Preface

The Suffolk University Sawyer Business School hosted the Knowledge Globalization Conference on October 15-16, 2011 in Boston, Massachusetts. The conference attendees included scholars, members of the business community, and students from the United States and twenty-six foreign countries. The conference tracks included Global Supply Chain, Technology Applications, Small Enterprises, Management Issues, Ethical and Moral Issues, including Accounting and Finance, economic and social issues, Education, and Regulatory issues with emphasis on poverty alleviation. This Proceedings Edition includes many of the conference papers. As such, it offers a window into current global scholarship and the continuing dialogue concerning evolving social, cultural, economic and business trends. These reflections offer an opportunity for cross-cultural exchanges and increased global understanding. We thank the conference presenters and participants for their insight and contributions.

A very special thanks to Dr. Miriam Weismann, who in spite of her arduous responsibilities of the director of AACSB accreditation, teaching, research, and the director of the Ethics Center had agreed to take and burden of editing this issue of the proceedings and helped us to carry on the publishing work. However, at the end, with the help from Dr. Nargis Mahmud, conference co-chair and the managing editor of the peer reviewed Knowledge Globalization Journal and Tingting Xue, my research assistant we finally succeeded to publish the proceedings though late. I am sorry for the unusual delay in publishing the proceedings.

We thank Dean William O’Neill for his continued support to the Knowledge Globalization efforts and the wonderful professors at Suffolk University who contributed to the topics development of the conference and the presentation process.

On behalf of the editorial Board

Mawdudur Rahman
Knowledge Globalization Conference, Boston, October 16-17, 2011

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Enhancing Warehouse Performance at a Global Company

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Abstract

Warehousing has become an important competency, a strategic tool that many companies are using to achieve competitive advantage. At the same time the warehouse is undergoing enormous changes that make warehouse excellence harder to achieve. This paper is intended to show some specific tools in enhancing warehouse performance for a global factory warehouse in Hungary.

Introduction

The main purpose of the joint research between our University and the warehouse was for the development of a mathematical model and program that is able to predict future BSC indicators based on forecasted operational level data.

At the beginning of the joint research the existing situation of the warehouse was observed followed by an analysis of the material flow and an overview of the main tasks. After that the overview of the current international literature was followed with focus on complexity and performance measurement.

In the last section the model and program is presented. The main idea behind the use of the proposed model was that we needed a link between complex BSC indicators and easy-to-measure and easy-to-obtain indicators. After visiting the warehouse we found that the operating SAP-based business software is frequently used to obtain operational level data and is capable to obtain other data not used yet. Based on the above information our first task was to obtain a logical link between some of the already available data and a BSC indicator. For the pilot test we have chosen the damaged goods BSC indicator. In the next step we identified operational level data that is most likely being in logical connection with this BSC indicator.

We have chosen the following operational level data and with the help of the warehouse staff we received the required number of them:

- a) incoming goods
- b) outgoing goods
- c) transplacement within the warehouse

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With the exact logical connection described and with the use of hypothetical or forecasted operational level data the approximate BSC indicator can be calculated. For this purpose we used artificial neural networks. After the learning and testing phase the program is able to calculate the number of damaged goods used the aforementioned operational level indicators as input.

**Review of the present situation**

The participant of this project is a central warehouse of a global company acting also as a distribution center for Central Europe and as a finished goods warehouse for the Hungarian factory. An additional task of the warehouse is to serve other warehouses with full truck loads. This makes the warehouse a true logistic service provider despite that it is situated beside a factory. This status comes with additional challenges and problems like the following:

- **a)** different performance factors at outbound flows regarding directions
- **b)** different requirements for the different outgoing flows.

These facts will have serious effects on performance measurement that is to be discussed later.

The warehouse itself has 25,000 m$^2$ surface. It has 25 ramps 53 gates. 7 gates are used for outgoing traffic.

The storing technology includes two major storing technologies:

- **a)** shelves with 4 levels
- **b)** block storage

The block storage is used mainly for the factory products. Other important task of the warehouse is the distribution and collection of pallets within the whole company supply chain.

**Warehouse operation**

**Major warehouse tasks**

According to the 3 main operation area of the warehouse (distribution center, factory warehouse, central warehouse) there are various tasks to be carried out with various success parameters. That makes the performance measurement a real challenge.

**Put away of factory goods**

Factory goods from the nearby two factories arrive at the warehouse. First the cubes have to be turned, than either put on pallets or placed directly in the block storage.

**Put away of import goods**
Factory goods from factories from other countries arrive at the warehouse. The put away process is like a reverse order picking.

**Order picking for direct market**

Hungarian and Slovakian market order fulfillment.

**Order picking for other warehouses**

Full truck load building for filling up stocks at other warehouses.

**Order picking for the Austrian market**

The various tasks built up a pre-defined daily routine within the warehouse according to service level agreements and delivery windows.

Other tasks of the warehouse staff includes but is not limited to the following:

- pallet handling
- fill-up of shelves from block storage

**Shifts**

There are 2 shifts within the warehouse, with distinctive task sharing between them; however there is a shift for special purposes like mentioned above. (Pallet handling, fill-up of the shelves from bulk storage, etc.).

The major task of the morning shift is the preparation of Austrian market delivery. The major task of the afternoon shift is the preparation of other export full truck loads. However there are several other tasks to be fulfilled for both shifts, those are just the major guidelines.

**Performance measurement**

Effective management of a supply chain has been increasingly recognized as a key factor in differentiating product and service offerings and gaining competitive advantage for firms. It demands close integration of internal functions within a firm and effective linkages with the external operations of channel members in the chain. This SCM concept fundamentally changes the nature of a firm as control is no longer based on direct control of the business processes, but rather based on integration across member organizations in the supply chain. Coordination between different firms in the supply chain is key to its effective implementation. To this end, it is necessary for firms to understand their supply chain activities and the associated performance impact on the other member firms in the supply chain.

Goal for firms in achieving a competitive edge is to manage their supply chain performance (SCP) to gain advantages in cost and service differentiation.

For the time being there are three levels of performance measurement at the company.
Strategic level performance measurement

First, at strategic level, there is a Balanced Score Card performance measurement tool used by the management of the company.

Since the appearance of the balanced scorecard (BSC) in 1992, it has gained widespread acceptance as an important tool for performance measurement and strategic management in the for-profit sector. The balanced scorecard model was developed as a means for addressing the strategy development process, continuing in monitoring strategy achievement and performance measurement. It does this by dividing measures into four different, inter-related perspectives.

- **Financial perspective**
  - “If we succeed, how will we look to our shareholders?”

- **Customer perspective**
  - “To achieve my vision, how must I look to my customers?”

- **Vision & strategies**

- **Internal perspective**
  - “To satisfy my customers, at which processes must I excel?”

- **Learning & growth perspective**
  - “To achieve my vision, how must my organization learn & improve?”

- **. Figure 1: Balanced Scorecard**

Financial Perspective: How do we look to the shareholders? The strategy for the growth, profitability and risk viewed from the shareholder.

Customer Perspective: How do our customers see us? The strategy for creating value and differentiation from the perspective of the customer.

Internal Business Processes perspective: what must we excel at? The strategic priorities for various business processes that create customer and shareholder satisfaction.
Innovation and Learning Perspective: Can we continue to improve and create value? The priorities to create a climate that supports organizational change, innovation and growth

By integrating objectives, measures, targets and initiatives of each of the four perspectives to support the overall vision and strategy, the BSC demonstrates its value as a strategic management instrument that goes beyond mere financial indicators by emphasizing the importance of non-financial perspectives. To ensure financial performance, the other perspectives act as drivers and need to be given balanced weighting.

*Tactical level performance measurement*

More important is the performance measurement that is linked to the BSC measurement. This tool is able to show the results for the workers about the previous month. The following areas are covered with that tool:

- Customer Complaints
- Damaged products at the warehouse
- Warehouse inventory differences
- Warehouse loading delays
- Trailer Utilization
- Equipment damages
- Warehouse productivity

All the above mentioned measurements are carried out each month to show some results from the warehouse performance within the given year. It is linked with the BSC measurement numbers, and thus it is a suitable tool to monitor the changes in BSC indicators within the given year.

The tool is a method for linking operative processes to the strategic performance measurement numbers of the BSC method. However this method is good for monitoring an operative level measurement is inevitable. Without a proper operative level performance measurement the feedback to strategic level will be missing thus making evasive actions against problems and bottlenecks impossible. In this paper we suggest a solution to this problem by developing a tool for that purpose.

*Operative level performance measurement*

At the end of all shifts the shift leader records the following data about the shift workers:

- tasks fulfilled at the given day
- time consumption of these tasks.

At the end of the month – based on the daily recorded data, the actual performance in piece or in m³ and a pre-defined norm – the operative performance of the warehouse can be calculated.

The major problem with this performance measurement tool is that it relies on the pre-defined norms. If the performance is high for a given amount of time the management will raise the norm values. However, if the complexity of the tasks is raising the norm values will not be lowered. This one-direction inelasticity can make the operative feedback about performance inaccurate.
Development of strategic level performance measurement

In this chapter we propose a mathematical model and program that is able to predict future BSC indicators based on forecasted operational level data.

Connection between operational level and strategic level performance measurement

It is without doubt that strategic level performance is based on operational level actions. However the connection between them depends on various factors – among them the various types of complexity. The exact relation between them cannot be calculated with traditional mathematic and statistic tools such as function approximation, or regression analysis.

Our proposal is to use advanced mathematical tools to identify the connection and describe it in a way that can be used as future strategic planning.

At the warehouse the strategic level performance measurement is based on various BSC-based results such as damaged goods, customer complaints, inventory differences among others. Our goal was to develop a tool that is able to create a direct connection between those indicators and various operational level indicators such as incoming goods, delivered goods, transshipment, and placement within the warehouse, capacity usage of the warehouse and overtime of the workers.

As described before the connection between the above mentioned indicators is very complex and inter-related. Simple calculations and regression analysis is not able to model the inter-relations and complexity of the various input parameters and so the prediction of strategic level performance indicators based on operational level actions will be inaccurate.

Proposed tool for creating the connection between strategic and operational level performance measurement

The tool to be chosen should be able to predict the strategic level result based on operational level inputs. The operational level inputs can be “manipulated” in short term (for example not allowing overtime for the workers) but strategic level outcomes must be accepted and altering them in short term is not possible.

Based on the above mentioned complex and inter-related connection between the inputs and outputs our proposal is to use artificial neural networks as a computational model for establishing connection between strategic and operational level indicators.

An artificial neural network (ANN) is a mathematical model that is inspired by the structure and functional aspects of biological neural networks. A neural network consists of an interconnected group of artificial neurons, and it processes information using a connectionist approach to computation. In most cases an ANN is an adaptive system that changes its structure based on external or internal information that flows through the network during the learning phase. This learning phase is important for the use of the model. With enough data from the past the ANN is able to learn the connection between the input and output data. Parallel with the learning phase a test phase is taking place where the network is testing itself with other data from the same problem. As a result after the learning the ANN can be used to predict output data from input data.
Building of the database

In our case the output of the model is one of the BSC indicators hence we cannot affect it in short term. The inputs are operational level data that can be affected in short term. With an ANN that has been taught before the BSC indicator can be predicted by entering possible operational level inputs. And with the manipulation of these inputs the required BSC indicator level can be reached.

![Figure 2: The structure of the model](image)

For the BSC indicator we have chosen the damaged goods. As input we have chosen:

- incoming goods
- outgoing goods
- transplacement within the warehouse
- warehouse capacity
- overtime of the workers.

For the best training and test results of the model a sufficient number of input data is required. If we give only the incoming and outgoing goods as input to this model the training will perhaps more simple but the future use will be questionable: the more input we have the more we are able to re-model the complex inter-relations that build up goods damage in the warehouse.
Other important criterion for the success of the model is to have enough number of data from the various inputs. In our case we used the weekly data of two years from the above listed input parameters. 48 data for each year, (the first and the last three weeks are considered as an outlier for the model and to make the model more accurate we did not use them) 96 for two years. If we use the data for 2009 for training and 2010 for testing the model will give result but considering the various factors that can change from a given year to the next it can lead to miscalculations and wrong prediction. That is why we have used the odd weeks and even weeks from both years separately for training and testing the model.

The data was exported in a more simple number structure for the use of the model separately for training and testing. For the input of the parameters there is a possibility to use the so called fuzzy parameters. Fuzzy parameters describe not definite, exact values but it deals with values that are approximate.

From Figure 3 we can see that all input data was added three times. However in our case – except the Overtime – all data for the three times were the same. This fuzzy input feature can be used at the future use of the model. For example if we try to predict the outcome for 2012 the inputs can only be guess. However with the fuzzy method we can say that the volume of incoming goods for a given week will be most likely 40,000 cubic meters but (with decreasing probability) it can be between 38,000 and 42,000.
In the given case no need arose for fuzzy inputs hence the definite numbers of the previous years were at hand. At the overtime data input we had monthly numbers. Those numbers were not simply divided by four to receive weekly data, but we applied them as fuzzy numbers, for example the overtime for the second week in 2009 was most likely 10,75 pro worker but (with decreasing possibility) it could be somewhere between 9,75 and 11,75. This fuzzy input was used to demonstrate this feature of the model.

Parameter setting

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The parameter setting is important for the optimal running and achieving good results.

The following parameters are required for the program:

a) number of inputs: The number of operational level performance indicators used for the program (in our case 5)
b) number of training patterns: The number of data for each operational level indicators used for training (in our case 48 hence we used weekly data for two years and only the even weeks for training)
c) number of test patterns: The number of data for each operational level indicators used for testing (in our case 48 hence we used weekly data for two years and only the odd weeks for testing)
d) trainingfile: Name of the txt file for the train data (in our case train.txt)
e) testfile: Name of the txt file for the test data (in our case test.txt)
f) load weights from file: For further learning we can load previously runned results into the program. Hence this is the first run, the value is set to “0”
g) weights file: If the previous parameter is set to “1” we can give the name of the file containing the weights (weights.txt)
h) outputfile: Name of the txt file for the output (in our case output.txt)
i) weights outputfile: Name of the txt file for the weight results (in our case weightsoutput.txt)
j) weights readable outputfile: Name of the txt file for the weight results for easy understanding (in our case weightsreadableoutput.txt)

The setting of those parameters requires further understanding of artificial neural networks and its programming.

Figure 6: Parameters (params.txt) as seen in Notepad
Teaching and Testing Process

After the data was exported the teaching and testing process was initiated. The program operates with various parameters that must be adjusted to the given task.

In the figure below a part of the output text file can be seen. For each generation (the number of generations can be set at the parameters) we see two important results: MREP Train and MREP test. Those are the Mean Relative Error percentages for the train and test data.

![Figure 7: Result of one evolution process: the output.txt](image)

After a number of program runs the best result was chosen. From the train input data the algorithm was able to guess the output with a 19% mean relative error. Parallel to the training the algorithm tested its skills with the test data and was able to guess the output with a 26 % mean relative error. This second error showed that the algorithm taught from the data of even weeks was able to guess input based on other data not from the teaching database (that is odd weeks) with 74 % accuracy.

For further use the data in the weights.txt can be used. This is the “connection” between input and output and the main result of the running.
**Figure 8: Result of the running: the connection between the input and output**

**Further work**

The main area of use should be the prediction of important BSC indicators based on inputs that can be forecasted or guessed. With the altering of those inputs an optimal solution for the fulfillment of the BSC indicator can be chosen.

The result showed that with this first model a usable tool was created that can be further developed and be used for other outputs. Other models can be built for other important BSC indicators with completely different input parameters that were chosen by us for the pilot phase.

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Cost Analysis of the Application of “Pick It Up” Distribution Structure

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Abstract

Traditional division of labor between manufacturing and trading companies is currently changing. The trading companies takeover more and more distribution logistic tasks of the manufacturers. It was previously the responsibility of manufacturing companies to deliver goods for trading companies. However this responsibility is getting shifted towards the distributor trading companies because of cost saving aspects. The main purpose of this paper is to illustrate the development of distribution logistics of distributor companies and to describe the possibilities of the application of a new distribution model called "pick it up logistics".

Keywords: Distribution logistics, warehousing costs, transportation

Introduction

The main task of distribution is to transfer commercial products from producer to consumer by using the available resources efficiently and fulfilling the basic principles of logistics and manufacturer and consumer expectations. The product forwarding is realized through complex and diversified distribution networks. These distribution models have evolved in different way depending on the country, transportation infrastructure and geographical position [5]. Organizing physical distribution requires the solution of several problems which are closely related. At first system elements - distribution network, warehouses, transportation modes, vehicle fleet etc. - seem to be independent from each other; however in case of system development these elements should be handled globally.

Basic distribution system structures

Direct distribution

In the beginning the development of distribution logistics products were transported directly from manufacturer to consumer. In these cases the insertion of certain logistic nodes was not necessary. Of course this kind of distribution model exists till present day but their application is rare because of higher costs.
Indirect distribution

Today's requirements promoted the development of multi-stage systems in distribution logistics. The number of stage levels is influenced by several reasons like specific supply and production system management features, inventory optimization and ensuring goods for consumers at any circumstances.

Multi-stage distribution can be implemented and operated without inserted commercial activity (3PL - Third Part Logistics). According to current trends multi-stage distribution systems are not organized, operated and controlled by manufacturers and traders but by logistic entrepreneurs [6].

However in several cases it is reasonable and appropriate for traders and manufacturers to organize and manage themselves the logistics system. The following part of the paper deals with the analysis of economical features and efficiency of systems organized by traders.
“Pick it up” distribution

Traditionally freights are organized according to the following procedure: manufacturer delivers itself the goods to trader or assigns a transport company (primary loop). After that the trader organizes deliveries from central warehouse to retailers (secondary loop).

“Pick it up logistics” distribution system aims to modify relationship of manufacturer and trader by excluding manufacturer from the organization of distribution. This may result in significant cost savings. According to [1] manufacturers have to face the fact that traders take away the control of logistic activities. This may happen in one or two steps.

The following schematic figure shows the logistic activities organized by trader.

![Figure 3. „Pick it up” (own source)](image)

This paper would like to emphasize the fact that the theory described above is more and more widely spread. According to this theory organizing tasks are taken away and primary loop is organized by trader.

This method could be the opportunity for traders to decrease their costs. Trader or its contracted logistic service provider does not pay delivery costs for manufacturer but directly transfer the goods itself [3].

This situation can be advantageous: on the one hand they get better negotiation basis against manufacturers; on the other hand they can realize cost savings.

According to [1] the theory of saving cost derives from the following resources:
Absence of additional costs charged by manufacturers. Manufacturers often charge traders more than actual logistic cost.

By consolidation of more deliveries traders may reach lower delivery cost compared to that case when manufacturer order delivery service individually.

By avoiding unnecessary deliveries and intermediary storages in the network between manufacturer and trader.

The “Pick it up logistics” often outgrows to global dimension by stretching through country borders of trader.

The study’s base case

With the above mentioned distribution system the following question comes up:

*Whether the savings can be achieved in all cases with the application of “pick it up logistics”?*

The study's base case is looking to answer this question with the aid of a simple mathematical model.

The theoretical cases examined by us will use test data collected at an Eastern Europe based company with a central warehouse and numerous retail stores. For the analysis' starting point we have selected the following current market trend - when producers deliver to a central warehouse and then the distribution to the retail store is performed by the company.

Scope of model formation

The question is to determine whether it is cost efficient for the company to transport the products from the producers to the central warehouse.

In this case it is not necessary for the suppliers to produce goods for a longer period of time in order to take advantage of the maximum transport capacity of their vehicles or sending vehicles with underutilized load capacity, therefore decreasing the transport costs both at the supplier and the central warehouse. In order to maintain the service level and to improve their competitive positions the suppliers are trying to fulfill their customers' smaller orders by using smaller and more expensive or underutilized vehicles. The takeover of deliveries should only be considered for suppliers that have slow selling large quantity products.

We merely perform analysis on the physical distribution level costs only transport, storage, handling, and inventory holding expenses are examined.

We perform cost analysis in two cases:

The suppliers deliver the orders separately to the central warehouse
The company collects the given amount of products utilizing either their own or rented vehicle fleet.

In a mixed system [4] it may be conceivable to link locally the retail outlets and the suppliers/producers, so theoretically it is possible to link routes, delivering goods in both directions thus cutting down on empty kilometers but in this paper we do not examine this version.
The calculation of total cost of supply process and inventory holding

The cost of import and inventory holding in case of vendor managed deliveries

Our test data is taken from the case of an Eastern European country (Hungary). This company operates a central warehouse where 192 vendors deliver their goods. From here 48 retail stores are supplied. Based on historical data the average required quantity of a retail store is 11.4 pallets.

The vendors’ average shipping quantity is calculated based on the commercial unit demands:

\[
q_t = \frac{N \cdot q_0}{P} = \frac{48 \cdot 11.4}{192} = 2.85 \text{ pallets/day}
\]  

(1)

Where:

- \(q_t\): average required quantity from vendors in pallet
- \(N\): number of retail stores
- \(q_0\): average required quantity of one single retail store in pallet
- \(P\): number of vendors

Considering a small commercial unit where the average order quantity of products is 11.4 pallets/day. The vendors use mainly smaller vehicles with the capacity of 16 pallets. The specific transport cost of smaller vehicles is higher, that in case of larger capacity vehicles. The capacity data and the rolling fees can be found in Table 1

Table 1. Capacity and rolling fee data of vehicles

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Based on the total ordered quantity and the vehicle capacity parameters the number of routes can be calculated (2).

\[
R^V = \frac{P \cdot q_i}{\beta^V \cdot G^V} = \frac{N \cdot q_0}{\beta^V \cdot G^V} = \frac{192 \cdot 2.85}{0.85 \cdot 16} = 40.23 \text{ routes/day (2)}
\]

Where:

- \( R^V \): number of routes
- \( G^V \): Carrying capacity of the vehicles used by vendor (pallet, volume, weight)
- \( \beta^V \): loading weight/volume utilization

If we examine the supply and distribution networks we can observe that the central warehouses are mostly located near to the middle of the network and the partners are located within a circular area around it. Of course this is a rough approximation which simplifies the mathematical modeling. In the case of a circular area the suppliers’ average distance from the distribution center can be calculated as follows [2].

\[
\bar{d}_{CA} = \frac{2}{3} \cdot R = \frac{2}{3} \cdot 172 = 115 \text{km / 71mi (3)}
\]

Where:

- \( \bar{d}_{CA} \): Average distance of a circular distribution/collection area
- \( R \): radius of the area

The examined wholesaler maintains commercial relation with domestic partners that are located within a circle with a radius of 172 km (106 mi). The radius is calculated from the area of the country (93000 km\(^2\) / 35,919 sq mi). The distribution warehouse is in the middle of this circle. This way the average distance of a supplier from the central warehouse is 115 km.
The vendors usually deliver their goods with a 3,5-ton- and 16-pallet capacity vehicles which has a rolling cost of 0,6 EUR/km.

By using all the previously given and calculated data the total estimated cost of the supply process can be determined:

\[
C_I^V = \frac{2 \cdot \bar{d}_{CA} \cdot C_D^V \cdot R^V}{\alpha^V} = \frac{2 \cdot 115 \cdot 0,6 \cdot 40,23}{0,5} = 111049 \text{ EUR/day}
\]  

\( C_I^V \): import cost  \\  
\( C_D^V \): rolling cost of vehicles used by vendor or by its contractor  \\  
\( \alpha^V \): route utilization

Besides transport costs inventory handling costs emerge. The run of the inventory level of goods in the distribution center is shown on Figure 7.

Figure 7. It is valid in case of the company prescribed 4 days long cycle times of vendor deliveries.

The definition of inventory holding cost realized at the distribution center is the following: 

\[
C_{IH} = \frac{1}{2} \cdot C_{SP} \cdot p \cdot N \cdot q_0 = \frac{1}{2} \cdot 0,2 \cdot 4 \cdot 48 \cdot 11,4 = 218,8 \text{ EUR/day}
\]  

Where:
At companies with developed IT system effective controlling tools support the hardly definable specific costs of the logistic system such as takeover costs and procurement administration costs. This way the calculation of the cost of takeover process can be done:

\[ C_T^V = R^V \cdot \left( \frac{\text{VAR}}{\text{MH}} + \beta^V \cdot G^V \cdot C_M \right) + \frac{\text{VAR} \cdot 40,23}{8 + 0.85 \cdot 16 \cdot 1.1 + 6} \geq 915,6 \text{ EUR/day} (6) \]

Where:

- \( C_T^V \): cost of takeover which includes the costs of material handling and administration done by both warehouse operators and procurers.
- \( C_M \): material handling cost at takeover
- \( C_A \): administration cost related to procurement

After the definition of the cost elements the total cost of vendor managed import process can be easily calculated:

\[ C^V = C_T^V + C_{IH}^V + C_T^V = 11149 + 218,8 + 915,6 = 12239,5 \text{ EUR} (7) \]

Where:

- \( C^V \): cost of import process made by vehicles of vendor - or its subcontractor.

The cost of import and inventory holding in case of distributor managed deliveries

By the “pick it up” distribution structure we can take advantages of the better vehicle capacity utilization which results from the opportunity to arrange round routes and the use of higher capacity vehicles. That will be on influence on the daily route number:

\[ R^D = \frac{P \cdot q_1}{\beta^D \cdot G^D} = \frac{N \cdot q_0}{\beta^D \cdot G^D} = \frac{192 \cdot 2.85}{0.85 \cdot 33} = 19.5 \text{ routes/day} (8) \]

Where:

- \( R^D \): number of routes
- \( \beta^D \): loading weight/volume utilization
- \( G^D \): average carrying capacity of the vehicles of distributor
However the drivers and vehicles have a limited working time in a day. Furthermore the driving and resting time of drivers is even regulated by AETR (Accord Européen sur les Transports Routiers = European Agreement concerning the Work of Crews of Vehicles engaged in International Road Transport). That is why an extra checking operation should be executed. The maximum number of visited vendors can be determined by the following expression [7]:

\[
x \leq t_D \cdot v - 0.75 \cdot \sqrt[A]{\frac{A}{P}} + t_L \cdot v
\]

Where:

- \( t_D \): daily driving time of the driver
- \( v \): average speed of the vehicle
- \( A \): area of the distribution network
- \( t_L \): loading time at a vendor

If the small number of routes requires the driver to visit more points than possible the distribution task can not be executed.

For the collecting route the distributor uses 24-ton- and 33-pallet-capacity vehicles which have 1 EUR/km rolling cost. The total covered distance of one single route is calculated according to [7]:

\[
D^D = 0.75 \cdot \sqrt[A]{A} \left( 1 + \frac{C^D}{q_t} \cdot \frac{\sqrt{P}}{P} \right) = 0.75 \cdot \sqrt{93000} \left( 1 + \frac{33}{2.85} \cdot \frac{\sqrt{192}}{192} \right) = 419.8 \text{km} \quad (10)
\]

By using all the previously given and calculated data the total estimated cost of the supply process can be determined:

\[
C^D_I = \frac{D^D \cdot C^D_C \cdot R^D}{\alpha^D} = \frac{419.8 \cdot 1.195}{0.85} = 9635.7 \text{ EUR/day} \quad (11)
\]

- \( C^D_I \): import cost
- \( C^D_C \): distance cost of vehicles used by distributor or by its freighter
- \( \alpha^D \): route utilization

The inventory holding cost at the distribution center will be the same as calculated in (7) since the quantity of delivered goods remain the same.

\[
C^D_{IH} = C^V_{IH} = 218.8 \text{ EUR/day} \quad (12)
\]

Where:

- \( C^D_{IH} \): Inventory holding cost at retail stores
However the company will save costs at takeover since less number of vehicles will unload during a day, so that fix costs of takeover will reduce.

\[
C^D_T = R^D \cdot (D^{\text{MH}} + G^D \cdot C^{\text{VAR}}_{\text{MH}} + C_A + 19.5 \cdot (8 + 0.85 \cdot 33 \cdot 1.1 + 6) = 754.1 \text{ EUR/day} \quad (13)
\]

Where:

\( C^D_T \): cost of takeover which includes the costs of material handling and administration done by both warehouse operators and procurers.

The import expense:

\[
C^D = C^D_T + C^D_{IN} + C^D_T = 9635.7 + 218.8 + 754.1 = 10608.6 \text{ EUR} \quad (14)
\]

A benefit can be achieved if the following statement is true:

\[
C^V < C^D
\]

\[
12239.5 < 10608.6 \quad (15)
\]

By applying the distribution structure of “pick it up logistic” the company would realize a significant 8.5% profit. The exact cost saving in our example is 1630 EUR/day.

The profit is largely determined by the average amount of delivered goods per vendor. Figure 8 shows the formation of profit in function of the number of vendors. Here the total required quantity is constant, so this means that if vendor number increases the average shipping quantity is decreasing. During this the profit is also decreasing.

Other influencing factors are the following:

- the ratio of the rolling fees used by vendors and the rolling fees of the traders’ fleet.
- product type and diversity
- special shipping requirement
- etc.
Figure 8. The run of profit in function of the number of vendors by constant level of total required volume (own source)

Another interesting question: what is the minimal rolling fee beyond which “pick it up” is not worth to apply. Figure 9 shows that if the vendor can deliver with 0,55 EUR/km rolling fee or even cheaper we can not realize profit.

Figure 9. Realized profit in function of the rolling fee of the vehicles of the vendors (own source)

Conclusion

The mathematical model demonstrated in this paper – and also the development scope of more and more companies - confirms that it is worth to deal with “Pick it up logistitcs”.

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This procedure is very simplified; however in further researches we plan to examine those cases when logistic service providers do not utilize vehicle capacity in 100% or deliveries are done with smaller capacity vehicles.

Further researches aim to develop the model and to work out the details of rough approaches in it. We aim to include the diversity of goods in the model [8]. We have considered that the supply network is circle shaped and the central warehouse is located in the middle of the area. However this is true only in special cases. Another benefit of this system is that the rate of empty runs can be reduced by inserting distribution point before the first loading point of the supply route.

It could also be an interesting task to determine the optimal cycle time of import deliveries by solving the trade-off between the inventory level and the frequency of shipments. Vehicle capacity also has influence on the same trade-off situation.

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GLOBAL RETAILING: ACT NOW

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Abstract

Geographic distribution of “buying power” is undergoing significant change with various parts of the globe showing a rapid growth of population with greater disposable incomes. Traditional retailing powerhouses such as US and Western Europe are showing negligible growth, if not a reduction in consumer spend. Several leading retailers across geographies have expanded their footprint across their own shores looking in search of growth. This paper examines typical models utilized by retailers when expanding globally, factors that influence the models and identifies a number of best practices that has allowed their technology infrastructure to scale to meet business needs. This paper does not address the organizational and business operations areas of globalization although an indication of key areas of focus is provided.

Keywords: Global Retailing, International Expansion, Multi-tenancy, Global Platforms

Time to expand is now

A bird’s eye view of the current state of the market clearly indicates that the time has arrived to expand globally for an increasing number of retailers. Several research reports clearly show a greater distribution of consumer spending power. Leaders have already started on their global expansion journey. Adding the typical “harness power”, of 5 to 10 years for a retailer to generate significant ROI on their expansion, the time to act is now.

Deutsche Bank Report “Asia’s Rising Middle Class” clearly shows a significant rise in buying power in Asia. By World Bank forecasts the middle class from Asia will account for 8.9% of the world’s population and 7.7% of the global income. China, India and parts of South East Asia such as South Korea and Singapore show a clear increase in percentage of world population with high disposable incomes.

According to the Organization for Economic Co-operation and Development, the GDP of US, Japan and Eurozone decreased by 2.4, 5.2 and 4.1 percentage points in 2009 while the BRIC nations show an increase. Among BRIC, China is the powerhouse with its economy twice as large as the other countries.
The “2009 Global Retail Development Index” report, clearly highlights that the retail window of opportunity is mature in India, China and Russia while it is closing in parts of Eastern Europe.

The research report titled “How Global is the Business of Retail?” shows a greater geographical spread of the top 15 international expansion locations. Dubai features prominently at number 4 with the ranking also including Tokyo, Singapore, Hong Kong and Beijing. In a survey of 280 Top Retailers across 67 countries, 46% of the retailers had a presence in each of the three main global regions.

Supply chains in US and Western Europe is different from APAC and Eastern Europe. Retailers that perform with a well oiled infrastructure have faced severe operational challenges. Conversely, European retailers that have a history of successfully expanding to Eastern European markets have performed well in APAC markets. This is a clear indication that adaptability as well as a focus on the culture and operational mechanisms of the target country are key ingredients of a successful entry strategy.

“Globalization – is it for US Retailers?”, lays some guidelines for retailers on a retailer’s expansion strategy; Luxury goods retailer that utilize flagship stores to test a differentiated product or offering in a few core cities Establishing significant presence in a market where their method of retailing blends itself well in the new geography Expanding to a new geography where the company’s current operating model and infrastructure can be leveraged To be successful in all of the above approaches retailers need to localize their offerings for the new market (branding, operations, footprint etc) and customer while leveraging economies of scale that their current infrastructure/operations offer.

Retailers have primarily followed hybrid models for expansion that allows the highest agility and is consistent with their objectives. The complexity of their technology portfolio increases multi-fold given the variety of business strategies that retailers have adopted to enter newer geographic markets.

Retail Globalization – State of the Market

Over the past few years retailers have not only continued to internationalize but also globalize. Industry reports indicate 40% of new openings during 2008 were outside the home region of the retailer concerned. Fashion and apparel retailers have led the way in globalization. Geographically, the primary regions of global expansion tend to be Middle East, Asia and Eastern Europe. Though globalization is on the rise, it is still in its nascent stages.

The emerging economies are driving ever harder to open up their markets. Recently, India has allowed 100% foreign direct investment for cash and carry, wholesale trading. Three international retailers have announced plans to setup wholesale stores. World’s leading maternity apparel retailer, Destination Maternity, announced a joint venture with Mahindra Retail to sell its merchandise as a private label brand in India’s Mom & Me stores. Vietnam has opened its doors to global retailers, offering them full ownership of local retail enterprises. Several leading global retailer are well established in Vietnam, including Seiyu, Metro, Big C, Dairy Farm and CP All. Auchan is planning to open 30 new stores. China is one of few countries with positive GDP growth in 2009. Walmart opened 23 new stores in 2009 bringing its total in the country to 140. Carrefour has maintained that it will maintain the pace of new store
openings. It opened 23 new stores last year, bringing the count to 135 outlets. Retail Gaint Aeon is opening several Ministop convenience stores in Qingdao and has plans of opening 200 more store in China in next 5 years.

Despite a market that has high retail demand, Russia’s operational challenges remain severe. Slovenia, the region’s second wealthiest country is dominated by international retailer, Mercator, enjoying a 36% share of the retail market.

UAE and Abu Dhabi in particular are enjoying a retail renaissance. Its population of 5 MM is small when compared to India or China but it has the highest consumer spending per capita of any country in the Global Retail Index. Several global retailers including Carrefour, Casino and Emke Group have clear plans for expansion in that region. In Latin America, Brazil and Chile have been the leading international destinations with Walmart, Carrefour and Casino having a large presence.

**Retail Globalization Framework**

Marks and Spencers setup a joint venture in the Indian market with a franchise model “Planet Sports” and have had a great success in localizing for the Indian market. Their ability to localize branding, marketing and customer management while leveraging their broader supply chain and merchandizing has worked well for the retailer. Tesco, one of the most adaptive Top global 30 retailer has a diverse mix between convenience stores and hypermarkets. Walmart has reigned supreme as it has continued its international expansion on multiple channels. Walmart has continued investing in markets that it was able to localize in (Latin America and Japan) while pulling out of South Korea and Germany. Best Buy is following suit with a heavy emphasis on international expansion through localization. Historically, the Top 30 global retailers have entered into a new market through joint ventures/acquisitions rather than setup shops (only 5%).

![Figure 2: Global expansion framework](image-url)
The key to a successful international expansion strategy is to impart specific consideration to the following five aspects:

1. Tailor branding with local culture
2. Localize Merchandize
3. Understand regional regulations and modes of government operations
4. Embrace local logistics
5. Leverage operations and supply chains

**Tailored Branding**

Retailers that have a business model based on mass applicability need to tailor their branding and value proposition to the local market. Walmart operates bodegas in Mexico to meet local market demands. Aldi, another Top 30 global retailer has picked and chosen its geography for its hard discounting stores. Tesco is a prime example of a company that has successfully adopted local cultures and has transformed itself in its internationalization journey. The company serves about 15 markets including Western Europe, Eastern Europe, Asia Pacific and North America. Tesco has a separate division to customize branding for the region/locale. For example, the California stores are branded as Fresh and Easy to take advantage of the regional culture and values.

Walmart's expansion into South Korea in the late 1990s did not fare well due to its continued US based branding strategy. Its Every Day Low Price branding did not mean “value” in the minds of its consumers. Walmart was not prepared to invest in an effective localized branding strategy.
Localized Merchandise

Most retailers that have expanded internationally have primarily directed their products towards mid to high income customers in the emerging markets. In the paper titled “Successful Retail Innovation in Emerging Markets” the authors publish results of a study that clearly indicate retailers that have succeeded in emerging markets cater to the aspirational needs of the emerging customer to create a great value equation. They have been able to more easily adapt concepts created in more developed economies to these income groups. For example Walmart, Carrefour and Pao de Acucar have bought in their big box retailing formats to Latin America but have adapted their merchandize to local flavors. To cater to local high end consumer habits they added freshly prepared meals such as barbecue, sushi and pasta to their portfolio.

Home Depot’s lack of success in Chile offers pertinent insight into the value of tailoring merchandizing for local consumers. Shopping experiences in Chile is a family event. The choice of stores to shop is driven as much by women as it is by men. Though men preferred home depot’s products and prices the family shopping experience did not exist. Families went back to HomeCenter since it catered to women’s home decoration needs as well as men’s home improvement needs.

Tesco was one of few international retailers that were successful in South Korea. Instead of implementing the same business model that it used in its home country, Tesco understood the local market and the needs of its customers. It localized its products and offerings for the market while leveraging some of the best practices from its UK operations.

Regional Regulations

Retailers that are expanding globally need to understand the regional/country specific regulations.

To successfully navigate this terrain, retailers must establish an organized framework. IKEA spent years navigating the bureaucratic maze before opening its first Russian store. Wal-Mart’s expansion in Europe was measured and systematic. They took time to understand local laws, working hours, zoning regulations and data ownership. Asian laws typically protect local retailers and mom and pop retailers. Retailer’s that wish to succeed in these markets need to closely watch waning government restrictions and actively search for a suitable joint venture.
Local Logistics

A clear understanding of local logistics is critical to an international retailer’s success. Successful supply chain operations in the developed countries such as US and UK do not translate to success in Eastern Europe, Middle East and Asia Pacific. For example, in Russia, delays at borders, logistic challenges such as lack of containers, poor infrastructure/product quality create long gestation periods. Maturity of vendors that supply products, their modes of operations need to be well understood by retailers that wish to expand internationally. Wal-Mart’s lean store replenishment model that creates efficient logistics in the US does not translate well in several Asian economies. Modes of operation vary significantly for grocery retailers between US/UK and developing countries such as India. “Reliance Fresh”, an Indian retailer that entered the organized retail market in India when it was in its nascent stages, initially had severe operational challenges in obtaining fresh groceries for its stores and ensuring that its shelves were stocked with fresh items

Technology Principles for Internationalization

Technology infrastructure needs to satisfy the following goals for international retailers:

a) Enable an agile enterprise that reduces time to enter a new country/market
b) Reduce complexity of technology portfolio reducing platform and skill requirements
c) Reduce total cost of ownership
d) Portfolio optimization can occur at multiple levels. Depending on a variety of factors retailers have chosen to standardize at a variety of layers;
e) Hardware infrastructure
f) Products/platforms utilized for various business functions/capabilities
g) Applications deployed to meet requirements

A single approach has not been successful. Retailers have mixed and matched to achieve the greatest ROI. For example retailers have chosen to standardize on a particular product/platform for certain functions while creating global applications for others.

There are a number of technology advances that global retailers can take advantage of to optimize on their costs and provide a consistent experience to the customer. The key aspect of such technologies is to harness the best practices while allowing sufficient flexibility to customize to country specific needs.

Leading retailers are establishing platforms for their international store and eCommerce operations. This reduces the overall cost of operations. There is also flexibility in migrating a country’s operations to the chosen platform. For example, each country can choose to migrate to the next generation eCommerce platform when there is a sufficient business case. Similarly when legacy merchandizing and store operations are insufficient to meet customer needs, migration can happen at that point in time.

Key principles that drive a successful global platform include;

Multi-tenancy
Localization support
Multi-mode deployment Scalability
Performance Management

Multi-tenancy

This concept has picked up steam over the past few years. More than a specific technology or platform it is a way of building and implementing business capabilities for multiple tenants. Each tenant is a new country that is added to the retailer’s portfolio. The best global retailers have built their international platforms utilizing the concept of multi-tenancy.

Delivering capabilities utilizing multi-tenancy allows a retailer to:

- Achieve platform consistency, reduced IS technology landscape and fewer skills to maintain
- Allows best in class features and functionality to be shared across geographies
- Reduces overall cost of ownership
- Improves maintainability
- Reduces overall technology complexity

Localization Support

Retailers face the following challenges while implementing global platforms:

- Determining the business processes that are standard across all geographies
- Handling processes that are standard across few geographies but are not applicable consistently across all geographies
- Parts of the processes are standard across geographies but some countries have variations
- Unique processes for a geography

Best in class platforms utilize a number of abstractions that provide the flexibility required to handle the above scenarios. As shown in Figure y, a “gold” list of capabilities is developed, with specific customizations for additional capabilities required for geographies. Each geography, will have its own process configuration that leverages the master capability catalog. Global extensibility when coupled with multi-tenancy is a potent combination that helps reduce several architectural challenges in retail globalization.

Multi-mode Deployment

Several factors govern return on infrastructure investment including scale of operations, regional influences, capability delivered etc. Global retailers have varied needs that require infrastructural deployments that cater to one geo, set of geographies or global. The type of deployments could also vary over time. It is critical to that international support such varied needs. Rollover/cutover planning assume greater significance due to the transformational nature of this activity.

Scalability

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Scalability of international platforms has a broader connotation than the ability to handle larger volumes. International platforms need to support a variety of business models. Retailers may choose acquisitions, joint ventures or organic expansion as a means of entering new markets. Platforms should have the ability to support these models. Each of the above has its own implications on the capabilities to be delivered.

In certain cases, the platform needs to deliver its full range of capabilities while in other scenarios it needs to support operational visibility while in some others it needs to seamlessly mix and match. Another key scalability requirement is the ability to support regional operations, businesses need to operate and administer the platform. The platform should also allow various modes of operation to support varied geographic requirements:

- Single versus multiple warehouses
- Regions with strong wholesale versus retail operations
- Regions with lack of robust distribution networks
- Operations support required from the platform required for Dubai will vary greatly from that of India or China.

**Performance Management**

International platforms require greater decision support mechanisms than a single geography operation. These systems should have the capability to provide, respond and act upon local, regional and global decisions. It needs to cater to a varied set of stakeholders. It also needs to cater to a broad spectrum of operational mechanisms.

International platforms should provide performance metrics that is geo specific. Geographies such as Japan have a different retail operating model than US or Western Europe. Supply chain and real estate performance metrics presented for Japan will vary significantly from those of US/Western Europe.

Certain classes of international platforms should provide the capability to go across application capabilities to provide a lifecycle view for a particular geo, across geo as well as provide comparative analysis.

**State of the Market**

Leading retailers have implemented technologies that cater to “global retailing” requirements. Parts of the retail value chain have mature platforms that allows retailers to achieve the fine balance between standardization and localization.
Order Capture

There are a number of areas that are enabled by technology at the store;

Point of Sale systems
Store back office applications running on the store server
Devices in the store such as kiosk, price scanners etc
Customer experience enhancers such as digital signage, ESL, “personalizers” in the changing rooms, shopping buddy etc

Leading international retailers have chosen to standardize POS and store server applications. This allows country specific factors to govern store devices and customer experience enablers. This approach has allowed retailers to bring in as many localize for consumer experience while optimizing costs and creating a quicker time to benefit.

B2C/eCommerce platforms have significantly matured over the past decade. Leading vendors provide multi-tenant, multi-lingual capabilities. They can also be deployed in a variety of mechanisms. Some of the largest retailers in the world have chosen to create international B2C platforms that cater to country specific needs. Most eCommerce platforms offer basic CSR capability. The market is still evolving towards an integrated platform. Currently there is limited support from vendors to provide a holistic, international capable CSR platform

Supply Chain

This broad topic covers;

Order Management
Warehouse Management
Transportation and Logistics

Retail order management platforms have evolved over the past decade. The market is divided into pure play retail order management vendors, eCommerce vendors that have basic order management capability and ERP vendors that primarily support bulk order management and have some retail order management capabilities. Leaders in this space
have multi-tenant, international support capability though there are only select vendors that have implementation maturity and have undergone the challenges inherent to multi-geo expansion

Managing warehouses catering to varied geographical and fulfilment needs poses significant challenges to most vendors in this space. Leaders in this space have mature platforms to manage complex warehousing needs but are still evolving to support needs across multiple geographies and further optimize supply chain operations

Most retailers currently utilize home-grown or legacy logistics systems. As retailers continue to expand to newer geographies, further stress will be placed on these platforms. This area is still evolving with limited vendor support.

**Merchandizing**

Top retailers have begun implementing large Retail ERP packages that have strong merchandizing suites as part of their portfolio. Though the platforms in themselves are not inherently multi-tenant capable, retailers are utilizing them to meet their international expansion needs. Niche merchandizing product vendors are robust to meet needs of a single geography.

**Corporate**

Corporate systems that cover HR, financials and other back office needs are the most mature to support international expansion needs. These platforms have been battle tested not just in the Retail sector but in several other industries such as manufacturing, financial, insurance etc.

**Conclusion**

Structuring your IT landscape to support international operations involves a number of trade-offs based on your strategy, market maturity and the maturity of your IS platforms. Retailers that have chosen organic growth as primary international growth strategy have chosen to create platforms for several key retail functions such as order capture (eCommerce, stores etc), merchandizing, corporate etc. Other retailers that have chosen acquisitions as their international expansion strategy have started to consolidate financials and other corporate functions while leveraging retail technologies that have been part of their acquisitions.

In order to make appropriate technology decisions, the following questions needs to be answered;

What is the strategy that needs to be adopted to enter a market (acquisition, joint venture, new presence etc)  
Strength of technology investments for the new country/market that the partner brings to the table in case of acquisitions/joint ventures  
What is the positioning in the market and what is the strategy for growth  
Variance of key business processes in the market versus standardized processes (eg. distribution, transportation etc)?  
Ability of technology products that meet a particular capability to accommodate a variety of brands and business processes
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Integration of Knowledge Conversion Process and Electronic Learning Environment: Use of Course Management System

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Abstract
This is the era of knowledge and we are digging out information in the thirst of knowledge. In this growing knowledge society efficient technological tools must be used for the better management of knowledge. The Electronic Learning is the platform which provides the facility of interaction among knowledge holders and seekers. The knowledge conversion process is used to integrate the EL environment with the KM. The integration of EL and KM utilizing the Course Management System is proposed in this paper for the effective utilization of knowledge shared among individuals in online portals. Use of MOODLE as a CMS in EL portal implemented in Allama Iqbal Open University is explained showing the practical practice of KM and EL integration. The practical relationship among KM and EL can be analyzed and used for the effective utilization of knowledge.

Keywords: Knowledge Conversion Process, Electronic Learning, MOODLE

Introduction
In the previous decade World Wide Web has taken the fundamental place of individuals in everyday life. The emergence of global network has changed the communication patterns of business and the personal communication with other individuals and machines. The revolution in this field is taking the world towards Knowledge Society, where we will find knowledge instead of information (Bonino, 2009).

The development of knowledge society has influenced our thinking about the computer usage. Computer is no more a simple “calculus engine” for calculations, it is not considered as a “gateway” for the entering the knowledge highway. The starting of 21st century brought big change in every sector specially the educational sector has adopted various revolutions. The emergence of Electronic Learning (EL) has changed the traditional method of education and presented a new concept of lifelong education. In order to utilize and manage these EL networks efficient management of uploaded knowledge is of great concern. The realization of this emerging need is causing a call for the knowledge management (KM) (Qinfei, 2010). The new technology implementation in an effective way produce a required benefits for the organization (Teo, & Too, 2000).

In previous literature considering the knowledge as an important entity is acknowledged. In spite of knowledge importance, the acquisition of knowledge in a better way for the effective performance of institutions is not completely understood. Facing and responding to new challenges in this discontinuous environment, management must understand the knowledge era (Lee, Chi-Wai Kwo, 2000).
Knowledge and knowledge management

2.1 Knowledge

The hierarchy of knowledge process starts from the “data”, “information” and then “knowledge”. The fact lacking the background is data. The organized and analyzed form of data is considered as information. While the information transforms to knowledge only when it is used in a meaning full and logical area, which is easy to verify with our experience. We can refer information to knowledge only when it gives answers to our assignments or problems (Davenport and Prusak, 1998a). In actual we dig out the information in the thirst of knowledge acquisition (Gunnlaugsdottir, 2003).

Knowledge is defined by different authors in their own respective ways. The most famous definition of knowledge is by Nonaka and Takeuchi (1995), considering knowledge as “justified True Belief”. In 1989, Drucker completely differentiate the knowledge from data and information, considering the knowledge as a specialized and filtered form. Naeve (2005) explains the term knowledge as “efficient fantasies” which deals with the focus group, a rationale and a framework that are evaluated on efficiency basis. The Siemens (2006) explain the knowledge from individual perspective, saying that the knowledge rests in individual and be inherent in the group (Chatti, Jarke & Frosch-Wilke, 2007).

2.2 KM (Knowledge management)

Managing the procedures involved in the formation, distribution and use of knowledge with the amalgamation of new technological and institutional structure and the individuals who are responsible for the creation of efficient learning, solving the problems and making strategic decisions; is the KM (Ubon, Kimble, 2002). Defining KM in exact manner is difficult. Much of the fresh literature on KM emphasize on need of KM’s human side and recognizing for the individual input for effective KM (Akamavi & Kimble, 2005; Davenport & Völpel, 2001; Wilson, 2002).

The KM is seeking for the individual’s confrontation with worthy knowledge and also the individual’s interaction for getting the high performance, which is also the objective of EL (Chatti, Jarke & Frosch-Wilke, 2007). The KM objective to increase the educational learning that is seeking for the knowledge integration and sharing has gained inadequate success. The reason for this is that the institutions/individuals consider the “Knowledge as Recourse” instead of “Learning as a people Process” (Grace & Butler, 2005). Individuals are more focused on gaining knowledge instead of learning knowledge.

The focus of KM projects is

a) The formation of repositories for knowledge.
b) Make possible the capture, formation, shift, utilization, and sharing of knowledge.
c) The management of knowledge as a valuable entity, constructing it, arranging it, and preserving it.

The main aim of KM is

People interaction
Giving the courage for creativity and innovation
Initiating the issue of information to knowledge conversion among individuals (Abell & Oxbrow, 2001).

There is symmetry between KM and Educational System, both demands for the useable and experienced knowledge extracted from the information and data in existing or new resources (Marshall, Zhang, Chen, Lally, Shen, Fox, &
Cassel, 2003). The formation of knowledge and process of codification lead to the performance enhancement and value creation (Alavi & Leidner, 2001). When the knowledge is shared as a whole in institution and utilized exactly at the place where it was required then the value is formed (Grant, 1996).

The theoretical justification of our knowledge views is based on the Nonaka’s (1991) organizational Knowledge Based Theory (KBT). Nonaka focus on the vitality of knowledge formation by considering the implicit and explicit elements of knowledge creation. The KBT complement the motionless view of “Knowledge assets” explained in previous KB view (e.g. Grant, 1996), and Dynamic capabilities theories (e.g. Teece, Pisano, & Shuen, 1997). In KBT tacit and explicit knowledge dynamically interact among the individuals and groups (Janhonen & Johanson, 2010).

Fewer theories are available for the effective management of transferring knowledge in big institutions. Researchers usually perform experiments to achieve the said problem (Braganza, Hackney & Tanudjojo, 2007).

2.3 Knowledge conversion process

2.3.1 Implicit or tacit knowledge

The knowledge of an individual which is not documented yet, though it is of great importance for the organization’s flourishing. For example the employee experience, how to manage the sudden problems or discontinuities, knowledge of demands of customer and their expectations, the useful contacts for the organization. All of this knowledge can possible be documented for future use and is considered as implicit or tacit knowledge.

2.3.2 Explicit knowledge

The documented form of implicit or tacit knowledge is explicit knowledge. The explicit knowledge may have different types; printed minutes of meeting, tutorial sessions on discs and tapes, documentaries, the official correspondence using faxes and e-mails, NOCs, Memos, Contracts, Plans etc (Gunnlaugsdottir, 2003).

2.3.3 Nonaka and Takenuchi model

For the conversion of Tacit to Explicit and Explicit to Tacit knowledge Nonaka and Takenuchi (1995) Knowledge Conversion Process Model (KCPM) has taken great interest of researchers for the creation of new and innovative knowledge.

The knowledge conversion process follows the specific pattern

Socialization: this is also considered as Tacit-Tacit knowledge conversion, the individuals share their experiences and knowledge in a form of team in an organization or network. This is simply the transfer of knowledge among individuals when people meet or socialize at any place or community.

Externalization: also referred as Tacit- Explicit knowledge. The knowledge shared among individuals is totally the contextualized and based on individual experiences. The externalization is storing the tacit knowledge which is strongly the context-based facts into explicit knowledge with context-free knowledge condition in knowledge repository.

Internalization: this is also considered as Explicit- Tacit knowledge. The knowledge in the explicit form is taken out from the repository which is required by the person according to his need and relevance. Then that extracted
Knowledge is shifted to concerned person in the form of tacit knowledge which he can further use for his future working.

**Combination**: also considered as Explicit-Explicit knowledge. In this stage of knowledge conversion process new and innovative knowledge is often created. The categorization, sorting, addition and deletion of explicit knowledge in repository are performed in this stage. It is required to index and organize the explicit knowledge on regular basis for achieving the efficient retrieving of relevant knowledge and also for utilizing the available storage place (Bonino, 2009; Janhonen & Johanson, 2010).

![Knowledge conversion process](image)

**Electronic learning**

The electronic delivery of learning is considered as Electronic Learning (EL). The broad definition of EL is the delivery of learning material with the help of internet, satellite, computer, mobile and any other new technological equipment (Bonino, 2009). The importance of information technology is acknowledge by many researchers, thus it is moving towards support to strategic side (Teo, & Too, 2000).

The systematic and organized teaching and learning method with the help of Information and Communication Technologies (ICT) to provide the facility of interaction and communication without ground barriers is referred as EL or online education. The most famous terminologies used for EL are: WBT (Web-Based Learning), Webcast, Computer Based Training (CBT), interactive tutorials etc (Sammour, Schreurs, Al-Zoubi and Vanhoof, 2008).

Literature shows that the students do not get the satisfactory useful material from the EL portals, however consider the online portal easy to use. The integration of KM and EL might be fruitful for the quality knowledge retrieval (Lee, Kim & hackney, 2010).

Though the emergence of technology has provided the efficient and faster access to knowledge, but the value of direct human interaction can’t be denied (Braganza et al, 2007).
3.1 Integration of KM and EL Need

Managing knowledge is not possible without the help of individual knower as compare to the information and data. Even with the knower help perfect management of knowledge is not achieved. There is much interaction among learners and instructors within the class room or outside the institution or network boundary and more knowledge is created which is mostly irrelevant. Centralization of knowledge is required for knowledge organization (Wilson, 2002).

The traditional institution’s goal is following the Knowledge Push Model instead of Pull. Institutions just push the learners towards tons of contents and then have the expectation of quality learning. Considering that the knowledge is flexible and easy to absorb by nature institutions must shift from the knowledge push to knowledge pull approach (Naeve, 2005). The knowledge pull is the case when learners pull the content which is required by them in actual (Chatti, Jarke & Frosch-Wilke, 2007).

Learners must be freehand to pull the required knowledge from the complete data repository which is suitable and semantically related from anywhere with the restricted learning structure (Dzbor, Motta & Stutt, 2005).

EL is the wide area having different learning and teaching tools that integrate the multimedia, hypertext, network technology under one umbrella. The availability of vivid knowledge in EL Environment for the learners which meets their demands helps the learners and promotes the process of knowledge internalization. The ELE has given the facility of unlimited space and learning environment for the students. These facts are pushing the tacit knowledge to explicit knowledge, and promoting the socialization and externalization of knowledge. KM can help to solve the defects in EL systems. The effective integration of Knowledge Conversion process into EL will enhance the effectiveness of learning outcomes.

The presentation and visualization facility in EL encourage the internalization of knowledge. The courses separation provides the facility of extracting the relevant knowledge from the entire knowledge repository. This paper will show the possible combination of EL and KM. this combination will lead to a thoughtful modification in higher education (Qinfei, 2010).

Researchers are now showing great interest towards the EL and KM and integration. Traditionally the EL system is considered as the recourse repository of knowledge, in which the KM methods can be integrated for the effective knowledge distribution (Sherwood, 2001).

3.2 KM’s Impact on EL

When we are sharing, adopting knowledge and understanding more skills then it is the part of our learning. The KM role at this stage is very important with the acquisition of relevant knowledge for their learning. The internet has abundant information, and that information is used in the subjects. The quality learning is not only the understanding and knowing of new facts for a particular subject, rather it is the development of competencies in that domain. The KM process should be integrated deeply in the EL systems for the better content availability and enhancing performance (Sammour, Schreurs, Al-Zoubi and Vanhoof, 2008). Keeping in view the distinct nature of private and public sector organizations and cultural effects (Teo, & Koh, 2010).
Integration of KM and EL

4.1 Symmetry between KM and EL Systems

System Structure: KM and EL systems both developed on client/server concept with the technical and complex nature of system at the server side and the user-friendly interface at the front end.

Teamwork and Interaction: the learners and instructor interact with each other in both the systems with the synchronous and asynchronous communication facility. Both can discuss specific topic with the relevant material available in the system.

Personalization: the knowledge available on the system can be modified and extended according to the need of user.

Access regulation: the both systems do not allow the entry of strange user. Registration for accessing the knowledge available on system is required. The registered user also can't access all the information, they have the facility of accessing only specific subjects which are relevant to them (Sammour, Schreurs, Al-Zoubi and Vanhoof, 2008).

4.2 Traditional EL

The institutions with traditional ELE do not use the Externalization view of Knowledge Conversation Process. There is not any proper utilization of explicit knowledge, only the Tacit Knowledge is transferred to knowledge seekers. The knowledge seekers can take the benefit of already designed knowledge repository by the instructional designers and can also put back their comments in the repository, but there is not proper input from knowledge holder or instructor.

The Educational Institutions face the following problems with Traditional EL.

a) The instructional designers are not aware of the relevant content, weather to put that content in the course or not.

b) The instructional designers know about the relevant content but they are not able to search that content in order to incorporate in the subject.

c) Instructional designers have enough responsibilities that they can’t communicate with the extra instructors and course coordinators; in a result they create few courses.
4.3 KM Based EL

The Fig. 3 is showing the integration of KM and EL. The instructor (knowledge holder) can store his experience and knowledge (Tacit knowledge) in both the knowledge repository through externalization and can also transfer that to the learner (Knowledge seeker) via socialization. The KM has integrated the working of Knowledge organizer in EL system. The knowledge organizer will help in the placement of relevant information in it proper place for the purpose of refining and indexing the knowledge. The instructional designer was doing all the tasks in traditional EL at a time and was not able to provide effective results. In KM enhancement instructional designer is just working on the new learning aids creation, assignment posting and creating new modules. The learner is able to receive more knowledge from the knowledge repository through internalization and also from the instructor through socialization. The learners learn from these sources and then do further working. The working and performance of the learner is operationalize and then again returned to the knowledge repository as a feedback.
4.4 Course management system CMS (MOODLE)

The KM can take help of different tools for the indexing, storing and retrieving information in the ELE for the better collaboration and achieving quality knowledge. The new innovative knowledge is created using the combination approach of KM knowledge conversion process with the proper management of documents there categorization and production. The use of Course Management System (CMS) can be utilized for achieving the explicit-explicit conversion of knowledge.

A CMS can be freeware or paid user-friendly software that enables the management or indexing of knowledge in EL system. The CMS provides the facility of controlling and monitoring the activities of registered users. All the changes done by the instructor, learner, and coordinator are stored in the system (Bonino, 2009).

CMS provides the facility of integrating knowledge and information and efficient utilization of useful exchanged data. ICT support the knowledge integration, via using the CMS explicit knowledge storage, faster retrieval and efficient utilization can be achieved through simple coding (Huber, 1990). The use of CMS is ELE can improve the learning effectiveness (Lado & Zhang, 1998), moreover the ELE can provide the access to more new and innovative knowledge (Yan & Lewis, 1999). The CMS provides the facility of indexing and providing the useful information and spreading the knowledge for large population in ELE (Bianco & Michelino, 2010). The Fig. 4 provides the integration of CMS in KM based EL system. The most famous freeware CMS is the MOODLE that provides the facility of managing all the EL requirements.
Figure 4: Course management system integration in knowledge management based electronic learning.

EL Portal

This paper presents an EL portal Fig. 5, using the KM approach and also the CMS. This portal is used by the Commonwealth MBA/MPA Program, English Department and Computer Department of Allama Iqbal Open University, Islamabad Pakistan. The MOODLE is used as a CMS for EL portal. There are regular classes for the courses and relevant material is uploaded in each course for the students. The material is uploaded by the teacher and also the administrator, considering the relevancy matter. The administrator works as a knowledge organizer while the instructor role is to provide his explicit knowledge to students and also to the knowledge repository. This system can only be used by the registered users for security and relevancy purpose.

EL portal is a personalized GUI based interface which provides the knowledge of relevant domain to students. Instructor can integrate the relevant information in the course that can be monitored by the administrator later.
5.1 Course building

The course created on the portal are unique, having the contents relevant to the specific domain. The research material, experiences are uploaded in the course. The guidelines for uploading the relevant information are also available at the start of the page by the administrator for instructor at the start of the semester, in order to upload the relevant material. These guidelines improve the quality of course contents, the material which is not relevant to the course is been deleted by the administrator. Fig. 6 shows the designed course of Research Methodology on MOODLE.

Figure 5: Electronic learning portal
5.2 Dynamism of content delivery

The EL portal based on MOODLE has the content which is arranged and modularized by the content developers. Only the authorized users can do the required modifications and integrations in the course in order to make it up to date and relevant. The authorized person can only be instructor or administrator which can turn on the editing option as shown in Fig. 7. This will enable the editing options in the course.
Fig. 8 shows the view of presentation module in the MOODLE. This module is not available in the freeware MOODLE version, as the MOODLE is open source; the software developers in Allama Iqbal Open University has integrated this new module in the MOODLE for the better delivery of learning to students.

5.3 Assessment process
MOODLE provides the facility of online assessment of student performance. As shown in Fig. 9 the assignments are uploaded for the students at the start of the semester with the proper guidelines of attending the questions asked. The links are available for uploading the completed assignments on the mentioned dates.

![Figure 9: Assessment process](image)

5.4 Discussion forums

The facility of discussion forums in EL portal gives the edge of wide learning to students. Students can ask questions from teacher or other mates on the relevant topic of the week. The two students can do communication or the large group can also discuss on a point. All of these activities are properly managed and monitored by the administrator. Fig. 10 is showing the graphical representation of Discussion forums.

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Conclusion

This paper shows the usefulness of KM and EL integration and how we can efficiently utilize the EL technology with the KM integration for the learners’ quality learning and benefit. The knowledge management develops a mutual interaction environment for knowledge sharing among learners and instructors. The learning processes of the learners become efficient and innovative due to this interaction. Use of KM based EL portals provide the facility of learning from a specific domain and can retrieve relevant knowledge due to CMS facility. In discussion forums of MOODLE students and instructor perform socialization and then internalization and externalization for creating the explicit knowledge; however the CMS perform the task of combination for the new and quality knowledge creation. The integration of KM with EL systems with the use of CMS will be useful for the efficient capturing of knowledge and its delivery for quality learning.

References

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Factors Influencing Mobile Advertising Adoption in Malaysia

An Empirical Study

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Abstract

The media landscape has changed considerably in the past decade. Digital content has moved beyond the Internet and can be found in mobile devices and interactive screens in public places. Mobile market growth, particularly in developing countries, has provided a direct net benefit to these economies through increased employment, employment wages, tax revenue and Gross Domestic Product (GDP). With increased mobile phone usage, and its key contributions to market growth, questions can be raised regarding how marketers can take advantage of the mobile channel and which key variables will stimulate consumer acceptance of advertising through the mobile channel. It is crucial to understand consumers' behavior toward mobile advertising (m-advertising) campaigns to supplement mobile usage fees and start-up costs. In this study, factors influencing consumer adoption of m-advertising in Malaysia are examined. Using a sample of 400 respondents, the study identifies Perceived Usefulness (PU) and Social Influence (SI) as the strongest factors influencing the acceptance of m-advertising. The paper provides valuable insights for policy makers and telecommunication operators. The findings may be potentially useful in other emerging markets.

Keywords - consumer's behavior; emerging markets, mobile advertising

Introduction

Advertising plays a role as a crucial channel for firms and individuals to promote their services and products as well as to create brand awareness. Richards and Curran (2002) defined advertising as “a paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action now or in the future”. While some researchers have forcefully debated that persuasion alone may be an overly limited view of advertising (Duncan and Moriarty 1998), it is difficult to deny that a good deal of the focus in advertising is to persuade or to reinforce attitudes. According to Lavidge (1999), rapid technological innovations have transformed the way advertising is conducted around the globe.

Currently, consumers have tremendous set of options available to them for media consumption. Measurement of advertising effectiveness has been a challenge since the early days of advertising (Sharma et al. 2008). Many marketing programs are not easily justifiable on basic return on investment (ROI) measure. With the advent of Internet advertising, advertising has become more transparent and measurable. Advertising is only charged when there is user action. However, there are still issues with the model due to the problems with click fraud and lack of
openness on the part of some players. Nevertheless, Internet advertising has been a huge improvement over past media. Although Internet advertising share the characteristics of targeted, tracking, deliverability, flexibility and interactivity in which advertisers use it as a common platform for marketing (Zeff and Aronson 1999), Nielsen (1997) mentioned that only the top 0.01 percent of Websites can generate sufficient revenues from advertising. Since the mid-1990s, the penetration of mobile phones in developed economies has been explosive. Whereas in 1997 only 215 million people were using mobile communication devices worldwide, by 2001 this had grown to a massive 961 million, further growing to 1.16 billion by 2003 (Bauer et al. 2005). At the end of 2006 there were more than 2.68 billion mobile phone subscribers worldwide (Youra 2007). This compares to 1.27 billion fixed-line subscribers and one billion Internet users worldwide (Youra 2007).

The high global penetration of mobile communication devices is only one indicator of the high potential of mobile advertising. Furthermore, the specific characteristics of the mobile phone allow for marketing measures not attainable by the use of other media. In most cases, a mobile phone is used only by its owner, hence allowing for highly personalized marketing measures (Bauer et al. 2005). One-on-one tracking allows user profile development, which enables great understanding of user behavior both individually as well as in a clustered population. Smaller and smaller niche campaigns emerge with mobile targeting. M-advertising presents an opportunity for all stakeholders to decouple space and time – thus allowing them to access and exchange information and knowledge instantaneously from any part of the world. However, most studies on m-advertising were examined in developed countries. Thus, understanding consumer attitudes toward m-advertising in emerging economies is highly relevant (Chowdhury et al. 2006). It is crucial to understand consumer attitudes toward m-advertising campaigns to supplement mobile usage fees and start-up costs.

**DEFINITIONS**

Despite the rapid increase in studies focusing on mobile commercial communication, the theory development and especially the conceptualizations of mobile means of commercial communication suffered from lack of attention (Tähtinen 2005). Leppäniemi and Karjaluoto (2005) have acknowledged a need for more work on the various definitions of m-advertising. Leppäniemi et al. (2006) observed that marketing communications in mobile media has, implicitly or explicitly, been conceptualized as (1) mobile marketing, (2) mobile advertising, (3) wireless marketing, and (4) wireless advertising. The following table provides a chronological list of different definitions of the abovementioned concepts.

<table>
<thead>
<tr>
<th>Definitions</th>
</tr>
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<tbody>
<tr>
<td>Mobile marketing “The application of marketing to the mobile environment of smart phones, mobile phones, PDA, and telematics” (Sullivan Mort and Drennan 2001)</td>
</tr>
<tr>
<td>Wireless advertising “…advertising and marketing activities which deliver ads to mobile devices over a wireless network...” (Yunos et al. 2003)</td>
</tr>
<tr>
<td>Mobile marketing “…use of SMS and MMS as marketing media in push campaigns” (Heinonen and Strandvik 2003)</td>
</tr>
<tr>
<td>Wireless marketing “…the use of text messaging via a mobile telephone as a means of marketing communication” (Brassington and Pettitt 2003)</td>
</tr>
</tbody>
</table>
Mobile marketing | “Using interactive wireless media to provide customers with time and location sensitive, personalised information that promotes goods, services and ideas, thereby generating value for all stakeholders” (Dickinger and Haghirian 2004)

Mobile marketing | “Using a wireless medium to provide consumers with time- and location-sensitive, personalised information that promotes goods, services and ideas, thereby benefiting all stakeholders” (Scharl et al. 2005)

Mobile marketing | “M-marketing is the use of the mobile medium as a communications and entertainment channel between a brand and an end-user” (MMA_UK 2005)

Mobile advertising | “Any paid message communicated by mobile media with the intent to influence the attitudes, intentions and behaviour of those addressed by the commercial messages” (Leppäniemi and Karjaluoto 2005)

Mobile advertising | “The usage of interactive wireless media (such as cellular phones and pagers, cordless telephones, personal digital assistants (PDA), two-way radios, baby crib monitors, wireless networking systems, GPS-based locators and maps) to transmit advertising messages to consumers in form of time and location sensitive, personalized information with the overall goal to promote goods and services” (Haghirian and Madlberger 2005)

Mobile advertising | “Mobile advertising, or wireless advertising as it is often labelled, is an activity that falls within the umbrella of mobile marketing and relates to use of the mobile channel to deliver advertising messages directly to consumers” (Hanley et al. 2006)

Mobile marketing | “The use of wireless media as an integrated content delivery and direct-response vehicle within a cross-media marketing communications program” (MMA 2006)

The definitions above (see Table I) provide evidence that there are some discrepancies pertaining to how the authors defined these related concepts. In addition to the conceptual differences and confusing usages, the relations of the applied terms to other concepts have not been clarified (Tähtinen 2005). Firstly, mobile marketing in many studies seems to refer to a more restricted action than the concept marketing does. For example, Kalakota and Robinson (2002) defined mobile marketing as “the distribution of any kind of message or promotion that adds value to the customer while enhancing revenue for the firm”. From a traditional marketing management perspective, this is a description of only one of the 5P’s in marketing (i.e. product, positioning, price, place, and promotion); which implies promotion and not all of the 5Ps. Secondly, according to Tähtinen (2005), “advertising as a one-way communication from the marketer to the customer seems to be much more restricted than what the use of mobile phones enables advertisers to do”. The receiver of the message can react by calling the marketer, sending the company a text message, or connecting herself/himself to the company’s Web pages. Moreover, m-advertising is much more interactive and personal than traditional advertising. Nevertheless, the personal and interactive nature of the phenomenon is not captured in the conceptualizations or descriptions of mobile advertising (Tähtinen 2005).
As the industry moves towards network convergence, the distinction between fixed-line, wireless and mobile will blur. However, for the purpose of reviewing the definitions of related concepts, ‘wireless’ is defined as the transfer of information over electromagnetic waves, similar to ‘mobile’, but does not necessarily support ‘true’ mobility. ‘True’ mobility implies that even when a user is commuting beyond a predefined speed, wireless connection continues to support mobility and does not result in network disconnection.

Figure 2: Position of M-Advertising within the Four Domains

Figure 21 combines wireless/mobile and marketing/advertising domains. In summary, this study attempts to distinguish (1) mobile marketing, (2) mobile advertising, (3) wireless marketing and (4) wireless advertising. This section is one attempt to fill the gap in prior researches concerning the conceptualization of wireless commercial communication. Hanley et al. (2006) also considered m-advertising as an activity which falls within the umbrella of mobile marketing and associated the term to the use of mobile channel to deliver advertising messages directly to consumers.

INFORMATION SYSTEM THEORIES

One of the most developed research areas in information systems (IS) literature is the study of consumer adoption of new technology (Hu et al. 1999). Adoption can be viewed as “a reallocation decision made in response to disequilibria” (Schultz 1975). With roots in IS, psychology, and sociology, research in this field has resulted in several theoretical models that consistently explain over two-fifth of the variance in individual intention to use technological innovations (e.g., (Davis 1989; Taylor and Todd 1995; Venkatesh and Davis 2000)). Economic growth theory states that “technological progress generated by processes of innovation is the most important determinant of economic wealth” (Aghion and Howitt 1998; Nelson and Winter 1982). The pursuit for factors which promote or hamper the generation and spread of innovations is a fundamental theme of modern innovation economics.

Prior literature shows one key generalization where different channels of communication play key roles at different points in the adoption process (Abbott and Yarbrough 1999). Mass media play important role in creating initial awareness and the knowledge of novel ideas and practices, while the decision whether or not to adopt is influenced by interpersonal sources (Abbott and Yarbrough 1999). The thought of these distinct functions for communication channels has found its way into the mainstream literature on how to use communication efficiently to bring about social change (Abbott and Yarbrough 1999). As pointed out by Pedersen et al. (2002), end-user mobile commerce services adoption (including m-advertising) may also be considered as technology adoption.
IT acceptance research has yielded many competing models, each with different sets of acceptance determinants. Venkatesh et al. (2003) developed Unified Theory of Acceptance and Use of Technology (UTAUT) – which integrates elements across eight models including Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Extended TAM (TAM2), Model of Personal Computer Utilization (MPCU), Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT) (Venkatesh et al. 2003). Behavioral Intention (BI) influences Use Behavior (UB) (Biljon and Kotzé 2007). The use of self-reporting can arguably lead to measuring the variance in self-reported technology usage (Biljon and Kotzé 2007). Yi et al. (2006) discovered a strong causal link between BI and UB, which implies that consumer intention should strongly influence UB. UB generally follows intention in a variety of models (Bahmanziari et al. 2003; Riemenschneider and Hargrove 2001). UB implies UB as found in a number of studies (Standing et al. 2005; Tsang et al. 2004). Therefore, this study only looks at BI and does not include UB in the theoretical framework.
measurement. The finding is consistent with previous models tested (Agarwal and Prasad 1998; Compeau and Higgins 1995; Taylor and Todd 1995; Thompson et al. 1991; Venkatesh and Davis 2000). In the context of m-advertising, many studies have tested PU and concluded that consumers will only agree to m-advertising if they perceive a benefit in accepting advertising messages on their mobile devices (Kavassalis et al. 2003).

Hence:

**H1: Consumers' PU of m-advertising is positively related to their intention to accept m-advertising**

Perceived ease of use (PEoU) or effort expectancy is defined as “the degree of ease associated with the use of the system” (Venkatesh et al. 2003). Venkatesh et al. (2003) asserted that PEoU is significant in both voluntary and mandatory usage contexts. Nevertheless, consistent with previous research findings, each one is significant only during the first time period, becoming insignificant over periods of extended and sustained usage (e.g., (Agarwal and Prasad 1998; Davis et al. 1989; Thompson et al. 1991; 1994)). In the context of m-advertising, the knowledge related to reducing the perceived complexity of m-advertising is the know-how about mobile communications. Mobile communications technology provides the technological basis for m-advertising (Bauer et al. 2005). The more accustomed a consumer is with mobile communications in general, the less complicated the use of m-advertising services will be to him or her. Hence:

**H2: Consumers' PEoU of m-advertising is positively related to their intention to accept m-advertising**

Social influence (SI) is defined as “the degree to which an individual perceives how important others believe he or she should use the new system” (Venkatesh et al. 2003). Bhattacherjee (2000) asserted that consumers are easily influenced based on word-of-mouth from peers. Chua (1980) suggested that the adopter’s friends, family, and colleagues are groups that will potentially influence diffusion. Rogers (1995) further elaborated that influences from mass media contribute to SI. SI has been found to be more important prior to, or in the early stages of innovation implementation when users have limited direct experience from which to develop attitudes (Taylor and Todd 1995). Hence:

**H3: Consumers' SI on m-advertising is positively related to their intention to accept m-advertising**

Facilitating condition (FC) is defined as “the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system” (Venkatesh et al. 2003). Venkatesh et al. (2003) asserted that their empirical results indicated that FC has a direct influence on usage beyond that explained by behavioral intentions alone. Consistent with TPB, FC is also modeled as a direct antecedent of usage. In fact, the effect is expected to increase with experience as technology users find multiple avenues for help and support throughout the community, thus removing impediments to sustained usage (Bergeron et al. 1990). Bina and Giaglis (2005) broke FC down to three categories, namely financial barriers (i.e., confusing billing schemes and hidden costs), technology barriers (i.e., network coverage, reliability and responsiveness), as well as security and privacy barriers (i.e. trust). Hence:

**H4: Consumers' FC for m-advertising is positively related to their intention to accept m-advertising**

After reviewing a number of IS theories, this paper adapted UTAUT (see Figure 3) for the purpose of understanding factors influencing the willingness of consumers to adopt m-advertising in Malaysia, a rapidly developing nation. In the context of m-advertising research, it was found that the effect of SI, especially people close to participants is higher in case of m-advertisements (Komulainen et al. 2006). In another study, He and Lu (2007) explored...
consumer’s perceptions towards SMS-based mobile advertising in China using UTAUT and task-technology fit theory. Despite the small sample size (i.e. 243 responses), their study indicated that performance expectancy, SI, FC and user’s permission had significant effects on use behavior.

RESEARCH METHODS

Malaysian Communications and Multimedia Commission (MCMC) reported that there are 34,456,000 mobile subscriptions in Malaysia as of the first quarter of 2011 (MCMC 2011). This implies penetration rate per 100 inhabitants of 121 percent.

Increasingly, survey designers are exploiting the potential offered by using a combination of data collection modes to offset the weaknesses of a particular mode with the strengths of another (Dillman 2000). With declining survey response rate, traditional single mode data collection strategies appear in many ways to no longer be fit for purpose (Dillman 2000). This combination of factors has led to the growing attraction of mixing modes of data collection (de Leeuw 2005). Therefore, this study uses paper based face-to-face and Web based survey questionnaires. Web based survey is ideal to reach respondents in remote geographical areas. Applying multiple strategies to collect data can increase response rates, reduce non-response error and reduce costs (Bodes et al. 2005). Each question in the survey represents a component of the research model. The questions are selected based on their theoretical importance as well as potential relevance to practice.

The research study employs five-point Likert scales throughout the questionnaire for all the statements requiring scaling except demographic questions. Respondents are required to indicate the extent to which they agree or disagree with a variety of statements. The questions in the questionnaire were coded with the following: Strongly Disagree, Disagree, Neither Agree Nor Disagree, Agree and Strongly Agree.

Structural equation modeling (SEM) is used to test the research framework. Though SEM has similar purposes as multiple regression, it is more powerful as it takes into account the modeling of interactions, correlated independents, measurement error, correlated error terms, multiple latent independents each measured by multiple indicators and one or more latent dependents also each with multiple indicators. In this paper, AMOS 16 is used extensively to study the hypotheses in this study. The sample respondents were selected based on a stratified sampling design. Although there is little consensus on the recommended sample size for SEM (Sivo et al. 2006), Garver and Mentzer (1999) and Hoelter (1983) proposed that any sample number above 200 respondents would provide sufficient statistical power for data analysis. It should be noted that as the sample size becomes larger (i.e. above 400), Maximum Likelihood Estimation (MLE) becomes increasingly sensitive and nearly any difference is detected, making goodness-of-fit measures suggest poor fit (Tanaka and Huba 1985).

RESULTS AND DISCUSSION
The removal of outliers and records with missing values left 400 responses suitable for structural modeling. The questionnaires were deployed between August and November 2010. The total sample (N=400) of the survey consists of 58.5 percent female respondents. The sample is represented by 44.8 percent participants between the ages of 26 to 35, 38.5 percent between the ages of 17 to 25, 11.8 percent between the ages of 36 to 45, as well as 3.2 percent between the ages of 46 to 55, and 1.8 percent above 55 years’ old. There were 253 respondents who are single and 146 of the respondents are married. In this sample, 30.8 percent of the samples are Bumiputras. Bumiputra is a Malay term widely used in Malaysia, embracing indigenous people of the Malay Archipelago. It can be seen that the sample is overly represented by respondents who had at least a Bachelor’s degree (65.3 percent).

**Reliability Test**

<table>
<thead>
<tr>
<th>Factor</th>
<th>No. of Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Intention (BI)</td>
<td>5</td>
<td>0.892</td>
</tr>
<tr>
<td>Perceived Usefulness (PU)</td>
<td>7</td>
<td>0.848</td>
</tr>
<tr>
<td>Perceived Ease of Use (PEoU)</td>
<td>7</td>
<td>0.864</td>
</tr>
<tr>
<td>Social Influence (SI)</td>
<td>7</td>
<td>0.869</td>
</tr>
<tr>
<td>Facilitating Condition (FC)</td>
<td>16</td>
<td>0.914</td>
</tr>
</tbody>
</table>

The data were first tested for reliability. Cronbach’s alpha in excess of 0.9 for FC suggests possible redundancy in the questionnaire (see Table II) (Shrout and Fleiss 1979). Factor analysis was conducted to determine if data reduction is necessary. Overall, all five constructs were so highly internally consistent, that there was the possibility that several items in each construct are redundant. The 42 items were subjected to exploratory factor analysis (EFA) and canonical correlations matrix to identify the factors. The EFA using principal axis factoring (PAF) and oblique rotation (i.e. Promax) resulted in five factors with eigenvalues above one. Next, the constructs were subjected to Confirmatory Factor Analysis (CFA). Inspection of the correlation matrix revealed the presence of many coefficients of 0.4 and above. The Kaiser-Meyer-Oklin value was 0.937, exceeding the recommended value of 0.6 (Kaiser 1974) and the Barlett’s (Barlett 1954) Test of Sphericity reached statistical significance, supporting the factorability of correlation matrix. All five constructs were retained in this study and 17 items were removed as suggested by the modification indices. Significant results of the chi-square statistic imply that the model was unacceptable ($x^2=734.56$, df=269). Nonetheless, as the chi-square statistic is highly dependent on sample size, the fit of models estimated with small samples is usually difficult to assess. Therefore, caution needs to be exercised in its application and fit indices have been developed to address this problem (Diamantopoulos and Siguaw 2000).
**Model Fit**

<table>
<thead>
<tr>
<th>Goodness-of-fit</th>
<th>Fit Indices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square ($\chi^2$)</td>
<td>734.56</td>
</tr>
<tr>
<td>Degrees of freedom (df)</td>
<td>269</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.066</td>
</tr>
<tr>
<td>GFI</td>
<td>0.871</td>
</tr>
<tr>
<td>RMR</td>
<td>0.060</td>
</tr>
<tr>
<td>NFI</td>
<td>0.859</td>
</tr>
<tr>
<td>TLI</td>
<td>0.895</td>
</tr>
<tr>
<td>CFI</td>
<td>0.905</td>
</tr>
<tr>
<td>$\chi^2$:df</td>
<td>2.731:1</td>
</tr>
</tbody>
</table>

The root mean square error of approximation (RMSEA) is usually regarded as the most informative of the fit indices. Values less than 0.05 are indicative of good fit, and between 0.05 and under 0.08 of reasonable fit (Browne and Cudeck 1993). Thus, with RMSEA of 0.066, the model fit is reasonable. Values of the Normed Fit Index (NFI) and the Comparative Fit Index (CFI) range from 0 to 1, and values close to 1 indicate a good fit (Steenkamp and Trijp 1991). The fit indices (NFI=0.859, CFI=0.905) indicate that the model fits well with the data, and thus these fit indices concerned indicate that the model fit is good.

* = significantly different from zero at the 0.001 level (two-tailed)
Figure 2: Mobile Advertising Diffusion in Emerging Market (MADEM) Model

The positive regression weight for PU (0.49) in the prediction of BI is significantly different from zero at the 0.001 level. As expected, it has been suggested that when using mobile services or receiving m-advertising messages, consumers perceive value in relation to the utilization of time and place (i.e., contextual information) (Heinonen and Strandvik 2003). The results also indicate a significant positive regression weight for SI (0.33) in the prediction of BI at the 0.001 level. This is supported by findings in other studies where the effect of SI, especially people close to participants, seem to be higher in the case of m-advertisements (Komulainen et al. 2006).

**STANDARDIZED REGRESSION WEIGHTS**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimates</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI → BI</td>
<td>0.33</td>
<td>***</td>
</tr>
<tr>
<td>PU → BI</td>
<td>0.49</td>
<td>***</td>
</tr>
<tr>
<td>FC → PEOU</td>
<td>0.30</td>
<td>***</td>
</tr>
<tr>
<td>PEOU → PU</td>
<td>0.30</td>
<td>***</td>
</tr>
<tr>
<td>SI → PEOU</td>
<td>0.71</td>
<td>***</td>
</tr>
<tr>
<td>SI → PU</td>
<td>0.45</td>
<td>***</td>
</tr>
</tbody>
</table>

*** Significantly different from zero at the 0.001 level (two-tailed)

However, PEOU failed to show significant relationship with BI. It is noteworthy to understand that PEOU becomes non-significant over periods of extended and sustained usage, consistent with prior studies (e.g. (Agarwal and Prasad 1998; Davis 1989; Thompson et al. 1994)). FC hypothesized to interact with BI is also not statistically significant. This is unanticipated and the finding necessitates further research, particularly in countries where the legislation concerning permission is different. In many developing nations, legislation may be inadequately implemented.

The positive regression weight for FC (0.3) in the prediction of PEOU is significantly different from zero at the 0.001 level. This implies that FC (i.e. sufficient telecommunication infrastructure, better customer support, etc.) positively affects ease of use of m-advertising services. PEOU (0.3) is significantly different from zero at the 0.001 level. The easier it is to use, the more useful the product or service is. The findings also show significant positive regression weights for SI (0.71 and 0.45 respectively) in the prediction of PEOU and PU at the 0.001 level. It is apparent that subscribers turn to people who are close to them when it comes to learning a new technology.

**CONCLUSIONS**

In conclusion, this research has proven the validity of UTAUT for research in the area of m-advertising. The findings emphasize the importance of personalizing m-advertisements based on consumers’ perceived usefulness of these advertisements. The most appropriate content portfolio may still be challenging and warrants further investigations. In emerging economies, there is opportunity to realize incremental revenues by delivering m-advertising services that
capitalize on expanding mobile phone penetration. Mobile phone users in the developing nations have already demonstrated willingness to utilize their mobile devices to access value-added services. Providing timely and useful information to address basic needs among new subscribers is a compelling growth opportunity. In addition, consumers view the opinion of people who are close to them as influential in their decision to accept m-advertisement. Advertisers could emphasize on the social importance of accepting m-advertisement as a trendy and fashionable thing among selected target audiences. Advertising strategies that make use of celebrity endorsers or reference group influence could potentially generate similar effects on targeted audience.

Secondly, emerging markets are the primary growth opportunity for the mobile industry and, with the right business models; mobile devices are accessible to some of the poorest communities in the world. Mobile devices are one of the most efficient and accessible devices for reaching the masses. With access to many rural and low-income populations, mobile technology has the capacity of providing information and services to individuals who would otherwise be excluded. In emerging markets, low-income mobile subscribers have preferences, usage patterns and limited disposable income that require innovative business model. Additionally, the dominance of prepaid subscriptions makes it more taxing to maintain brand loyalty. Mobile operators must offer additional incentives or benefits to retain customers. Appropriate and targeted advertising campaign would expand the addressable markets by educating potential buyers about the promotional offers. The government in Malaysia is committed to achieving broad development goals through strategic investment and reform. Tying m-advertising into basic human needs will help gain the cooperation and support of government and the community.

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Information and Communication Technology Penetration and Political Institutions in Africa

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Covenant University
Evans Steven Osabuohien,
Covenant University

Introduction

Information and Communication Technology (ICT) is the utilization of technology to enhance communication between individuals and groups of people. The growth in the transfer as well as penetration of ICT across the world in the last decades has had laudable imprints in almost all the sectors in many countries. This is evidenced in increase in wireless transactions through electronic payments in the financial sector amongst others. Thus, technological advanced is often seen as essential component of economic growth in a country (Mukoyama, 2003; Osabuohien, 2010; Osabuohien and Efobi, 2011). On the other hand, the level of economic activities in a country can be influenced by the institutional quality in the country. This is rooted on recent studies that there are other crucial factors such as institutions (rules designed to govern human behaviour in a given society) that exert impact on countries’ economic performance apart from capital and labour as earlier opined by the classical economists (North, 1994; Rodrik, 2008; Acemoglu, 2010; Garba, 2011; Osabuohien, 2011). For instance, it was observed that the major difference between economic growth in North Korea and South Korea can be attributable to the difference in their institutional framework (Acemoglu and Robinson, 2008). Just as Botswana is said to have experienced better economic progress compared to Zambia because Botswana had better institutional quality (Parsons and Robinson, 2006). Similarly, it has been noted that improved institutional quality played a significant role in the transformation of the Brazilian economy (Cavalcanti, Magalhaes and Tavares, 2008). In essence, there could be possible relationship between political institutions and ICT penetration in a country, knowing that ICT is a veritable tool for economic performance (Osabuohien and Efobi, 2011). This has not been given much empirical investigation especially in Africa, which motivates this study.

From the above background, the main objective of this study is to examine the role of the political institutions in enhancing ICT penetration in Africa. The main research question set out to be answered from the study was whether political institution matters in determining the rate of ICT penetration in Africa and if it does, can the influence be enhanced in the light of per capita income and human development indices in Africa. This is because many countries in Africa have lagged behind with respect to some indicators of ICT penetration. For instance, the number of internet users per 100 inhabitants in Africa was just 10.8 in 2010, which was many times lower than all other regions of the world (International Telecommunication Union-ITU, 2010). Some factors attributable to this low penetration rate includes weak political institutions, low educational level and high illiteracy rate, inadequate capital, poor infrastructural facility, among others (Dimitrios and Ourania, 2003; Musa, Meso and Mbarika, 2005; Truong and Ngoe, 2008). However, the influence of poor institution has not been given much attention compared to other factors influencing ICT penetration, therefore making this study relevant.
The objective of the study and the research question was answered by employing descriptive and econometric techniques. The econometric technique includes the Fixed Effect (FE) and Generalized Method of Moments (GMM). The GMM was used with a view to handling the issue of unobserved heterogeneity and endogeneity among the regressors as institutions may not be exogenous. The remaining part of the study is organized thus: in the next section, we present some stylized facts; analytical framework, model formulation and estimation technique are covered in Section 3; while Section 4 presents and discusses the empirical results. The last section concludes with recommendations.

SOME STYLIZED FACTS

Technology penetration refers to the volume of utilization of a particular technology to meet the need of the user and enhance productivity. It means the ability of technology having a wider impact on the economy through its usage by the larger population. It also implies the acceptance of an innovation and the usage of same to enhance human activities in the society. The process of technology penetration can be enhanced through human development (improved educational attainment and health care), which have been said to be one of the major distinguishing factor in economic growth of countries across the world (Mukoyama, 2003; Osabuohien, 2010).

Using some indicators of ICT penetration as can be seen in Tables 2.1 and 2.2, it is evidenced that level of technology penetration in Africa is quite low compared to other regions of the world.

<table>
<thead>
<tr>
<th>Table 2.1: ICT (Telephoning) Penetration across Regions of the World</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regions</strong></td>
</tr>
<tr>
<td>Africa</td>
</tr>
<tr>
<td>Arab States</td>
</tr>
<tr>
<td>Asia and Pacific</td>
</tr>
<tr>
<td>Commonwealth of Independent States (CIS)</td>
</tr>
<tr>
<td>Europe</td>
</tr>
<tr>
<td>The Americas</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation from International Telecommunication Union (2010).

From the table, fixed telephone lines per 100 inhabitants (which is a measure of number of persons in each 100 cluster that uses fixed telephone lines) shows that Africa had the least ICT (telephoning) penetration compared to other regions all through the years presented. The value for Africa was not only the least but it was many-folds lower than other regions. For instance, the average number of usage in Africa in 2010 was about 7-folds lower than the Arab States, 9-folds lower than Asia and pacific region, 17-folds lower than Commonwealth of Independent States, 20-folds below the Americas and 27-folds lower than Europe. The same pattern of low values for Africa
compared to other regions can be observed for the preceding years (2006 and 2008). Using another indicator of ICT penetration, the number of mobile cellular subscription per 100 inhabitants reveals that Africa also performed far below other regions of the world.

Furthermore, Table 2.2 presents other indicators of ICT penetration, namely: internet users per 100 inhabitants’ fixed (wired) broadband subscriptions per 100 inhabitants, and active mobile broadband subscriptions per 100 inhabitants. From the Table, the number of internet users was lowest in Africa compared to the other regions presented. The number of internet users per 100 inhabitants in Africa was 3.3, 6.3 and 10.8 in 2006, 2008 and 2010, respectively. Similar trend is observed in the fixed (wired) broadband subscriptions per 100 inhabitants where the value for Africa ranged at a very low value of 0.1 to 0.2 between 2006 and 2010. This was generally far lower than other regions.

Table 2.2: ICT (Internet) Penetration across Regions of the World

<table>
<thead>
<tr>
<th>Region</th>
<th>Internet Users per 100 Inhabitants</th>
<th>Fixed (Wired) Broadband Subscriptions per 100 Inhabitants</th>
<th>Active Mobile Broadband Subscriptions per 100 Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>3.3</td>
<td>6.3</td>
<td>10.8</td>
</tr>
<tr>
<td>Arab States</td>
<td>10.9</td>
<td>17.3</td>
<td>24.1</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>10.6</td>
<td>16.5</td>
<td>22.5</td>
</tr>
<tr>
<td>CIS</td>
<td>12.6</td>
<td>19.5</td>
<td>34.0</td>
</tr>
<tr>
<td>Europe</td>
<td>49.8</td>
<td>60.3</td>
<td>67.0</td>
</tr>
<tr>
<td>The Americas</td>
<td>38.8</td>
<td>44.2</td>
<td>50.7</td>
</tr>
</tbody>
</table>

In addition, the active mobile broadband subscription per 100 persons as an indicator of ICT penetration rate that measures mobile internet facility is reported in Table 2.2. The values in the Table indicate that Africa performed slightly above Commonwealth Independent States in 2008 and lower than others. However, in 2010 the value for Africa not only became the least, it was far lower than others; about 3-folds below Asia and Pacific countries, 4-folds lower than the Arab States, 10-folds below the Americas, and 17-fold below European countries.

Besides the stylized facts on indicators of ICT penetration where the African region performed below other regions of the world, available information equally underscored that indicators of political institutions in Africa was lower than other regions of the world. Political institutions can be defined by the nature of political leadership structure or governance structure that is persistent in a given country. This includes the way the political structure in a society influences the behaviour of individuals within such society. Examples of political institutions include the form of government in a country (democracy or dictatorship), rule of law, and the extent of constraint of political power amongst others (Osabuohien, 2011). Using rule of law as an indicator of political institutions, the values which ranged from -2.5 (worst) to 2.5 (best), indicates that Sub-Saharan Africa (SSA)’s average values was -0.70 in 2008.
compared to the global average of -0.03 (Kaufmann, Kraay, and Mastruzzi, 2009). In the same vein, regulatory quality (another indicator of political institutions) in SSA in 2008 was -0.54 compared to the global average of -0.02. The values for SSA were not only below the world average, it was equally below those of other regions (Kaufmann, Kraay and Mastruzzi, 2009; Osabuohien, 2011).

Given the low indicators of ICT penetration and political institutions observed for Africa, there may be a possible relationship between the qualities of a country’s political institutions and ICT penetration. In other words can the low level of ICT penetration in Africa be traceable to weak political institutions in Africa?

3. ANALYTICAL FRAMEWORK AND EMPIRICAL MODEL

3.1 Analytical Framework

ICT and general technology penetration always follows a long process and as a result may penetrate at different rate across countries based on their level of development (Radolfo and Ananth, 2003). This rate of ICT penetration can be traced to several factors such as learning by doing, vintage human capital, spillovers across firms, social learning among others (Jovanovic and Nyarko, 1995; Munshi, 2004). Thus, an individual utilizing a technology will only use such technology by making rational decisions based on the availability of relevant information, which can also help align their expectations with those of other users (Au and Kauffman, 2005).

There are other frameworks that explain the process of technology penetration. For instance, the Epidemic Model opines that the rate of penetration can be influenced by the rate at which information about the technology spreads across users (Bass, 1969). This process occurs by one-to-one interactions among persons who have used the particular technology to others who have not and as the number of users increase, the rate of penetration also increases. This process depends on the risk, benefit, profitability and the size of the investment needed to use the new technology (Blackman, 1999). The above can be linked to the submission of Osabuohien (2008) based on empirical analysis to establish that age, educational level, and type of ICT gadgets were crucial determinants of ICT usage in commercial banks in Nigeria.

Other models that try to explain technology penetration include Rank Order Model and Order Model. The Rank Order model has the maxim that the rate of usage of a given technology differs amongst users due to prevailing circumstances surrounding the users. While the Order Model posit that the process of technology penetration follow a particular order such that the usage of a particular technology follow a given order such that a set of users pass it to other groups of users and it percolates to the society. Thus, order models hypothesize that users take on technology at different times because the net return on usage is negative for users that are slow to take on the technology relative to their rivals (Eeckhout and Jovanovic, 2002; Comin and Hobijn, 2003).

3.2 Model Formulation

From the foregoing discuss, a functional relationship between the level of ICT penetration and institutions is formulated. This is also based on the fact that the rate of technology penetration in any society is sensitive to the level of human capital development (Moradi and Kebryaei, 2010). It is also due to the fact that the better developed
human capital in the society will easily understand and appreciate the usefulness of technology and as a result it 
enhances their productivity at work. Furthermore, the income level also matters especially with regards to the level 
of penetration of technology in the society. For instance poor society are more concerned with meeting basic needs 
such as food, clothing, security, housing and less emphasis on technology. Hence, the empirical model developed for 
this study is thus;

\[
ICTpen_i = \beta_0 + \beta_1 \text{Insq}_i + \beta_2 Hdev_i + \beta_3 \text{Rpgdp}_i + U_i
\]  

(1)

Where:

\( ICTpen \): \( ICTpen \) is the indicator of ICT penetration. It is measured as the simple average of three main indicators of 
ICT, namely: telephone and mobile phone penetration (Tel), internet penetration (Itnet), and personal computer 
usage (Pcom) per 100 persons. A similar approach was adopted by Moradi and Kebryaee (2010).

\( \text{Instq} \): Indicator of political institutions. This was derived from the simple average of rule of law (Rl) and regulatory 
quality (Rq). This approach has been used recently in recent empirical studies (e.g. Fosu, 2011). The measures Rl 
and Rq are imperative measures of political institution based on the understanding that the rule of law captures the 
extent to which economic agents have confidence in and abide by the rules in a country as well as the extent to 
which property rights are protected. It includes the effectiveness of the judiciary system, the incidence of crime and 
the enforceability of contract. Likewise, the regulatory quality captures the quality of the regulation, which measures 
the incidence of market friendly policies. Thus, this variable will reflect the ability of the government to formulate 
and implement sound policy that will further enhance the private sector development, which is fundamental to ICT 
penetration. The values as computed by Kaufmann et al (2009) range from -2.5 to +2.5, the higher, the stronger the 
institutional framework.

\( Hdev \): Level of human development, which is captured by Human Development Index (HDI) that reflects the 
level of human capital in the country. The HDI is a measure of economic development that takes into consideration 
how expanding income translates into the human development with respect to health, education and income. The 
rank is between 0 and 1, with the higher value signifying better human development. A country with HDI value 
above 0.80 is regarded as a high; those between 0.50 and 0.80 are regarded as medium; while below 0.50 is regarded 
as low.

\( \text{Rpgdp} \): Growth rate of the real per capita income of the country measured as the growth rate of the real gross 
domestic product (GDP) at 1990 constant prices.

Based on the possibility of political institutions influencing economic development variable, interactions variables 
are included in the model. These include the interactions between institutional quality and the \( Hdi \) as well as the \( \text{Rpgdp} \). The interactions between the institutional quality and the \( Hdi \) (\( \text{Insq*Hdi} \)) as well as the \( \text{rpgdp} \) (\( \text{Inst*Rpgdp} \)) 
were generated so as to capture the effect when relating the institutional quality with the two variables. These 
variables were generated so as to form a control to moderate the model. This aided in understanding the reaction of 
the model when a complimentarity coefficient is included with emphasis on institutions focused on human 
development (\( Hdi \)) as well as the growth rate of the per capita GDP (\( \text{Rpgdp} \)). When the coefficient of \( \text{Insq*Hdi} \) is 
positive, it will be evidently said that institutional quality will enhance technology penetration in a humanly 
developed society. In this case, better institutional quality would be deemed as complementing the human 
development to boost technology penetration. The converse would imply that institutional quality is poor accelerator 
of technology penetration in a less human developed society. An analogous interpretation is given to the \( \text{Insq*Rpgdp} \) 
variable.
In the light of the above, equation (1) is extended as:

\[ ICTpen_{it} = \beta_0 + \beta_1 \text{Instq}_{it} + \beta_2 \text{Hdev}_{it} + \beta_3 \text{Rpgdp}_{it} + \beta_4 \text{Inst*Hdev}_{it} + \beta_5 \text{Inst*Rpgdp}_{it} + U_{it} \]  

(2)

Where:

\text{Inst*Hdev}: The interaction between the institutional quality and the level of human development in the country. This interaction is measured as the multiplicative between institutional quality and the human development variables.

\text{Inst*Rpgdp}: The interaction between the institutional quality and the growth rate of real GDP. It is measured as the multiplicative between institutional quality and the growth rate of real GDP.

\text{U}_{it}: The error term that captures other factors influencing ICT penetration not included in the model. They are assumed to be identically and independently distributed (iid) with zero mean and constant variance.

\text{it}: Country's and time identifiers.

Others are as earlier defined. The apriori expectation is such that: \( \beta_i \) (i =1-3) > 0. The signs of \( \beta_4 \) and \( \beta_5 \) can be +/- depending on the nature of interactions between economic development and institutions.

3.3 Estimation Technique

The model formulated in equation (2) in the preceding section was estimated using econometric technique based on a panel data framework. First, descriptive analysis was carried out on the data with a view to having a foreknowledge on the relationship between indicators of political institutions and ICT penetration. The econometric analysis started with correlation test among the explanatory variables before carrying out regression analysis using static and dynamic panel data estimators. The static panel analysis was done with Fixed Effects (FE) estimators. The choice of FE over the Random Effects (RE) was based on Hausman test.

The GMM method produces very similar results like Two Stage Least Squares (2SLS) for ‘just identified’ models. However, the GMM can give more precise estimates with ‘over-identified’ models. This is because it uses internal instruments unlike the TSLS method where the researcher has to look for valid external instrumental variables. Thus, the GMM method of instrumental variable (IV) estimation is considered appropriate for estimation in this study. In addition, the introduction of the lag dependent variable into the mode based on the fact that innovations in current technology usage will affect future usage will introduce autocorrelation and endogeneity problems (Grubler, 1991; Jovanovic and lach, 2007). This renders OLS and estimate bias, therefore making the GMM more appropriate.
4. RESULTS AND DISCUSSIONS

4.1 Descriptive Analysis

The data engaged in this study were sourced from the World Development Indicators (WDI) of the World Bank (2010) and the Human Development Indicators (HDI) of the United Nations Development Programme -UNDP (2010) for the period 1995-2008. The data was analyzed using STATA 11.1 econometric package. 45 countries in Africa were selected as the sample. The selection criteria were based on countries that had their data available for at least five consecutive years. The sampled countries represent 80% of the countries in Africa. The list of countries selected according to their region is represented in the Table 4.1

<table>
<thead>
<tr>
<th>Central Africa</th>
<th>East Africa</th>
<th>North Africa</th>
<th>Southern Africa</th>
<th>West Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>Comoros</td>
<td>Algeria</td>
<td>Angola</td>
<td>Benin</td>
</tr>
<tr>
<td>Central Africa Rep.</td>
<td>Djibouti</td>
<td>Egypt</td>
<td>Botswana</td>
<td>Burkina Faso</td>
</tr>
<tr>
<td>Chad</td>
<td>Eritrea</td>
<td>Libya</td>
<td>Mozambique</td>
<td>Cape Verde</td>
</tr>
<tr>
<td>Congo, DR</td>
<td>Ethiopia</td>
<td>Morocco</td>
<td>Namibia</td>
<td>Cote d’Ivoire</td>
</tr>
<tr>
<td>Congo, Republic</td>
<td>Kenya</td>
<td>Tunisia</td>
<td>South Africa</td>
<td>Gambia</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>Madagascar</td>
<td>Swaziland</td>
<td>Ghana</td>
<td></td>
</tr>
<tr>
<td>Gabon</td>
<td>Malawi</td>
<td>Zambia</td>
<td>Guinea</td>
<td></td>
</tr>
<tr>
<td>Mauritius</td>
<td>Zimbabwe</td>
<td>Guinea Bissau</td>
<td>Mali</td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td>Tanzania</td>
<td>Mauritania</td>
<td>Niger</td>
<td></td>
</tr>
<tr>
<td>Uganda</td>
<td></td>
<td></td>
<td>Nigeria</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Senegal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Togo</td>
<td></td>
</tr>
</tbody>
</table>


The descriptive analysis of the main variables in their disaggregated form is reported in Table 4.2. From Table 4.2, the selected African countries had low values in the indicators of ICT penetration. This is especially with respect to internet usage (Iinet) and the personal computer usage (Pcom) usage, with an average penetration rate of 2.09 personal computer per 100 persons and 2.40 internet users per 100 persons. The telephone usage (Tel) had the mean value of 13.29 users per 100 persons, which equally appeared low. Indicators of political institutions reported in
Table 4.2  Descriptive Statistics of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. dev</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Political Institutions Indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rl</td>
<td>-0.6167</td>
<td>0.6306</td>
<td>-1.8829</td>
<td>1.0000</td>
<td>449</td>
</tr>
<tr>
<td>Rq</td>
<td>-0.4987</td>
<td>0.7124</td>
<td>-2.3694</td>
<td>1.7457</td>
<td>448</td>
</tr>
<tr>
<td><strong>ICT Penetration Indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pcom</td>
<td>2.0934</td>
<td>3.7342</td>
<td>0.0200</td>
<td>24.0400</td>
<td>471</td>
</tr>
<tr>
<td>Tel</td>
<td>13.2931</td>
<td>21.7315</td>
<td>0.0700</td>
<td>125.7200</td>
<td>601</td>
</tr>
<tr>
<td>Itnet</td>
<td>2.3981</td>
<td>4.7715</td>
<td>0.0000</td>
<td>38.9852</td>
<td>601</td>
</tr>
<tr>
<td><strong>Economic Development Indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rpgdp</td>
<td>2.7449</td>
<td>7.1447</td>
<td>-29.6301</td>
<td>65.7716</td>
<td>626</td>
</tr>
<tr>
<td>Hdev</td>
<td>0.5051</td>
<td>0.1288</td>
<td>0.2740</td>
<td>0.8480</td>
<td>542</td>
</tr>
</tbody>
</table>

Source: Authors’ computation

Table 4.2 also revealed that the mean value for regulatory quality (Rq) and rule of law (Rl) for the sampled countries is -0.6267 and -0.4987. This shows that, on the average, the strength of political institutions of the sampled countries is rather weak. This may imply that the weak political institutional quality may be crucial in explaining the low level of ICT penetration in Africa. This submission is not farfetched as similar submissions has been made by Sanjeev and Ourvashi (2006), who observed that the strength of the institution Africa may have accounted for the low growth in investment, because foreign investors (inclusive of ICT gadget manufacturers) can mostly be attracted and retained in countries with better institutions quality.

The indicators of economic development, namely: human development indices (Hdi) and the growth rate of the real per capita GDP (rpgdg) show that the sampled African countries have mean value of Hdi of 0.5051 and a per capita GDP annual growth rate of 2.74%. The values equally appeared low, which is a reflection of low economic development in Africa.

4.2 Correlation Test

The bivariate correlation analysis was carried out to ensure that there is no problem of multicollinearity amongst the independent variables in the model. This is essential because of the assumption that a regression model should have its regressors that are not overly interdependent. This is crucial to having reliable estimates that is not spurious.
As can be observed in Table 4.3, there was no problem of multicollinearity between the explanatory variables. Thus, econometric estimation carried out using the variables in a model can be reliable for useful inference.

### 4.3 Results from Panel Regression

The results from the estimation process using a variety of estimators Fixed Effects (FE) and Generalized Method of Moments (GMM) are reported in Table 4.4. The result from the Hausman test as well as test for common intercept indicates that the FE was more efficient than the random effect; hence, only the FE results are reported in columns 1-3 for brevity sake. The efficiency of the FE may be as a result of the fact that there are essential country specific effects that are crucial for ICT penetration. On the other hand, columns 4-6 of Table 4.4 report the results from the dynamic panel using GMM.

---

**Table 4.3 Correlation Test among Regressors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\text{Inst}^*\text{Hdev}$</th>
<th>$\text{Inst}^*\text{Rpgdp}$</th>
<th>$\text{Instq}$</th>
<th>$\text{Hdev}$</th>
<th>$\text{Rpgdp}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Inst}^*\text{Hdev}$</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\text{Inst}^*\text{Rpgdp}$</td>
<td>0.3264</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\text{Instq}$</td>
<td>0.5533</td>
<td>0.2179</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\text{Hdev}$</td>
<td>0.2953</td>
<td>0.0033</td>
<td>0.4727</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>$\text{Rpgdp}$</td>
<td>-0.0485</td>
<td>-0.6725</td>
<td>0.0297</td>
<td>0.0942</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

**Source:** Authors’ computation
Table 4.4  Panel Regression on ICT Penetration and Political Institutions

<table>
<thead>
<tr>
<th>Variables</th>
<th>FE</th>
<th>GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cons</td>
<td>-41.4716a</td>
<td>-40.3222a</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Hdev</td>
<td>90.9007a</td>
<td>89.6643a</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Rpgdp</td>
<td>0.0217</td>
<td>0.0273</td>
</tr>
<tr>
<td></td>
<td>(0.6468)</td>
<td>(0.5604)</td>
</tr>
<tr>
<td>Instq</td>
<td>2.3558c</td>
<td>2.6324b</td>
</tr>
<tr>
<td></td>
<td>(0.0821)</td>
<td>(0.0410)</td>
</tr>
<tr>
<td>Inst*Hdev</td>
<td>-3.0337</td>
<td>-0.6918a</td>
</tr>
<tr>
<td></td>
<td>(0.3416)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Inst*Rpgdp</td>
<td>0.0712</td>
<td>-0.0044c</td>
</tr>
<tr>
<td></td>
<td>(0.1530)</td>
<td>(0.0930)</td>
</tr>
<tr>
<td>ICTpen (-1)</td>
<td>1.1726a</td>
<td>1.1741a</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>R-squared</th>
<th>F-Stat.</th>
<th>Breuch Pagan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.8234</td>
<td>20.3321</td>
<td>53.1592</td>
</tr>
<tr>
<td></td>
<td>0.8219</td>
<td>20.1320</td>
<td>44.4885</td>
</tr>
<tr>
<td></td>
<td>0.8240</td>
<td>20.4149</td>
<td>52.2964</td>
</tr>
</tbody>
</table>

<p>|                   | (0.0000)    | (0.0000)    | (0.0000)     |</p>
<table>
<thead>
<tr>
<th>Test for Common Intercept</th>
<th>7.1689</th>
<th>6.7541</th>
<th>7.1256</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>12.5963</td>
<td>13.5694</td>
<td>13.1559</td>
</tr>
<tr>
<td></td>
<td>(0.0056)</td>
<td>(0.0036)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>AR (1)</td>
<td>-1.2833</td>
<td>-1.2885</td>
<td>-1.2832</td>
</tr>
<tr>
<td></td>
<td>(0.1994)</td>
<td>(0.1976)</td>
<td>(0.1994)</td>
</tr>
<tr>
<td>AR (2)</td>
<td>-0.1422</td>
<td>-0.1658</td>
<td>-0.1418</td>
</tr>
<tr>
<td></td>
<td>(0.8869)</td>
<td>(0.8683)</td>
<td>(0.8872)</td>
</tr>
<tr>
<td>Sargan Test</td>
<td>42.3883</td>
<td>42.4138</td>
<td>42.5136</td>
</tr>
<tr>
<td></td>
<td>(0.9786)</td>
<td>(0.9784)</td>
<td>(0.9778)</td>
</tr>
<tr>
<td>Number of Obs.</td>
<td>253</td>
<td>253</td>
<td>253</td>
</tr>
<tr>
<td></td>
<td>236</td>
<td>236</td>
<td>236</td>
</tr>
</tbody>
</table>

**Note:** The values in brackets represent the p-values. The superscript a, b and c represents 1%, 5% and 10% levels of significance.

**Source:** Authors’ computation

In the FE estimations, the coefficients of political institutions were statistically significant, indicating the essence of political institutions in influencing ICT penetration in Africa. However, there is the issue of endogeneity that the static panel may not be able to sufficiently handle. Hence, this study focuses analysis on the results from the GMM estimator. This is also because the GMM estimator can generate its internal instruments. To evaluate whether this problem is sufficiently dealt with and the instruments are valid, two statistics are usually carried out. The first is the Sagan/Hansen test for over identifying restrictions and the other is the second order serial correlation test AR (2).

From the values in Table 4.4, the instruments are valid as the probability values for the Sagan/Hansen test as well as that of the AR(2) test are not significant at 5%. Although there is no first order serial correlation - AR(1), the null hypothesis that there is no first order serial correlation will be accepted for AR(1) but will be rejected for AR(2) and the validation of the Sagan/Hansen test further makes the diagnostic more appropriate.

An examination of the coefficients of the explanatory variables in columns 4, 5 and 6 shows that the significant level of political institutions changed from 10% and 5% to 1%, which is an indicator of improvement of the results using the GMM estimator. The result helps to establish the fact that a unit improvement in the quality of political institutions in Africa will help to boost the rate of ICT penetration by 0.26 units. The implication of the above is that if African countries want to advance in ICT penetration, there is a need to improve the quality of their political institutions.

---

1 The Sagan/Hansen test is asymptotically distributed as a chi-square with degree of freedom equal to the number of instruments less the number of parameters. For the model to be correctly specified, the variables in the instrument set should be uncorrelated with the idiosyncratic component of the error term (Layero and Morrissey, 2010).

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institutions especially adherence to rule of law and improvement of regulatory quality. This submission is crucial given the fact that most of the stimulants of ICT penetration such as property rights and innovations are to be protected by law in order to give the needed incentive for idea generation through Research and Development which are crucial for ICT penetration.

Besides political institutions, another important variable reported in Table 4.4 is the coefficient of Hdev. The result reveals that human capital development has positive impact on ICT penetration, which is statistically significant at 1%. The coefficient denotes that a unit increase in the rate of human development will result in about 1.07 units’ improvement in the level of ICT penetration in the selected African countries. The result implies among others that there is urgent need to improve the quality of human capital in Africa with a view to improving the level of ICT penetration. This can be driven by improvement in functional educational system that will manage ideas (knowledge) with requisite technical know-how. Thus, it should not just end in certification but appreciation of the fact that technical skills are essential to enhance ICT penetration. In this perspective, regulatory bodies charged with responsibility of formulation of technical innovations through broad-based consultation is also recommended.

Similarly, per capita income was found to statistically and positively impact ICT penetration. This is expected because the wealth of the populace is expected to inform the rate of ICT penetration. This is in line with the rank order model of ICT penetration, where wealth of the individuals is able to influence the rate of ICT usage. Another observation from columns 4, 5 and 6 is that the previous rate of ICT penetration has a great influence on current rate of ICT penetration. This implies that ICT penetration is strongly influenced by its previous penetration rate, making Radolfo and Ananth (2003) proposition that ICT penetration is time dependent correct. Therefore to predict future ICT penetration, current rate of penetration should be effectively considered.

The two interacting variable was included in the estimation in column 5 and 6. This was in order to answer the research question on whether political institution matters in determining the rate of ICT penetration in Africa and if it does, will per capita income and human development indices in Africa enhance the effect. The result from column 5 reveals that institutional qualities in Africa are poor accelerators of ICT penetration in the light of poor human development. This is evidenced with the negative and significant effect the interaction variable between institution and human development exhibited. In Africa, regardless of developing strong institutions, the level of human development should be put into consideration. This is because the basic enhancer of ICT penetration such as education, income capacity, and health cannot be neglected even with good institutions.

Similar result was observed for the interaction between ICT penetration and the growth rate of real per capita income. The result reveals that political institutions are poor accelerators of ICT penetration with poor growth rate of per capita income. This implies that economic development and income of the citizens of a country has important influence on the relationship between institutional quality and the rate of ICT penetration in Africa.

Conclusions and Policy Recommendations

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Information and Communication Technology (ICT) penetration just like most economic activities can be influenced by the institutional quality in the country, which this study set-out to examine with the main objective of investigating the extent to which political institutions impact technological penetration in Africa. The main findings and implications based on analyses carried out using descriptive and econometric techniques are summarized herein:

Based on some indicators of ICT penetration, the study found that the level of ICT penetration in Africa was far lower than all other regions of the world. This is similar to the findings that the strength of political institutions of the sampled African countries was weak.

From the econometric analysis using panel regression based on GMM, it was found that political institutions positively and significantly influences the level of ICT penetration in Africa. In effect, it was established that a unit improvement in political institutions will lead to about 0.26 unit increase in the level of ICT penetration in Africa. This implies that for African countries to advance technological, as often aspired, there is urgent and frantic need to strengthen their political institutions. This is essential with respect to the adherence to the tenets of rule of law and enhancement in quality of regulation because this affects some of the key issues of ICT penetration like protection of property rights are needed to create incentive for adequate research and development.

The study equally found that human capital development has positive and significant impact on ICT penetration. It was established that a unit increase in the level of human development will generate about 1.07 units of advancement in the level of ICT penetration in Africa. The implication of this finding is the need to urgently improve the quality of human capital in Africa, which will significantly improve the level of ICT penetration. One of the ways this can be achieved is through improvement of the educational system, which help to drive the essential technical know-how. It was also found in the study that the growth of per capita income has significant and positive influence on the level of ICT penetration in Africa.

In conclusion, political institution matters a great deal in explaining the rate of ICT penetration in Africa just as growth rate of per capita income and human development are also essential. Thus, strengthening political, improving level of human development and increase in per capita income will help in the quest of African countries to improve their level of ICT penetration.
References


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Barriers to Knowledge Management in Saudi Arabia with respect to the Saudi Arabian National Information Technology Plan

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Charles Bixler
George Washington University, Washington DC, USA

Abstract:

Barriers to Knowledge Management (KM) is a global problem that faces many governmental and non-governmental organizations that are seeking effective utilization of knowledge in their products and/or services throughout their national systems, laws, plans, and policies. Obstacles to successful implementation of KM programs vary in each country according to various factors influencing the understanding of KM, preparedness and awareness. Factors such as country's technology, telecommunications infrastructure, research and development standing, science and technology procedures and plans, and the population education and cultural level play a key role in moving a country towards a knowledge society. Saudi Arabia is among the countries that are trying to shift towards a knowledge based society. One of the ten major goals of the Saudi Arabian national policy plan for science and technology is to invest in Information Technology (IT) tools and technologies with the goal of utilizing them to build a knowledge economy. The research utilized Dr. Michael Stankosky four pillars of Knowledge Management (Technology, Leadership, Organization, Learning) as a conceptual framework that served as basis for identifying barriers to knowledge management. The Delphi method is the main research investigation tool. The Delphi method will be used to brainstorm various barriers to knowledge management. The method uses subject matter experts to answer iterative rounds of sequential questionnaires throughout continuous feedback.

Keywords: Barriers to KM, Delphi Method, IT plans, Saudi Arabia

Research justification:

The need for KM has become a necessity for governmental sectors due to the needs for process improvements. Sinclair asserts that the essences of KM national plans are similar to what constructs the majority of other KM strategies like:

The need to leverage the role of KM in the search for better services and products.
The need to encourage collaboration and sharing activities.
The need to facilitate individual and community learning and knowledge-growth.

The ability to enhance government’s services depends greatly on knowledge sharing across the governmental organization. The issue of knowledge preservation and diffusion to improve public services represents one important aspect of challenges that face governments (Sinclair 2006). (Sinclair 2006) also suggests the following five important points to keep in mind about knowledge management and governments: Globally, governments understand the necessity of administrating their knowledge foundation, but the majority views that necessity as substituting retiring employees and preserving the loss of knowledge.

The majority of governments made serious attempts to recognize KM as a strategic requirement, but failed to link KM to an operational strategic plan. KM can play an important role in E-government as it helps in the E-government services that call for cooperation efforts.

It is important to stay away from “enterprise-scale” projects or plans with the goal of unifying the government process and procedures. As an alternative, it is recommended to communicate “with business owners and middle managers with sufficient resources to fund KM activity in programs and projects.”

Maintain KM actions on a non-large practical level and keep them linked to the “business manager’s” aims, objectives, and metrics of success.

The 2003 Arab Human Development Report entitled: “Towards a Knowledge Economy” states in its five vision pillars recommendations to the Arab World the “Shifting rapidly towards knowledge-based production in Arab socioeconomic structures” (United Nations Development Program 2003).

Researching the issue of barriers to Knowledge Management in Saudi Arabia with respect to the Saudi National IT Plan will contribute the following benefits to the academic body of knowledge:

Provide additional related literature to the regional Arabian KM literature, particularly in Saudi Arabia where KM is still in its infancy stage.

Add unknown KM barriers that would arise from the Saudi Arabian culture.

Create research opportunities for other researchers investigating KM barriers with respect to the IT plans in other countries worldwide.

Suggest recommendations to developing countries willing to initiate KM plans or policies.
Various legislative, educational, and research and development organizations in the government sector in Saudi Arabia seek effective management of knowledge. The following points illustrate the reason behind the need for effective utilization of knowledge in the Saudi Arabian governmental organizations:

Decreasing trends of importance in natural resources such as equipment and traditional production machines, while there is an increasing importance on knowledge, science, and technology resources (Saudi Arabian National Policy for Science and Technology 2003).

One of the ten major goals of the National Policy Plan is to invest in information technology tools to utilize them in the knowledge economy (Saudi Arabian National Policy for Science and Technology 2003).

The increase in Saudi Arabian investments in Research and Development and innovation programs (Saudi Arabian National Policy for Science and Technology 2003).

The immense demand Saudi Arabia demands in information technology and communication industry services and technologies (Saudi Arabian national policy for science and technology 2003).

Prior to choosing the topic of this research, an extensive exploration in various universities and research organizations databases in the United States and in Saudi Arabia was performed to ensure that this research is distinct and that it is not a duplication of any prior work on barriers to Knowledge Management in Saudi Arabia; hence, the first to be conducted in the kingdom.

Statement of the problem:

Literature on knowledge management identified both success factors and barriers that affect the effective implementation of knowledge management systems in different organizations. Often, success factors can be barriers if they are not adequately addressed and thus obstruct effective implementation.

Barriers to knowledge management constitute a global problem faced by a number of governmental and non-governmental organizations seeking effective utilization of knowledge in their products and/or services throughout their national systems, laws, plans, and policies (Sinclair, 2006). Obstacles to successful implementation of knowledge management vary in each country according to various factors influencing the understanding of knowledge management, preparedness and awareness (Sinclair 2006). Factors such as a country’s technology, telecommunications infrastructure, research and development standing, science and technology procedures and
plans, population education, and cultural level play a key role in moving a country towards a knowledge society (United Nations Development Program 2003). Saudi Arabia is one of those countries that are trying to shift towards a knowledge based society (Alsharq Alalawsat 2008). One of the ten major goals of the Saudi Arabian National Policy Plan for Science and Technology is to invest in Information Technology (IT) tools and technologies with the goal of utilizing them to build knowledge economy (Saudi Arabian National Policy Plan for Science and Technology 2003). To achieve such goal, certain barriers to effective knowledge management need to be addressed in order to highlight future KM issues and concerns that the kingdom will face. This research is designed to identify critical factors that affect Knowledge Management in Saudi Arabia. The research will address the following research question:

**What are the main barriers to Knowledge management in Saudi Arabia with respect to the national Saudi Arabian information technology plan?**

**Barriers to knowledge management:**

Designing an organization’s strategy, structure, and systems so that knowledge can be utilized for innovation and adaptation is a basic challenge to knowledge management. (Bookrags 2011). Apart from this challenge, however, are vital factors that can influence knowledge management.

In order to ensure a successful knowledge management process, it is necessary to be aware of obstacles affecting effective sharing of knowledge within the organization and develop strategies of overcoming them. These obstacles include: (1) organizational structure barriers, boundary barriers, management support barriers, and technology barriers (Carlson 1999).

A study conducted in 1994 and led by Gabriel Szulanski aimed to determine the reasons why best practices did not transfer well between sections within the same organizations. Results indicated that a successful business procedure would go unrecognized or shared for a long time, usually a minimum of two years. This happened because of the following reasons: ignorance, absence of absorptive capacity, lack of pre-existing relationships, and lack of motivation. These barriers are organizational and management driven. (cabinetoffice 2000)

Gurteen (2007) cited Sveiby who identified ten organization and management driven barriers to knowledge sharing as follows: (1) silo mentality, (2) knowledge is power, (3) lack of knowledge sharing processes, (4) no time allowed, (5) no knowledge sharing by executives, (6) management do not walk the talk, (7) poor IT systems, (8) lack of encouragement, (9) bureaucracy, and (10) resistance to change by management.

Incalculable human factors can hinder knowledge transfer. These include prejudices, fear of criticism, lack of confidence, and constant time pressures. In addition, organizations may also create barriers to knowledge...
management specifically through rigid hierarchies, red tape, and outdated procedures. Moreover, communication media can also cause obstacles to transfer of knowledge (Lugger and Kraus 2001).

Organizations where communication lines are not open may not be able to have an effective KM system. Opening up boundaries within the organization can stimulate the flow of information between departments. According to Professor David Garvin of Harvard Business School, “opening up boundaries, with conferences, meetings, and project teams, which either cross organizational levels or link the company and its customers and suppliers, ensure a fresh flow of ideas and the chance to consider competing perspectives” (Garvin 1998).

O’Dell and Grayson (1998) opine that developing an effective KM program requires total management commitment, involvement and support. Organizational goals and projects can be successfully accomplish if managers cultivate employees’ knowledge and provide employees encouragement and support in utilizing their talents for the accomplishment of projects and goals.

Another barrier to effective knowledge management programs is the type of technology a company uses to implement their KM strategy. The common failure of companies is to select technologies that do not meet their KM needs. As a result, they resort to reengineering which should not happen since technology should only provide tools to speed up and assist in process of knowledge management process. (Bottomley 1998)

Barriers can also become success factors if adequately addressed to facilitate KM implementation. On the contrary, they serve as obstacles if not if not sufficiently addressed: they prevent effective KM implementation. The four pillars of Knowledge Management described by its founder Dr. Stankosky as the DNA for KM present “critical elements” are: (1) organizational (2) technological, (3) leadership, and (4) learning. Next is a concise explanation of each pillar:

Leadership. Leadership is the power that utilizes management means like business strategy. Leadership directs and steers knowledge management in the organization.

Organization. The organization structure should integrate with harmony the main organization strategy to promote knowledge sharing and creation.

Technology. Technology is the means by which knowledge can be delivered, shared and stored. Technology serves the role of being the backbone infrastructure of the organization to disseminate knowledge across it.
Learning. Creating a learning organizing to disseminate knowledge across the organization and share it. The four pillars of knowledge management dose include the key components of Process, technology, and people.

Methodology:

During the 1950s and the 1960s Helmer and Dalkey founded the Delphi method at the RAND Corporation in order to evaluate the path of “long-range trends, with special emphasis on science and technology, and their probable effects on society.” In addition, the Delphi method had initial supplementary uses such as discovering new policies, planning purposes, and organizational arrangement (Alder and Zglio 1996, p.5). RAND specialists utilized the Delphi method to address the frequency, intensity, and probability of enemy attacks during the Cold War (Wikipedia 2011).

The Delphi method is considered, according to Alder and Ziglo as a knowledge building tool as experts share information that passes on their expertise and experience (Linstone and Turoff 1974).

The key research tool chosen for this research is the Delphi method. This method helps to systematically explore a concern or problem with the aim of reaching relevant consequences of a concern or problem by means of brainstorming of experts in that related field. The Delphi method is a tool for gathering and refining knowledge from expert teams using a set of questionnaires directed by a controlled feedback mechanism. (Ziglio 1996)

The Delphi method “is a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (Linstone and Turoff 1974).

The Delphi method can be described by three main attributes, namely:

1. Anonymity;
2. Controlled feedback; and
3. Statistical group response

The Delphi method challenges participants with radical views and, invites them to justify and comment on their opinions. Participants are asked to reconsider their observations in light of other participants’ assessments. (millennium project 2004)

The participants views can be presented with some statistical measures, such as frequency, median, mean. (millennium-project 2004). The deeply method is a controlled feedback method that allows participants to comment and react to the group discussion avoiding direct contact and loops of misunderstanding. (millennium-project 2004) The Delphi rounds terminate as soon as a consensuses is reached.
The research started with a first round Delphi survey that has asked the participants to identify four major organizational, technology, leadership, and learning barriers to knowledge management. The responses from the first Delphi survey were reviewed and redundant barriers were eliminated. The second round Delphi survey presented the refined barriers from the first round Delphi survey with its associated frequencies and asked the participants to review their responses in light of all the answers from the participants. The third round survey will show the second round responses and will asks the participants to rank the corresponded identified barriers to knowledge management and comment on them if necessary. The fourth round Delphi will be a validation step to reassure the agreement on the final identified barriers to knowledge management. After completing the forth-round Delphi survey, a statistical analysis will be performed to analyze the gathered data. The statistical will help in determining the highest ranking barrier and the correlation between the barriers. The possible statistics that will be used to analyze the gathered data will be as follows:

Median: Central tendency measure, the greater the median the greater support of the Delphi panel.
Standard Deviation: measure the spreading of opinion, decreasing Standard deviation between rounds → increasing agreement on the importance of the issue.
Inter-quartile range: measure of spread of response = 75th - 25th small spread of response consequences has achieved.
Percent of top issues: top 10 or top 5
Kendall’s Coefficient of concordance (W): Value of the coefficient increase as the agreement increases.
Range and convergence: measures of dispersion
Crammer V statistics: computed for each variable to indicate if there was significant change between the first group's first and second round response.
Correlation coefficient (Spearman-rho) if not normally distributed otherwise use Person R.
The following summarized flowchart figure 2 illustrates the Delphi planed steps that will take place in this research:

**Figure 1 : Delphi Planned Steps of the Research**

Based on the reading from (Linstone and Turoff 1974), the following steps are reformatted by the author in the following:

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1. In the first stage, “selection of panel of experts”, relevant experts are selected from various organizations and government ministries. The selection of experts is based on the following criteria relevant to the concern or problem field (i.e. factors affecting the implementation of knowledge management):

- Publications and projects.
- Work experience.
- Educational background.

Additionally, other beneficial sources such as finding names from conferences, books, and professional Internet groups can help in the selection of panel of experts.

2. The stage of “invitation and project explanation” verifies if the selected experts will cooperate or not in the research. If an expert decides to be part of the research, then an explanation of the research Delphi procedure will be provided to the participant. A list of more than 100 experts will be prepared from which 20 participants will be selected so that he will be able to have at least 20 participants.

3. Next, is the step of “submitting a set of sequential questionnaires” which starts by asking experts primary questions about the concern to be discussed. In the second round of questionnaires, the experts are asked to recognize and examine elements to be evaluated through a prioritization scale to be in favor of or in opposition to the presented elements. The participants may add clarifications, strengths and weaknesses to their ideas, if applicable. Additional iterative rounds may be applicable to make sure that all new ideas are collected.

4. The checkpoint step “is the objective reached? questions reaching the objective of the research to assess academically and professionally the efficiency of the information gathered.

If the answer is “NO”, then the examiner would have to perform “additional questionnaires runs” to reach the desired objective.

On the other hand, if the answer is “YES”, then the researcher may proceed to the step of “refinement and alignment”. The “refinement and alignment” phase is where information gathered will be categorized and prepared for the next step “analysis and conclusions”.

5. Finally, the “analysis and conclusions” stage carries out the required analysis from the obtained information to draw useful conclusions.
Results and conclusions:

Various organization, leadership, learning, and technology factors have been identified in this research as shown below in table (1).

**Table 1: Barriers to knowledge management**

<table>
<thead>
<tr>
<th>Organizational Factors</th>
<th>Technological Factors</th>
<th>Leadership Factors</th>
<th>Learning Factors</th>
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</thead>
<tbody>
<tr>
<td>Culture</td>
<td>Software</td>
<td>Experience</td>
<td>Training</td>
</tr>
<tr>
<td>Vision</td>
<td>Excessive focus</td>
<td>Incentives</td>
<td>Specialization</td>
</tr>
<tr>
<td>Communication</td>
<td>Support</td>
<td>Assessments</td>
<td>Resources</td>
</tr>
<tr>
<td>Structure</td>
<td>Obsolete Technology</td>
<td>Trust</td>
<td>Understanding of KM</td>
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<tr>
<td>Management</td>
<td>Infrastructure</td>
<td>Communication</td>
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<tr>
<td>Planning</td>
<td>Software customization</td>
<td>Distribution</td>
<td>Awareness</td>
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<td>Collaboration</td>
<td>Procedures and Standards</td>
<td>Metrics</td>
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<tr>
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<td>Incentives</td>
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<td>IT Centers</td>
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<td>Experts employees</td>
<td>Underestimating</td>
<td>Competition</td>
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<td>Archiving resources</td>
<td>misunderstanding</td>
<td>Communication</td>
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<tr>
<td>Embedding KM</td>
<td>User-friendly</td>
<td>Distribution</td>
<td>Time</td>
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<td>Outdated information</td>
<td>Embedding KM</td>
<td>Commitment</td>
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<tr>
<td>Trust</td>
<td>Work flow systems</td>
<td>Experts</td>
<td>User-Friendly</td>
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<tr>
<td>Technology</td>
<td>Communications</td>
<td>Prioritization</td>
<td>Culture</td>
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<tr>
<td>Training</td>
<td>Lack of IT</td>
<td>Coordination</td>
<td>Skills and resources</td>
</tr>
<tr>
<td>Time</td>
<td>Lack of information systems</td>
<td>Vision</td>
<td>Procedures and standards</td>
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<tr>
<td></td>
<td>Lack if CIT</td>
<td>Support</td>
<td>Objectives and goals</td>
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<td>Documentation</td>
<td>Trust</td>
<td>Perceptions</td>
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<td>Complexity</td>
<td>Competency</td>
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<td></td>
<td>Security</td>
<td>Resistance to change</td>
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<td></td>
<td>Maintenance &amp; updating</td>
<td>Transparency</td>
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<td>Process and procedures</td>
<td>Centralization</td>
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<td>Incentives</td>
<td>Authority conflict</td>
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<td>Work methodology</td>
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</table>
There are some common barriers that have been identified such as non-supporting culture, lack of incentives to share knowledge, and weak leadership support. Up to this stage, it seems that barriers lack of incentives, non-supporting culture, and weak leadership support are the most influential KM barriers. The third round Delphi survey will determine the most fundamental barriers of KM according to the ranking. The fourth and final round will revalidate the ranked barriers.

The main results that can be extracted from the current stage of the research is the following:

The identified barriers to KM in Saudi Arabia are very similar to common global barriers to KM. Lack of incentives came out with the highest frequency among all identified barriers. It was a barrier that was identified as in three of the main classification of barriers to KM (Technological, Leadership, Learning). Lack of process and procedures is identified in all three main classifications of KM (Technological, Leadership, Learning). Communication was identified in the three main classifications of KM.

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An Empirical Study of Fitting Super-Measure Management (SMM)
In Hospitals of Bangladesh

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Abstract

The study investigates the effect of determinants of super-measure management (SMM) such as service guarantee, customer relationship, strategic alignment and leadership on customer satisfaction and performance of the firm. Data are collected from a leading private hospital based on structured questionnaire. Results indicate that customer satisfaction is significantly related positively with service guarantee. The study also finds that strategic alignment and customer relationship are related positively with company performance. Other factors like leadership, strategic alignment and customer relationship do not have any effect on satisfaction of customer. Correspondingly, performance has no relationship with service guarantee and leadership. The research suggests that incorporating these dimensions may render the hospital with the potential to heighten customer satisfaction and performance.

Keywords: Super-measure management, performance, strategic alignment, leadership.

1. Introduction

A “Super-Measure Management” (SMM) is a single measure that has great relevance up, down, and across the organization and to its customer base. This can be used to align the behaviors and actions of the various parts of a firm with the firm’s value proposition or customers’ needs. It aligns the behaviors and actions of the various parts of a firm with its customers' needs. A Super-Measure focuses a firm more intensely on its chosen direction than would a complex set of measures. This super measure system is used to align behaviors and actions of various parts of firm with value proposition. It transcends other measures by unifying actions of disparate organizational functions and levels that service sector encounters and often require various elements of supply system to have direct customer interface. Most powerful service guarantees are those that guarantee satisfaction with no exclusions. SMM is one on which all eyes within the firm are firmly fixed and which can be used to propel the firm in a unified fashion in its chosen direction (Morgan and Rao, 2002). The problem for managers lies not simply in setting the direction but in getting the firm to follow it. There is often a gap between intended strategy and its execution. Successful execution of an intended strategy is the result of middle and operating level managers acting on a common set of strategies.
with the priorities achieved through a shared level of understanding and commitment. The firm’s intended strategy including rewards, systems and structures are likely to be more powerful than any words and it is these elements are the keys to building commitment by aligning the execution of the firm’s strategy with the interests of the people within the firm.

Choosing the strategy and developing the SMM and its reward system is the first phase of SMM management that falls to a firm’s leadership. Though implementation requires leaders to follow with careful communication and education to create the commitment necessary to use the SMM to align the organization with the chosen strategy. The onset of the 21st century has not diminished the challenges facing business enterprises. They are like ships navigating in uncharted seas, with major obstacles lurking below tranquil water, and storms sometimes come unexpectedly with great ferocity (Floyd and Wooldridge, 1992). In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Company performance is the indicator of the company’s growth or decline. Through the performance we could know whether its market share is increased or decreased, do they have a good management, how much did they earned as revenue and how did they competed or will competing with their competitors. These are the facts to measure the company performance. In the service market, service guarantee is the most crucial factor. It means the quality assurance of the service which the company is providing. Service guarantee could also refer to the continuous improvement of the service quality of the organization. The overall goals of customer relationship is to find, attract, and win new clients, nurture and retain those the company already has, entice former clients back into the fold, and reduce the costs of marketing and client service.

Alignment is the adjustment of an object in relation with other objects, or a static orientation of some object or set of objects in relation to others. Strategic Alignment is to synchronize the recruiting procedure, motivating compensation package, conducts training programs to develop employees’ knowledge, skills and abilities, performance appraisal etc. Leadership has been described as the process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task. In organizations, leadership is the process to lead the organization and its employees to achieve company goals. For a service guarantee to be effective, it is important that there be a visible cost to the firm to recover from a service failure, the thinking being that these failure costs will encourage alignment of the firm’s internal behaviors with its external market demand. The customer evaluates the firm’s performance against this service guarantee. A service guarantee could form an SMM if properly implemented, well timed, properly communicated and appropriate to a firm’s strategic alignment requirements and it would then serve to aid continuous improvement. Although several studies have demonstrated the importance of the antecedents of super-measure management on customers’ satisfaction and firm performance.
but no study has examined the interaction between the determinants of SMM and customer satisfaction and how these relationships affect firm’s performance at the end. The purpose of the study is to develop and quantitatively explore a conceptual model based on insights from various disciplines including organizational behavior, consumer behavior, and psychology.

2. Review of Literature

Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within a business organization. Customer satisfaction is an abstract concept and the actual sign of the state of satisfaction will vary from person to person and product/service to product/service. A company performance is the ultimate statement which confirms how well the company has been able to successfully achieve the goals and how well it has met with the customer demands. This is an indicator of company’s current market share compared to the previous year and also the profitability of the company. Not only it shows performance in comparison with the competitors and but also the performance of its workforce. Service is an integral part of business operation in context of the modern business practices. It is the service guarantee of the company that will ultimately ensure to the customers that it is the right decision to choose the company. Service guarantee gives customers the experience that ensures customer loyalty, and re-purchase of the company’s product and services. This section indicates the company’s willingness and attitude towards its customers in context of better service, and the focus on training up its workforce for service guarantee.

Super Measure Management (SMM) is used in the service oriented firms to measure whether the organization is cohesively working together for a common goal. The common goal in this case is the customer satisfaction, which is the key of a service firm. A service guarantee is between a firm and its market that sets specific performance standards, system failure recovery processes, and penalties. SMM is one that can be used to align the behaviors and actions of the various parts of a firm with the firm’s value proposition or customers’ needs. SMM is a measure that unifies the actions of an organizational functions and levels. The customer evaluates the firm’s performance against the guarantee. In order to be effective, it is necessary that the visible cost of the firm should recover from a service failure.

A single Super-Measure is easier to communicate than multiple measures. It gives a greater opportunity to clarify its meaning. It leads to fewer misunderstandings than under a multiple measure approach. The most powerful service guarantees are those that guarantee satisfaction. A firm may manage a customer’s prior service perceptions. A service guarantee could form SMM if properly implemented, well timed, well communicated, and appropriate to a firm’s strategic alignment requirements. It would then serve as an aid to continuous improvement. For a service guarantee to be effective, it is important that there be a visible cost to the firm to recover from a service failure, the thinking being that these failure costs will encourage alignment of the firm’s internal behaviors
with its external market demands. In a time of increasing competition and more demanding consumers, superior service quality is becoming a key determinant of a firm's success (Jochen and Prem, 1994). The determination of satisfaction lies ultimately with the customer. The force of such a system lies in creating a close link between the firm and its customers, a motivation for better alignment and a strict monitoring system of failure. The success of the service orientated firms (e.g., hospital) requires a balance of employees with the culture and the strategy of the firm.

SMM helps to connect the overall strategy of the firm. The continuous improvement of SMM may benefit everybody. It helps all employees to understand what the effect of SMM is and what the requirements are in order to utilize it properly. The firm has an opportunity to recover the service when dissatisfied customers complain. Global competition has forced firms to rethink their approach to providing products and services to their customer base. Business process reengineering has been adopted by many firms in an effort to improve their competitive position and enhance their ability to provide customer satisfaction and delight (Archie and Wilburn, 1997).

SMM helps to create a longer-term management system. The development of an effective SMM is difficult. It becomes difficult though the benefits from this communication, monitoring, and understanding. The approaches of SMM need to be managed properly. Customer relationships enhance the satisfaction of the customers substantially. Satisfaction and customer retention are further increased when the complaints are resolved through service recovery or guarantee payouts (Hart, 1988). The SMM also allows managers to select any major dimension that they believe could lead to competitive advantage. SMM approach can produce a vertical alignment within the firm. It can develop an excellent horizontal alignment from the firm’s suppliers and across its functional areas to its customer base. The SMM can help to provide a clear picture of the present and the future. SMM allows managers to select major dimensions that they believe will lead them to a competitive advantage over the other companies. A service firm can form SMM if it is properly implemented, well timed and well communicated. SMM provides a powerful thrust to a firm.

However, managing the SMM itself depends on two key dimensions: modifying the SMM’s definition and changing its scope of application. An explanation for why appropriate management is needed for these measures is that the business world is going through a continuous change. Measures may have shorter life spans and lose their effectiveness over time. As the employees need to understand the firms strategic direction and measure associated with it should connect the employee both in short and long run to achieve success, thus they articulate and communicate through the SMM. In other words the SMM will help to fire up an organization. Though the improvement in the SMM may benefit everybody, all employees must understand how they can affect the SMM in order to release its full power. And they must understand the connection between the SMM and strategy. Creating these connections requires a system for educating company members and communications links between
members to identify opportunities from which they can benefit. A dynamic environment requires considerable work to ensure the strategic alignment of any measurement system. The difficulty in constructing effective SMM may make changes difficult, though benefits from the ease of communication, monitoring, and understanding should offset this difficulty considerably. In short, like many other ideas, the SMM approach needs to be managed (Morgan and Rao, 2002). Customer relationship enhances the satisfaction of the customers substantially. The concepts of SMM will eventually help to give a more defined picture of the effectiveness and efficiency of the workforce in the organization and the level of customer satisfaction. Lastly, it is possible to modify and replace SMM in order to create a long term management and build a competitive advantage for the service industry.

Customer relationship is the way how an organization plans and executes in building a positive relationship with the customer base that the organization caters its product or service. It also indicates the company’s view about customer care, whether or not it has motivated workforce to practice proactive marketing and finally if the company involves itself in CSR responsibilities. When a company has its strategies aligned, it makes job much easier for the organization to go out there and achieve the goals and targets it has set out for itself. Strategic alignment brings in synergy into an organization. In order to understand how well the organization has aligned its strategies, one needs to look into factors such as systematic selection procedure, the availability of motivational compensation package, training program to enhance the skills and abilities of the current workforce, proper and consistent performance appraisal method and whether or not the organization uses performance as a tool for promotion. In this connection organizational leadership is not only the top management initiatives, each and every employee has to lead certain group of people and thus making leadership an important aspect across the organization. Leadership empowers employees as a part of the organizational human resource policies, how the organization use job rotation to understand the potential of its employees, whether or not the company uses job enlargement technique. It indicates if innovative ideas are encouraged in the organization and finally whether the management has an autocratic or a participative approach towards its employees. Thus above discussion might lead following hypothesis.

**H1**: Service guarantee is positively related with customer satisfaction and performance of the company.

**H2**: Customer relationship is positively related with customer satisfaction and performance of the company.

**H3**: Strategic alignment is positively related with customer satisfaction and performance of the company.

**H4**: Leadership of the employees is positively related with customer satisfaction and performance of the company.

### 3. Conceptual Model

Most research studies have an explicit or implicit theory, which describes, explains, predicts or controls the phenomenon under study. Theories are linked to conceptual models and frameworks; whereas a conceptual model is
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more abstract than a theory and a theory may be derived from a model, the framework is derived deductively from the theory (Burns & Groves, 2001). A model is tested that derived from a review of the literature by integrating theory and research relating to service guarantee, customer relationship, strategic alignment, leadership of employees and their relationship with customer satisfaction and company performance. The four independent variables that have been counted are service guarantee, leadership, customer relationship and strategic alignment. All these will have significant impact on dependent variables such as company performance and customer satisfaction.

![Conceptual framework of research variables and their relationships](image)

**Figure 1: Conceptual framework of research variables and their relationships**

4. Methods

The research adopted convenience sampling approach to obtain data. The sample consisted of 100 participants of United Hospital, one of the premier private hospitals in Bangladesh. The respondents are chosen from managerial
levels (e.g., doctors) as the research was completely based on their behavior and responses to the situations. The participants are selected randomly according to researcher’s choice. The questionnaire was administered by experts with physical presence in the organization. The format was spelled out clearly to the respondents prior to collecting data. The questionnaire was divided into six sections and designed to be scale rated. The questions of each section were in the form of statements that were direct, simple and concise mostly. The participants had to tick in the boxes provided beside each question according to the extent of their agreement (scale provided at the beginning of the questionnaire). Fixed alternative with Likert 5 scale (e.g., 1 = highly disagree, 2 = moderately disagree, 3 = neutral, 4 = moderately agree, and 5 = highly agree) was used. The research takes two dependent variables such as customer satisfaction and company performance. However, the independent variables are service guarantee, customer relations, strategic alignment, and leadership.

Customer satisfaction determines whether the products or services are meeting or exceeding the expectations of the customers and acts as a major indicator for organizational performance. On the other hand company performance is the final indicator for whether the company was able to achieve its goals and objectives and customers demands and wants. Service guarantee is basically about giving the customers the reason to be loyal to the organization and for repeat purchase of the company’s products. Customer relationship is about how the organization looks to develop a positive and sustainable relationship with their target customers. Strategic alignment is all about bringing a synergistic effect into the organization through a proper mix of organizational activities. And lastly leadership talks about giving employees the autonomy to lead subordinates. Data gained is analyzed with SPSS for Windows 11.5. To measure the reliability of the survey tool, Cronbach’s alpha value is calculated. In order to test the hypotheses the analyses of Pearson Correlation and linear regression are used. Data was analyzed using descriptive statistics to project the respondents’ profiles as well as the general patterns of the variations in super-measure management dimensions and customer satisfaction.

Factor Analysis

Factor analysis attempts to find a way of condensing the information contained in a number of original variables into a smaller set of dimensions (factors) with a minimum loss of information (Hair et al., 1998). The factor analysis in Table 1 revealed only two factors such as customer satisfaction and company performance with an Eigenvalue greater than 1. Reliability test was carried out following data collection. This helps to analyze the degree to which the items in each section were consistent with each other. Although the alpha value was almost 0.7, this is required as reliability is a prerequisite for validity which is a measure for the degree of relation between the items assessed and actual results.
Table 1. Eigen values and total variance of the items explained in the study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Eigenvalues</th>
<th>% of variance</th>
<th>Cumulative % of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Customer Satisfaction</td>
<td>1.72</td>
<td>28.79</td>
<td>28.79</td>
</tr>
<tr>
<td>2. Firm Performance</td>
<td>1.31</td>
<td>21.96</td>
<td>50.76</td>
</tr>
<tr>
<td>3. Service Guarantee</td>
<td>0.987</td>
<td>16.45</td>
<td>67.21</td>
</tr>
<tr>
<td>4. Customer Relations</td>
<td>0.835</td>
<td>13.92</td>
<td>81.13</td>
</tr>
<tr>
<td>5. Strategic Alignment</td>
<td>0.733</td>
<td>12.21</td>
<td>93.35</td>
</tr>
<tr>
<td>6. Leadership</td>
<td>0.399</td>
<td>6.64</td>
<td>100</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis

5. Findings

Hypothesis 1 predicted that service guarantee is positively related with customer satisfaction and performance of the company. The study found significant positive relationship of service guarantee with customer satisfaction (r=.28**, p<.01) but company performance has no relationship with service guarantee. Thus hypothesis is accepted for customer satisfaction while rejected for company performance. Regression results in Table 2 also supported the hypothesis with customer satisfaction (β=.27*, p<.05) and firm performance (β=.11*, p<.05). Hypothesis 2 predicted that customer relationship is positively related with customer satisfaction and performance of the company. The research indicated significant positive relationship of customer relationship with company performance (r=.22**, p<.01) but customer relationship does not have relationship with customer satisfaction. Hypothesis is accepted for company performance while rejected for customer satisfaction. This is also supported by regression analysis (β=.22*; β=.08*).

Table 2. Means, standard deviations, reliabilities and correlations of variables

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Variables | M   | SD  | 1   | 2   | 3   | 4   | 5   | 6   |
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</tr>
</thead>
<tbody>
<tr>
<td>1. Customer Satisfaction</td>
<td>4.15</td>
<td>.31</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Firm Performance</td>
<td>3.84</td>
<td>.41</td>
<td>.34**</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Service Guarantee</td>
<td>4.29</td>
<td>.35</td>
<td>.28**</td>
<td>.12</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Customer Relations</td>
<td>3.46</td>
<td>.35</td>
<td>.08</td>
<td>.22**</td>
<td>.21*</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Strategic Alignment</td>
<td>4.23</td>
<td>.39</td>
<td>.1</td>
<td>.2</td>
<td>.17</td>
<td>.17</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>6. Leadership</td>
<td>3.06</td>
<td>.39</td>
<td>.05</td>
<td>.06</td>
<td>.1</td>
<td>.08</td>
<td>.33**</td>
<td>.68</td>
</tr>
</tbody>
</table>

N=100; ** p< 0.01, * p< 0.05

Hypothesis 3 predicted that strategic alignment is positively related with customer satisfaction and performance of the company. The research reported no relationship of strategic alignment with customer satisfaction and company performance. Thus hypothesis is rejected. This is also supported by regression analysis (SA with CS and FP as $\beta=─.09*$; $\beta=.2*$) respectively.

Table 3. Regression results of determinants of SMM affecting satisfaction and performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Customer Satisfaction</th>
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<th>Firm Performance</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>T</td>
<td>F</td>
<td>AR*</td>
</tr>
<tr>
<td>Service Guarantee</td>
<td>.27*</td>
<td>2.86</td>
<td>8.2</td>
<td>.06</td>
</tr>
<tr>
<td>Customer Relations</td>
<td>.08*</td>
<td>.77</td>
<td>.59</td>
<td>.004</td>
</tr>
<tr>
<td>Strategic Alignment</td>
<td>─.09*</td>
<td>─.96</td>
<td>.93</td>
<td>─.001</td>
</tr>
<tr>
<td>Leadership</td>
<td>.05*</td>
<td>.46</td>
<td>.21</td>
<td>─.008</td>
</tr>
</tbody>
</table>

N=100; *p<.05; SG=service guarantee, CR=customer relationship, SA=strategic alignment, L=leadership, CS=customer satisfaction, FP=firm performance

Hypothesis 4 predicted that leadership of the employees is positively related with customer satisfaction and performance of the company. The research showed no relationship of strategic alignment with customer satisfaction and company performance. Thus hypothesis is rejected. This is also supported by regression analysis (L with CS and FP respectively).
FP as $\beta=0.05\ast$, $\beta=0.06\ast$ respectively). Beta value higher than .5 is always accepted for significant relationship among the variables. To test the proposed hypotheses, regression analyses was conducted. It was found that only SG and CR significantly affect CS ($F=8.2$) and FP ($F=5.11$). The study did not find significant value of adjusted $R^2$ as it required drawing any meaningful inference.

6. Discussion

The study found significant positive relationship of service guarantee with customer satisfaction but firm performance has no relationship with service guarantee. The research indicated significant positive relationship of customer relationship with firm performance but customer relationship does not have relationship with customer satisfaction. The research reported no relationship of strategic alignment with customer satisfaction and firm performance. The research showed no relationship of strategic alignment with customer satisfaction and firm performance. Marvin (1992) pointed out that service guarantee encourages the firm to thoroughly examine its entire service delivery system for potential fail points and try to eliminate them. Furthermore, every time a guarantee is invoked, it provides an opportunity for the firm to learn about the fail points in its operations. An implemented guarantee encourages the firm to solicit feedback from dissatisfied customers while increasing performance of the firm. Morgan and Rao (2002) and Talukder (2010) reported that customer evaluates the firm’s performance against this guarantee. They also observed that leadership abilities enhance the satisfaction of the customers. Choosing the strategy and developing the SM and its reward system is the first phase of SM management that falls to a firm’s leadership. Several authors have found a positive correlation between customer satisfaction and managing customers in the past. Numerous studies in the service industry have also empirically validated the link between satisfaction and behavioral intentions such as customer retention and word of mouth (Anderson & Sullivan, 1993; Bolton & Drew, 1991; Fornell, 1992). Business process reengineering has been adopted by many firms in an effort to improve their competitive position and enhance their ability to provide customer satisfaction and delight. (Archie & Wilburn, 1997).

Business people intuitively know that managing customers’ well lead to improved business performance. Even analysts, economists and stockbrokers are starting to take customer management seriously, believing it to be a very important “intangible that determines sustainable long-term company performance” (Neil, Yuksel, & Merlin, 2008). A particular challenge for leadership may be the need for firms to have the flexibility to communicate easily across levels and departments and take actions accordingly. A rigid organization is unlikely to be able to align the forces necessary for the impact we look for here. We recognize the difficulties associated with changing such an organization and culture. This challenge may deter some leaders from SM use (Morgan and Rao, 2002). Marvin (1992) pointed out that service guarantee encourages the firm to thoroughly examine its entire service delivery
system for potential fail points and try to eliminate them. Furthermore, every time a guarantee is invoked, it provides an opportunity for the firm to learn about the fail points in its operations. An implemented guarantee encourages the firm to solicit feedback from dissatisfied customers while increasing performance of the firm. From the analysis certain problems have been figured out in terms of no or weak relationship between the customer relationship and customer satisfaction and similar type of relationship between company performance and strategic alignment and so on. In addition, it also emphasizes on the reliability of the measurements and its validity thereby leading to the implications on the current and future status of the company and its potential. Aspects like the customer satisfaction, company performance, service guarantee, customer relationship, strategic alignment, leadership are linked with the success of a company and interdependent on each other for initiating and sustaining a company’s success.

7 Conclusions and implications for future research

One of the best ways to enhance customer satisfaction through service guarantee is to provide customers a sense of reliability that will be able to fulfill their needs. Customers always have a need to be constantly reassured that they are receiving the best quality service and the cost of the service is worth their money, time and effort. Service guarantee can be done through better communications, contingency plans for service failures and rapid service delivery. In order for the company to deliver best performance, all its activities and departments needs to be aligned so as to develop strategies that complement each other and helps to create competitive advantages for the organization. Through strategic alignment the company can better understand different needs and requirements of its activities, employees and departments. Communications efforts should be improved for better understanding. This will make the service company more efficient and effective in its activities and thus leveraging overall performance of the company. This fact has been proven from this research that shows a positive relation between strategic alignment and company performance. Customer relationship is basically made to maintain a customer with an organization and to learn of the customer’s need and wants to better refocus to them. Customer relations include a significant amount of time and communications with customers to gain information. Thus with the necessary information the organization can serve their customers better. And on the other hand the customer will develop an inner sense that the organization is truly dedicated to their needs and thus the overall service experience will be enhanced and the customers will be better satisfied. This research holds this concept true since there is a positive relation between customer relationship and customer satisfaction. Leadership is an important factor for an organization. Authentic leadership gives an organization the drive and vision towards the future. It directs the organization to the path that it needs to take to grow and become successful. However leadership is not enough to ensure that the organization works properly. Leadership alone cannot bring efficiency and effectiveness in the organization. And this fact is proven true in the research where it shows that leadership is unable to increase company performance.
Customer relationship involves effectively communicating with the customers and keeping them with the organization. This involves taking feedback from customers and improves the service, its quality and delivery. And as the organization learns from its customers the quality of their service improves. Firms proactively anticipate customers’ needs and wants and adjust their service characteristics. Thus their service become more efficient and effective this eventually increases the company’s performance. And this fact is once again proven true from the study where there is a positive relation between customer relationship and company performance. Thus in conclusion, Super-Measure Management helps an organization to understand the internal factors that affects its business activities and its eventual success. And so managements of organizations are recognizing its potentials and benefits and are incorporating the necessary changes and additions to proactively prepare for the rapid changes in the business environment. The sample size was not large (N=100). First, small sample sizes generates low statistical power, meaning that one is more likely to conclude (falsely) that no relationship exists when, in fact, one truly does. The other concern is generalizability. It is recommended that applying large sample size both in service as well as manufacturing context might produce universal conclusion about the tractability of applying super-measure management (SMM) across organizations.

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Management Education for Professional Integrity

The case of University Center for Economic and Managerial Sciences,
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Abstract

This paper is aimed to analyze professional integrity as an improvement concept to the actual values and virtues and meaning managerial capabilities and attitudes to assume any professional task. This paper is aimed to analyze a case of management education for professional integrity at the University Center for Economic and Managerial Sciences, University of Guadalajara. The research method employed is the ethnographic, documental and life’s histories, complemented with field work supported by in-depth interviews and analyzed using a comparative method. The outcomes of the research on the application in management education demonstrate that the drama of economic efficiency is centered on a dysfunctional professional integrity. This chapter provides a sound professional philosophy that empowers professionals to act with integrity, increases the probability for long-term success and professional fulfillment. The results provide also the basis to develop a code of conduct and regulation policies to sustain management education for professional integrity which, can positively impact on business culture through influencing the behavior of key actors.

Keywords – Integrity, leadership effectiveness, management education, managerial integrity, professional integrity development.

Introduction

This paper is aimed to analyze professional integrity as an improvement concept to the actual values and virtues as meaningful managerial capabilities and attitudes to assume any professional task. The objective is to analyze the importance of professional integrity and ethics in the development of professionals in administration and management sciences. The paper also pretends to present some suggestions of ethical and integrity program based in
professional integrity that can lead the manager to a more ethical and humanistic practice based on a case at University Center for Economic and Managerial Sciences, University of Guadalajara.

Economic and political conditions of the globalization processes carry with them the elements toward the multinational integration which implies a higher professional competitiveness. Professionals have to be prepared for a global market constrained by time and resources for their basic developments. Thus, there is a need for optimizing the resources applied to the development of the new professionals. The most important change facing the new demands of education is the task of personal and professional integrity formation for the performance of citizenship and productive capabilities. Llano (1997) makes reference to a divorce between professional formation and the real labor market as the product of nonexistent but necessary synchronization, between the graduated professionals from Universities and technological institutes and the requirements of employers that have resulted to be devastating for the social responsibility that the organizations must fulfill.

The manager’s success in the provision of services to individuals and society depends to a certain extent in the degree of knowledge, skills and experiences obtained in the classroom and the professional performance. Moreover, it depends of the achieved level of personal qualities development that distinguishes him/her as an individual, such as the professional integrity, independence, ethics, and so forth (AICPA, 1980: 16). There is a peremptory need to recover credibility, integrity and respect in the management profession through a truth reconstruction of the ethical and integrity fundamentals. Professional formation and development in management sciences conducted in Universities must specify the required behaviors for the professional integrity. The formation of professional integrity at University programs, more than the added value must be the inherent value expected to grant to the organizations and society as a whole.

Integrity is the improvement answer to the business man’s ethical dilemmas. The effort to achieve the integrity dimension produces positive effects in personal life of persons and in entrepreneurial management. To decide in favor of integrity is to reconcile harmoniously the own goodness and the common good. Integrity appeals to the deeper consciousness to impulse action as a consequence.

Notion of integrity

Integrity is important to build a good society, a reason that makes necessary to define with precision the origin and sense of the term. Srivastva and Associates (1988) describe integrity with an emphasis on congruence, consistency, morality, universality and concern for others. Kerr (1988: 126-127) lists the Ten Commandments of Executive Integrity. Covey (1992) describes integrity as honestly matching words and feelings with thoughts and actions for the good of others. A key component of integrity is the consistency between actions and words. Integrity is defined
by the Webster’s New World Dictionary (1994) as: “1. the quality or state of being complete; unbroken condition; wholeness; entirety; 2. the quality or state of being unimpaired; perfect condition; soundness; and 3. the quality or state of being of sound moral principle; uprightness, honesty, and sincerity”. Integrity is a state or condition of being whole, complete, unbroken, unimpaired, sound, perfect condition.

The word integrity suggest the wholeness of the person in such a way that can be said that person with integrity are whole as human beings. The term integrity refers to honesty, playing by the rules and not necessarily following the rules, which means setting aside in situations where people may be victimized. Becker (1998) conceptually distinguishes integrity from honesty and fairness. However, the empirical research conducted by Hooijberg and Lane (2005) shows those managers and their direct reports, peers, and bosses do not distinguish integrity from honesty and fairness. Integrity in the context of other values that are in the eye of the beholder is an implicit model to evaluate the meaning of integrity. Becker (1998) found no standard definition of integrity because it is treated as synonymous with other values such as honesty and fairness, which makes very difficult to measure it.

Integrity means honesty or stating what one really thinks even if the honest person runs the risk of hurting relationships and getting the organization in trouble. The condition of integrity must emerge at the heart of the person, people and organizations as the distinctive seal in all actions, decisions, determinations, etc. Simons (1999:90) defines Behavioral Integrity (BI) as the perceived degree of congruence between the values expressed by words and those expressed through action. Integrity is primarily a formal relation one has to oneself. Integrity refers to the wholeness, intactness or purity of a thing, meanings that are sometimes, applied to people (Cox, La Caze and Levine, 2005).

“What is it to be a person of integrity? Ordinary discourse about integrity involves two fundamental intuitions: first, that integrity is primarily a formal relation one has to oneself or between parts or aspects of one's self; and second, that integrity is connected in an important way to acting morally, in other words, there are some substantive or normative constraints on what it is to act with integrity. How these two intuitions can be incorporated into a consistent theory of integrity is not obvious, and most accounts of integrity tend to focus on one of these intuitions to the detriment of the other.” (Cox, La Caze, and Levine, 2005).

Erhard, Jensen and Zaffron (2010) combine the two intuitions of integrity developed by Cox, La Caze, and Levine (2005), the second becoming a logical implication of the first, in one consistent theory. Integrity is the integration of self, the maintenance of identity and standing for something. Personal integrity, defined as honoring one's word, becomes predictable with first-hand reliable and accurate information (Erhard, et al., 2007). Integrity is the base to trust to people because it guarantees the subject consistency in making decisions and in how he/she relates to others. Trust and ethics are terms related to the concept of integrity. Integrity is a guarantee of being ready to repair any threat to honesty. Integrity is defined as honoring one's word in a positive model developed by Erhard, Jensen and
Zaffron (2008) revealing the causal link between integrity and performance. There is not a consistent and validated framework of integrity. Erhard, Jensen and Zaffron (2010) define integrity as: *a state or condition of being whole, complete, unbroken, unimpaired, sound, perfect condition.* Personal integrity has to do with the wholeness and completeness of that person’s word. Personal integrity is one of the personal qualities. The Oxford Dictionary (2011) defines integrity as “the quality of being honest and having strong moral principles”, “the state of being whole and undivided”.

Integrity has different meanings to different respondents. Integrity is for an individual, group, or organization as honoring one’s word. At an individual level, integrity is the matter of that person’s word “being whole and complete”. Personal integrity has to do with the wholeness and completeness of that person’s word (Erhard, Jensen and Zaffron, 2010). A person’s word may consist of what is said, known, expected, is said is so, stands for, and the social moral, group ethical and governmental legal standards. Integrity is a matter of a human entity’s word being whole and complete. One’s word is not a matter of being obligated or not, being willing or not willing to fulfill the expectations of others. To be a person of integrity is honoring one’s word and not a matter of keeping one’s word. Simons (2002) defines integrity as keeping one’s word. Honoring one’s word is defined by Erhard, Jensen and Zaffron (2010) as keeping or not keeping the word on time when it is impossible, saying to everyone impacted if the conditions are not met and cleaning up any consequences.

Keeping the word is doing what it is said will be done and on time. Keeping the word is doing what it is known to do and doing the way it was meant to be done, and on time, unless it has been said it would no so doing what others expect to be done. It is congruent to define integrity to the capability to rationalize without interest’s influences or particular sensations. Even if it has been never said it would not be done, and doing it on time, unless it has been said it would not been done and it has been made expectations of others clear to them by making explicit requests being willing to held accountable when it is asserted something that others would accept the evidence on the issue as valid.

Considered as a positive phenomenon, independent of normative value judgments, integrity is defined as honoring one’s word. Honoring the one’s word to oneself provides a solid foundation for self discipline as a way to maintain one whole and complete as a person that empowers him/her to deal with the matter with integrity. One may create trust by others when honoring one’s word although fails to *keep* one’s word. Honoring the word maintains integrity when it is not possible or appropriate to keep the word or to choose not to keep the word. The concept of integrity as Honoring One’s Word includes a way to maintain integrity when one is for any reason not going to keep one’s word. Integrity is a guarantee of being ready to repair any threat to honesty. However, for Kaizer and Hogan (2010),
integrity is a moral attribution that we place on the behavior of another person, in such a way that integrity is in the eyes of the beholder rather than consistency of that person’s words and actions.

Argyris (1991) contends that people consistently act inconsistently; unaware of the contradiction between the way they think they are acting and the way they really act. Simons (1999: 90) argues that behavioral integrity is the perceived degree of congruence between the values expressed by words and those expressed through action that he terms “wordaction”. However, while keeping the words is not always possible, honoring the word, and thus, to be a person of integrity, whole and complete, is always possible. Honoring one’s word when failing to keep it provides a behavior that can generate substantial benefits. It is the interpretation of one’s body, emotions and thoughts in the own words that are said, which ultimately defines who is one is for self.

Authenticity means being and acting consistent with which you hold yourself out to be for others, and who you hold yourself to be for yourself. Being authentic is “being willing to discover, confront, and tell the truth about your in authenticities” (Erhard, W. and Jensen, M., 2009). Argyris (1991) argues that “people consistently act inconsistently; unaware of the contradiction between their espoused theory and their theory-in-use, between the way they think they are acting, and the way they really act.”

For a group or organizational entity, Erhard, Jensen and Zaffron (2010) define integrity as that group’s or organization’s word being whole and complete. Organizational integrity as any human system is an organization that honors whole and complete its word to its members and to outsiders. Respondents refuse to answer questions related to identify integrity issues and behaviors of managers lacking integrity besides the difficulties to observe and rate them.

Honoring one’s word to another creates a whole and complete relationship. One’s word is constituted by what literally one person says in words, in the “speaking” of his/her actions and in what these actions say to others. Being in-integrity leaves one person whole and complete outside or inside the relationship with other person who may be out-of integrity. Shakespeare said, “This above all: to thine own self be true, it must follow, as the night the day, Thou cans’t not be false to any man.” When one is true to one’s word, which is being true to one’s self, one cannot be but true to any man. Being in-integrity allows one person to continue to be effective and workable in the relationship with other or others.

The terms integrity, morality, ethics, and legality are confused by the common usage. Morality, ethics and legality exist in a normative realm of virtues while integrity exists in a positive real. Erhard, Jensen and Zaffron (2010:1) distinguish the domain of integrity “as the objective state or condition of an object, system, person, group, or organizational entity.” Integrity is within the positive realm and its domain is one of the objective state or condition. The virtue phenomena of morality and ethics are related to integrity as a positive phenomenon.

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The Oxford Dictionary (2011) defines morals as “standards of behavior or beliefs concerning what is and is not acceptable to do”. Morality exists in the social virtue domain in the normative realm. Morality is the generally accepted standards of what is desirable and undesirable; of right and wrong conduct, and what is considered by that society as good behavior and what is considered bad behavior of a person, group, or entity. Integrity cannot be falsified because it is, by its own nature, the truthiness, what avoids the fragmentation of persons and the cracking down of moral strengthens.

The Oxford Dictionary (2011) defines ethics as “moral principles that govern a person’s or group’s behavior”. Ethics refers to the set of values and behaviors defined by society as desirable in such a way that any action can be judged as “good or bad” (Pojman, 1995). Ethics exists in the group virtue domain in the normative realm. Ethics is defined as in a given group (the benefits of inclusion in which group a person, sub-group, or entity enjoys), ethics is the agreed on standards of what is desirable and undesirable; of right and wrong conduct; of what is considered by that group as good and bad behavior of a person, sub-group, or entity that is a member of the group, and may include defined bases for discipline, including exclusion.

Integrity as the condition of being whole and complete is a necessary condition for workability. Workability is defined as the state or condition that constitutes the available opportunity for something or somebody or a group or an organization to function, operate or behave to produce an intended outcome, i.e., to be effective; or the state or condition that determines the opportunity set from which someone or a group or an organization can choose outcomes, or design or construct for outcomes (Erhard, Jensen and Zaffron, 2010). The resultant level of workability determines the available opportunity set for superior performance. Integrity provides access for superior performance and competitive advantage for individuals, groups, organizations, and societies. Erhard, Jensen and Zaffron (2010) conclude that the way in which integrity is defined for individuals, groups and organizations reveals the impact of integrity on workability and trustworthiness, and consequently on performance.

Variations in personal behavior depending on situations may be interpreted as lack of integrity. Lack of integrity is compatible with a multiplicity of interests that are in collision among each other. Lack of integrity implies a gap between what is said and what is thought, between what is considered a proper conduct and what is finally done, between what is morally fair and what it appears to result from pressure of circumstances. The lack of integrity goes beyond and has effects far away the sphere of the specific activity in each organization, even impact the society’s rules of the game. Personal as well as professional integrity in firms declines more and more in an environment of global economy, leading to a decrease in performance.
Moral and ethical values may guide human action and interactions shaping professional integrity and determining performance. Professional integrity derives its substance from the fundamental goals or mission of the profession (McDowell, D., ).

Legality exists in governmental virtue domain in the normative realm. Legality is defined as the system of laws and regulations of right and wrong behavior that are enforceable by the state (federal, state, or local governmental body the U.S.) through the exercise of its policing powers and judicial process, with the threat and use of penalties, including its monopoly on the right to use physical violence.

Honoring the standards of the three virtue phenomena of morality, ethics and legality and its relationships with performance, including being complete as a person and the quality of life, raises the likelihood to shape human behavior.

Professional integrity

One of the first documents that treat on professional integrity is the Hippocratic Oath. The thesis behind is that professionals have to aspire to excellence. Personal integrity is directly related to professional integrity. Personal integrity and professional integrity are generally interdependent and compatible. Professional integrity is related to, but different from personal integrity. Professional integrity is an attribute although philosophically the term integrity relates to general character. Professional integrity derives its substance from the fundamental goals or mission of the profession (McDowell D.). Professional integrity is sustained on the principle of moral integrity and ethical principles centered in transparency, honesty, sincerity, moral consciousness, loyalty, truthiness and reality in the functions performed adhered to legality. Professional integrity is the set of principles and commitments to improve the results of the manager’s activities, to maximize autonomy, to create relationships characterized by integrity, the ethical practice, social justice and team work.

Different aspects of professional integrity are derived from the basic functions of each profession. The professional integrity includes the role-specific obligations and responsibilities of a particular profession. Well-established professions often spell out and stand on the role-specific principles of professional integrity. Professional integrity derives its substance from the mission and fundamental goals of the profession. Where the stakes for society are so high, professional integrity must be first over personal loyalties of friendships. Professional integrity is based on value integrity first, service before self, and excellence in all that we do. When a professional commits himself/herself to “integrity first” is that he or she understands the importance of both personal integrity and professional integrity, and through his/her efforts to keep them compatible, he or she best provides the crucial professional functions and activities to the society.
A clash between personal integrity and professional integrity leads to integrity dilemmas which are present in some situations such as for example a professional refuse to participate on moral grounds because it is not morally obligatory even though it is legally permitted. In any professional role it may be possible to live up to high standards of competence and conduct but not to sustain professional integrity outside the professional realm and context by living entirely different, opposed, conflicting or contradictory moral values in private life. It reveals a direct conflict between personal integrity and professional integrity. Culpable incompetence is clearly violation of professional integrity.

At the times when professional integrity is most valuable, there is an excuse to avoid the obligation to be in integrity. To be in professional integrity when it is most valuable to others, means to bear the costs. Professional integrity may be sacrificed to avoid some costs imposed on others, such as to protect institutional reputation. Based on integrity, it is build the personal reputation, and also as an extension the institutional reputation, when these are liberated according to the integrity criteria. The value of good reputation has been manifested several times in management. With violations of the public trust by actions of authority are serious breaches of professional integrity. When the stakes are so high in a profession, the breach of professional integrity could be devastating to society. Mayor challenges to professional integrity are the misuse of science, research and evidence in policymaking (McDowell, D.).

The concept of professional integrity is separated from normative concepts to understand it as a “purely positive phenomenon that plays a foundational role” in economic performance. The issue of competence is directly relevant to professional integrity. The duties of competent professionals can be carried out by professional practices, functions and actions constrained by moral, ethical and legal restraints on professional integrity. “Ethical implies conformity with an elaborated, ideal code of moral principles, sometimes, specifically, with the code of a particular profession” (Webster’s New World Dictionary).

The codes of conduct support the profession’s conception of professional integrity. A code of professional ethics allows to norm a more ethical and humanistic professional practice and the commitment with individuals and society, the actions that must be guided not only by the speculation but for the necessity to act with justice, responsibility, discretion, honesty, etc. A myopic vision of professional integrity and ethic is reduced to a catalog of things that are good and that are bad, and that there are not considered under a wider vision as the set of principles that serve to the human beings to achieve perfection and plenitude which is an arduous task. Changes on environment and the actual life can originate the loss of a clear vision of the limits between the honest and what is not, where it finishes the dignity and where begins the non dignity and what are the moral principles that must rule professional behavior.
Professional integrity is formed by social responsibility and some other social elements that professionals inherit to maintain high standards of competence and conduct in the entire full range of professional activities and not just for themselves. Professional integrity has as an effect a major consistency of one person on himself/herself and produces greater social cohesion. Honest members of society strengthen the links of the structure and make advancements toward the own end, the common good. Professional integrity involves competences shared by all members of the profession and joint responsibilities for conduct. Integrity in communication is the pillar in trusting interpersonal networks building as a condition for the cooperation among human beings.

**Professionalism**

Professionalism has integrity as the essential and defining element. Professionalism is an ethical movement defined by essential elements of professional good will and good doing and reflects on values, actions and curricular implications. Professionalism as an aspect of a person's life is an attribute of integrity.

**Managerial integrity**

Organizational activities include regular issues of professional managerial integrity (Thompson, Grahek, Phillips, & Fay, 2008). Professional management integrity is defined as a “leadership competency and measures it using coworker ratings of observed ethical behavior”. Professional managers displaying integrity are more concerned about the welfare of others (Brown & Trevino, 2006). Managerial integrity acknowledges responsiveness among one another, receptivity and creative efforts to understand other’s perspectives while at the same time articulating their own (Levinson, 1988: 318).

Perceived managerial integrity is central to managers – stakeholder’s relations as it is for leaders in the role of leader-follower relations, although it is questionable as to what extent integrity is important for various stakeholders. A manager would like to be able to look at themselves as someone who has integrity, is fair and honest. Kerr (1988) argues about the difference between the conceptual work on integrity and the realities faced by management practitioners. Kerr truly explored the meaning of integrity for real managers. As Kerr (1988: 138) states that the author’s prescriptions about how to behave with ethics and integrity, were far away from the managerial practice in everyday organizational life. When the mistakes and incompetency of managers are buried instead of being exposed and removed from their practice, the managerial authorities fall short of their responsibilities to the mission and goals of the profession. Managers act with integrity to stay true to themselves (Levinson, 1988: 268).

The environment under which the role of management takes place include managerial integrity, honesty and in safeguarding the integrity of the management system. Trust may create a “transformation in relational logic” which produces differential interaction effects for personal and professional integrity trust and capability trust (Bigley and McAllister, 2002) in professionals. Professional managers must have high integrity in order to be trusted by other
stakeholders, as leaders by followers. There are negative as well as the positive effects on public managerial integrity caused by the introduction of businesslike methods in the public service Kolthoff, Huberts, and Heuvel (2003). However, global perceptions of supervisor integrity are a function of discrete, and primarily destructive, supervisor behaviors (Craig and Gustafson 1998, p.134).

Moral philosophers agreed that integrity is linked to personality psychology and also Allport (1937) recognized this connection which can be measured directly through integrity testing. In organizational life, managerial integrity and other related competencies can be measured and evaluated through structured interviews, background checks, assessment centers, and other methods such as high-fidelity simulations and strategically designed assessment exercises that are other more valid and reliable methods for measuring integrity. Little effort has been made to link ethical theory to management behavior (Fritzsche and Becker (1984: 166). Becker (1998: 159) suggests obtaining assessments of integrity from supervisors or peers because integrity tests invoke social desirability responses with an emphasis on action. One important instrument to assess managerial integrity is the Diamond of Managerial Integrity model was developed by Kaptein (2003) to assess and improve the integrity of managers.

Leslie & Fleenor (1998) reported 24 popular assessment instruments that are similar in content to other competency instruments used by organizations that were compared and analyzed by Kaiser and Hogan (2010) who found several weaknesses centered on the lack of clarification of the integrity domain. Moreover, the instruments define low integrity by the absence of high integrity rather than by the presence of devious behaviors, and were found used for rating the integrity of managers only focusing on the positive desirable integrity construct but not on a lack of integrity or unethical behavior. Minor breaches of integrity are not rated as violations against serious violations of integrity that are usually covert.

However, Kaiser and Hogan (2010) measure managerial integrity framed by personality theory to identify the integrity of managers, drawing on the concepts of reputation and the influence of “weak” situations on the expression of dark-side tendencies. According to Kaiser and Hogan (2010) self assessments of managerial integrity are dubious sources of information because the manipulation and deceit of persons lacking integrity. Managers who lack integrity hardly recognize themselves as that and observers may identify questionable integrity behaviors of managers. Thus, subordinates are likely to be a prime and the best source of information about the personal and professional integrity of managers (Brown & Trevino, 2006). Kaiser and Hogan (2010) found that competency ratings do not identify managers with integrity issues. Ratings of an integrity competency are heavily skewed favoring managers who receive high ratings for integrity and are unlikely to identify managerial misconduct. Respondents refuse to answer questions related to identify integrity issues and behaviors of managers lacking integrity besides the difficulties to observe and rate them.
Firms may be concerned with effectively preventing declines in managerial integrity. Erhard, Jensen, and Zaffron (2007) assume that the decision of a firm to appoint a previous CEO, relies to a greater extent on firm-specific information on personal and professional integrity. In the case of the integrity of the previous CEO, firms promote an insider and hire an outsider in the case of a former dishonest CEO. However, it is not enough to be trusted in terms of managerial integrity to predict OCB.

Ratings of managerial integrity always favor managers and rarely identifies the ones who may lack integrity. Kaiser and Hogan (2010) contend that competency ratings are unlikely to identify managerial integrity issues. They propose an alternative method, referred as the dubious reputation approach, to identify managers with potential integrity problems focusing on the lower level of the integrity, not relying on ratings of observed behavior but estimating the likelihood those managerial engagements in unethical behaviors. Ratings focused on the undesirable behaviors of the integrity domain of managers may identify their integrity problems. The dubious reputation approach involves personal integrity evaluations of the dark side of managers’ personalities. This method proves to identify and assess levels of managerial integrity and effective competency.

The epitome of the dubious reputation method developed by Kaiser and Hogan (2010) is the Perceived Leader Integrity Scale (PLIS) developed by Craig and Gustafson (1998) which identifies low integrity of managers. An empirical research conducted by Kaiser and Hogan (2011) found that the PLIS yielded variability and higher incidence of low scores of managerial integrity than the integrity competency scale. Perceived integrity as a variable is more highly correlated with Consideration than Initiating Structure. Also the research concluded that as the strongest predictor, Perceived Integrity as a variable is more highly correlated to Perceived Effectiveness. This result is consistent with the notion that integrity is concerned with the needs and rights of other people.

**Integrity and performance**

The ontological law of integrity states that “To the degree that integrity is diminished, the opportunity for performance (the opportunity set) is diminished” (Erhard, Jensen and Zaffron, 2010). There is a relationship between integrity and performance, where integrity is a necessary condition for performance. Integrity not only exists as a virtue but rather than as a necessary condition for performance. Performance is defined as “the manner in which something or somebody functions, operates, or behaves; the effectiveness of the way somebody does his or her job” (Encarta Dictionary, 2004). To maintain management performance centered in the human and ethical values is always an issue that requires being subject to pressures and tensions for the same nature of the management profession. Perceptions of the manager’s integrity determine how much to trust the manager which, in turn, influences attitudes and performance.
Competency models that include integrity as a dimension are used by organizations to identify managerial performance capabilities (Boyatzis, 1982) use subordinate ratings focusing on behaviors to evaluate the integrity of managers. Perceptions of manager’s behavioral integrity created collective trust and were related to customer satisfaction and profitability which translated into higher performance (McLean Parks, 2002). Behavioral ratings of observed ethical behavior by coworkers measures integrity defined as a leadership competency suggests that only a small proportion of managers may have integrity issues without distinguishing high- from low-performing managers (Kaiser and Hogan, 2010).

When nobody has an incentive to invest in firm-specific knowledge, the managerial integrity drops and consequently the performance of the firm, such as the case of external hires who step up the regression of integrity in firms (Rost, K., Salomo, S. and Osterloh, M. 2008). Regression of integrity in firms may result in the prevalence of outside hires. When followers believe their leader cannot be trusted because the leader is perceived not to have integrity, they divert energy diminishing work performance (Mayer and Gavin, 1999). Assuming that the integrity of the previous CEO has no effects on performance, Erhard, Jensen and Zaffron, (2007) found that the managerial integrity of a former CEO pays off improving the performance of a firm at the time when the leadership change is stable.

Kaiser and Hogan (2010) conducted an empirical study of ratings on a competency-based integrity scale with psychometric properties to test the expectation that few managers are rated as lacking integrity, to prove that ratings of integrity fail to identify individuals at the low level and not predict managerial performance. The integrity competency analysis use subordinate ratings of integrity to predict overall performance. Subordinate ratings of a professional managerial integrity competency are consistent with performance ratings in organizations. Results of a research conducted by Kaiser and Hogan (2010) show that ratings on the integrity competency are unrelated to managerial performance. The proposed method by Kaiser and Hogan (2010) based on subordinate expectations about the likelihood that professional managers would misbehave and have unethically behaviors suggests that a larger proportion of managers may have professional integrity issues without distinctions performance.

Kaiser and Hogan (2010) found in their empirical research that manager’s competency integrity is highly correlated with building talent showing concern for subordinates, although does not distinguish the level of management performance concluding that integrity competency does not predict performance. This finding is consistent with the definition of integrity as sensitivity for the needs and rights of other people. The empirical research conducted by Kaiser and Hogan (2010) found that the levels of manager’s integrity is not correlated with the level of performance. This finding contradicts the research showing that personal integrity is a prerequisite for effective leadership.

**Integrity and leadership effectiveness**
Regarding integrity, most leaders follow a more Machiavellian view who wrote that a prince should appear a man of integrity (Machiavelli, 1981: 101). Integrity as other values has an impact on effectiveness. The argument that leaders need integrity to function effectively is supported by Covey (1992:61 and 108), who contends that followers become guarded of leaders with low level of integrity.

There are few empirical studies conducted to explore the role that integrity plays in leadership effectiveness. There is a lack of empirical research to analyze the relationship between integrity, leadership behaviors and effectiveness. The study of the impact that integrity has for effectiveness has not been clarified because integrity is to a greater or lesser extent being perceived as more effective when having honesty and fairness. Few empirical studies examine the relationship between integrity and leader effectiveness but not the impact integrity has on leader effectiveness. What may be good for the sense of integrity may not improve effectiveness. Direct reports have association between integrity and leadership effectiveness and are concerned about indicators of integrity of managers because of the need for consistent behavior (Staw and Ross, 1980).

The assumption that integrity has a positive effect on leader and organizational effectiveness is questionable when research on leadership emphasizes behavioral approaches rather than integrity and actions that lack integrity can lead to success (Jackall, 1988). Morgan (1989) developed a leadership assessment scales on integrity to analyze the relationship to leader effectiveness and found that integrity as a variable is related to trust. Trust reflects the integrity or capability of another party, thus trust in a leader’s integrity may inspire followers because of the leader’s adherence to certain values (McAllister, 1995). Research on integrity and leadership effectiveness suggests a positive relationship. Badaracco and Ellsworth (1990) and Covey (1992) argue integrity has an impact for leadership effectiveness. Followers believing in the integrity of their leaders are more comfortable engaging in risky behaviors (Mayer, Davis, & Schoorman, 1995). Hooijberg, Hunt and Dodge (1997) call for the role of integrity as a value in leadership research.

Craig and Gustafson (1998) developed the Perceived Leader Integrity Scale (PLIS) to measure employee’s perceptions of their leader’s integrity and job satisfaction and found positive correlation. Craig and Gustafson (1998) provide a large pool of items. The global indicators of integrity (Craig and Gustafson, 1998: 134) account for 81% of the variance in perceptions of integrity. Becker (1998: 160) argues high personal integrity make excellent candidates for leadership positions. Simons (1999) used the concept of behavioral integrity and leader effectiveness and found that there is a significant positive correlation between perceived integrity and leader effectiveness. Morrison (2001: 65) states that integrity is necessary for managers to engender the goodwill and trust required for an effective leadership. Parry and Proctor-Thomson (2002) revised the PLIS to analyze the relationship.

Integrity is a cognitive form operating via different processes on outcomes such as the organizational citizenship behavior (OCB). Thus, Dirks and Skarlicki (2004) argue that integrity may be a predictor of OCB and the leader
may be seen as being with high integrity. This idea, according to the authors implies that integrity predicts employee OCB although the main effects for benevolence and integrity on OCB were not significant at low and moderate levels, however the authors found that when benevolence is high the relationship between integrity and OCB is positive. Mayer and Davis’ (1999) trustworthiness scales assess trust in managers in terms of integrity and benevolence. Behavioral integrity and competence impact trust, although Salam (2000) argues that integrity and competence are not sufficient to increase trust for other parties.

Hooijberg and Lane (2005) examine the impact integrity has on people’s perceptions of effectiveness and found that integrity has a small relevance for leadership effectiveness. To test the relationship between leadership behaviors, integrity, and managerial effectiveness, Hooijberg and Lane, N (2005) included in his research values associated with integrity and values in conflict with integrity. Hooijberg and Lane (2005) reported that is partially confirmed for all raters that integrity has a positive association with effectiveness for managers and their peers.

However, between integrity and direct reports or bosses’ perceptions of effectiveness, they did not find a significant association between integrity and effectiveness. The results show a statistically significant association for the managers themselves and their peers, but there is not statistically significant association between Integrity and effectiveness for the direct reports and bosses. Their results also confirm that bosses associate goal-oriented behaviors had the strongest association, but not integrity with leadership effectiveness. These values have a stronger association with effectiveness than integrity, honesty, and fairness do. Integrity affects perceptions of managerial effectiveness when managers strongly associate being goal-oriented, monitoring and facilitation. Perceived competence and integrity are character-based factors make individuals willing to take the risk toward a common goal. Goal-oriented behaviors of managers are associated with effectiveness, but not integrity. Integrity as a key ingredient for effectiveness may be hard to maintain.

Competency ratings of integrity are not capable to identify managers who may lack integrity because there is an assumption that managers are at risk for misbehaving. Competency rating methods assume integrity in terms of desirable observed ethical behaviors in such a way that to identify managerial integrity underestimates the number of managers with integrity issues. Definitively, when an organization is lead by managerial integrity, interior life develops with integrity and generates an exemplar effect for all involved in the activities.

Kaiser and Hogan (2010) suggest that organizations conducting character and integrity audits consider other alternative approaches for detecting integrity such as simulations, assessment centers, enhanced background checks, specially designed interviews and rely on more than just competency ratings of integrity. There is the possibility to replace competency ratings with ratings based on the dubious reputation methods, the PLIS scale is in the public domain, by focusing on subordinates’ expectations or create hybrid scales. The PLIS scale, a measure of the dubious
reputation method identifies managers’ integrity at the unethical end of the continuum. The dubious reputation analysis use subordinate ratings of integrity to predict ratings of job satisfaction and perceived effectiveness. Kaiser and Hogan (2010) propose the dubious reputation method to evaluate the integrity of managers based on expectations that managers behave unethically. The dubious reputation method is intended to replace the competency ratings to identify and evaluate the integrity of managers. Results of using PLIS are consistent with prior findings that leader integrity is determinant of leadership perceptions.

Integrity and ethics concern one’s relationships with other people. The absence of ethics and integrity precluded leadership. Hooijberg, and Lane, (2005) examine the impact of some values including integrity on leadership behaviors and effectiveness finding that the value of integrity has a significant impact on effectiveness. The findings of Hooijberg, R. and Lane, N (2005) do not support the notion that integrity is essential for leadership. They did not find a statistically significant association between integrity and effectiveness.

Personal integrity also plays a central role in transformational as well as charismatic leadership highlighted by research. Thus, Personal integrity is a prerequisite for leadership (Cohen, 2009). Followers’ perceptions of a leader’s integrity are related to transformational leadership (Parry & Proctor-Thomson, 2002). However, competency ratings do not measure low level of personal and managerial integrity because leadership research focuses on positive qualities (Padilla, Hogan & Kaiser, 2007).

The case of University Center for Economic and Managerial Sciences at University of Guadalajara.

Research design

The hypothesis of this research considers that there are some economic, social and cultural factors which appear to pressure management education to far outweigh to maintain professional integrity. This hypothesis is proved empirically confirmed by the finding that significant importance is placed on the professional’s reputation for integrity, economic efficiency strength, organizational social capital, and a compliance ethical culture. This paper outlines an approach in which professional integrity in management education is understood in the context of honesty, as having an ethical background, building trust and maintaining credibility. The chapter concludes by Conference papers © Knowledge Globalization Institute, Boston, Massachusetts, USA 2012
presenting a model of management education for professional integrity that can used to prescribe a more sensitive and dynamic human-ethical environment.

The research method employed is the ethnographic, documental and life’s histories, complemented with field work supported by in-depth interviews and analyzed using a comparative method. Participants described several dimensions of professional integrity in management education. Discussion focuses on integrity as the basic principle of professionalism in management education to guide complex ethical reasoning, as well as the need for creating and sustaining professional integrity environments through ethical modeling and relational behaviors promoted by integrity as the essential element. This methodology puts in evidence that there is an urgent need to develop a model to approach professional integrity in economic and managerial careers.

In our own research conducted with information units involving teachers and students to determine the existence of program content oriented toward teaching ethics and professional integrity in the administration major at the university level as well as the existence of behavior codes as a frame of reference. Results indicated that all the teachers coincide in affirming the need to incorporate a transversal program axis that would permeate the curriculum, oriented toward teaching ethics and professional integrity in the administration schools. Therefore, the study recommended setting up cooperation networks to implement common axes for teaching ethics at the national universities.

The outcomes of the research on the application in management education demonstrate that the drama of economic efficiency is centered on a dysfunctional professional integrity. This chapter provides a sound professional philosophy that empowers professionals to act with integrity, increases the probability for long-term success and professional fulfillment. The chapter offers practitioners, managers, leaders, etc., skills and moral frameworks of professional integrity that can be shared across and within professions, and used to compare and evaluate their professional practice. The results provide also the basis to develop a code of conduct and regulation policies to sustain management education for professional integrity which, can positively impact on business culture through influencing the behavior of key actors.

Professional integrity development

In general, there is a consensus that now a days it is required professionals with the capacity to live and share in harmony with others, sociability, self-control, professional integrity and adaptability in cultural diversity. To develop this type of professional, it is necessary to institute, teach and share with an example the values of the organization to the personnel on the basis of congruence between the word and the action of executives. The
teaching of ethical professional based on the integrity must consider teaching at the university as an educative responsibility to satisfy the professional development programs. The ultimate end of any educative process is that human being achieve its plenitude to be capable to build everyday a more fair and equalitarian society where justice, tolerance and participation and of course, respect to others must prevail over any other interest. Being that, the economic progress will be possible on the behalf of human being integrity.

Personal sustainable development and success requires getting, restoring and maintaining professional integrity. To have, restore and maintain professional integrity behavior for individuals, groups and organizations where it doesn’t exist or it has been diminished requires a development program of professional integrity. As it has been signaled by Battey and Snell (2001) ethics programs must be based on integrity and to go beyond to avoid illegality, to worry for the law, but also to inculcate on the people a personal responsibility for ethical behavior. Ethical problems based on personal integrity, besides the legal aspects consider necessary to inculcate in the student personal responsibility for his/her ethical behavior. Behaviors are manifestations and expressions of a value scale. As Humboldt had said: If we want to have professionals with ethics, we have to teach to be and how to be. Professional development must inculcate the habits of professional integrity, in such a way to create confidence that those habits of professional integrity will be practiced by these same individuals when they become licensed professionals. However, determination to work in an ethical way and to be an integrity person is an individual process. The teaching of professional ethics and integrity is a factor contributed to an elemental human development in the global realm (Kliksberg, 2002 and Etkin, 1993). Professional ethics determine the essential bases of behaviors, to make decisions on the grounds of moral values and professional acts and keep on the relationship with vocation. The business ethics has an incidence in professional integrity. In this way, institutions of higher education must attend the specific needs of professional formation and development that society merits to the aim to guarantee the positioning of professionals in labor markets.

Learning models must integrate a holistic vision of professional managerial integrity formation and development, the institutions of higher education must foster formation and development of professional integrity of organizational administration according to the existent needs, achieving the requests by why they were created. The characteristics of professional integrity as part of the graduate profile of universities must be screened by the mechanisms of personnel selection of organizations and vice versa, according to the environment needs. It is required the existence of a major coordination between business organizations and the university to have an incidence in the formation and development of the managerial cadres in educative institutions as a product of this synchronization.

It has been under the study the need to achieve some changes centered on the formation and development of professional integrity in the professional practice (Rodríguez Ordoñez, 2004). The components of the professional’s
moral integrity and their influence in the development of activities such as the academic formation and how it complements with learned values in the family nucleus which will generate in the professional an indisputable added value. Professional integrity of the manager’s action in the development of competencies and capabilities are related to corporate social responsibility (CSR) that has a fundamental part in corporative governance.

An analysis of professional integrity and values across cultures and their interrelationships to increase or reduce human welfare is a new field of research. In this sense, Managers constantly associated integrity with honesty, merit and fairness but differ with other values. In some training situations penalties for tolerating lapses of integrity may be ameliorated, the same which may be fully enforced in the professional context. However, professional integrity must be so crucial in training situations where the stakes are not too high and some failures may be tolerated.

Some proposals can be implemented in the management teaching programs development addressed to the application of integrity and ethical values at the same level of knowledge, searching for coherent professional behaviors in order to avoid the forced interpretation of normative. Otherwise, when the occasion comes, it allows to treason without scrupulous the spirit of the norm, looking for meeting only the personal interests that nothing have to do with the pretended public interest that is equivalent to collective welfare of a community of persons and institutions served by the professional manager. The point to make here is that trust in his/her objectivity and integrity is vital to sustain the adequate functioning of the organizational activity.

Management’s curriculum must be oriented towards the future and to must be enriched to include student’s development in a systematic and ordered way of attitudes, attributes and personal qualities, such as professional integrity and independence, among others. All of these must be aligned with the concept of integral development, moreover because they are consubstantial to the successful practice of the profession (AICPA, 1980: 16).

**Implications for management education**

Professions exist to serve society’s needs through professionals using morally decent means to provide values and services. Professionals in administration and management must be able to effectively cultivate an image of personal integrity. When integrity-based trust in management professionals is high, organizations that espouse ethical and moral values are more willing to trust more important and crucial responsibilities and activities. The professional ethical principles give substance to different forms of professional behavior included in the actions, such as how to focus justice to human beings, responsibility in performance of professional activities, discretion in information management and honesty in each one of his/her actions.
An individual maintains its professional integrity as long as it remains uncorrupted. Professionals that distort their essential service functions to society toward unreasonable profits, power, or greed, they may lose the trust and respect of their communities. The character-based perspective focusing on concerns about the managerial integrity, suggests that the referent trusted predicts the response or concern toward a specific individual integrity. The negligent professional manager in his/her actions despite that having necessary information to execute his/her functions, expose his/her professional integrity. In the case of conflicting duties, professional integrity tells us that the highest duty is to avoid harming others. Simons (1999:89) “. . . proposes that the divergence between words and deeds has profound costs as it renders managers untrustworthy and undermines their credibility and their ability to use their words to influence the actions of their subordinates.” The manager must have and show absolute mental independence and criteria regarding to any interest, which can be considered incompatible with integrity and objectivity principles that can be affected without an application of autonomous and neutral criteria.

Management’s professional must act with integrity which is achieved taking into account that must be immerse in each one of his/her functions, tasks and components of personal activities. The most important and significant aspects of management’s professional services towards clients, customers and general public, cannot be defined as knowledge and experiences but in less precise terms, such as professional integrity, sense, wise, perception, imagination, circumspection, service to others, professional stability, personal benefits, professional honesty, respect personal dignity, vocation, and so forth. Beyond the technological financial and of any other type aspects, the management’s professional must have as a central axis his action and behavior toward other human beings.

A reconstruction of professional ethics and integrity is necessary to recover credibility and respect of management’s profession. According to the competencies of knowing to be and knowing to share, the attitudes, values, qualities, habits and dispositions imprinted in the citizens and professionals’ character, make managers builders of a better society. Being capable of make sense on managerial knowledge and practices it is expected from personal integrity.

Society provides the necessary resources and opportunities for carrying out the professional integrity functions, the authority to act on its behalf and the autonomy required to provide social trust. Failures of social trust are related to breaches of professional integrity. Violations of the trust based on the relationship and on the authority to act on behalf of the entire society, are serious breaches of professional integrity. To refuse a professional assignment in such a way that breaks faith with all other members of the profession and the social interest, it may be considered a first-order violation of professional integrity. It is the equivalent of a manager to manage or abandoning managerial assignments that can be devastating to and organization and society. Manager’s professional reputation and integrity in his/her relationships to other persons and stakeholder groups are important. The commitment to social welfare and preservation of environment is getting anchored in all managerial and economic fields’ professions.

In conclusion to value integrity as a relevant aspect to individuals, is possible to work effectively for personal goodness and for the common good.
Recommendations for assessing professional managerial integrity in practice must urge the professional managers to consider the prevalence and impact of managerial misconduct. All the professions and management is not the exception, are ruled under social principles of honesty, integrity and collective responsibility that must be developed at the workplace. Integrity and responsibility must be part of the manager’s professional life. This means that a good professional must know his / her legal, labor and entrepreneurial limitations which are aligned with the ethical values that generate a higher level of transparency. The management’s professional is committed to carry on his/her functions with transparency and integrity generating a better quality of life.

It is necessary to promote a managerial culture to rescue the values and the attention to human being as a key factor to have organizations that every day achieves higher levels of development and productivity.

It is necessary to strengthen and consolidate plans and programs on management study with the ethical and human formation either in the teaching of specific courses strengthen them with the action of academic and administrative authorities.

Future research on professional and managerial integrity could conduct a more anthropological study and collect not only quantitative assessments but also qualitative assessments.

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International Trade and Capital Flows as the Sources of the Nations Poverty or Richness

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Abstract

This paper analyses how international trade and capital flows influence the economic situation and the social life level in the particular countries. Some high developed countries use their foreign trade and exchange rates to establish and maintain their richness. Rich states have a strong position in relations with transnational corporations. Poor countries need an international help and their own responsible economic politics to control their foreign trade and capital flows in the aim to come through the poverty.

Keywords: poverty, richness, international trade, exchange rates, capital flows, less and high developed countries.

1. Introduction

A problem to alleviate a poverty and to achieve a richness is old like the world. However, the globalization processes on the one way conduct to the poverty of many countries and societies but on the other they create opportunities to obtain the richness. Therefore, there is necessary to know the globalization. Mawdudur Rahman and Nargis A. Mahmud “argue that knowledge globalization is a utilitarian theory, because in the sphere of generating and sharing knowledge one should take interests of others into consideration and the outcome should positively contribute towards creating social, economic, and political good” (Rahman and Mahmud, 2008). In this paper I consider two important aspects of the globalization, i.e. the international trade and capital flows in the aim to explain their importance for the nations poverty and richness.
2. International trade of high developed countries. Importance of exchange rates

Many high developed countries have deficits on their foreign trade balance. It means that there is not any rapid transition from the foreign trade deficit to the poverty of the state. However, it means a life on credit of many states that must conduct to the poverty in a longer time. There is no solution to say that we can produce nothing because we can buy everything in China, Japan and in emerging countries. The economic crisis and the recession in 2008-2009 and the instable recovery in 2010 conducted to a drop of incomes of many people in high developed countries. Moreover, the revolts in Arab countries in 2011 caused the fourth oil shock (the first oil shock was in 1973-1974, the second oil shock was in 1979-1980 - Coffey, 1974, Ickenberry (ed.), 1988; the third oil shock was in 2007-2008 - Staszcak, 2009, Staszcak, 2011). The fourth oil shock causes a growth of inflation, impedes the economic growth and can cause a return of the global recession. The catastrophes in Japan, Brazil, Australia and in other countries caused big economic problems, including the fast growth of food prices. Many countries are in debts and they have budget deficit and deficit on balance on current account including deficit on balance on foreign trade.

Growing limitations of opportunities to live on credit forced interventions of the U.S.A and some other countries of the ideological West to improve their foreign trade balance. In this aim there is necessary to improve the price or quality competitiveness of commodities made in these countries. During the recession or the instable recovery and a lower global demand connected with lower incomes of many groups of people the most important competitiveness should concern the prices.

The global price competitiveness usually are realized by a depreciation of currencies. Exchange rates are the tools of so-called currency war (Forex, 2010, Morici, 2010, Soros, 2010). Influences of exchange rates on foreign trade of the U.S.A., euro area countries, China and Japan are illustrated below.

2.1. Exchange rates

The U.S. dollar strengthened versus euro in 1999-2001, i.e. during the period of euro virtual currency since 1.0653 to 0.8952 dollars per euro. Next, dollar weakened in comparison to euro since 0.9454 to 1,4726 in 2001-2008. Subsequently, dollar exchange rate rose versus euro in 2009 again. However, in quarterly view, there is interesting fact that dollar strengthened rapidly and strongly in the third and fourth quarters of 2008 and in the first quarter of 2009 until 1.3035 dollars per euro. Dollar exchange rate slid versus euro in the next three quarters of 2009 (until 1.4762 in the fourth quarter of 2009). Dollar strengthened versus euro again in first and second quarters of 2010 (until 1.2740 in second quarter of 2010) and weakened in again in third and fourth quarter of 2010 (until 1,3586 in fourth quarter of 2010), (Table 1).
Table 1. Exchange rates of major currencies of the world versus the U.S. dollar in March 1973 and 1990-2010

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<th>Germany (mark)</th>
<th>China P.R. (yuan)</th>
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<td>Value</td>
<td>4.7921</td>
<td>5.3337</td>
<td>5.5206</td>
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| Value| 145.00 | 134.59 | 126.78 | 111.08 | 102.18 | 93.96 | 108.78 | 121.06 | 130.99 | 113.73 |

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| Value| 107.80 | 121.57 | 125.22 | 115.94 | 108.15 | 110.11 | 116.31 | 117.76 | 103.39 | 93.68 |

| Value| 93.78 | 93.78 | 93.78 | 93.78 | 93.78 | 93.78 | 93.78 | 93.78 | 93.78 | 93.78 |
Note:*EMU (European Monetary Union) includes countries which introduced euro, i.e. Austria, Belgium, France, Finland, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain in 1999, Greece in 2001, Slovenia in 2007, Cyprus and Malta in 2008, Slovakia in 2009 and Estonia in 2011. Euro was introduced in electronic version in 1999 and in banknotes and coins in 2002.

**Euro is in the counter showing, i.e. a volume of the U.S. dollars per one euro.


Chinese yuan also known as the renminbi was depreciated strongly since 5.7795 in 1993 to 8.6397 yuans per U.S. dollar in 1994. Since 1995 yuan is slowly appreciated until 6.7696 yuans per U.S. dollar in 2010 (Table 1).

Japanese yen was depreciated since 93.86 in 1995 to 130.99 yens per U.S. dollar in 1998. Yen was appreciated since 113.73 to 107.80 yens per U.S. dollar in 1999-2000 (in spite of the appreciation of the U.S. dollar versus euro in the same time). Yen was devalued versus dollar since 121.57 to125.22 in 2001-2002 and yen was appreciated again since 115.94 to 110.11 in 2003-2005. The next small depreciation of yen versus dollar was in 2006-2007 since 121.57 to125.22 in 2001-2002 and yen was appreciated again since 115.94 to 110.11 in 2003-2005. The next small depreciation of yen versus dollar was in 2006-2007 since 116.31 to 117.76. The last appreciation of yen against dollar was in 2008-2010 since 103.39 to 87.78 (in spite of the fact that U.S. dollar strengthened versus euro in 2009-2010), (Table 1).

Another interesting fact concerns appreciation the U.S. dollar versus euro in 2009 and in the first half of 2010. However, dollar was depreciated versus yuan and yen in the same period (table 1). It was connected with big debts of the U.S.A. in China and Japan (Camposagrado 2009). Therefore, there were not any fundamental basis to appreciate dollar in the long period. However, systematic depreciation of dollar could touch to the exclusion of dollar from its position of the major currency in the world monetary system.

2.2. U.S. external trade in goods

The U.S. total exports of goods rose significantly since 650 billion euro until 817.2 billion euro in 1999-2001, i.e. during the period of strengthening dollar. It confirmed a high competitiveness of the U.S. economy which export rose in spite of stronger currency. However, the U.S. exports dropped in the first part of the weak dollar until 639.7 billion euro in 2003. This fact showed a low competitiveness of American economy. Next, there was a growth of the exports in the second part of the weak dollar period in 2004-2008 since 657.5 billion euro until 883.8 billion euro. The similar trend was in the U.S. exports during the period of weakened dollar in 2001-2008 according to data showed in dollars. The exports dropped in 2001-2002 since 730.3 billion dollars to 696.3 billion dollars and the
exports rose in 2003-2008 since 728.2 billion dollars to 1304.9 billion dollars. It meant that the U.S. economy was not so strong if it needed a weak currency to rise its exports. The last growth of dollar exchange rate in 2009 was unprofitable for the U.S. exports which dropped until 757.6 billion euro (1068.5 billion dollars). The U.S. exports growth again in two quarters of 2010. (Eurostat, 2011, Economic, 2011). This occurrence confirmed the thesis about a relative weakness of the U.S. economy.

The U.S. total imports in goods rose significantly since 993.8 billion euro until 1317.6 billion euro in 1999-2001, i.e. during the period of strengthening dollar. The strong dollar promoted a growth of imports because foreign commodities were cheaper for American customers. Next, the U.S. imports dropped to 1153.7 billion euro in 2003 and it was connected with the weakening dollar. However this imports rose since 1226.2 billion euro to 1528.3 billion euro in 2004-2006 in spite of the lower dollar exchange rate versus euro. This fact proved a import dependency of American economy. Next, the imports dropped again to 1471.8 billion euro in 2007 and it was stable in 2008. It confirmed that a weak dollar made foreign goods too expensive for the U.S. customers. The recession in 2008 also was not favourable for purchase of imported commodities. A different trend was in American imports during the period of weakened dollar in 2001-2008 according to data indicated in the U.S. currency. The U.S. imports rose each year of this period since 1152.2 billion dollars to 2139.5 billion dollars. It means that American customers paid higher prices in dollars for foreign products which was connected with a weakness of their currency.

The next important drop of the U.S. imports to 1575.4 billion euro was in 2009 and it was connected with the rising U.S. dollar exchange rate versus euro and with the deepening economic recession simultaneously. The growth of the U.S. imports was indicated in two quarters of 2010 (Eurostat, 2011, Economic, 2011). A lower demand caused by a growth of unemployment and rising prices of foreign goods connected with the weak U.S. dollar were not favourable for imports in 2009.

**Table 2. External trade balance (in billion euro)**

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
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<tbody>
<tr>
<td>Euro area-16</td>
<td>26,02</td>
<td>-29,49</td>
<td>38,15</td>
<td>90,88</td>
<td>63,65</td>
<td>65,09</td>
<td>7,04</td>
<td>-19,06</td>
<td>11,66</td>
<td>-</td>
<td>20,32</td>
</tr>
<tr>
<td>Austria</td>
<td>-4,94</td>
<td>-5,07</td>
<td>-4,33</td>
<td>0,40</td>
<td>-2,11</td>
<td>-1,23</td>
<td>-1,72</td>
<td>-0,37</td>
<td>0,43</td>
<td>-2,04</td>
<td>-4,15</td>
</tr>
<tr>
<td>Belgium</td>
<td>13,46</td>
<td>11,76</td>
<td>13,05</td>
<td>18,84</td>
<td>18,27</td>
<td>1708</td>
<td>12,62</td>
<td>12,03</td>
<td>14,15</td>
<td>3,76</td>
<td>12,83</td>
</tr>
<tr>
<td>France</td>
<td>9,17</td>
<td>-12,27</td>
<td>-5,84</td>
<td>2,60</td>
<td>-6,01</td>
<td>-15,14</td>
<td>-32,71</td>
<td>-36,68</td>
<td>-49,32</td>
<td>-69,52</td>
<td>-53,84</td>
</tr>
</tbody>
</table>
Knowledge Globalization Conference, Boston, October 16-17, 2011

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>27.43</td>
<td>26.10</td>
<td>25.17</td>
<td>32.18</td>
<td>22.51</td>
<td>25.80</td>
<td>81.99</td>
<td>141.35</td>
<td>192.59</td>
<td>202.70</td>
<td>140.58</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>343.82</td>
<td>517.26</td>
<td>501.42</td>
<td>538.35</td>
<td>514.04</td>
<td>568.67</td>
<td>665.53</td>
<td>702.43</td>
<td>623.56</td>
<td>588.07</td>
<td>390.87</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>336.31</td>
<td>446.23</td>
<td>421.98</td>
<td>475.34</td>
<td>541.54</td>
<td>665.63</td>
<td>783.80</td>
<td>839.46</td>
<td>823.19</td>
<td>834.65</td>
<td>506.94</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>100.97</td>
<td>107.82</td>
<td>60.37</td>
<td>83.66</td>
<td>78.27</td>
<td>88.84</td>
<td>63.56</td>
<td>53.89</td>
<td>67.19</td>
<td>12.84</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>

The U.S. foreign trade balance in goods is negative in the whole examined period 1999-2009. The minus balance increased since -343.8 billion euro (-336.3 billion dollars) to -501.4 billion euro (-421.9 billion dollars) in 1999-2001, i.e. during the period of the strengthened U.S. dollar. These facts confirmed a low competitiveness of the U.S. economy which need a lower currency to improve the balance on external trade. However, the negative balance rose again to -538.3 billion euro in 2002 in spite of the U.S. dollar depreciation. Next, the negative balance dropped slightly to -514 billion euro in 2003. However, it rose again since -568.7 billion euro in 2004 to -702.4 billion euro in 2006 when dollar exchange rates dropped. It shows that the weak dollar is not enough to improve the U.S. negative trade balance. A drop of the negative balance since -623.5 billion euro to -588.1 billion euro was in 2007-2008 which could be connected with the U.S. dollar weakness and with the recession in the U.S. economy simultaneously. A negative balance of commerce was in this period 2001-2008 presented in the U.S. dollars. However the negative balance rose since -422.0 billion dollars to -839.4 billion dollars in 2006 in spite of dollar depreciation. The negative balance decreased to -823.2 billion dollars in 2007 and increased slightly to -834.6 billion dollars in 2008, i.e. also during dollar depreciation. The big drop on the negative U.S. balance on foreign trade to -390.9 billion euro (-506.9 billion dollars) was in 2009 in spite of a growth of dollar exchange rate (table 2). It was connected with the big U.S. economic recession and decrease of internal demand. Therefore, there was a bigger drop of the U.S. imports than exports. The next growth of the U.S. negative balance was indicated in first and second quarter of 2010 and amounts to -151.3 billion dollars and -169.6 billion dollars and it was connected with the U.S. dollar appreciation versus euro (Eurostat, 2011, Economic, 2011). Moreover, systematically negative balance on the U.S. foreign trade confirmed a low competitiveness of American economy. The foreign trade is not a source of the U.S. richness. However, this balance was positive until the 1970s (Economic, 2001) and it was a source of American richness.

2.3. Euro area external trade in goods

Euro area includes 17 of 27 countries of the European Union (see notices under table 1). European Union had the negative balance on external trade in 1999-2009. The euro area had better balance on external trade, i.e. the positive balance (except 2000, 2006 and 2008) in this period (table 2). European Union includes higher and less developed countries (Staszczak, 2011). The same situation concerns the euro area. Nowadays, some countries of euro zone, i.e. Greece, Ireland, Portugal and Spain are near to the bankruptcy. However, in this paper, all countries of euro area are considered in the part of the high developed countries because they are included to the single-currency bloc within the framework of the European Monetary Union (EMU). Three other countries (Andorra, Kosovo and Montenegro) use euro but they are not allowed to mint this currency. Moreover, three states which are no members of the European Union mint euro coins as follows: Vatican, San Marino and Monaco.
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The euro area (including 16 of 17 countries of EMU, i.e. without Estonia) total exports of goods rose since 814.8 to 993.1 billion euro during the period of weakening euro in 1999-2000. Next, the total exports rose since 1053.5 to 1074.6 billion euro in 2001-2002, and it dropped slightly to 1050.3 in 2003, and increased again since 1145.7 billion euro to 1560.6 billion euro in 2004-2008, i.e. during the period of the growth of euro exchange rates versus the U.S. dollar in 2002-2008 and including the beginning of the global recession in 2008. It confirmed a relatively high competitiveness of the euro zone which does not need weak currency to increase export. However, the exports dropped in to 1276.4 billion euro in 2009 when the global recession deepened in spite of weakening euro (Eurostat, 2011). It means that a drop of euro exchange rate versus dollar was not enough to maintain the exports of euro countries during recession. The global and especially American lower demand was more important and negative factor influencing the euro area exports.

The total imports in goods of the euro area (including 16 countries) rose since 788.8 billion euro to 1022.6 billion euro in 1999-2000 when euro exchange rates dropped versus the U.S. dollar. Next, the imports decreased since 1015.4 billion euro to 983.7 billion euro in 2001-2002. However, the imports increased again since 986.6 billion euro to 1611.8 billion euro in 2003-2008 also in the period of strengthening euro. It meant that the strong euro was favourable for the growth of imports because foreign products were cheaper for customers in the euro zone. The imports fell again to 1256.1 billion euro when euro weakened in 2009 (Eurostat, 2011). It could be connected with the growth of prices of foreign products and with the global economic crisis simultaneously.

The trade balance of 16 countries of euro area was positive and amounted to 26.0 billion euro in 1999 and it was negative amounting to -29.5 billion euro in 2000 in spite of decreasing euro in this period. Positive balance returned in 2001 and it amounted to 38.1 billion euro and it rose strongly to 90.9 billion euro in 2002 in spite if increasing euro exchange rates against dollar. Next, it fell strongly to 63.6 billion euro in 2003. The trade balance rose slightly since 65.0 billion euro in 2004 and dropped strongly to 7.0 billion euro in 2005. The negative balance amounting to -19.1 billion euro returned in 2006. Next, the positive balance amounting to 11.7 billion euro came back in 2007. The next negative balance amounting to -51.2 billion euro was in 2008 and it could be connected with the growth of euro exchange rates and with the global recession together. In conclusion, the strengthening euro had not too big negative influence for the trade balance of euro area in 2001-2002. Later, the strong euro stopped the growth of positive balance and contributed the negative balance. The positive balance returned and amounted 20.3 billion euro in 2009 when euro weakened in spite of the global economic recession (table 2). This fact confirms that weak euro was helpful for the return of the positive trade balance and for the maintenance of the richness by the euro area net exporters.
2.4. External trade in goods of euro area net exporters

The net exporters of euro area are the following countries: Germany, Netherlands, Ireland, Belgium and Finland. A positive trade balance of Germany dropped since 65.2 billions euro to 59.1 billions euro in 1999-2000 in spite of weakening euro period. It rose since 95.5 billions euro to 194.2 billions euro in 2001-2007 (except a low drops in 2003 and in 2005) in spite of strengthening euro period (since 2002). It fell since 177.5 billions euro to 134.8 billions euro in 2008-2009, i.e. during the global recession and in spite of weakened euro versus dollar in 2009. Negative influences on trade balance of recession connected with strengthening euro was in 2008 only (table 2). German exports increased since 510.0 billions euro to 983.2 billions euro in 1999-2008 in spite of strengthening euro in 2002-2008 and it decreased to 807.5 billions euro in 2009 in spite of weakening euro this year. A similar trend was in German import which rose since 444.8 billions euro to 805.7 billions euro in 1999-2008 (except a drop in 2002). It dropped to 672.7 billions euro in 2009 in spite of weakening euro (Eurostat, 2011). The above mentioned facts confirm that Germany have a strong and competitive economy which can obtain a growth of exports and of positive trade balance in spite of strengthening euro. The global recession has bigger negative influence on German trade balance than euro exchange rates versus dollar.

A similar situation was in Netherlands which positive trade balance rose since 11.6 billion euro to 42.4 billion euro in 1999-2007 and it dropped to 38.7 billion euro in 2008 and slowly rose to 39.2 billion euro in 2009 (table 2). There was also bigger influence of the global recession than euro exchange rates on Dutch trade balance. However, the weakening euro in 2009 had a positive influence on Dutch commercial balance even during the global recession.

A positive trade balance of Ireland rose since 22.9 billion euro to 34.5 billion euro in 1999-2004 and it drop since 33.0 to 27.5 in 2005-2007 and rose again since 28.3 billion euro to 37.7 billion euro in 2008-2009 (table 2). It meant that the global recession had a positive influence on Irish trade balance in spite of the enormous budget deficit of this country. Moreover, a weakening euro in 2009 was helpful to reduce Irish imports and to growth positive trade balance in spite of a drop of Irish exports simultaneously. The global crisis could cause lower internal demand and lower costs of work which was positive to improve a price competitiveness of Irish commodities.

A positive trade balance of Belgium amounting to 13.4 billion euro in 1999 dropped to 11.7 in 2000. It increased since 13.0 billion euro to 18.2 billion euro in 2001-2003 in spite of the strengthening euro. Next, it decreased since 17.0 billion euro the strengthening euro to 12.0 billion euro the strengthening euro in 2004-2006 and this situation could be connected with strengthening euro. It rose again to 14.1 billion euro in 2007 but it drop drastically to 3.8 billion euro in 2008. This situation could be connected with the global recession and strengthening euro.
simultaneously. However, Belgian trade balance rose sharply to 12.8 billion euro in 2009 in spite of the global recession (table 2). A weakening euro had dominating positive influence on Belgian trade balance in 2009.

A positive trade balance of Finland rose since 9.5 billion euro to 12.6 billion euro in 1999-2000 and it could be connected with a weakening euro which improved a price competitiveness of Finnish products. The positive trade balance dropped since 11.8 billion euro to 5.4 billion euro in 2001-2005 and it could be connected with strengthening euro which reduced a price competitiveness of Finnish products. The positive trade balance increased lowly to 6.2 billion euro in 2006 but it decreased drastically since 6.1 billion euro to 1.4 billion euro in 2007-2009 (table 2). Such a situation could be connected with the global recession and a dropping price competitiveness of Finnish commodities because of strengthening euro. This currency exchange rates dropped versus dollar in 2009 but negative influences of the global recession on Finnish foreign trade was higher than a positive influence of weakening euro.

2.5. External trade in goods of euro area net importers

The net importers of euro area are the following countries: France, Spain, Greece, Portugal, Italy, Austria, and Luxembourg. The new euro countries, i.e. Slovenia (since 2007), Cyprus (since 2008), Malta (since 2008) are net importers too. Slovakia which introduced euro in 2009 was net importer until 2008 but this country obtained a positive trade balance in 2009. Estonia that introduced euro in 2011 is also net importer (table 2).

France obtained a positive trade balance amounting to 9.2 billion euro in 1999 and a negative trade balance amounting to -12.3 billion euro in 2000 in spite of weakening euro. It was caused by a small growth of export which could be connected with the recession in the U.S.A. in third quarter of 2000 and in first, second and third quarters of 2001. French negative trade balance was reduced to -5.8 billion euro in 2001. Next, France obtained a positive trade balance amounting to 2.6 billion euro in 2002 in spite of strengthening euro. However, French negative trade balance rose since -6.0 billion euro to -67.7 billion euro in 2003-2008. It was connected with higher growth of French imports than exports (Eurostat, 2011) which could be connected with strengthening euro. The negative balance reduced to -53.8 billion euro in 2009 (table 2) and it was connected with weakening euro and with the global recession simultaneously. This situation proves a low competitiveness of French economy which need weak euro exchange rates to improve trade balance.

A similar situation in Spain, Greece, Portugal, Italy, Austria, and Luxembourg proves a low competitiveness of these economies which need weakening euro exchange rates and recession to improve their trade balance.

2.6. External trade in goods of China

In my opinion China is nowadays the high developed country. The name emerging market for the biggest net exporter over the world would be the error. Chinese positive balance on foreign trade dropped since 27.42 billion
euro to 25.17 billion euro in 1999-2001. It was increased with the fact that imports increased faster than exports in this period. This positive balance rose to 32.17 billion euro in 2002 and it dropped again too 22.51 billion euro in 2003. This positive balance drastically rose again since 25.80 billion euro to 202.70 billion euro in 2004-2008. The crucial year was 2005 when Chinese trade balance amounting to 81.99 billion euro exceeded Japanese balance amounting to 63.56 billion euro. Next crucial year was 2008 when Chinese positive balance on foreign trade amounting 202.70 billion euro exceeded German trade balance amounting 177.52 billion euro. Since 2008 China is the biggest net exporter over the world (table 2). Chinese growing exports and power in the global trade was established during the slowly appreciated Yuan versus U.S. dollar.

However, in the one way, the biggest competitiveness of Chinese economy is connected with the relative low labour costs in this country but on other way there is a growth of earnings in China. Chinese balance of foreign trade dropped to 140.58 billion euro in 2009 (table 2) because of the global recession that impeded the foreign demand for Chinese products. However, China is still the biggest net exporter over the world (table 2). Therefore, the foreign trade is a Chinese way from the poverty to the richness.

2.7. External trade in goods of Japan

Japan was the biggest net exporter over the world 2000 and its positive foreign trade balance rose since 100.97 billion euro in 1999 to 107.82 billion euro in 2000 in spite of yen appreciation against the U.S. dollar in this period. However, this positive trade balance fell to 60.36 billion euro in 2001 in spite of yen depreciation. Then Japan forfeited its first position between the global net exporters. Germany obtained the leadership. Japanese positive commercial balance increased to 83.65 billion euro in 2002 during yen depreciation. Japanese balance dropped again to 78.17 billion euro in 2003 during yen appreciation. Japanese balance grew again to 88.84 billion euro in 2004 (table 2) in spite of yen appreciation.

However, Japanese positive foreign trade balance fell since 63.56 billion euro in 2005 to 53.89 billion euro in 2006. Chinese positive net balance exceeded Japanese balance in 2005 and Japan withdrew for the third position of the world net exporters. The appreciation of yen until2005 could contribute to this situation. The positive balance on Japanese foreign trade increased again to 67.19 billion euro in 2007. However, the positive balance on Japanese foreign trade fell drastically to 12.83 billion euro in 2008 (table 2) during the yen appreciation. Japan used the foreign trade to establish its richness. However, Japanese international trade competitiveness was reduced last time.

2.8. Importance of foreign trade in goods of the high developed countries to establish or maintain their richness.

Exports of the euro area (including 16 countries) rose in spite of strengthening euro versus dollar in 2001-2008 (except 2003) but U.S. exports needs lower dollar to increase in 2004-2008 according to data showed in euro (in
2003-2008 according to data indicated in dollars). It confirmed a higher competitiveness of the euro zone economy than the U.S.A.

A similar conclusion can be find in analysis of imports. Imports of euro area rose in 1999—2000 when euro dropped and this imports fell in 2001-2002 in spite of the fact that euro strengthened (since 2002). Next, the euro area imports increased when euro strengthened. The strong U.S. dollar was favourable for American imports growth in 1999-2000 and the weakened dollar (since 2002) was favourable for American imports drop until 2003 and it stopped this imports growth in 2004-2008 (in 2001-2008 according to data indicated in dollars). These facts confirms a thesis that euro area is more competitive than the U.S.A.

The euro exchange rates versus dollar influence significantly on balance on foreign trade of most net exporters from euro area. However, the influence of the global recession on trade balance is more important. Moreover, German economy is almost independent from euro exchange rates. However, the global recession influences German trade balance negatively. The euro exchange rates versus dollar influence significantly on balance of trade of most net importers from euro area. This fact confirms a low international competitiveness of net importers economies which need weak euro and recession simultaneously to improve their trade balance.

An insufficient demand during the global recession in 2009 caused a drop of the U.S. and euro area exports and imports. It confirmed that the global recession which caused a lower demand in the U.S.A. and in the euro zone was more important factor than exchange rates for the both economies.

China is the biggest net exporter over the world in spite of the slow appreciation of yuan. It is possible because of still relatively low labor costs in China compares to the U.S.A., Europe and Japan. Moreover, the living standard in China has improved strongly. Therefore, according to my point of view, China is a high developed country. The historical political geography that includes only ideological West to the high developed countries is not correct in the contemporary world. It is a very important question because the Chinese way from poverty to richness can be the example for other countries. The economic growth of China was possible because of its excellent economic politics of relatively low yuan exchange rate and of capital flow control. It was not connected with any foreign help. However, the Chinese political system disagrees with the economic reforms in this country. Therefore, social revolts are possible and a stability of this country is not sure in the longer period.

The United States tried to push China to appreciate yuan (Soros, 2010) but without result. It was a classic conflict of national interests and opinions about a possibility to recover the global economy. A stronger yuan is probably necessary and China appreciates its currency slowly. A big and fast appreciation could collapse the positive balance on Chinese foreign trade. Therefore, China is wary of yuan appreciation in case it can disturb its way for the richness. However, the U.S. dropping dollar reduces Chinese assets nominated in this currency. Therefore, China is interested to sustain the U.S dollar exchange rates, for instance in 2009 and in the middle of 2010. Moreover, China
tries to dispose of the U.S. dollars in the longer time and to invest in gold and in other assets (Chu, 2009). President of the China’s People Bank Zhou Xiaochuan suggests to change the U.S. dollar for other international currency (Gielda, 2010).

A foreign trade is a source of the Chinese, German and Japanese richness (this situation in Japan can be changed after the catastrophe in atomic power station in March 2011). It was also a reason of American, British and French richness. However, the present balance on foreign trade is negative for these countries. Therefore, there are presented some ideas to solve this problem. The most radical and unacceptable proposal to improve the U.S. foreign trade balance was presented by Peter Morici who wanted to tax the purchase of yuan, yen and euro for import of goods (Morici, 2010). It was the next example of a conflict of interests among the high developed countries about the richness from the international trade.

3. International trade of less developed countries

Many less developed countries have the negative balance on foreign trade that is connected with their negative terms of trade in raw materials (except strategic oil, uranium, etc.) and unprocessed agricultural products compares to the positive terms of trade in high or medium technology goods of other countries. It means that the poor countries from Africa, Asia and Latin America must export more and more their products in the aim to import the same volume of high technology goods. The growing poverty is a characteristic problem of these countries.

It is the old problem and its solution requires a responsible economic policy of these countries (i.e. a protection of internal producers, a relatively low taxes interesting for internal and foreign capital and a control of capital flows) and a foreign economic help. The attempt to solve the poverty problem was the declaration about the New International Economic Order (U.N. Declaration, 1974). However, most of its assumptions have not been realized. Especially, the high developed countries of the “ideological West” were not interested to help and to improve terms of trade of the less developed countries.

The poor countries have usually low exchange rates and a cheap labour force but market-prices for their commodities (for instance bananas) are to low. A foreign trade of the less developed countries gives them low incomes and negative terms of trade. Therefore, the foreign trade of these countries is a source of their poverty and they have no opportunities for the high economic growth.

These countries are usually in the big debts which stunt their development, for instance Guinea-Bissau is one 32 states included to the Enhanced Initiative for Heavily Indebted Poor Countries by International Development Association (of the International Monetary Fund and the World Bank) and by African Development Bank. Such countries can obtain a debt reduction to 150 percent of export and other debt relief under the Multilateral Debt Relief Initiative (Guinea-Bissau, 2010). However, in spite of such program, the poor countries are still poorer and poorer.
The international help for these countries is necessary but a belief that an external economic help can solve all the Third World’s problems is usually unrealistic.

In spite of formally existing the New International Economic Order many poor countries are forced to liberalize their foreign trade according to informally existing the liberal international economic order (i.e. the rules and norms of the global market economy including the world monetary and trade system), (Kegley and Wittkopf, 1989) that is maintained by the collective global hegemony of power-states and transnational corporations. This global hegemony uses some international organizations and institutions (for instance World Trade Organization, International Monetary Fund and World Bank) to extort the conformity of the liberal norms from less developed countries (see Staszcza, 2011).

Isolda Agazzi argues “that trade liberalization will bring about growth employment and development for the poorest countries.” She believes in free market opportunities and she criticizes Aileen Kwa, the coordinator of the trade and development program at the South Centre in Geneva and Mohammad Abdul Hannan, Bangladesh’s ambassador and coordinator of the least developed countries group at the WTO for their critical position on a reduction of tariffs by poorest states in Doha Development Round. Least developed countries are not enforced to reduce their tariffs for industrial commodities and fisheries. However, this problem concerns some least developed countries which are members of customs unions together with larger developed countries, for instance the Economic Community of West African States (ECOWAS). According to future agreements of these unions within the framework of Doha Development Round their poorest member-states can be embraced to zones of reduced tariffs (Agazzi, 2011).

However, in my opinion, the poorest states should not agree for to fast trade liberalization. A relatively free trade is profitable for competitive economies but it is unprofitable for the poorest countries, for instance China has established its richness by slowly opening its economy and by the central control of the results of the economic reforms. Poor countries should also control their foreign trade in the aim to make it profitable for their economies.

Another problem is an unsteady distribution of incomes in many poor countries. There is usually a little rich class and an enormous poor class. Moreover, the unstable political situation is also big problem which impede a poverty reduction.

4. Global capital flows

The global capital flows can be understood as foreign direct investments (FDI) including so-called green fields (i.e. constructions of new plants) and cross-border mergers and acquisitions of corporations. Other kind of the global capital flows are so-called wallet or volatile financial investments, i.e. acquisitions of foreign stocks and shares. This kind of the capital flows has mostly speculative character and it is usually unprofitable for states because of the opportunities to deregulate their economies. In contrast, FDI have usually more stable character.
Capital flows have positive or negative influences on social incomes in particular countries which depend on the power of states and corporations and on forms of the investments. High developed countries have a strong position which is usually equal according to the force but different according to the quality with transnational corporations. The force of corporations is usually not connected with their military power (that is characteristic for states) but it is connected with their economic power and marketing influences on societies in many countries. The force of state-powers, except the military force, is usually connected with a big customer and investment demand of their societies. Therefore, on the one way, corporations which look for markets for their products are depended on these countries. In other way, the ruling and opposing politicians in democratic strong states depend on corporations which usually pay for their political marketing, especially for their election campaigns (see Staszczyk, 2011).

More independent position in relations with transnational corporations has China because its politicians need not corporate payments for their election campaigns. Therefore, China is interested in growth of its control over capital flows in the aim to reduce the internet-based speculations on foreign exchanges and abnormal cross-border capital flows of foreign private banks (Xinhua, 2010). In spite of this situation FDI do not get away from China because of a big importance of this country in the global economy. China was the second (after the U.S.A.) country of destination of FDI in 2009 and it edged up from the third place in 2008. Moreover, China was the sixth and Russia was the seventh state of source of FDI and they invested 48 billion dollars and 46 billion dollars in 2009 (Lynn, 2010). The growth of China’s importance in the world economy was confirmed by the World Bank which “buttressed the argument made by China and others that U.S. policies are sending a wave of cash flowing into higher-yielding emerging markets, undermining their export competitiveness and pumping up inflation and assets bubbles” (White and Christie, 2010). China has a strong position in its relations with so-called ideological West and with transnational corporations that are supported by the U.S.A. and the strongest Western European states.

The less developed countries have much worse position un their relations with transnational corporations. Some countries which have expansive raw materials (for instance diamonds) are disturbed by civil wars which are sometimes supported by transnational corporations, for instance the Democratic Republic of the Congo (former Zaire) and Liberia. Such a situation conducts to the poverty of their societies. The worst position have countries that have not any rare raw materials. These countries have a big problem of poverty of most parts of their societies. Their gross national product (GNP) is often lower than turnovers of transnational corporations. Poor countries have usually enormous disproportions in distributions of incomes between various classes of their societies. There are usually a rich class living in the highest world level and a poor class living under the official level of the poverty. Such countries need FDI in the aim to alleviate the poverty of their societies.

Many developing countries rely on FDI to finance their economies. According to UNCTAD prognosis, FDI will rise from 1.2 trillion dollars in 2010 to 1.3-1.5 trillion dollars in 2011 and to 1.6-2.0 trillion dollars in 2012 (Lynn,
However, investments withdrawn from poor countries can cause the poverty of their societies again. It is also a problem of a lack of the corporations social responsibility. Moreover, these countries are usually not able to control capital flows (in contrast to China) because of their big dependency on the foreign capital and because of the political pressure of state-powers. Therefore, a control of capital flows should be agreed on the international level.

Güler Aras and David Crowther claim that corporations must realize their social obligation (not only the corporate social responsibility) in the aim to survive. Their broadest definition of the social responsibility of corporations says about “the relationship between the global corporation, governments of countries and individual citizens.” A shorter and local definition says about “the relationship between a corporation and the local society in which it resides or operates.” They take a point of view that corporations respond to social needs. They show examples of the regulations of the corporate social responsibility in the European Union. However, they also claim rightly as follows: “The essential point is that compliance is voluntary rather than mandatory …”. They also find an example of Enron’s bankruptcy that denies their “faith in both financial markets and corporate behavior” (Aras and Crowther, 2008). Mahabir Narwal and Tejinder Sharma present the less optimistic point if view as follows: “Moreover, liberalization of economy has reduced the regulatory framework imposed by the state. In this kind of economy, society takes a positive as an skeptic view of corporate social responsibility activities and expect a responsible and ethical behavior from the corporation.” (Narwal and Sharma, 2008).

Of course those corporations satisfy many natural social needs. There are also transnational corporations which realize the corporate social responsibility. However, in my opinion many corporations prefer the global economic marketing against the social responsibility. It is possible because of the fact that corporations usually finance election campaigns of major ruling and opposing parties and politicians. Therefore, democratic states do not control the corporate activities enough regardless of election results. Transnational corporations look for profits mostly and take advantage of a limitation of state control. Therefore, corporations use marketing to create unnecessary social needs which are satisfied by credits of banks. Marketing is a tool of corporations and politicians and it is often used to influence the societies. In my opinion a marketing serves to realize the interests of corporations and politicians more than to satisfy the social needs.

A lack of social responsibility of banks (i.e. these kinds of corporations) that was connected with their bad management and a lack of enough state control conducted to the global economic crisis and recession in 2008-2009. It was connected with bad credits which were secured by real estates. However, the prices of real estates fell and many banks bankrupted. Another example of bad management and a lack of state control was Enron. These facts confirm a lack of the social responsibility of many corporations including banks. The same facts prove also an existence of the collective global hegemony of states and transnational corporations that subordinates weaker countries and influence the societies over the world, i.e. in poor and rich countries.
The biggest transnational corporations obtained a big power and transferred from economic to political factors in the 1990-ies. The state-powers, especially from the ideological West, support usually transnational corporations in the aim to common stabilize the global system. However, corporations including banks caused the global crisis and recession in 2008-2009. It confirms the fact that the strongest states and corporations have a big problem to stabilize the global system enough. Less developed countries are dependent on the collective global hegemony of state-powers and transnational corporations, according to the state-corporation hegemonial stability theory that is connected with the new paradigm of the global economy, i.e. the global political-economic spiral (see Staszczak 2011, Staszczak 2002).

Therefore, independent activities of less developed countries are limited and they need the economic help from high developed states (i.e. both food deliveries and a construction of infrastructure for the further economic growth). They need also the international agreement concerning control of capital flows and activities of transnational corporations. Sometimes these countries need a help to establish their political stability. However, such a help is often a method of the strongest sates and corporations to exploit other countries (for instance the U.S. corporations exploit oil in Iraq). Weak countries need also more independent and responsible their own economic politics and social activity. This aim should be realized by the educational help of all high developed states. It is also necessary to realize the presumptions of the U.N. Declaration on the Establishment of the New International Economic Order (U.N. Declaration …, 1974), especially to improve the unprofitable raw terms of trade of many less developed countries and in result to improve their negative balance on foreign trade. However, only a formal existence of the New International Economic Order and a lack of realization of most its presumptions cannot be acceptable. A cooperation of high and less developed countries in this matter is necessary in the aim of the real and not only formal activities to go out many societies from the poverty.

5. Conclusions

This paper proves that the international commerce and the capital flows can be the sources of the both richness and poverty of the nations. Positive or negative influences can dominate in the particular countries. It depends on their economic development, resources, economic policy and their political position in the world system. High developed countries try to maintain their advantages from the foreign trade and capital flows in the aim to maintain their power and richness. The international help and cooperation of high and less developed countries is necessary to reduce the poverty in many less developed states. However, a responsible and more independent economic politics of less developed countries is also necessary to construct their stable economic growth which can be a basis for their further richness. There are also necessary a growth of the social responsibility of transnational corporations and a growth of governmental control of capital flows in the international level. The last problem is a realization of the presumptions of the New International Economic Order from 1974 in the aim to improve the negative terms of trade of many less developed countries. In result, these countries will obtain a positive balance on foreign trade which can be a step in their way from their present poverty to their future richness.
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The Impact of ICT Investment on Multifactor Productivity (MFP): A Literature Review

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Abstract

This is a review study on the growth impact through boosting productivity of Information and Communication Technologies by analysing methodology and findings of around 110 articles of ISI journals. Up until now, economists have essentially looked at the impact of ICT on productivity in a neoclassical framework where ICT is assumed to be equivalent to other types of capital. This framework of analysis is far too restrictive in the case of ICT therefore, according to bridging gap of previous survales, investigation new aproach of ICT effects on productivity is essential simultaneously fundamental reosen for acumplishing of this research. A panel data approach will have been employed to estimate the ICT effect using the system GMM and the pooled mean group panel data estimators. We expect the results vary depending on the period, the region, and the type of industry considered. The GMM estimates will suggest a significant ICT effect on growth during the 1996-2010 in the APEC countries. However, it seems that the productivity effects of ICT are mainly present in the industries which are either ICT producers or heavy ICT users.

Keywords: Multifactor Productivity, ICT, Economic Growth, MFP, Panel Data

1.0 Introduction

Industrialization is the process of social and economic change that transforms a human group from an agrarian society into an industrial one. It is a part of a wider modernization process, where social change and economic development are closely related with technological innovation, particularly with the development of large-scale energy and metallurgy production. It is the extensive organization of an economy for the purpose of manufacturing. Positive work ethics in populations at large combined with skills in quickly utilizing new technologies and scientific discoveries were likely to boost production and income levels and as the latter rose, markets for consumer goods and services of all kinds tended to expand and provide a further stimulus to industrial investment and economic growth.
The accumulation of capital allowed investments in the conception and application of new technologies, enabling the industrialization process to continue to evolve. The industrialization process formed a class of industrial workers who had more money to spend than their agricultural cousins. They spent this on items such as tobacco and sugar, creating new mass markets that stimulated more investment as merchants sought to exploit them. The first country to industrialize was the United Kingdom during the Industrial Revolution. In recent decades, a few countries in Latin America, Asia, and Africa, such as Turkey, South Africa, Malaysia, Philippines and Mexico have experienced substantial industrial growth, fuelled by exportations going to countries that have bigger economies: the United States, Peru, China, India and the EU that they are sometimes called newly industrialized countries. By the end of the century, East Asia was one of the most economically successful regions of the world with free market countries such as Hong Kong being widely seen as models for other, less developed countries around the world to emulate.


The literature on the possible impact of ICT on productivity growth took off from Solow paradox, the observation by that although enormous technological progress in ICT production had been realized and gone along with strong investments in ICT(Solow, 1987), hardly any effect on economic growth could be observed. Subsequent studies on ICT and productivity growth in the macro literature has mostly been performed for the US using the growth accounting framework. For an introduction to the growth accounting methodology the studies found that productivity growth has accelerated after 1995, and a consensus has been established that this acceleration is linked to ICT (Jorgenson DW, 1987). This was stated by Dale Jorgenson in his presidential address to the American Economic Association meeting:

“……The resurgence of the American economy since 1995 has outrun all but the most optimistic expectations. Economic forecasting models have been seriously off track and growth projections have been revised to reflect a more sanguine outlook only recently....Productivity growth in IT-producing industries has gradually risen in importance, and a productivity revival is now under way in the rest of the economy. Despite differences in methodology and data sources, a consensus is building that the remarkable behavior of IT prices provides the key to the surge in economic growth……”

1.2 New Approach of growth

An implication of these findings is that the Solow Paradox no longer applies. The paradox was simply a consequence of ICT constituting a small part of the capital stock.(Cristiano Antonelli 2010) The renewed Lisbon strategy puts special emphasis on the role Information and Communication Technologies (ICT) could play in meeting the challenges of boosting growth, competitiveness and cohesion throughout the EU. In particular, the Conference papers and Abstracts: © Knowledge Globalization Institute, Boston, Massachusetts, USA 2012
2010 objectives to promote the information society and the diffusion of ICT to strengthen the competitiveness of the EU economy have translated into concrete policy proposals in a number of EU policy initiatives. In parallel to these policy developments, extensive research has provided evidence regarding the positive impact of ICT on growth and productivity.

Importantly, from a policy perspective, the existence of interactions and spillovers in ICT diffusion suggests that the productivity impact of ICT may require ICT diffusion to attain a certain level (or critical mass) and that it must be accompanied by measures fostering knowledge creation and diffusion. These issues have been largely discussed in endogenous-growth theories (often termed "new growth theories"), although not in the context of macroeconomic analysis of ICT diffusion and productivity.


2 See more (Jorgenson DW 2001), “Information technology and the U.S. economy” (Theo Dunnewijk, 2007). This literature has tended to focus attention on identifying possible interactions, spillovers, in productivity and innovation dynamics. However, these views have rarely been connected with the information society. Significantly, the existence of spillovers in ICT adoption suggests the possibility that ICT investment can be lower in a given country than the optimum from an economic viewpoint.

The naive idea that information and communications technologies (ICTs) directly, immediately and evidently contribute to the improvement of productivity and the efficiency of organizations came to an abrupt end in 1987 when Robert Solow pointed out the fact that massive investments being made in ICT by US firms coexisted with a stagnation of productivity at macroeconomic level. This led to a surge in the studies on the relationship between ICT and business performance, which continues today and has shown the contribution of ICT to the work of organizations. However, unclear, insignificant or negative results have been sufficiently numerous for the debate on dimension of real effect of ICT on productivity and efficiency, the mechanisms through which this impact occurs and the variables on which it depends to continue. Most studies on the relationship of ICT and productivity are based on one of the two theoretical frameworks: the Economic Theory of Production and the Resource-Based Theory (Jose´ Ferna´ndez-Mene´z 2009)

In accordance with the first of these approaches the ICT would be just a productive factor, a particular type of capital and/or work, whose consumption would be explicitly included in the production function of the firms. Once estimated, the coefficients of this production function would make it possible to determine
whether the contribution of ICT to output (that is to say, whether the contribution of each monetary unit of ICT consumed in the production process) is greater than the other productive factors or not. The studies based on the Resource-Based Theory have usually attributed the character of a commodity to ICT (Clemons, 1991), a resource available on the factors market and within the reach of anyone disposed to pay for it; thus, a possible direct relationship between ICT and competitive advantage would disappear immediately if all the firms were able to acquire the resource capable of providing them with an advantage with no difficulty. Consequently, this can be sustainably achieved only when ICTs are used in order to lever idiosyncratic capacities of the firm in a way that is difficult for the competitors to replicate (Jose´ Ferna´ndez-Mene´ndez 2009).

In the other hand, we demonstrate the industrialization by different indexes such as economic growth, productivity of labor and firms, technical and economic efficiency. In this paper we intend to explore influences of ICT growth on industrialization proceeding by interpreting econometric results. The current study provides a review of the literature on the impact of ICT on economic growth and productivity. It also contributes to the discussion on extending the neoclassical growth framework and supplement new framework to incorporate elements of endogenous growth theories, in order to take this impact into account. For more information we intend to illustrate important definition from different approaches in literature in summary in table 1.
Table 1. Constructs, Year, Definition, Measure and Indexes or proxy

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Main Source</th>
<th>Definition</th>
<th>Measure</th>
<th>Index or Proxy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT</td>
<td>(Ebrahim Hosseini Nasab, 2009),(Spyros)</td>
<td>Most usage and production of equipment in information</td>
<td>Share of ICT production of GDP, Share of ICT expenditure form GDP</td>
<td>Computer (\text{hardware, software, computer services,Wire and Wireless})</td>
</tr>
<tr>
<td>LP</td>
<td>(Hans-Ju¨rger Engelbrecht 2006)</td>
<td>Average total product for labor factor, productivity of labor factor</td>
<td>(\text{Ln } \text{LP} = \text{LnGDP-LnL } \text{LP=GDP-L} )</td>
<td>GDP,L corresponds to the OECD’s definition of business sector value added in real terms employment adjusted by hours per worker.</td>
</tr>
<tr>
<td>MFP</td>
<td>(Hans-Ju¨rger Engelbrecht 2006), Bureau of Labor Statistics,</td>
<td>Multi-Factor measures the changes in output per unit of combined inputs. Indexes of MFP are produced for the private business, private non-profit, financial, and public sectors.</td>
<td>(\text{MFP} = \text{Output/KLEM} ) (\text{S MFP=}y-aL-(1-a)K )</td>
<td>measures reflect output per unit of some combined set of inputs</td>
</tr>
<tr>
<td>TFP</td>
<td>(Barnett 2007; Ching-Cheng Changa 2000)</td>
<td>TFP approach seeks to evaluate the independent influences of technical change and factor substitution</td>
<td>distance-function-based (\text{Malmquist productivity indexes following } \text{Mt} = \text{Dt(Xt+1,Yt+1)/ t(Xt,Yt)} )</td>
<td>(\text{Solow residual. If all inputs are accounted, TFP can be taken as a measure of an economy’s long-term technological change or technological dynamism. If all inputs are not accounted for, then TFP may also reflect omitted inputs.})</td>
</tr>
<tr>
<td><strong>Growth Gap</strong></td>
<td>(Hwan-Joo Seo 2009)</td>
<td>Difference of productivity growth of 2 kind of</td>
<td>$G_i = \ln (\text{PRO}_f - \text{PRO}_i)$</td>
<td>Index divergence of growth between developed countries</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------</td>
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<td>---------------------------------</td>
<td>------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Acceleration of LP and MFP** | (Christopher Gust 2004) | Speed of movement of variables in to part of time | $T_1 = 1981-1995$  
$T_2 = 1996-200$  
LPGR = LP growth rate  
MFPGR = MFP growth rate  
ACLP = LPGR$_{t1}$- LPGR$_{t2}$ | Index of divergence for different Countries. |
| **ICT Intensity** | (Dahl, Kongsted, & Sørensen, 2011) | ICT-capital services per worked hour, ICT-capital | ----------- | Index for measurement of penetration of ICT |

*Ratio 1: Communication ratio: communication expenses /total expenses on external services.  
Ratio 2: Hardware acquisitions ratio: hardware acquisitions/ total acquisitions of tangible Immobilizations  
Ratio 3: Software acquisition ratio: software acquisitions / total acquisitions of intangible immobilisations

### 2.1. Impact of ICT on Labor, Firm Productivity and Multi factor productivity (MFP, TFP)

The growth-accounting method decomposes labor productivity growth into growth in labor input, growth contributions by capital deepening, and growth in MFP. Based on previous studies, ICT has already associated to economic growth by promoting productivity in the industries producing ICT equipment. It has also increased labor productivity in the rest of the economy through capital deepening, through the substitution of ICT capital for other forms of capital. Nevertheless, given the large dependency on the ICT-producing sector, the continuous outsourcing of ICT production to low-wage countries provides an intimidation to productivity carrying out in the future. ICT is expected to enhance productivity by standardizing, automating and outsourcing white-collar work in basically the same way as the assembly line mechanized manufacturing.
2.1.1 Definition of Multifactor productivity

Multifactor productivity (MFP) measures the changes in output per unit of combined inputs. Indexes of MFP are produced for the private business, private nonfarm business, and manufacturing sectors of the economy. Multifactor productivity measures reflect output per unit of some combined set of inputs. A change in multifactor productivity reflects the change in output that cannot be accounted for by the change in combined inputs. As a result, multifactor productivity measures reflect the joint effects of many factors including new technologies, economies of scale, managerial skill, and changes in the organization of production also, is measured by Solow residual. In some economic theories growth in MPF is attributed to the economic growth that is the basic background theory of our research.

Whereas, labor productivity measures the output per unit of labor input, multifactor productivity looks at a combination of production inputs (or factors): labor, materials, and capital. In theory, it’s a more comprehensive measure than labor productivity, but it’s also more difficult to calculate.

![Equation]

\[
\text{Labor Productivity (output per hour)} = \frac{\text{Output}}{\text{Labor Inputs}}
\]

\[
\text{Multifactor Productivity} = \frac{\text{Output}}{\text{(KLEMS)}}
\]

Multi-factor productivity is the same as total factor productivity, a certain type of Solow residual.
(Sophia P. Dimelis a, 010)

![Equation]

\[
MFP = \frac{d(ln f)}{dt} = \frac{d(ln Y)}{dt} - s_L \cdot \frac{d(ln L)}{dt} - s_K \cdot \frac{d(ln K)}{dt}
\]

Where:
- \( f \) is the global production function;
- \( Y \) is output;
- \( t \) is time;
- \( sL \) is the share of input costs attributable to labor expenses;

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sK is the share of input costs attributable to capital expenses;
L is a dollar quantity of labor;
K is a dollar quantity of capital.¹

In 2009 similar survey just with focusing on Spanish firms was performed for investigation IT impacts on productivity of labor in firm-level representative panel data of 341 medium- sized and large- sized ,also cobb-douglas production function are employed due to measure of contribution of IT capital to labor productivity(Mariela Badescua, 2009).Using similar methodology are conducted for New Zealand’s 29 industry by Hans-Ju’rgen Engelbrecht(2006) that concluded labor factor growth of more ICT intensive industries has improved over time relative to other industries, even though overall LP growth was weak .It is examined by employing dummy variable regression models the link between ICT intensity and New Zealand’s LP growth in 29 industries over the period 1988–2003, and over relevant sub-periods(Hans-Ju’rgen Engelbrecht 2006) .But in Spanish sample, the panel contains representative firms from the 15 Spanish manufacturing industry, and it has a flexible design .Applying value add per worker , investment on IT capital and the permanent fund of firm were considered .minus

¹ Website US Labor,(U.S. Bureau of Labor Statistics, 2011 the accumulated IT investment as a proxy for measurement labor productivity , IT capital stock of firm and NON_IT capital stock is employed form the economic approaches .

Results for Breusch-pagan test and Huasman test in both one-factor model and two -factor model indicated in performance model with specific effects and also, with random effects. The results had been presented in one – factor and two-factors within group (WG) firm effects and one-factor firm effects, firm and period effects (GLS).

Generally, the deduction achieved from these results shows that, despite the fact that the firms experienced some improvement in labor productivity in the period in question, this positive changing was not significantly extract from IT investment .In new Zealand’s work (Hans-Ju’rgen Engelbrecht 2006) the results prove sensitive to the time period specified. When sample period is divided into sub- periods, there is support for the view that LP growth of more ICT intensive industries has improved over time relative to that of other industries, even though overall LP growth was weak. The explanation for this conclusion can be found in the fact that there is a large gap between the learning process and the running of new technologies, which means that the positive effects of It’s on the firms appear after a fairly long period of time (Mariela Badescua, 2009).
growth effects on the ICT-producing on US manufacturing industries. Neoclassical framework and argued 5 different ways-input measurement error , omitted variable ,increasing return, reserve causality and production spillovers and network externalities-cause to existence correlation between ICT and TFP growth. The data collection for Multifactor productivity is completed from BLS, then focused on BLS estimation of APL and TFP for 2 main digit manufacturing industries which is presented in BLS .

\[
\begin{align*}
\text{dLn} \ APL &= \text{dLn} \ Y - \text{dLn} \ H \quad \text{APL growth} \\
\text{dLn} \ Z &= \text{dLn} \ Y - \alpha_k \ Ln \ K - \alpha_H \ Ln \ H - \alpha_M \ Ln \ M \quad \text{TFP growth}
\end{align*}
\]

Therefore, the dLnZ is calculated as a residual to satisfy the equality. This model is estimated neoclassical mode based on Solow (1957) and Jorgenson and Stiroh (1999) assumptions growth model.

Moreover classified industry size and ICT intensity of industries, they are sorted by APL and TFP growth rate . They used 2 approaches for considering econometric interpretation, one of them difference in difference estimates of APL and TFP growth which is estimated by OLS and is employed ICT dummy ,time dummy and nitration them. The result of this estimation provided little evidence that intensity of ICT capital is correlated with TFP(J.Stiroh, 2002) . In contrast with this idea , in perior is substantiated which contribution of ICT-specific technological change to productivity growth is about 0.73% points, that of non-ICT capital assets is only 0.16% points. More interestingly, the contribution of ICT increases from the mid 1990s, while the contribution of non-ICT capital inputs decreases. About 43% of productivity growth can be attributed to specific technological change, most of it due to technological change embedded in hardware equipment(Diego Martínez a, 2010). Whereas J.Stiroh’s second estimation results by 3 methods ,OLS ,IV(Instrumental variable) and ICT producing dummy, in two section regression once, has demonstrated output as dependent variable and TFP as dependent variable. Also, are applied for all regression 270 observations (15 years for 18 industries). It was investigated negative coefficient for ICT that revealed being unproductive of ICT. For better deducing this surprising result, they decompose ICT into Computers and Telecommunications Equipment and after that estimate again. Finding has showed there was considerable differences between 2 equipment of ICT also heterogeneity in productivity shock across industries also, there was no strong reasons to substitute neoclassical model into new economy explanation of production.(J.Stiroh, 2002)
Jukka Jalava and Matti Pohjola by choosing Finland as a statistic society had accomplished analysis the effects of ICT on output, labor productivity growth over the 1995-2005. Accordance that Finland is one of the leading information societies (regards to Nokia revolution in telephone industry), They depicted information communication technology’s effects on economics growth via 3 channels. ICT is involved as an output or direct contribution of the production of ICT goods and services in first one, after that ICT capital services contribute to economic growth as an input into production. Finally, channel for information and communications technology to enhance economic growth is via the impact of ICT production on Multi-Factor Productivity. To this end of three approach, it is employed merit model via aggregate value added Y is assumed to consist of the production of ICT goods and services YICT as well as of other production YO. These outputs are produced from aggregate inputs consisting of ICT capital services KICT, other capital services KO and labor services

\[ Y(t|ICT(t),Y(t)) = A(t) F(k ICT (t), k(t), L(t)) \]

The basic computational framework is the balance of aggregate supply and demand. GDP at market prices plus imports equals private and government consumption expenditure plus investment plus changes in inventories plus exports also; ICT capital is indicated as computers, communication equipments and software:

\[ \text{GDP + Imports = Consumption + Investment +ΔInventories + Exports} \]

Findings have demonstrated, information and communications technology (ICT) calculated for 1.87 percentage
points of the monitored labor productivity growth at the average rate of 2.87 per cent. The contribution from increases in ICT capital intensity was 0.46 percentage points. The rest is attributed to multi-factor productivity growth in ICT production, especially in telecommunications production. (Jalava & Pohjola, 2007)

Two other related papers are (Christopher Gust 2004) and (Dahl, Kongsted, & Sorensen, 2011) had explored cross-country differences in the development of the IT sector. Papers provided evidences for a view that can account for this recent productivity divergence between the United States and other industrial countries by emphasizing the role of regulatory practices in influencing the diffusion of information technologies also, positive and significant productivity effects of ICT in Europe, mainly due to advances in total factor productivity. The delay in the adoption of new technologies in these countries then translates into slower productivity growth vis-à-vis the United States. Results have challenged the consensus in the growth accounting literature that there has been no acceleration of productivity growth in Europe, mainly due to a dismal performance of ICT-using sectors.

Depicting importance of ICT by two measurement share of ICT in production of GDP and amount of expenditures on ICT and definition different kinds of variables for alternative estimation models were innovation of Christopher’s effort. But Christan M. Dahl by choose estimation of the dynamic panel data model, for EU countries and employing the generalized methods of moments approach (GMM) in 3 dimension time, industry, country investigated TFP growth econometric model. (Dahl, et al., 2011) Table 2 shows antecedents and consequences of ICT effects on Total factor productivity and Labor productivity concept by different authors in above sector.
Table 2. Studies of antecedents and consequences of ICT effects on total factor productivity and labor productivity

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Purpose</th>
<th>Case study/period</th>
<th>Econometric model</th>
<th>Method of estimation</th>
<th>Key finding</th>
<th>Key words</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Hans-Ju¨rgen Engelbrecht 2006)</td>
<td>Regulation of labor market</td>
<td>13 industrial countries focus on U.S., 1981-</td>
<td>Regress LP growth, Regress IT</td>
<td>OLS, GLS, IV</td>
<td>↑employment protection, ↑GDP share of IT expenditure,</td>
<td>Information technology; Labour productivity; Business regulations; Employment</td>
</tr>
<tr>
<td>(Solow, 1987)</td>
<td>conflicting international evidence on the impact of ICT on Lp growth</td>
<td>New Zealand, 29 Industries, 1982-2003</td>
<td>3 model, Regress Lp on intensive ICT and non ICT factor</td>
<td>OLS plotted data, cross-section</td>
<td>↑intensity of ICT in industries, ↑Lp productivity</td>
<td>Information and communication technology; Labor productivity</td>
</tr>
<tr>
<td>(Dahl, et al., 2011)</td>
<td>quantitative effect on productivity growth of</td>
<td>Europe E7 countries(j), 1980-1994, 1995-</td>
<td>Regress Ln TPF by first degree</td>
<td>Panel data, generalized methods of moments</td>
<td>ICT has positive and significiacnt effects on TFP</td>
<td>Labor productivity, Total factor productivity, Information and communication technology</td>
</tr>
<tr>
<td>(Sophia P. Dimelis a., 2010)</td>
<td>ICT growth effects at the industry level: A comparison between the EU countries, U.S., 1980-1990, 1990-</td>
<td>Regress out put growth on K,L,ICT,ICT<em>prod, ICT</em>use, ICT*k</td>
<td>Pooled mean group panel data, GMM</td>
<td>The long run growth contribution of ICT was significantly positive in the</td>
<td>Growth Information technology Industry effects</td>
<td></td>
</tr>
</tbody>
</table>

Conference papers and Abstracts: © Knowledge Globalization Institute, Boston, Massachusetts, USA 2012
| (Mariela Badescu, 2009) | analyses the impact of investments in information technologies (ITs) on productivity | Spanish firms,12 industry,341 medium large-sized | Cobb-Douglas P function, Regress LnLP(VA/L) on LnKit LnKn LnLp, OLS, W,G, GL S(one factor effect and two factor effect) | The results obtained reveal that the sensitivity of labor productivity to changes in technological capital intensity is | Information technologies; Labor productivity; Spanish firms; Panel data methodology; |
| Production spillover and net work | USA,18 industry 19 | Regress dLn TFPon dLp y dLp Panel | TFP growth is uncorrelated with |
| (J Stirh) | ICT are important part of New | Intermediate input | including ICT capital | ----- |
| (Jalava & Pohjola, 2007) | analyses the impacts of ICT on output and input | Finland 1995-2005 | Average growth of GDP and LP by Calculate share of GDP, Volume growth | The contribution from increases in ICT capital intensity was 0.46 percentage points. The rest is attributed to multi- | ICT, Information and communication technology, Economic growth, |

### 3.0 Analysis of Published Articles

Finally, we have illustrated figures which have demonstrated the number of published articles attributes to years (2001-2011) and citation times in each year over the last 10 years. It is observed the more profusion of articles is on 2009-2011and over the 2002 and 2007 investigation between ICT and total factor productivity was quiet hot for the economics experts. Therefore results are captured form each sector is fund out form the last securing.
Figure 1. Published Items in Each Year

Figure 2. Citations in Each Year

Source: Citation Report¹, Topic= ("ICT" and “total factor productivity")
Time span=All Years, Web of Science 2011

¹ This report reflects citations to source items indexed within All Databases.
Whenever, we will compare the results of figures 1, 2 and obviously majority of articles that are studied belong to journals with high impact factor and high total citation, so the validity and reality of selected methodology for our research is high. Herewith, commitment of more consideration to roles of ICT on the growth of multifactor productivity and labor factor productivity is depicted in recent years.

![Number of Articles](Image)

Figure 3. Number of Articles in different Journals

4. Identify the Research Gap

Up until now, economists have had essentially looked at the impact of ICT on productivity and growth in a neoclassical framework where ICT is assumed to be equivalent to other types of capital. Here, the amount of money invested in ICT is linked to productivity growth and economic growth in a given economy. This framework of analysis is far too restrictive in the case of ICT, however. There are a number of reasons for this. In particular, ICT diffusion radically changes the way information flows.

ICT diffusion also promotes interaction between economic agents though network effects. This means that the economic behavior of a particular firm, industry or country, cannot be understood properly without considering the specific context within which its activity takes place. These two features tend to support the view that the deployment of ICT does not face the same constraints as traditional physical production factors. Hence the neoclassic framework is necessarily limited for an analysis of the impact of ICT on productivity.

As it is well-known Solow allows the change in the output elasticity of capital, as measured by its share on income, and does not account for its effects (Solow 1987). As a matter of fact the US case in the years 1909–1949, which Solow analyzed using a Cobb-Douglas based growth accounting methodology, provides clear empirical evidence about the long term stability of factor shares and hence the substantial neutrality of technological change. The international evidence suggests that the US evidence reported by Solow is quite a special case. Technological
change appears to be highly biased in most countries with changing levels of output elasticity and hence high levels of both between and within variance. The recent empirical evidence and the new debate on the relevance of ICT change revive the interest in the matter.

Moreover, majority of previous studies focused on the investigation the role of ICT or technological change on economic growth of US and other developed countries; less is done in this regard in the APEC (Asia-Pacific Economic Corporation) member countries. This situation creates special opportunity to compare different results of impacts ICT on economic growth of APEC members in terms of developing and developed countries also, majority of the findings of experimental studies emphasize the positive effects of ICT on the productivity and economic growth of the developed countries. Not only there are a few studies which have the opposite idea about the ICT but also, in the developing countries, as the researches indicate, ICT does not have permanently positive effects on productivity growth. Of course it should be mentioned that the number of conducted researches in the developing countries comparing to the developed countries are much fewer and there must be more efforts and researches to evaluate the effectiveness of ICT on the economy of these countries. We believe that our results have taken a modest step toward deeper understanding of the role of information technology on multi factor productivity and economic growth.

4.3. Proposed Model

Examination of ICT role on MFP and finally economic growth is employed cross- country regressions for the panel data of 21 countries of APEC members over three sub periods, 1996–2000, 2001–2005 and 2006-2010 examining the link between growth and a number of potential growth drivers, while controlling for country fixed effects.

In order to evaluate the effect of ICT on the economic growth of the APCE countries the model of growth in permanent stability will be used. For evaluation of total productivity the Cobb Douglas Production function will be used:

\[
LTFP = LY - \alpha LK - \beta LN
\]

Influential elements on the total productivity will be introduced based on theoretical and experimental studies by this equation:

\[
LMFP = \alpha_1 + \alpha_2 LICT_{ij} + \alpha_3 LNICT_{ij} + \alpha_4 LTE_{ij} + \alpha_5 LOPEN_{ij} + \alpha_6 LHU_{ij} + \alpha_7 LMS \cdot ij + \\
\alpha_8 LOR_{ij} + \alpha_9 LR\&D_{ij} + \alpha_{10} LRTS_{ij} + U_{ij}
\]

Where:

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MFP Multifactor productivity, ICTij investment on ICT, NI ICTij investment on non-ICT, T Ej technical efficiency, OPENij open economy, HU ij secondary and tertiary school enrollment used as measure of investment in human capital, MS ij managerial skill, OR ij organizational structure, R&D ij research and development investment, RTS ij return to scale, U ij is the model's random error component.

Also L is natural logarithm, i is time and j is country. This function will be evaluated by using the panel data 1996-2010 on 21 APCE countries.

Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Russia, Singapore, Taiwan, Thailand, USA, Vietnam.

The exercise uses the system GMM estimator for dynamic panel data analysis, developed by Arellano and Bover (1995). In this method, lagged values of the explanatory variables are used as instruments and an over-identification test is applied to ensure there is no bias due to correlation with the error term. Another estimation problem in such growth equations of the kind that also shows itself in our paper is the existence of unobservable country specific effects and also lagged dependent variables among the explanatory variables. This problem was overcome by the use of Generalized Method of Moment (GMM) estimator too. This requires a decision on which variable to use as instrumental variables.

5.0 Conclusion

Since the mid-1990s the ICT revolution has rapidly penetrated across nations and transformed the way people communicate, work, and live. At the core of the driving force of this transformation is the quantum progress across countries in the speed, scope, intensity, and quality of access to information, knowledge diffusion, and communications. These powerful impacts are expected to have been translated into economic performance. The paper then, conducts a comprehensive empirical examination to investigate the effect of ICT on growth for a sample of 21 countries of APEC member in the 1996–2010 periods, during which ICT has different investment across nations. These findings as such strengthen the hypothesis that ICT was an important source of growth in 1996–2010. Examines whether the association between ICT spending and growth over 1996–2010 was significant, Controlling for the other potential growth determinants and country-fixed effects.

The evidence of the role of ICT as an important source of growth suggests several policy implications. First, all countries, need a more strategic focus on promoting ICT investment as an important source of growth. This promotion should not be confined only to upgrading the ICT infrastructure and allocation numerous budgets to ICT investment from governmental and privat sectors. The countries with lower level of ICT penetration should be more aggressive in promoting the diffusion of ICT, especially the Internet. The results from this study show that

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the marginal effect of the investment of ICT is larger when at its lower level, especially for the Internet and mobile phone.

Bibliography:


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Impact of Self Help Groups on Financial Inclusion and Deepening in India

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ABSTRACT

Financial inclusion is a state in which all sections of the society have affordable, convenient, and dignified access to quality financial services such as banking, credit and insurance. Large sections of the society, especially the low-income and disadvantaged sections, still lack access to even the basic financial services. This adversely impacts not only their financial well-being but also overall economic growth of the society. Financial inclusion is particularly low outside of the developed world. According to the Reserve Bank of India (RBI), almost half of the country’s population does not even have a bank account. Improving financial inclusion is now an important goal for many central banks and governments. Financial inclusion can be enhanced in a lot of ways such as improving income and prosperity, financial education and improved awareness of financial services, expansion of the financial services infrastructure, technological innovations such as mobile banking, financial policy innovations etc. Several one-time incentive schemes have also been tried to expose the rural poor to the financial system. Some of these schemes have a more sustainable impact on financial inclusion. We study the impact schemes and policy interventions on financial inclusion in the Indian context. The Reserve Bank of India has tried several innovative schemes to enhance financial inclusion such as promoting cooperative banks, promoting regional-rural banks, greatly expanding the number of bank branches, providing overdraft in savings accounts, establishing pro-poor credit delivery systems via interest rate subsidies etc.

Financial inclusion is also deeply affected by social norms and peer-pressure. A particularly interesting socio-financial experiment in India has been that of Self Help Groups (SHGs). SHGs are a group of mostly rural micro-entrepreneurs that come together voluntarily to establish a contributory fund from which the members of the group can borrow for their financial needs. The SHG model replaces formal collateral with collective wisdom and peer-pressure to ensure timely payments and functioning of the group. In India, many SHGs can borrow from the regular banks under the SHG-Bank Linkage program once they have established a good track record of regular repayments. Such programs are expected to infuse banking habit among individuals that would ultimately lead to demand for financial services among the rural population and sustainable financial inclusion.
In this paper, we assess the effectiveness of the coverage of SHGs in expanding the financial inclusion base. To measure financial inclusion, we use a broad-based Index of Financial Inclusion (IFI), developed by Satya R. Chakravarthy and Rupayan Pal, for the measurement of Financial Inclusion across different states of the country. IFI is a comprehensive composite index that includes factors such as demographic penetration, geographic penetration, access to the banking system, access to formal credit facilities, etc. We use regression analysis to identify the impact of various socio-economic variables like per-capita income (PCI), literacy rate, share of financial services, and coverage of SHGs on the degree of financial inclusion. The regression model explains an overall 83.8% variation in the Index of Financial Inclusion. All the regression coefficients are positive but co-efficient of share of financial services and coverage of SHGs is highly significant. We thus find that the demographic penetration of SHGs significantly impacts the financial inclusion in different states. Traditional instruments like credit/interest subsidy, demographic and geographic penetration have a limited role in improving financial inclusion. By inculcating banking habits, such schemes are possibly creating a long-term demand for financial services. Our analysis thus presents a quantitative vote of confidence for the effectiveness of Self Help Groups for sustainable improvements in financial inclusion and deepening in India.

**INTRODUCTION**

Access to financial services especially for deposits, remittances, credit and insurance enlarges livelihood opportunities and empower the poor to take charge of their lives. But in India, a large part of the population is yet not able to access the formal financial market. They are mostly poor and have failed to participate in mainstream growth of the economy. The Govt. of India therefore has introduced various govt. sponsored credit schemes to extend the formal financial services among the low-income people. Small and Marginal Farmers Development Agencies of early 1970’s, Integrated Rural Development Program of late 1970s and Self Employment Schemes of 1990s are some of the early interventions in India to improve the reach of the poor in the formal financial market. The Kisan Credit Card (KCC), Artisan Card and General Purpose Credit Card are some of the latest credit schemes of the Govt. to link low income people with banks. All these programs provided credit that became a one-time event of taking loan from banks for most of the borrowers. These programs could not develop regular banking habit in these low-income people. These schemes thus have failed to reduce the dependency of rural poor on the informal exploitative financial market. But, the recent intervention by the Govt. of India through Self Help Groups Bank-Linkage Program is an attempt to inculcate the banking habit in a group who are then allowed access to banking services. In this paper, we study the impact of SHGs on the Financial Inclusion across different States of India.

A regulated and participatory financial sector is a prerequisite for sustainable economic development of any nation. Unregulated and imperfect financial sector may cause failure of banking sector and thus can result into the failure of the entire economic system. Cross-country studies show that the regulated and a broad based financial sector is normally associated with a steady economic development coupled with lower economic inequality. Moreover,
promotions and incentives given through financial markets are more effective than grants and subsidies. Therefore financial development and easy access to financial services not only accelerates economic growth but also possesses the capacity to reduce income inequality and poverty. In the absence of a proper and developed financial system, poor individuals and small enterprises have to rely on their limited savings and earnings to invest in their education and entrepreneurship to take advantage of growth opportunities (World Bank, 2008). The Government can also use banking services for providing various social security services for the weaker sections of the society. It thus can create a win-win environment for both the customers and financial institutions in an economy (Thorat 2006). In spite of the importance of financial services, financial exclusion can be seen in both developing and developed countries alike. The World Bank estimates that 2.7 billion people, over half the population of the developing world, are without a bank account or basic financial services.

**Financial Inclusion in the Indian Context**

Indian economic growth is fuelled by the expansion of industrial and services sector. But, it is the agriculture sector and the small and medium enterprises that provide employment to more than half of the Indian population. A country of large and diverse population of 1.3 billion people speaking 23 languages with 71 percent belonging to the rural segment; 27 percent living below poverty line, the task of full financial inclusion in India is undoubtedly a difficult one as it requires a high level of penetration by the formal financial system tailor-made in accordance with the need of this diverse society. It is quite disheartening to note that even in the era of globalization and liberalization, there are large sections of society that are not aware of the banking and financial services. For a country to ripe and garner the benefits of demographic dividend, a regulated and a broad based financial sector is an essential for setting up the economy on a higher growth trajectory. Hence, financial inclusion in the country has to be developed as a key policy concern.

From a dismal financial coverage in the rural areas, Indian banking has seen a major upheaval owing to the commendable efforts of the regulatory authority. With a greater impetus to financial inclusion thereby reducing regional barriers in the supply of financial services, a phenomenal number of commercial bank offices have come up. Higher branch intensity is considered to be indicative of the higher possibilities of access and opportunity to use financial services by households and enterprises (BeckKuntPeria2005). Along with expanding bank branches, easing the KYC norms, opening up of no-frills account, providing overdraft in Savings Bank Accounts, coming up with Banking Correspondent Model and liberalized policy for ATMs, the RBI had come up with recent initiatives to broaden the financial inclusion base in India.

But, financial inclusion of rural India seems yet far from financial deepening. According to Cellular Operators Association of India, out of the 403 million people that have mobile phones, 187 Million (46%) people do not have bank accounts as of 30 April, 2009. NSSO data also reveals that 45.9 million farmer households in the country
(51.4%) out of a total of 89.3 million households, do not access credit, either from institutional or non-institutional sources. Further, despite the vast network of bank branches, only 27% of total farm households are indebted to formal sources. This shows the severity of financial exclusion in the Indian economy. Therefore, extending financial reach has emerged as an important policy issue in the country.

**Review of Literature**

Financial inclusion is the process of ensuring access to financial services and adequate credit for all the sections of the society particularly to the vulnerable groups such as weaker sections and low-income groups at an affordable cost (Report of the Committee on Financial Inclusion in India, 2008). Satya Chakravarty (2010) considers access to financial services as one of the basic ingredients of human well-being apart from income, health, housing etc. because of its ability to usher the productive capacities of an individual.

Kempson et al (2000) found that financial exclusion is mainly a function of having a low income. National Consumer Council (2005) states those on the lowest income are also those least likely to have bank accounts. A coordinated approach by the public, private and voluntary sectors is desirable which will have to be led by the Govt. as the low income group is considered least attractive customers to banks and other service providers as reviewed by Lavinia Mitton (2008) on Financial Inclusion in United Kingdom. In contrast, Rajam 2006(b) argues for a broadened access to financial services that goes beyond ensuring financial services for the poor, thereby mobilizing resources for the middle class as well. Sumanjeet (2011) asserts that mobile technology can accelerate financial inclusion in India provided the fact that policymakers are certain about what they want to achieve in the wake of opportunities and challenges associated with the given technology. Kisan Credit Card studies show that easy access to timely and hassle-free credit has a direct impact on production, productivity, income and employment of farmers. World Bank Report (2007) suggests adequate competition is required to invigorate the incumbent institutions by providing them with the right incentives for broadening financial access so as to cater to the excluded segments of the population.

Sangwan S.S.(2008) in his cross-sectional study of Indian states through multiple regression analysis found that coefficient of branch density and per capita income to be positive and significant with the adults having saving accounts though literacy showed negative relationship with both percentage of savings as well as credit accounts. Self-help groups showed a positive relationship with financial inclusion particularly in credit accounts. Parida and Sinha(2010) consider SHG and Bank Linkage program as an effective tool in addressing various socio-economic issues. They found female SHGs are doing exceptionally well in loan recovery and per capita savings in six Indian states. Leeladhara (2006) in his paper strongly asserts forging linkages with Microfinance Institutions and local communities. The wider publicity about the introduction of no-frills account either with nil or a minimal balance as well as charges that would make such accounts accessible to vast sections of the population can help a great deal in encouraging people to come out of their cocoons and actually avail the benefits of financial services. He considers
targeting low-income group for the financial inclusion as both a business opportunity as well as a corporate social responsibility for banks.

With financial inclusion emerging as an important tool for empowerment and inclusive growth, in this work we study the degree and spread of financial inclusion and factors affecting it across different states in India. We also analyze the impact of recent innovative intervention of Govt. of India through Self Help Groups Bank Linkages Programs (SHGBLP) on financial Inclusion. A cross-sectional study of twenty-six Indian states with different levels of economic development helps us to understand the role of policy of inculcating banking habit or demand induced policy on financial inclusion in a poor and diversified economy like India.

OBJECTIVES

The specific objectives of the study are:

To analyze the growth and spread of financial inclusion in India as measured by the Index of financial inclusion (IFI).

To assess the relationship between IFI and Per Capita Income, IFI and Literacy Rate, IFI and Growth Rate and IFI and Share of Financial Inclusion

To assess the effect of Per Capita Income, Literacy Rate, Share of Financial Services and coverage of SHG on the degree of Financial inclusion.

To find out if the above determining factors individually or collectively affect financial inclusiveness in India.

To suggest policy innovations for enhancing the financial spread in the economy.

RESEARCH METHODOLOGY

Measuring Financial Inclusion is a difficult problem. Simple measures such as the density and penetration of bank accounts do not capture the complex ways in which people can access financial services. In addition, there are vagaries specifics to India that must be accounted for in a study like ours. Keeping the above factors in mind, we use a more broad-based composite Index of Financial Inclusion (IFI) developed by Satya R. Chakravarthy and Rupayan Pal. This is a comprehensive composite index based on factors including i) Demographic Penetration ii) Geographic Penetration iii) Access to Banking Payment System iv) Access to Formal Credit Facilities v) Mobilization of Deposits and vi) Spread of Formal Credit over Income.

For this study, we use a regression model to identify the impact of various socio-economic variables and innovations on the degree of financial inclusion. The study is based on secondary data collected from RBI,
NABARD (National Bank for Agriculture and Rural Development) and reports of the Govt. of India Census, 2011. Due to paucity of data, only 26 States have been taken. We have also used Karl Pearson’s Coefficient of Correlation to find out the association or degree of closeness between IFI with other parameters such as PCI, Growth rate and share of financial sector in the State Domestic Product.

**INDEX OF FINANCIAL INCLUSION IN INDIA**

The Index of Financial Inclusion along with per capita income, share of financial services in the State Domestic Product, growth rate of State Domestic Product and literacy-rate across different states is given in Table 1.

**TABLE 1: INDEX OF FINANCIAL INCLUSION AND OTHER ECONOMIC VARIABLES**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>States</th>
<th>Index of Financial Inclusion</th>
<th>PCI at Constant Prices</th>
<th>Literacy Rate (%)</th>
<th>Growth rate 2006-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Andhra Pradesh</td>
<td>0.453</td>
<td>23898</td>
<td>67.66</td>
<td>11.18</td>
</tr>
<tr>
<td>2.</td>
<td>Arunachal Pradesh</td>
<td>0.315</td>
<td>20458</td>
<td>66.95</td>
<td>4.95</td>
</tr>
<tr>
<td>3.</td>
<td>Assam</td>
<td>0.32</td>
<td>14894</td>
<td>73.18</td>
<td>4.65</td>
</tr>
<tr>
<td>4.</td>
<td>Bihar</td>
<td>0.33</td>
<td>8233</td>
<td>63.82</td>
<td>18.13</td>
</tr>
<tr>
<td>5.</td>
<td>Chhattisgarh</td>
<td>0.317</td>
<td>17059</td>
<td>71.04</td>
<td>18.63</td>
</tr>
<tr>
<td>6.</td>
<td>Goa</td>
<td>0.709</td>
<td>56021</td>
<td>87.4</td>
<td>9.65</td>
</tr>
<tr>
<td>7.</td>
<td>Gujarat</td>
<td>0.41</td>
<td>28335</td>
<td>79.31</td>
<td>8.39</td>
</tr>
<tr>
<td>8.</td>
<td>Haryana</td>
<td>0.419</td>
<td>36669</td>
<td>76.64</td>
<td>11.55</td>
</tr>
<tr>
<td>9.</td>
<td>Himachal Pradesh</td>
<td>0.459</td>
<td>28620</td>
<td>83.78</td>
<td>9.09</td>
</tr>
<tr>
<td>11.</td>
<td>Jharkhand</td>
<td>0.341</td>
<td>14252</td>
<td>67.63</td>
<td>2.38</td>
</tr>
<tr>
<td>12.</td>
<td>Karnataka</td>
<td>0.529</td>
<td>23593</td>
<td>75.6</td>
<td>9.94</td>
</tr>
<tr>
<td>13.</td>
<td>Kerala</td>
<td>0.555</td>
<td>30476</td>
<td>93.91</td>
<td>7.90</td>
</tr>
<tr>
<td>14.</td>
<td>Madhya Pradesh</td>
<td>0.351</td>
<td>12881</td>
<td>70.63</td>
<td>9.23</td>
</tr>
<tr>
<td>15.</td>
<td>Maharashtra</td>
<td>0.563</td>
<td>30982</td>
<td>82.91</td>
<td>14.13</td>
</tr>
<tr>
<td>16.</td>
<td>Meghalaya</td>
<td>0.351</td>
<td>20185</td>
<td>75.48</td>
<td>7.74</td>
</tr>
<tr>
<td>17.</td>
<td>Nagaland</td>
<td>0.249</td>
<td>17129</td>
<td>80.11</td>
<td>6.04</td>
</tr>
<tr>
<td>18.</td>
<td>Orissa</td>
<td>0.386</td>
<td>15760</td>
<td>73.45</td>
<td>12.99</td>
</tr>
<tr>
<td>19.</td>
<td>Punjab</td>
<td>0.503</td>
<td>30154</td>
<td>76.68</td>
<td>10.16</td>
</tr>
<tr>
<td>20.</td>
<td>Rajasthan</td>
<td>0.355</td>
<td>17480</td>
<td>67.06</td>
<td>11.67</td>
</tr>
<tr>
<td>21.</td>
<td>Sikkim</td>
<td>0.424</td>
<td>22277</td>
<td>82.2</td>
<td>5.97</td>
</tr>
<tr>
<td>22.</td>
<td>Tamil Nadu</td>
<td>0.546</td>
<td>28320</td>
<td>80.33</td>
<td>14.85</td>
</tr>
</tbody>
</table>
Satya R. Chakravarty and Rupayan Pal (2010) conclude that, India as well as in all the States, the level of financial inclusion has increased during 2001-07. The index has increased from 0.373 in 2001 to 0.435 in 2007. This can be attributed to a more balanced, regional and steady policy change by the regulator of the financial market of the country. The RBI is giving greater impetus to financial inclusion by reducing regional barriers in the expansion of banking facilities. The number of bank branches showed a phenomenal increase from 8262 in June 1969 to 79,735 in March, 2009. The average population per branch of 64000 in 1969 has improved to 15000 in 2009. This geographic penetration has changed the banking scenario dramatically but not enough to improve financial inclusion in the country. Among various states, Goa, Maharashtra and Kerala have the highest intensity of financial inclusion. Only 9 out of 26 states have the intensity of financial inclusion more than the All-India average. On the other end, the North-Eastern States have very poor intensity of financial inclusion. The Central region of the country also has a poor degree of Financial Inclusion. The disparity between the financial inclusions of different states of the country is not only high but has been increasing over a period of time.

**DEGREE OF CORRELATION BETWEEN FINANCIAL INCLUSION AND OTHER ECONOMIC VARIABLES**

It is normally assumed that per-capita income (PCI), growth rate, literacy rate and percentage share of financial services enhance the demand of financial services. The improvement in these socio-economic variables should increase the degree of financial inclusion. Therefore, in order to assess the degree of association between financial inclusion and other socio-economic variables across different States in India, we have worked out the Karl Pearson’s Co-efficient of correlation between IFI and other parameters such as PCI, growth rate of income, literacy rate, and the share of the financial sector in the State Domestic Product across different states in India. This zero order correlation is given in Table 3.
TABLE 3: CORRELATION COEFFICIENT BETWEEN IFI AND OTHER PARAMETERS IN INDIA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Correlation with IFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFI</td>
<td>1</td>
</tr>
<tr>
<td>PCI</td>
<td>0.816</td>
</tr>
<tr>
<td>Growth Rate</td>
<td>0.199</td>
</tr>
<tr>
<td>Share of Financial Services</td>
<td>0.794</td>
</tr>
<tr>
<td>Literacy Rate</td>
<td>0.513</td>
</tr>
</tbody>
</table>

It is clear from the above table that the degree of correlation between PCI and IFI is positive and highly significant. It indicates that the spread of financial inclusion is associated with high per capita income. We can thus infer that high per capita income States help in promoting demand for financial services. The correlation coefficient between IFI and growth rate across different States is positive but poor. This might be due to the fact that in recent times, RBI has promoted financial inclusion through various policy measures that has improved financial inclusion but may take some time to realize its impact on growth. Similarly, the correlation co-efficient between IFI and Share of Financial Sector in the State Domestic Product is positive and highly significant. It thus supports the hypothesis that the level of financial inclusion helps in the expansion and growth of financial services in the region. The awareness about the financial markets and services can also help in achieving the goals of financial inclusion. We do not have a proper measure of education about financial markets across different states. We therefore use adult literacy rate as an indicator of awareness about financial services. The correlation between IFI and Literacy Rate is also positive and significant. It thus indicates that the states with higher literacy rate have a higher level of financial inclusion.

SELF HELP GROUPS AND FINANCIAL INCLUSION

Indirectly, financial inclusion of low-income people in terms of credit accounts has taken place through various Govt. sponsored credit schemes. But, the common weakness of these credit instruments is the absence of having saving and current account with the banks. They take credit from the bank as a one-time event for majority of borrowers. Thus, these credit-induced schemes are not able to create much impact on financial inclusion for that category. The latest innovative intervention by the Govt. of India through Self Help Groups Bank Linkage Model (SBLP) is a credit channel to link poor people with banking services. The distinguishing feature of this scheme is to motivate the rural population to mobilize and manage their own savings by themselves before availing bank loan. Therefore, initially the scheme of SHGs mobilizes saving within the group and they manage this collected savings all by themselves for maximum returns. It is thus an innovative instrument to cultivate banking habits within the members of the group. It is sustainable within its own strength. In financing SHGs, the requirement of collateral by bank has been replaced by peer group pressure and hence this approach has a capacity of social and economic
empowerment particularly of women of weaker sections. The scheme thus is not subsidy driven but demand driven to promote banking habits.

**PROGRESS OF SHG-BANK LINKAGE PROGRAM IN INDIA**

NABARD led SHG Bank Linkage program witnessed a significant progress in these years. Overall progress of SHG Bank linkage model is given in Table No.4. It is clear that the SHG Bank linkage is growing at a significant rate. The number of SHGs has increased by almost 25 percent year on year. The amount of saving mobilized by them has shown a sharp increase of about 42 percent during 2008-09. Similarly, the number of SHGs, who are availing loan from banks have also shown a sharp increase of about 31 percent during 2008-09 while the loan disbursed to them by the banks have shown much higher increase of about 38 percent. As on March 2009, the total savings mobilized by the SHG and deposited in the banks is around Rs. 5545 crores, which comes to an average of Rs.9061 per SHG. The loan disbursed by the banks is Rs. 12253.5 crores to a total of 1609586 SHGs i.e. average loan disbursed is Rs. 76128 per SHG. The banks have thus mobilized Rs. 5545.62 crore of savings and 12253 crore loan through SHGs. If we add the figure mobilized and used by the SHGs themselves, then this amount would be much higher. This shows the strength of the scheme for improving financial inclusion in the country. This shows the deepening of saving and credit by the banks through SHGs. But, this deepening of financial services through SHGs across different states is not uniform. States like Andhra Pradesh, Tamil Nadu and Karnataka that had a higher presence of SHGs witnessed a higher level of credit deepening than states like Jharkhand, Bihar and Madhya Pradesh. It therefore can be concluded that the spread of SHGs is not uniform and hence leading to disparities in the level of credit widening and credit deepening across different states.
TABLE 4: PROGRESS OF SHG-BANK LINKAGE MODEL (SOURCE: NABARD REPORT)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>March 31, 2007</th>
<th>March 31, 2008</th>
<th>March 31, 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.in Lakhs</td>
<td>Amt.in Rs.</td>
<td>No.in Lakhs</td>
</tr>
<tr>
<td>Savings of SHG with Banks</td>
<td>41.60</td>
<td>3512.7 Crores</td>
<td>50.10</td>
</tr>
<tr>
<td>Average Savings SHG(Rs.)</td>
<td>-</td>
<td>8444</td>
<td>-</td>
</tr>
<tr>
<td>Bank Loan Disbursed</td>
<td>11.06</td>
<td>6570.39 Crores</td>
<td>12.28</td>
</tr>
<tr>
<td>Average Loan</td>
<td>-</td>
<td>59406</td>
<td>-</td>
</tr>
</tbody>
</table>

DETERMINANTS OF FINANCIAL INCLUSION

Financial Inclusion in an economy is influenced by multiple factors like the level of economic development (PCI), financial literacy as measured by literacy rate, policy intervention to promote financial services for the weaker section and infrastructure development. Higher level of economic development generates demand for financial services and thus can hypothesis a positive impact on IFI. The SHGs have the capacity to improve financial inclusion. We therefore have considered percent adults covered under SHGs as an innovative intervention by the RBI to improve financial inclusion. In addition to this, the impact of technology or knowledge sharing can be substantial in the enhancement of financial inclusion. As state wise information on this variable is not available, we therefore had to rely on adult literacy rate. The final regression model used is as follows:

$$IFI = B_0 + B_1 \text{(PCI)} + B_2 \text{(Literacy Rate)} + B_3 \text{(%Share of Financial Services)} + B_4 \text{(Coverage of SHGs)} + U_t$$

The cross-sectional data for Indian economy for the year 2007 has been used to estimate the regression coefficients of the model. The results are given in Table 5.
Table 5 gives the estimates of linear regression coefficients. We have considered PCI(X1), Literacy Rate(X2), Share of Financial Services(X3), and Coverage of SHGs as independent variables to study their impact on financial inclusion. IFI as developed by Satya R. Chakravarty and Rupayan Pal for different States has been used as a dependent variable for this regression analysis. The regression model explains an overall 83.8% variation in the Index of Financial Inclusion. All the regression coefficients are positive but co-efficient of Share of Financial Services and coverage of SHGs is highly significant. These variables are thus crucial in determining financial inclusion in the country as depicted by the regression model. The coverage of SHG is also important in spreading the financial services across different regions and sections of the people. But, the share of Financial Services and PCI has turned out to be a major determinant of Financial Inclusion. It is thus the push of demand factors that is more supportive in the expansion of financial services. The coefficient of literacy rate is positive but not significant.

Simple literacy attainment may not help in understanding financial inclusion. As a result of poor financial awareness, a majority of the people are not able to use various financial products developed by formal financial sector. The co-efficient of share of SHG in the total adult population is positive and significant. In the second attempt, we have replaced Average Savings per SHG for the share of SHG in the regression model. The other variables of the model are the same. This model explains about 80.7% variation in IFI. The co-efficient of this new variable i.e. Average Savings per SHG is negative but insignificant. Similarly, we replaced this variable by Average Loan borrowed by SHG from Banks. The co-efficient of this variable is though positive but again insignificant. The change of these variables has not affected the overall results of the regression estimate. It is thus clear from the above estimates that it is not the amount of saving or credit but the coverage of SHG that is very important in the enhancement of Financial Inclusion. The demand side factors are emerging as crucial policy variables for making financial services very effective and broad based in the country. The introduction of microfinance through SHG
approach is really helping in inculcating the banking habit and thus promoting financial services in a sustainable manner. The traditional instruments like credit/interest subsidy, demographic and geographic penetration has a limited role in order to make inclusive financial services. Innovative financial products that can inculcate banking habits in the society are more effective in making the financial system inclusive in a diverse country like India.

CONCLUSIONS

India strives to ensure equitable growth of all the sections of the society. The century long efforts of pursuing developmental objective through financial sector is no cakewalk as it is quite evident from the different phases of financial inclusion in India. Delivering financial services to the poor undeniably needs a well-defined strategy which should not only be supply driven. The possibility of access and use of financial services can be transformed to actual access and use of financial services only with the demand factors pumping the need for such services. Our study found literacy level to be positive yet insignificant in explaining financial inclusion. So, it is quite evident that literacy alone would not suffice to ensure effective participation in using the financial services. Financial literacy concerning the use of various financial products should be encouraged through various economic agents like NGOs, MFIs, and Business Correspondents etc. The scope of traditional instruments for financial inclusion of providing credit/ interest subsidies is very limited and unsustainable. A major policy intervention which can help in inculcating banking habits among people would not only ensure use of financial services but would empower their social and economic status as well. Non-governmental organizations can make a rewarding contribution by promoting and training the self-help groups, helping them to manage their affairs, encouraging them to open a bank account and later on taking up of loan. Self-Help Group-Bank Linkage Model as vigorously promoted by NABARD and other organizations can help in achieving this purpose. With more and more people able to save and invest, the vicious circle of poverty, unemployment and the associated evils can be done away with thereby leading to increased Per Capita Income, which again is a very important determinant in Financial Inclusion.
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Policies and Performances of Agricultural/Rural Credit In Bangladesh: What Does Influence on Agricultural Production?

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International Poverty Reduction Center in China (IPRCC), China

Abstract

This paper evaluated the performance of various lenders on agricultural/rural credit program, assessed the relationship between agricultural credit and production, investigated the major challenges and proposed remedial measures for future policy direction and strengthening the policy implication for increasing agricultural production. The study employed time series data collected from various national and international data sources. Both linear and exponential equation adopted for representing the time series data. Pearson Correlation equation also applied to determine the significance of the relationship between credit disbursement and production. The performance of agricultural/rural credit of various lenders improved due to policy shift in recent years and the inclusion of new financial intermediaries- Private Commercial Banks (PCBs) and Foreign Commercial Banks (FCBs). Both allocation of credit and target attainment had paid less attention although agricultural credit and production revealed strong relationship at 1 per cent level. The findings may help policy makers and practitioners to gain better understanding on existing situation of agricultural/rural financing and may think or rethink further improvement.

Key words: Bangladesh, agricultural credit, scheduled banks, and agricultural production

Introduction

Agriculture is one of the prime sectors of Bangladesh economy. This sector contributes about 20 per cent of the country’s Gross Domestic Product (GDP) and employs 44 per cent of the total labor force (BB, 2010). Within the broad agricultural sector, the contribution of sub-sectors namely crops, livestock, forestry, and fisheries estimated 11.34 per cent, 2.66 per cent, 1.74 per cent, and 4.49 per cent respectively (BBS, 2010). Agricultural sector contributes significantly in respect to attaining marginal food sufficiency (Rahman and Parvin, 2009), creating employment opportunity, improving standard of living, and finally reducing poverty (Chowdhury and Chowdhury,
2011). The success has achieved due to continuous reform of agricultural policies and its implementation in recent years (Mahmud, 2008; GoB, 2009). These include - The National Agriculture Extension Policy, National Seed Policy, Irrigation and Water Management Policy, Integrated Pest Management Policy, and Agricultural/Rural Credit Policy. Among others, agricultural/rural credit policy considers one of the crucial factors toward sustainable development of agricultural sector particularly to increase agricultural production.

However, based on an old paradigm, like many developing countries, the government of Bangladesh provided subsidized agricultural/rural credit through specialized banks (Bangladesh Agricultural Bank and Rajshahi Agricultural Development bank) on grounds that lending to agriculture sector expedites agricultural production. Unfortunately, the outcomes were not satisfactory even tend huge default rates, lower performance of specialized banks, credit allocated to wealthiest borrowers, and regarded as unsustainable approach. The failure of the old paradigm is well documented in previous literatures. These are - portfolios concentrate in the hands of the wealthiest borrowers (Khandker and Faruquee, 1999; Nagarajan and Meyer, 2005), large landowners use formal loans unproductively (Khandker and Faruquee, 1999), a culture of non-repayment fosters because debts forgiven due to political favor (Nagarajan and Meyer, 2005), highly subsidized credit discourages the development of private financial intermediaries (Adams and Graham, 1981), and institutions become unsustainable because of subsidized interest rates (Christen and Douglas, 2005; Nagarajan and Meyer, 2005; Khandker & Faruqee, 1999; Harper, 2005).

Encouragingly, the central bank of Bangladesh has recently shifted agricultural/rural credit policy through incorporating all scheduled banks (including Private Commercial Banks and Foreign Commercial Banks) and NGO-MFIs under agricultural/rural credit program. In fact, agricultural/rural credit plays an important role in enhancing productivity of agriculture (GoB, 2009; Chowdhury, 2009) and the participation of all formal intermediaries’ obviously added extra value. These formal financial institutions offer micro-credit services for poverty alleviation like NGO-MFIs besides agricultural credits (CDF, 2006; Bayes, 2011). In the line of credit policy, the Private Commercial Banks (PCBs) and Foreign Commercial Banks (FCBs) are encouraged to extend lending facilities through partnership agreement with the NGO-MFIs as they have fewer or no rural branch offices. However, remain questions are- whether this approach works successfully or not? Does financial intermediaries’ performance change overtime due to policy shift? Finally, what is the influence of agricultural credit on increase production?

Considering the potentiality and shortcoming of agricultural credit program, present study aims to evaluate the NGO-MFI partnership approach for extending financial services and the performance of various lenders with the view of existing agricultural credit policy. The paper also tries to establish the relationship between agricultural credit and production such as food grain, livestock, and fisheries. Last but not least, the paper investigates upcoming challenges for extending financial services to farmers/rural poor and proposes some solutions to overcome these.

Methods

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The present paper mainly based on secondary sources of information. Data were collected from Bangladesh Bureau of Statistics (BBS), Bangladesh Economic Review (BER), and Bangladesh Bank (BB) publication of various years. Meanwhile, some relevant information was gathered from Poverty Reduction Strategy Paper (PRSP), Fifth Five Year Plan of Bangladesh, Ministry of Agriculture, Ministry of Livestock and Fisheries, and Ministry of Finance. After collecting required (time series) data these were analyzed based on study objectives. Microsoft Excel and SPSS program were applied for analyzing the data in a meaningful way. Both linear and exponential equations were adopted for representing time series data. Meanwhile, Pearson Correlation equation was used to determine the significance of the relationship among variables. The liner and exponential equations are as follows:

\[ Y_e = a + bt \quad \ldots \ldots \quad (1) \]

\[ Y_e = Ae^{bt} \quad \ldots \ldots \quad (2) \]

\[
\begin{align*}
\text{Ye}= & \text{ dependent variables; } \\
a= & \text{ intercept } \\
b= & \text{Co-efficient } \\
t= & \text{ time series }
\end{align*}
\]

**Policies of Agricultural/ Rural Financing**

Bangladesh Bank, the central bank of Bangladesh, every year sets policy for agricultural and rural credit to promote agricultural production and rural development. Typically, the State Commercial Banks (SCBs) and the Specialized Banks (SBS) are taking sole responsibility for agricultural/ rural credit disbursement; however recently (since 2008) the Private Commercial Banks (PCBs) and Foreign Commercial Banks (FCBs) also involved in disbursing agricultural/ rural credit. Encouragingly, a new system was introduced in 2009 to disburse agricultural credit at Union level openly through a transparent process (field or union parishad office rather than to a bank) so that only true farmers can get the credit (BB, 2011). Meanwhile, Bangladesh Bank allocated Tk. 5 billion revolving fund for distribution among sharecroppers with the assistance of BRAC in FY 2010. It is noted that about 28 per cent of rural households are sharecroppers who have long been deprived of the access to credit (Bayes, 2011). In fact, it was the first ever credit allocation for the sharecroppers in the history of Bangladesh. As per credit norms, special priority has given to the underdeveloped region as well as women entrepreneurs. Accordingly, a comprehensive monitoring strategy for agricultural credit system has been adopted by the Bangladesh Bank i.e ‘Agricultural Credit Monitoring System’. Following are the salient features of agricultural/rural credit policy enacted in 2010.

1). **Existing Policies:**
A farmer may be sanctioned credit for up to 15 bighas (5 acres) of cultivable land as determined by credit norms. However, credit ceiling for growing potato and sugarcane will remain fixed at 2.5 acres of cultivable land;

For disbursing agricultural credit, three core sectors of agricultural credit have to be given priority compared to other sectors. Sixty per cent of agricultural credit has to be disbursed to grain and crop sectors only;

Banks with inadequate number of branches are advised to disburse agricultural/rural credit by establishing linkages with NGOs/self-employment supporting groups if and when needed;

Banks are encouraged to disburse group-based loans to fishermen in various water bodies, haors and pools

In order to provide practical assistance in the field level farmers have connected with the Directorate of Agriculture under the Ministry of Agriculture (MOA);

**ii). Newly Added Policies:**

Bangladesh Bank considers refinancing facility to encourage credit distribution programs in relatively underdeveloped and neglected areas such as char (shoal), haor and coastal areas;

In order to bring landless, marginal and sharecroppers under bank credit coverage, arrangement has been made for accessing agricultural credit by submitting certificates by landowners and important persons of society;

Banks and other concerned institutions are advised to make arrangement for credit disbursement in the presence of local public representatives, concerned agricultural officers, teachers and other important persons in the community at Union level for ensuring transparency;

Concerned institutions are also advised to disburse credit in favor of fishermen permanently residing in the southern region of the country so that they can purchase/procure fishing instruments such as boats, nets etc.;

Banks are directed to seek help from local Agricultural Extension Officers for identifying the real farmers;

As an agriculture supporting sector irrigation, plowing and harvesting machineries have to be provided with necessary credit. Each bank branch is advised to take initiative for disbursement of agricultural credit for purchasing at least one threshing machine;

Credit has to be made available for different self-employment or income generating activities on individual or group basis with a view to expediting growth momentum in the rural economy;

Women entrepreneurs have paid special priority in agricultural/rural credit disbursement. Attainment of targeted amount of agricultural credit will be deemed as a plus point in getting permission for opening new bank branches;
Banks are encouraged to use modern Information and Communication Technology (ICT) including mobile phone in agricultural credit disbursement programs;

**iii). Refinance policy**

Bangladesh Bank has adopted refinance policy to encourage lenders for financing to agricultural sector. However, only Specialized Banks i.e *Bangladesh Khirisi Bank* (BKB-Bangladesh Agricultural Bank) and *Rajshahi Krishi Unnayan Bank* (RAKUB- Rajshahi Agricultural Development Bank) have enjoyed refinance facilities over the year. Bangladesh Bank’s refinance to BKB and RAKUB are shown in Figure 1. It is revealed that Bangladesh Bank’s refinance amount has fluctuated overtime. For instance, refinance fund reached highest amount Tk. 7.7 billion in 2002 while there was no refinance fund released in 2007. It is noted that only RAKUB received refinance fund to the tune of Tk. 1.58 billion from Bangladesh Bank in 2010. As mentioned previous section, Bangladesh Bank allocated Tk. 5 billion revolving fund to BRAC exclusively for sharecroppers in 2010.

**Figure 1.** Bangladesh Bank refines against agricultural credit during 2000-2010

### Results and Discussions

**Performances of Agricultural/Rural Financing**

With growing demand of agricultural credit for sustainable agricultural production, Bangladesh bank reinforces all scheduled banks (SCBs, SBs, PCBs and FCBs) to mobilize credit into agricultural sector. These financial intermediaries are offered short and long term credit according to the purposes of agricultural activities. According to BB recent report, about 63 per cent (Tk. 52.16 billion) of credit disbursed as short-term lending and the rest 37 per cent (Tk. 30.63 billion) as in the form of long-term loans. Long term loans are sectioned for purchasing...
irrigation equipments, agricultural machinery, livestock, horticultures, fisheries, and establishment of agro-based industries etc. Typically, short-term loans are provided for seasonal agricultural production activities.

Nevertheless, performance of agricultural credit has measured on the basis of credit disbursement and recovery situation overtime. More precisely, credit performance has evaluated from two angels - credit performance from lenders point of view and the credit performance from the perspective of specific agricultural sub-categories. Figure 2 shows total disbursement, outstanding loans, and an overdue as % of outstanding loans during FY 1980-81 to FY 2010-2011. Outstanding loans found an upward trend at slower pace during 1981-2007, but since 2008 the trend has pulled upward very sharply. It might be a reason for introduction of PCBs and FCBs into agricultural/rural financing. Overdue as % of outstanding loans was fluctuated until 2001, then started to go down which implies that the performance of recovery has improved in recent years. Despite increasing trend of agricultural credit disbursement and outstanding balance, the percentages of agricultural credit in terms of total bank credit were found more or less at static level. For example, agricultural credit constituted only 3 to 5 per cent of total bank credit during 2001-2010 (Table-1). It is depicted from Table 1 that the maximum share of agricultural credit was sanctioned in 2000 (4.8 %) and the minimum was in 2008 (3.40 per cent).

\[ y = 6.5759x - 15.708 \quad R^2 = 0.9204 \]
\[ y = 2.8247x - 16.433 \quad R^2 = 0.9334 \]
\[ y = -0.1076x + 51.369 \quad R^2 = 0.0048 \]

**Figure 2:** Credit disbursement, outstanding and overdue as % outstanding loans overtime
Table 1. Banks advances, agricultural credit disbursement and percentages of agricultural credit of total bank credits (Tk. in billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total bank credit</th>
<th>Agricultural credit</th>
<th>% of agricultural credit of total bank credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>417.65</td>
<td>15.17</td>
<td>3.63</td>
</tr>
<tr>
<td>1998</td>
<td>479.90</td>
<td>16.42</td>
<td>3.42</td>
</tr>
<tr>
<td>1999</td>
<td>539.84</td>
<td>30.05</td>
<td>5.57</td>
</tr>
<tr>
<td>2000</td>
<td>593.62</td>
<td>28.51</td>
<td>4.80</td>
</tr>
<tr>
<td>2001</td>
<td>687.78</td>
<td>30.20</td>
<td>4.39</td>
</tr>
<tr>
<td>2002</td>
<td>767.72</td>
<td>29.54</td>
<td>3.85</td>
</tr>
<tr>
<td>2003</td>
<td>847.34</td>
<td>32.78</td>
<td>3.87</td>
</tr>
<tr>
<td>2004</td>
<td>951.30</td>
<td>40.48</td>
<td>4.26</td>
</tr>
<tr>
<td>2005</td>
<td>1117.32</td>
<td>49.57</td>
<td>4.44</td>
</tr>
<tr>
<td>2006</td>
<td>1291.65</td>
<td>54.96</td>
<td>4.26</td>
</tr>
<tr>
<td>2007</td>
<td>1465.73</td>
<td>61.67</td>
<td>4.21</td>
</tr>
<tr>
<td>2008</td>
<td>1815.53</td>
<td>61.67</td>
<td>3.40</td>
</tr>
<tr>
<td>2009</td>
<td>2090.40</td>
<td>92.84</td>
<td>4.44</td>
</tr>
<tr>
<td>2010</td>
<td>2574.43</td>
<td>111.17</td>
<td>4.32</td>
</tr>
<tr>
<td>March, 11</td>
<td>-</td>
<td>91.54</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: BB annual report, 2001-2010; BER (2011), and BBS (2008)
Accessibility of banking services to small and marginal farmers is necessary to keep smooth growth to agricultural sector. Hence, SCBs and SBs are playing vital role particularly SBs are dominating the agricultural credit market. Encouragingly, PCBs and FCBs have begun to participate agricultural financing in recent years (since 2008). They are distributed agricultural credit through their branch network and in collaboration with NGO-MFIs. NGO-MFIs linkage program to channeling credit can be treated as positive movement but the concerning matter is such linkage program increase the cost for lending. It is argued that the credit become costly for the farmers to have their production profitable (CDF, 2006; Rahman, 2004). This is because of NGO-MFIs borrow these funds from PCBs/FCBs at high interest rate; after adding their cost the mark-up interest rate on credit become above 20-22%, which is well above the market rate of interest available for agricultural credit.

On the other hand, SCBs have branch offices at upazilla (lower administrative unit) level but not at village level while SBs have village level branch offices. According to BB annual report in 2010, SCBs and SBs had 2,149 (63 %) and 1205 (88 %) rural branches respectively as end of June, 2010 (Table 2). In contrast, private commercial banks had only 535 (22 %) rural branches out of total 2427 branches but none of foreign banks had branch offices in rural areas. Foreign banks had 53 branches in Bangladesh and all of them situated in the metropolitan city areas (Table-2). On the other hand, NGO-MFIs have extensive rural networks to extend their services to the rural poor people and the farmers.

Not to mention, Bangladeshi NGO-MFIs have been played an important role to extend financial services to the rural poor farmers particularly creating employment opportunity for them. For instance, ASA (Association for Social Advancement) has adopted agribusiness loan while BURO Bangladesh (a national MFIs) has made linkage program with Bangladesh Bank and other private commercial banks to extend credit services to the marginal and small farmers. Interestingly, BRAC (Bangladesh Rural Advancement Committee) launched sharecropper development project funded by the Bangladesh Bank in 2009 with Tk 5 billion as revolving fund to finance sharecappers. BRAC also provides technical assistance to the sharecroppers under this project. The attempt, definitely reduce the sufferings of the poor tenant farmers who cannot make required investments in crop cultivation due to severe cash constraints. Table 2 shows the branch network of scheduled banks and selected NGO-MFIs.
Table 2. No. of branch offices by lenders end of June, 2010

<table>
<thead>
<tr>
<th>Banks</th>
<th>No. Bank</th>
<th>Branches</th>
<th>Total Branches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>SCBs</td>
<td>4</td>
<td>1245 (37)</td>
<td>2149 (63)</td>
</tr>
<tr>
<td>SBs</td>
<td>4</td>
<td>157 (12)</td>
<td>1205 (88)</td>
</tr>
<tr>
<td>PCBs</td>
<td>30</td>
<td>1595 (78)</td>
<td>535 (22)</td>
</tr>
<tr>
<td>FCBs</td>
<td>9</td>
<td>59 (100)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Scheduled bank total</td>
<td>47</td>
<td>2056 (28)</td>
<td>5190 (72)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NGO-MFIs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grameen Bank</td>
<td>2562</td>
</tr>
<tr>
<td>BRAC</td>
<td>About 3000</td>
</tr>
<tr>
<td>ASA</td>
<td>3236</td>
</tr>
<tr>
<td>TMSS</td>
<td>533</td>
</tr>
<tr>
<td>BURO Bangladesh</td>
<td>506</td>
</tr>
</tbody>
</table>

Parentheses indicate the percentage

Following Figure 3, 4 and 5 show the actual disbursement, outstanding balance, and overdue as % of outstanding agricultural credit by various lenders. Typically, credit disbursement and outstanding balances were observed at upward trend during 2002-2010 for all lenders. SCBs and SBs contributed significantly in respect to credit disbursement and outstanding balances over the period. For instance, actual disbursement of agricultural credit was Tk 82.79 billion against set target of Tk. 84.53 in 2010, while in 2002 it was only Tk. 29.54 billion against the set target of Tk. 33.27 billion. The target attainment increased by 97.94 per cent in 2010 from 88.78 per cent in 2002. Within the disbursement credit, SCBs and SBs contributed Tk.19.82 billion Tk. 62.97 billion respectively in 2010. It can be seen from Figure 3 that the agricultural credit disbursement by PCBs appeared upward trend while it was opposite trend for FCBs. Agricultural credit disbursement of PCBs increased by Tk. 25.84 billion (annual growth rate about 22 %) in 2010 from Tk. 15.60 billion in 2008. In contrast, FCBs agricultural credit disbursement went down by Tk. 5.54 billion (annually dropped about 18 %) in 2010 from Tk. 8.5 billion in 2008. It might be reason for
non-existence of branch office in rural areas and lack of partnership agreement with NGO-MFIs as distribution channel. On the other hand, NGO-MFIs performed extremely well. It is noted that only top five NGO-MFIs (Grameen Bank, BRAC, ASA, TMSS and BURO Bangladesh) performances were taken into account. Credit disbursement of the selected NGO-MFIs reached at Tk. 252.94 billion (annual growth rate- 49 %) in 2010 compared to Tk. 39.15 billion in 2000.

![Figure 3. Actual credit disbursement by various lenders during 2002-2010](image)

It is appeared from Figure 4 outstanding credit balances for SBs had increased at slower rate during 2002- 2006, then dramatically fall in 2007, and regained sharply since 2008 on-ward. Similarly, SCBs outstanding balances were increased gradually overtime. In 2010, outstanding loans for SCBs and SBs were increased by Tk. 60.99 billion (annual growth rate 9 %) and Tk. 138.61 billion (annual growth rate about 8%) from Tk. 33.46 billion and Tk. 81.53 billion in 2002 respectively. Same as SCBs and SBs, PCBs and FCBs outstanding balances were also increased by Tk. 21.08 billion (about 8 % growth rate per year) and Tk. 5.19 billion (annual growth rate 24 %) in 2010 compared to Tk. 16.73 billion and Tk. 3.01 billion respectively. The gradual increasing trend of outstanding balances obviously indicates the lenders commitment to financing agricultural sector in Bangladesh. Encouragingly, outstanding balances for selected NGO-MFIs were increased very sharply over the period. The outstanding balance was increased by Tk. 150.05 billion (annual growth rate- 38 %) in 2010 from Tk. 28.81 in 2000.
Overdue as percentages of outstanding loans is an important indicator of credit performance. It was measured by multiplying overdue loan * 100 and then divided by the outstanding balance in a particular year. Overdue as % of outstanding loans higher rate implies lower credit recovery, hence lower credit performance by the lenders. Figure 5 presents the overdue as % outstanding loans by various lenders. Overdue as % of outstanding loans for SCBs and SBs loans appeared extremely higher because of inappropriate client selection, political interference, nepotism, and especially the lack of supervision and monitoring approaches. However, a certain progresses accomplished in course of time. For instance, SCBs overdue loan as % of outstanding loan dropped by 43.38 per cent in 2010 from 72 per cent in 2002. Similarly, SBs overdue as % of outstanding loans declined to 20.40 per cent in 2010 compared to 46 per cent 2002 (Figure 5). Interestingly, PCBs overdue as % of outstanding loans found below 3 per cent while it was always zero for FCBs. So, there is an urgent call for SCBs and SBs for further improvement of their recovery status. On other hand, PCBs and FCBs made significant achievement on recovery loans, however they should increase agricultural credit allocation considering their contribution to agricultural credit lower in an absolute term (2.5 per cent as credit norms). It is worth to mention that the NGO-MFIs overdue as % of outstanding loans declined to 3.73 in 2010 from 8.7 per cent in 2000. The NGO-MFIs performances on credit disbursement and recovery can be delineated as extra ordinary achievement in Bangladesh.
Nevertheless, overall performances of scheduled banks have also determined in terms of Non Performing Loans (NPLs), Return on Assets (ROA), and Return on Equity (ROE) of various lenders. Figure 6, 7 and 8 present the NPL ratio, ROA, and ROE overtime.

**Non performing loans:** Although ratio of NPLs to total loans revealed as declining trend (Figure 6) but SCBs and SBs are still burdened with a large portion of NPLs. The NPL ratio for SCBs was declined to 20.5 in 2010 (compared with 29.9 % in 2007), and the ratio for SBs was declined to 24.6 in 2010 (compared with 28.6% in 2007). The higher NPL ratio harms profitability and capital adequacy ratios, and constrains the supply of credit. Specialized banks are typically provided loans to agricultural sectors. So, higher NPLs rates of SBs may discourage new financial entities to extend financial services to agricultural/rural sector.

**Figure 5.** Overdue as % of outstanding agricultural credit by various lenders during 2002-2010

**Figure 6.** NPLs of various lenders during 1997-2010
Return on Assets and Equity: Return on Assets (ROA) and Return on Equity (ROE) varies largely within the banking sub-sector. Figure 7 and 8 show ROA and ROE for SCBs, SBs, PCBs and FCBs during 1997-2010. It reveals that the ROA for SCBs had almost zero per cent considering huge provision shortfall and that of the SBs even worse/negative. SCBs had an inconsistent trend but satisfactory. On the other hand, ROA for PCBs and FCBs were observed positive trend over the period. Similarly, ROE for PCBs and FCBs also appeared satisfactory during 1997-2010. ROE for SCBs had positive figures over the period exception years are 2004 and 2005, while for SBs had mostly negative outcome (exception years-2001, 2002, 2004 and 2010). Thus, the weak performance of SCBs and SBs in a continuous manner may hamper financial sector competitiveness. Consequently, the lower performance attainment by them may discourage PCBs and FCBs to furthering credit services to agricultural/rural sector.

Figure 7: ROA of various lenders during 1997-2010

Figure 8: ROE of various lenders during 1997-2010
Performance by agricultural sub-sector

In this section agricultural credit performances was determined at sub-category levels i.e crops, livestock, fisheries, poverty alleviation and others credit (purchasing irrigation equipments, marketing agricultural products, and other agricultural activities). Table 3 represents the percentages of credit allocation (share) over total agricultural/rural credit and target attainment by sub-category during 2001-2010. Expectedly, credits for crops composed highest percentile but still lower level as per agricultural credit norms (60 per cent for crops sub-sector). Crops’ share of agricultural credit had reached maximum level at 51.77 per cent in 2003 while it was minimum at 39.95 per cent in 2008. Hence, target and actual disbursement of crops credit were gradually increased overtime and reached at Tk. 35.88 and Tk. 33.19 billion in 2010 respectively. However, the target attainment of crops credit was always found below the settled target which can be treated as lower performance achievement. Credit disbursement gaps estimated lowest 8 per cent (Tk. 2.6 billion) in 2010 and highest 25 per cent (Tk. 7.43 billion) in 2007.

Similarly, target and actual disbursement of livestock credit were observed increasing trend overtime. However, the gaps between target and actual disbursement increased significantly after 2005 on-ward. For example, in 2010, livestock credit target had been set at Tk. 7.26 billion but actual disbursement attained only Tk. 4.08 billion (the target attainment was only 56 per cent). Even, disbursement gaps worsen in 2007 only 50 per cent of settled target had achieved. Nothing expectional, target and actual disbursement of fisheries credit also increased at significant rate particularly after 2005 on-ward. The fisheries credit disbursement target was attained highest level at 76.49 per cent in 2006 while it was lowest level at 61 per cent in 2001. It is argued that lower capital inflow to these agricultural sub-sectos can be attributed to under utilisation of the potentiality of these sectors which ultimately obstacles toward sustainable development.

On the other hand, credit allocation and actual disbursement for poverty alleviation and other components (purchasing irrigation equipments, marketing of agricultural products, and other agricultural activities) were depicted very impressive. In fact, credit inflow to these sub-categories has had positive impact on overall agricultural development. Even, the credit for poverty alleviation has also had somehow influence on agricultural production as the credit goes to marginal or small farmers, fisherman, small scale businesses etc. It is worth to notify that loan for poverty alleviation exceeded the defined target since 2007 on-ward. Credit disbursement target for other components also exceeded the defined target almost ever year (exceptions are 2003 and 2004). Target attainment and exceeding the target for these sub-categories can be regarded as potential achievement towards overall agricultural development. It can be concluded that the poverty alleviation and others components loans were given higher priority compared to livestock and fisheries sub-sector. Thus, lower target attainment of crops, livestock, and fisheries credit leaded to less capital inflow to these sub-sectors and might shackles agricultural production.
Table 3. Agricultural credit allocation and target attainment by sub category during 2001-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Crops</th>
<th>Livestock</th>
<th>Fisheries</th>
<th>Poverty alleviation</th>
<th>Others*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Share (%)</td>
<td>Attainment (%)</td>
<td>Share (%)</td>
<td>Attainment (%)</td>
<td>Share (%)</td>
</tr>
<tr>
<td>2001</td>
<td>45.10</td>
<td>83.87</td>
<td>2.62</td>
<td>65.83</td>
<td>2.68</td>
</tr>
<tr>
<td>2002</td>
<td>43.13</td>
<td>68.64</td>
<td>3.72</td>
<td>76.92</td>
<td>2.27</td>
</tr>
<tr>
<td>2003</td>
<td>51.77</td>
<td>90.31</td>
<td>4.51</td>
<td>79.57</td>
<td>1.71</td>
</tr>
<tr>
<td>2004</td>
<td>45.58</td>
<td>78.31</td>
<td>6.13</td>
<td>89.21</td>
<td>2.74</td>
</tr>
<tr>
<td>2005</td>
<td>42.53</td>
<td>75.61</td>
<td>5.75</td>
<td>74.22</td>
<td>2.70</td>
</tr>
<tr>
<td>2006</td>
<td>40.10</td>
<td>77.33</td>
<td>5.02</td>
<td>57.74</td>
<td>4.20</td>
</tr>
<tr>
<td>2007</td>
<td>43.19</td>
<td>75.47</td>
<td>5.04</td>
<td>50.00</td>
<td>4.55</td>
</tr>
<tr>
<td>2008</td>
<td>39.95</td>
<td>78.82</td>
<td>4.80</td>
<td>54.11</td>
<td>5.24</td>
</tr>
<tr>
<td>2009</td>
<td>40.82</td>
<td>91.77</td>
<td>4.49</td>
<td>50.65</td>
<td>4.89</td>
</tr>
<tr>
<td>2010</td>
<td>40.09</td>
<td>92.50</td>
<td>4.93</td>
<td>56.20</td>
<td>4.83</td>
</tr>
</tbody>
</table>

*purchasing irrigation equipments, marketing agricultural products, and other agricultural activities

Relationship between Credit Disbursement and Production

There is no doubt that credit access to agriculture farming, livestock and poultry raising, and fish farming have somehow impacts on production. With this notion, time series data were used to determine the relationship between actual credit disbursement and agricultural production. Table 4 presents the overall relationships between credit disbursement and production of food grain, livestock, and fisheries. Summary results (Table 4) are generated by applying production (crops, livestock, and fisheries) and credit disbursement data for the period of FY 1980-81 to 2010-11.
Table 4. Relationship between agricultural credit disbursement and production of crops, livestock products and fisheries during FY1980-81 to 2010-11

<table>
<thead>
<tr>
<th>Type of rice</th>
<th>Linear model</th>
<th>Exponential model</th>
<th>Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R²</td>
<td>Intercept (a)</td>
<td>Coefficient (b)</td>
</tr>
<tr>
<td>Food grain</td>
<td>.879</td>
<td>1.651E4</td>
<td>196.685</td>
</tr>
<tr>
<td>Milk</td>
<td>.597</td>
<td>1.384E3</td>
<td>10.571</td>
</tr>
<tr>
<td>Meat</td>
<td>.873</td>
<td>476.347</td>
<td>8.148</td>
</tr>
<tr>
<td>Eggs</td>
<td>.474</td>
<td>2.616E6</td>
<td>3.185E4</td>
</tr>
<tr>
<td>Fisheries</td>
<td>.899</td>
<td>791.399</td>
<td>23.772</td>
</tr>
</tbody>
</table>

* indicates as 1 per cent significant level (2-tailed)

Table 4 depicts, food grain production was highly correlated (0.938) with agricultural credit disbursement and statistically significant at 1 per cent level. Similarly, fisheries production was also highly correlated (0.948) with agricultural credit disbursement and statistically significant at 1 per cent level. Livestock products - milk, meat and eggs were moderately correlated with the value 0.772, 0.938 and 0.688 and statistically significant at 1 per cent level. The R² value in the linear model was 0.879 and 0.899 for food grain and fisheries production respectively which implies that independent variable (agricultural credit) can explain about 88 per cent and about 90 per cent of the dependent variable (production) of food grain production and fisheries production respectively. The R² value of liner model for milk, meat and eggs were 0.597, 0.873 and 0. 474 respectively which represent that independent variable (livestock credit) can explain only 59 %, 77 % and 51 % of dependent variables (production) of milk, meat, and eggs respectively. Similarly, the exponential model also shows that independent variable (agricultural credit) can explain 81 per cent and 79 per cent of the dependent variable (production) of food grain production and fisheries production respectively.
As per Bangladesh Bank credit policy, credit disbursement target has been set by sub-sector wise i.e crops, livestock, and fisheries etc. So, following Table 5 shows the relationship of credit on production for a particular agricultural product. It is noted that relationship between actual credit disbursement and sub-sectors (crops, livestock, and fisheries) production have determined based on time series data from FY 2000-01 to FY 2009-10 due to lack of credit disbursement data (before 2001) by sub-sectors.

Table 5 Relationship between credit disbursement and production for crops, livestock products and fisheries applying sub-sector wise data during FY2000-01 to 2009-10

<table>
<thead>
<tr>
<th>Type of rice</th>
<th>Linear model</th>
<th>Exponential model</th>
<th>Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R²</td>
<td>Intercept (a)</td>
<td>Coefficient (b)</td>
</tr>
<tr>
<td><strong>Food grain</strong></td>
<td>.819</td>
<td>1.975E4</td>
<td>419.06</td>
</tr>
<tr>
<td><strong>Milk</strong></td>
<td>.704</td>
<td>1.538E3</td>
<td>244.532</td>
</tr>
<tr>
<td><strong>Meat</strong></td>
<td>.928</td>
<td>605.215</td>
<td>157.789</td>
</tr>
<tr>
<td><strong>Fisheries</strong></td>
<td>.940</td>
<td>1.738E3</td>
<td>279.147</td>
</tr>
</tbody>
</table>

** indicates as 1 percent significant level (2 -tailed)

From Table 5 it is observed that food grain production was highly correlated (.905) with crops credit disbursement and statistically significant at 1 per cent level. Similarly, fisheries production was also highly correlated (.970) with the fisheries credit and statistically significant at 1 per cent level. Livestock products- milk, meat and eggs were moderately correlated with livestock credit disbursement at value 0.839, 0.839 and 0.818 respectively and statistically significant at 1 per cent level. The R² value in the linear model was .819 and .940 for food grain and fisheries production respectively which implies that independent variable (crops credit) can explain 82 per cent and 94 per cent of the dependent variable (production) of food grain and fisheries production respectively. On the other hand, R² value of liner model for milk, meat and eggs were 0.704, 0.928 and 0.669 respectively which represents that independent variable (livestock credit) can explain 70 per cent, 93 per cent and 67 per cent of dependent variables (production) of milk, meat, and eggs respectively. Interestingly, more or less similar outcomes were found in exponential growth model.
Challenges of Agricultural/Rural Financing and Proposed Remedial Measures

In the past, lot of questions and complaints were raised by the farmers at field level on the effectiveness of credit policies. Typically, performance of various lenders is determined on the basis of credit disbursement, outstanding loan, recovery rate etc. while selection/judgment of the appropriate clients and harassment for obtaining credits are neglected. Encouragingly, Bangladesh Bank has upgraded agricultural/rural credit policies particularly sets target for individual lenders and offering some incentives. However, there is still room for further improvement. Therefore, following section tries to address the major challenges for agricultural and rural financing and proposes some remedial measure to overcome these difficulties.

Inadequate rural branch offices: As mentioned earlier, only SBs have rural branch offices at village level while SCBs have branch offices at upazilla level. Hence, farmers are reluctant to handle the application and other formalities at upazilla level having their extreme busyness during pick season of agricultural farming. On the other hand, PCBs do not have adequate branches in rural areas while FCBs do not have any rural branch offices to expand their rural or agricultural credits which tend to reduce the business scale and performance. Hence, NGO-MFIs linkage program to channeling the credit can be treated as positive movement but the concerning matter is such linkage program increase the cost for lending. So, it is suggested to adopt cost sharing mechanism or Bangladesh bank should consider providing soft loan to limit the lending cost.

Farmer selection bias: Bangladesh bank has encouraged all scheduled banks to collect farmer information from department of agricultural extension to identify the real farmers. However, the selection bias is still prevail as bank officers given special priority to their relatives, friends, and those maintain good relation with bank personnel in selecting the borrowers. Thus, appropriate monitoring and supervisory approach should be adopted by the central bank to reduce the tendency of malpractices by the bank personnel.

Collateral requirements: Typically, farmers have to keep some of his/her assets as mortgage for obtaining loans from scheduled banks. Even, the formalities and procedures are complex requires longer time. As most of the farmers are illiterate, they caution about the formalities/contract eventually they lost their intention to borrow from formal banks. Despite recent initiative for extending credit to marginal and small farmers through guarantee of land owners or responsible person from village, has not gained much success as small and marginal farmers find difficulties to accomplish the requirements. Not to mention, group lending approach is so successful in Bangladesh, hence it is proposed to adopt group guarantee approach same as NGO-MFIs to expedite the agricultural credit disbursement.

Credit Recovery: It is apparent from previous discussion that the overdue as % of outstanding loans found higher for SCBs and SBs which definitely a concerning issue for the banks providing agricultural credit in a long run. It may also be discouraged PCBs and FCBs for extending agricultural credit furthermore in a larger scale although they
achieved significant recovery at present context. Besides taking legal action against default farmers, there should have frequent motivation and propaganda for encouraging farmers to repay the loans on time.

**Balancing farmer preferences:** Generally, farmers are enthusiastic to borrow from formal lenders particularly from specialized banks (BKB, RAKUB) due to lower interest rates. However, most of the farmers face difficulties to borrow from them due to collateral requirement, complex application procedures, claim on bribe, lack of required amount of credit and in timely fashion etc (Rahman et al., 2011). Hence, they prefer to borrow from NGO-MFIs as easily accessible to them and require less formality. There are concerns that NGO-MFIs are little shy to lend to farmers in absence of a real group model, potential of credit risk due to natural calamity, government pressure on subsidized interest rate for agriculture sector etc. So, it is quite challenge to make balance the farmer preference and the reality of agricultural credit market. To address such challenges, it is suggested to adopt simple application and loan approval process by the scheduled banks, meanwhile NGO-MFIs should be encouraged to extend their group lending approach in agricultural lending.

**Interest rate and repayment methods:** Generally, farmers have to pay higher interest rate for the loans they borrow from NGO-MFIs. The initiative to channeling credit through NGO-MFIs is not so productive. The concern is that the credit became costly for the farmers to have their production profitable. This is because the NGO-MFIs borrow these funds from PCBs/FCBs at high interest rate; after adding their cost the mark-up interest rate on credit become above 20-22%, which is well above the market rate of interest available for agricultural credit. So, the higher interest rate may shirk the market access of PCBs and FCBs. Generally, NGO-MFIs provide credit for short period of time and ask for weekly repayment which may not be suitable for agricultural sector. It is expected that agricultural loans should be advanced at the beginning of crops farming, livestock & poultry raising, fish farming etc. and repayment should be made after getting returns from the investment. In the meantime, the interest rate for agricultural credit should be caped at minimum level considering agricultural as priority sector.

**Political interferences:** In the past, there were several evidences on exemption of interest rate for agricultural credit due to political favor, hence farmers waited for further opportunities and delay to repay the loans. In addition, bank directors have recruited on political consideration- the directors use the banks' vehicles for their personal purposes as well as based on political wishes. Thus, it is suggested to keep financial intermediaries away from such political good will.

**Agricultural credit share over total bank advances:** The percentages of agricultural credit over total bank credit were observed more or less at static level between 3-5 per cent (Table 1). It is regarded that the allocation for agricultural credit was unrealistic considering the importance of agricultural sector for achieving self-sufficiency in food. So, allocation of agricultural credit should be increased considering growing demand and importance of agricultural credit.

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Uneven distribution of agricultural credit: Within agricultural credit allocation among sub-categories, the livestock and fisheries sub-sectors were neglected (Table 3). Even, the target attained was only between 50 to 70 per cent, while other sub-categories almost reached their target even exceeded the defined target. Considering the contribution of livestock and fisheries sub-sectors (2.66 % and 4.49 % agricultural GDP) the allocation need to be readjusted as well as must trace the reasons for lower target achievement.

Supervised Credit: Despite central bank initiatives, there is still lack of supervision and monitoring services from lenders side particularly it is true for SCBs and SBs. Hence, farmers are transferring agricultural credit to non-farm or business purposes as farming is more risky compared to non-farming activities. To reduce such deviation of agricultural credit there is nothing better than proper monitoring and supervision.

Agricultural Insurance: In Bangladesh, the agricultural insurance system has not yet been developed (Rahman, 2009). The earlier initiative on crop insurance failed due to lack of government patronization, and lack of interest from insurance companies due to higher risk in agricultural farming. So, the government patronize insurance company (Jiban Bima) should come forward to channeling the insurance facilities to agricultural sector (crops, livestock, fisheries etc.)

Conclusions

Financial access to agricultural sector has expanded over the decades with the combined efforts of scheduled banks and NGO-MFIs. Not to mention, Bangladesh bank policy on agricultural/rural credit has promoted the access to credit for small and marginal farmers. Although PCBs and FCBs contributed limited in respect to credit disbursement but their participation in agriculture/rural financing deemed as major movement of formal private banks to financing in rural Bangladesh. Many PCBs and FCBs have forged linkages with NGO-MFIs for expanding market horizon in a viable and sustainable manner, while SCBs and SBs have been using their existing branch network to do so. Encouragingly, performance of PCBs and FCBs were found very impressive in terms of credit recovery although they have recently involved in agricultural financing (only 3 years). Overdue as % of outstanding loans were found declining trend for all lenders including NGO-MFIs but for SCBs and SBs are still above the reasonable level.

Despite increasing allocation of agricultural credit overtime, the percentages of allocation over total credit advances were considerably low (4-5 per cent). It is disappointed to note that none of the year (since 1981 to 2010) actual credit disbursement attained the defined target of agricultural credit disbursement. Allocation of agricultural credit to livestock and fisheries sub-sectors were found below the expected level (considering their contribution to agricultural GDP) and more precisely their target attainment was considerably low (only 50-70 per cent). On the other hand, agricultural credit to other sub-category- marketing agricultural products, purchasing irrigation equipment, poverty alleviation, and other related agricultural activities achieved their settled target in most cases particularly in recent years. It is worth to note that the relationship between agricultural credit disbursement and
production (food grain, milk, meat, eggs, and fisheries) were found statistically significant at 1 per cent level.

Having exposed the significant relationship between production and agricultural credit, there should have demand for favorable agricultural credit policy and implication which can increase the budgetary allocation as well as will take steps to overcome the target shortfall. Meanwhile, policy makers should re-think the monitoring and supervisory mechanism to extend the credit to the target clients. Finally, there should have incentive for financial intermediaries to encourage them to financing the agricultural sector and rural areas in a sustainable manner.

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Nagarajan G, R Meyer (2005). Rural Finance: Recent Advances and Emerging Lessons, Debates, and Opportunities, Reformatted version of Working Paper No. (AEDE-WP-0041-05), Department of Agricultural, Environmental, and Development Economics, the Ohio State University (Columbus, Ohio, USA).


Determinants of Economic Development

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Abstract

This paper seeks to identify and analyze the factors that have hindered the economic growth of Bangladesh, restricted its growth rate to lackluster levels, and confined it among the so-called Third World countries. Among the factors are: low level of economic freedom, burdensome web of government regulations, government ineffectiveness, high tariff rates hindering competition, ineffectual rule of law, lax property rights, lack of accountability, endemic corruption, political instability, pathetic infrastructure, crippling dependence on foreign aid, and insecurity and lawlessness. These factors are identified through comparative analysis of key indicators of growth. One may argue that countries that are on the lower end of the economic development spectrum will fare poorly on these key indicators of growth. But the factors themselves are not new to policy makers and decision makers. This paper argues that the reason we do not hear the term 'Bengal Tiger' in the lexicon of economic growth as we hear about the Asian Tigers is the lack in Bangladesh of visionary, inspiring, selfless, and transcendental leadership – leadership that can bring about transformation in self-centered, self-serving, and narrow mind-set, as well as in outmoded institutions and inadequate infrastructure which are impediments to growth. Such leadership will create mass awareness, usher in new aspirations, and harness national energies towards creating an enabling environment, institutions, and incentives that can marshal economic growth and bring prosperity for all. The paper also argues that political freedom is not a necessary condition for achieving high growth rates – it is economic freedom. The paper also argues that a country does not need to be blessed with natural resources to achieve high economic growth rates. It is the ability to harness and process knowledge and resources from all around the globe that matters, especially in this age of globalization.

Introduction

The world is wired and globalized as never before. And the world is witnessing tectonic economic shifts as never before. Bangladesh is arrayed against unprecedented global competitive forces as never before. It needs to mobilize itself to combat this challenge as never before.
For over a quarter century under Pakistani rule, Bangladesh was economically exploited, politically neglected, and socially relegated. The country emerged out of the ashes of the War of Liberation at the fag end of 1971 with high hopes and aspirations. The hopes soon fizzled out. It was after centuries that the people of Bangladesh faced with the heavy burden of sovereignty and self-rule as a result of creation of the new state. Inexperience in governance was a factor in the misrule that followed. After a chaotic period of rehabilitation and reconstruction the sky-high hopes, aspirations and dreams gave way to despair and gloom. In the aftermath of mass nationalization of business enterprises, Bangladesh suffered disastrous consequences in the 1970s. After embarking on a process of gradual denationalization in the 1980s, the GDP of the country managed to register an average growth rate of 3%. Since 1990, the GDP growth rate has been over 5%. Through it has been ravaged by natural calamities time and again, its per capita income did not fall in any year since 1990; the average income today is 75% higher than it was in 1990 [Zhu and Mahajan (2007)]. Millions rose above the poverty line. But that was not impressive enough to take Bangladesh near many countries that were in its class of underdevelopment but have since propelled to the rank of middle-income country (MIC). Few among them are well-poised to challenge the most economically advanced countries of the world.

A 2007 World Bank report entitled “Bangladesh: Strategy for Sustained Growth” goads the country to take actions to raise its stature to that of an MIC in the shortest time. It is all a function of the GDP growth rate Bangladesh can muster. The report charts a roadmap that can potentially help the country realize the goal in a decade. It is an ambitious goal specially given the political uncertainty the country has been going through.

For decades the World Bank, the International Monetary Fund, as well as reputed Bangladeshi economists have been churning out reports and recommendations geared towards promoting economic development. The policy prescriptions are rich, plentiful, and tested in other countries, and cover the whole economic gamut of Bangladesh.

The 1996 World Bank report “Bangladesh 2020: A Long-Run Perspective Study” envisioned the following:

“By 2020, if not earlier, the hope is that the basic needs of the population of Bangladesh will have been met, when everyone will be properly fed and adequately clothed, shod and housed, able to read and write, have access to basic health care and have their basic rights respected – both men and women, old and young…Furthermore, the expectation is that all of this can be ensured on a sustainable basis without dependence on foreign donors, and without damaging the environment…Nothing would be done today which would in any way compromise the well-being of future generations. That, in essence, is the principal challenge for policymakers of today.”

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To reach the above vision, the authors made some assumptions about growth indicators. The following is just a sprinkling of projections for various aspects and sectors of the economy:

“…an average annual GDP growth rate of seven to eight percent during next 25 years …; an economy capable of creating 50 million new jobs over 25 years and putting poverty into retreat; population growth rates cut from 1.82 percent to 1.15 percent and infant mortality reduced by more than half – from 79.9 to 38.2 percent; a fully literate nation assured of basic health care, bringing forth cadres of skilled workers who will be capable contenders in high-tech, information-oriented, global markets;… $2 to $5 billion of FDI could be flowing in by early in the next century….”

An Assessment

Since 1996, the half-way point was reached in 2008. Where does Bangladesh stand in terms of some of the above indicators? Poverty is on the retreat (if a slow retreat is any consolation), but far from the rate envisioned by the World Bank in 1996. Forty-five percent of the population (over 60 million) was estimated to be below the poverty line in 2004. 2005 UN estimate was that 36% of the people (about 50 million) lived on less than $1 a day.

Population growth rate in 2007 is estimated to be 2.06% (much higher than the projection); infant mortality rate for 2007 is estimated to be 59.12 (just about where it was projected to be). Only about 47.5% of the total population could read and write as of 2005 (age 15 and over). With only about 0.26 physicians per 1,000 people, and much lower number of nurses, midwives, pharmacists, dentists, and public environmental health workers, Bangladesh is far from acquiring the ability to provide basic health care facilities to its citizens. The country does not have a policy or strategy for producing cadres of skilled workers. As Table 1 shows, foreign direct investment (FDI) in Bangladesh over 2003-2008 was lackluster, and far below what the World Bank envisaged. In virtually all tables, data for Bangladesh is compared to those of India, China, and Taiwan – countries that were roughly in similar category of underdevelopment few decades back.

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5 [hdrstats.undp.org/countries/country_fact_sheets/cty_fs_BGD.html/](http://hdrstats.undp.org/countries/country_fact_sheets/cty_fs_BGD.html/).
## Table 1: FDI Inflow into Bangladesh, China, India and Taiwan: 2003-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>0.350 (0.0620)</td>
<td>0.460 (0.0626)</td>
<td>0.845 (0.0868)</td>
<td>0.793 (0.0542)</td>
<td>0.666 (0.0337)</td>
<td>1.086 (0.0640)</td>
</tr>
<tr>
<td>China</td>
<td>53.505 (9.4672)</td>
<td>60.630 (8.2502)</td>
<td>72.406 (7.4390)</td>
<td>72.715 (4.9768)</td>
<td>83.521 (4.2207)</td>
<td>108.312 (6.3812)</td>
</tr>
<tr>
<td>India</td>
<td>4.323 (0.7649)</td>
<td>5.771 (0.7853)</td>
<td>7.606 (0.7814)</td>
<td>20.336 (1.3919)</td>
<td>25.127 (1.2698)</td>
<td>41.554 (2.4482)</td>
</tr>
<tr>
<td>Taiwan</td>
<td>0.453 (0.0802)</td>
<td>1.898 (0.2583)</td>
<td>1.625 (0.1670)</td>
<td>7.424 (0.5081)</td>
<td>7.769 (0.3926)</td>
<td>5.432 (0.3200)</td>
</tr>
<tr>
<td>World</td>
<td>565.16</td>
<td>734.89</td>
<td>973.32</td>
<td>1,461.07</td>
<td>1,978.83</td>
<td>1,697.35</td>
</tr>
</tbody>
</table>

Compiled from [www.unctad.org/fdistatistics/](http://www.unctad.org/fdistatistics/)
Table 2 Selected Indexes/Indicators for Bangladesh

<table>
<thead>
<tr>
<th>Index/Indicator</th>
<th>Rank</th>
<th>Countries Ranked</th>
<th>Value</th>
<th>Year of Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDI#</td>
<td>146</td>
<td>182</td>
<td>0.543</td>
<td>2007</td>
</tr>
<tr>
<td>HPI</td>
<td>112</td>
<td>135</td>
<td>36.1%</td>
<td>2007</td>
</tr>
<tr>
<td>Gini Index#</td>
<td>13</td>
<td>119</td>
<td>31</td>
<td>2000-2007</td>
</tr>
<tr>
<td>GDP Per Capita: IMF#</td>
<td>156</td>
<td>180</td>
<td>$574</td>
<td>2009</td>
</tr>
<tr>
<td>GDP Per Capita: World Bank#</td>
<td>163</td>
<td>185</td>
<td>$551</td>
<td>2009</td>
</tr>
<tr>
<td>GDP Per Capita: CIA#</td>
<td>165</td>
<td>191</td>
<td>$600</td>
<td>2009 est.</td>
</tr>
<tr>
<td>GDP Per Capita (PPP Adjusted)#</td>
<td>193#</td>
<td>227</td>
<td>$1,600</td>
<td>2009 est.</td>
</tr>
<tr>
<td>GDP (PPP Adjusted)#</td>
<td>47</td>
<td>227</td>
<td>$242.4 billion</td>
<td>2009 est.</td>
</tr>
</tbody>
</table>

The Human Development Index (HDI) measures poverty using life expectancy, literacy, and amount of education, along with the domestic purchasing power of GDP (how much citizens of a country can buy based on the country's GDP). It seeks to distinguish whether the country is a developed, a developing, or an under-developed country. The Human Poverty Index (HPI) uses probability at birth of not surviving to age 40, adult literacy rate, population without sustainable access to improved water source, and children underweight for age. Both the indexes were developed by the UNDP. The purpose of HDI is to measure how well a country is progressing toward development, whereas the HPI measures the level of poverty and suffering experienced in a country at any given time.
FDI inward flow reflects the level of confidence foreign investors have in a country. The numbers for Bangladesh are hardly surprising given its pitiable level of rule of law, investment climate, infrastructure, government bureaucracy, corruption and other factors discussed below. The Board of Investment (2005) reports most of the FDI has gone to one sector -- the energy sector -- for exploration of oil and gas.

The indexes and indicators shown in Table 2 reflect the plight of Bangladesh: Human Development Index (HDI), the Human Poverty Index (HPI), and the Gini Index of income inequality.

Human Development Index (HDI) for Bangladesh is among the 10 lowest countries in Asia and Pacific; 80% of countries are above Bangladesh. Bangladesh fares worse in Human Poverty Index (HPI); 83% of countries are above it. In terms of Gini Index, which measures income inequality, Bangladesh ranked rather high (relatively lower level of inequality) in 2000. Only Japan, Pakistan, South Korea and Mongolia ranked higher than Bangladesh among Asian countries. In terms of GDP per capita, 70% to 84% of countries rank above Bangladesh depending on the source of data. Countries that had lower GDP per capita (PPP adjusted) are virtually all African countries.

The next table seeks to highlight some of the factors that may be responsible for the plight of Bangladesh.

Table 3: Index of Economic Freedom: Bangladesh, China, India and Taiwan

<table>
<thead>
<tr>
<th>Country</th>
<th>Year 2004</th>
<th>Year 2005</th>
<th>Year 2006</th>
<th>Year 2007</th>
<th>Year 2008</th>
<th>Year 2009</th>
<th>Year 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Freedom Index (Rank)</td>
<td>50.0 (133)</td>
<td>47.5 (142)</td>
<td>52.9 (123)</td>
<td>46.7 (147)</td>
<td>44.2 (151)</td>
<td>47.5 (160)</td>
<td>51.1 (137)</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>52.5 (124)</td>
<td>53.7 (113)</td>
<td>53.6 (117)</td>
<td>52.0 (133)</td>
<td>53.1 (123)</td>
<td>53.2 (132)</td>
<td>51.0 (140)</td>
</tr>
<tr>
<td>China</td>
<td>51.5 (127)</td>
<td>54.2 (108)</td>
<td>52.2 (130)</td>
<td>53.9 (119)</td>
<td>54.1 (116)</td>
<td>54.4 (123)</td>
<td>53.8 (124)</td>
</tr>
<tr>
<td>India</td>
<td>69.6 (26)</td>
<td>71.3 (20)</td>
<td>69.7 (30)</td>
<td>69.4 (28)</td>
<td>70.3 (28)</td>
<td>69.5 (35)</td>
<td>70.4 (27)</td>
</tr>
</tbody>
</table>

6 www.heritage.org/research/features/index/searchresults.cfm. 155 countries were ranked in 2005; in 2006, 2007 and 2008, 157 countries were ranked.
Economic freedom is defined as the absence of government coercion or constraint. It embraces “all liberties and rights of production, distribution, or consumption of goods and services”. The ranking of Bangladesh worsened after 2006 so that 2010 Index shows 75% of countries were deemed to have greater economic freedom than it. That is an improvement over previous years. In 2009 – for which data breakdown is available -- Bangladesh received relatively higher scores on fiscal freedom, government size, and monetary freedom; the score was not so high on business freedom, trade freedom, and labor freedom; it was poor on investment freedom, financial freedom, property rights, and freedom from corruption. Bangladesh and China got scores that are rather close in 9 of the 10 freedoms, except for trade freedom. India shows greater embrace of economic freedom after 2005. India’s higher rank in 2009 is largely because of its much higher score in property rights (50), in which Bangladesh and China score 20. Hoskins and Eiras (2002) plotted 2002 Index of Economic Freedom Scores against 1999 Per Capita GDP (adjusted for PPP). They find (a) the freer the economy the wealthier it is, (b) there were no cases in which free economies were poor, and (c) they find a strong relationship between unfree economies and poverty. When we contrast this with the fact that India and China rank above 100 in terms of economic freedom compared to other countries but are economic powerhouses implies that there are other positive factors in play in these countries not captured by the 10 economic freedoms.

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7 For fuller definition and explanation of the ten economic freedom indicators, see: www.heritage.org/research/features/index/chapters/pdf/Index2008_Chap4.pdf.
Table 4: Indexes for Rule of Law, Voice and Accountability and Civil Liberties

<table>
<thead>
<tr>
<th>Country</th>
<th>Year 2004</th>
<th>Year 2005</th>
<th>Year 2006</th>
<th>Year 2007</th>
<th>Year 2008</th>
</tr>
</thead>
</table>
| **Indexes for Rule of Law**  
(-2.50 = worst governance, 0 = average, 2.50 = best governance) |           |           |           |           |           |
| Bangladesh | -0.92     | -0.83     | -0.79     | -0.77     | -0.70     |
| China      | -0.36     | -0.41     | -0.48     | -0.45     | -0.33     |
| India      | 0.08      | 0.18      | 0.21      | 0.13      | 0.12      |
| Taiwan     | 0.86      | 0.89      | 0.71      | 0.69      | 0.77      |

| **Indexes for Voice and Accountability**  
(-2.50 = worst governance, 0 = average, 2.50 = best governance) |           |           |           |           |           |
| Bangladesh | -0.66     | -0.52     | -0.42     | -0.59     | -0.61     |
| China      | -1.46     | -1.52     | -1.68     | -1.72     | -1.72     |
| India      | 0.42      | 0.42      | 0.47      | 0.41      | 0.45      |
| Taiwan     | 0.86      | 0.93      | 0.66      | 0.72      | 0.70      |

| **Indexes for Civil Liberties**  
(1 = most free, 0 = average, 7 = least free) |           |           |           |           |           |
| Bangladesh | 4         | 4         | 4         | 4         | 4         |
| China      | 6         | 6         | 6         | 6         | 6         |
| India      | 3         | 3         | 3         | 3         | 3         |
| Taiwan     | 1         | 1         | 1         | 1         | 1         |

Compiled from: earthtrends.wri.org/searchable_db/index.php?action=select_variable&theme=10

As Table 4 shows, India benefits from higher degree of rule of law, greater accountability, more civil liberties, and lower level of corruption than China and Bangladesh. Laar (2003) observed: “There can be no market economy and democracy without laws, clear property rights, and a functioning justice system.” India benefits from private sector initiative, skilled manpower especially in the high-tech sector, and the contribution of Non-resident Indians in its economic development. China on the other hand appears to ensure greater security and stability, lower regulation for businesses, more effective government, development of effective manufacturing base, massive investment in...
infrastructure, and higher productivity of workers. These observations are borne out in Tables 5 and 6 below. The comparative analysis is intended to highlight what Bangladesh needs to do to develop economically.

**Table 5:Indexes for Political Stability and Absence of Violence, Regulatory Quality, Government Effectiveness**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year 2004</th>
<th>Year 2005</th>
<th>Year 2006</th>
<th>Year 2007</th>
<th>Year 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Political Stability and Absence of Violence</strong> (Units: Index: -2.5 worst governance, 0 average, 2.5 best governance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>-1.14</td>
<td>-1.61</td>
<td>-1.39</td>
<td>-1.40</td>
<td>-1.54</td>
</tr>
<tr>
<td>China</td>
<td>-0.14</td>
<td>-0.25</td>
<td>-0.31</td>
<td>-0.28</td>
<td>-0.32</td>
</tr>
<tr>
<td>India</td>
<td>-0.90</td>
<td>-0.74</td>
<td>-0.90</td>
<td>-0.98</td>
<td>-0.99</td>
</tr>
<tr>
<td>Taiwan</td>
<td>0.61</td>
<td>0.61</td>
<td>0.60</td>
<td>0.50</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>Regulatory Quality</strong> (Units: Index: -2.5 worst governance, 0 average, 2.5 best governance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>-1.05</td>
<td>-0.95</td>
<td>-0.87</td>
<td>-0.86</td>
<td>-0.82</td>
</tr>
<tr>
<td>China</td>
<td>-0.29</td>
<td>-0.26</td>
<td>-0.33</td>
<td>-0.24</td>
<td>-0.22</td>
</tr>
<tr>
<td>India</td>
<td>-0.35</td>
<td>-0.21</td>
<td>-0.19</td>
<td>-0.22</td>
<td>-0.21</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1.15</td>
<td>1.08</td>
<td>0.92</td>
<td>0.94</td>
<td>1.07</td>
</tr>
<tr>
<td><strong>Government Effectiveness</strong> (Units: Index: -2.5 worst governance, 0 average, 2.5 best governance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>-0.84</td>
<td>-0.84</td>
<td>-0.74</td>
<td>-0.80</td>
<td>-0.77</td>
</tr>
<tr>
<td>China</td>
<td>-0.05</td>
<td>-0.12</td>
<td>0.06</td>
<td>0.19</td>
<td>0.24</td>
</tr>
<tr>
<td>India</td>
<td>-0.08</td>
<td>-0.12</td>
<td>-0.04</td>
<td>0.05</td>
<td>-0.03</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1.25</td>
<td>1.16</td>
<td>1.17</td>
<td>1.06</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Compiled from: earthtrends.wri.org/searchable_db/index.php?action=select_variable&theme=10
Though China’s political system is hardly benign, the conducive atmosphere it has provided to businesses can be gauged from Table 6 below which reflects government regulation of business. It shows even in the absence of political freedom, economic freedom can foster impressive economic expansion. It also shows the factors that have contributed to the economic plight of Bangladesh. Up until recently, Bangladesh provided considerable political freedom, but its economy has been largely in regulatory grips. India provides fair measure of both types of freedom, and hence is poised to benefit in the long-run.
### Table 6: Government Regulation of Businesses

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost to Register Property</strong>&lt;br&gt;(Units: Percent (%) of property value)&lt;br&gt;Bangladesh</td>
<td>11.1</td>
<td>11.0</td>
<td>10.3</td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>13.1</td>
<td>8.0</td>
<td>7.8</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td><strong>Cost to Start a New Business</strong>&lt;br&gt;(Units: Percent (%) GNI per capita)&lt;br&gt;Bangladesh</td>
<td>63.9</td>
<td>62.9</td>
<td>56.1</td>
<td>52.1</td>
<td>46.2</td>
</tr>
<tr>
<td>China</td>
<td>17.8</td>
<td>15.9</td>
<td>13.6</td>
<td>9.3</td>
<td>8.4</td>
</tr>
<tr>
<td>India</td>
<td>53.4</td>
<td>49.5</td>
<td>62.0</td>
<td>78.4</td>
<td>74.6</td>
</tr>
<tr>
<td>Taiwan</td>
<td>6.3</td>
<td>6.3</td>
<td>5.0</td>
<td>4.6</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Time required to register property</strong>&lt;br&gt;(Unit: Days)&lt;br&gt;Bangladesh</td>
<td>425</td>
<td>425</td>
<td>425</td>
<td>425</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Time required to start a new business</strong>&lt;br&gt;(Unit: Days)&lt;br&gt;Bangladesh</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>74</td>
</tr>
<tr>
<td>China</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>India</td>
<td>89</td>
<td>89</td>
<td>71</td>
<td>35</td>
<td>33</td>
</tr>
<tr>
<td>Taiwan</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

Compiled from: earthtrends.wri.org/searchable_db/index.php?action=select_variable&theme=10
With 425 days required to register property, Bangladesh is among the bottom two in the world (second worst is Kiribati which takes 513 days). Bangladesh takes more than three times longer than the regional and income group averages.

It takes on average 74 days to start a new business in Bangladesh. One can start a new business in Australia in 2 days, in Canada in 3 days, in Belgium in 4 days, and in Singapore and Iceland in 5 days. The average for 147 countries is 43.23 days which is to some extent distorted by Surinam which takes 694 days. The reflection of the lengthy process in Bangladesh is provided by the length of a 143-page book published in 2004 by Bangladesh Enterprise Institute (BEI)-South Asia Enterprise Development Facility (SAEDF) titled “Entrepreneur’s Guide to Regulatory Processes in Bangladesh”.

Foreign Aid

Mart Laar – the two-time Prime Minister of Estonia – said: “...one should not rely too much on foreign aid...we realized quickly the danger of extensive reliance on aid. Shipments of outdated computers to any transition country can secure them a permanent seat in the Third World” [Laar (2003)]. The curse of foreign aid is the dependence it creates. It is a formidable task to come out of its intoxicating effect. In 1993, Estonia proclaimed the slogan “Trade, not Aid”. This was one of several steps that Estonia took; it made economic history in a decade. Bangladesh needs to take bold steps to curtail foreign aid and rely more and more on trade as a means of economic development.

Table 7: Official Development Assistance: Foreign Aid

<table>
<thead>
<tr>
<th>Country</th>
<th>Aid as a percent of government expenditure Unit:Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 2003</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>29.7</td>
</tr>
<tr>
<td>China</td>
<td>0.8</td>
</tr>
<tr>
<td>India</td>
<td>1.0</td>
</tr>
<tr>
<td>Taiwan</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aid Per Capita Units: Current US$ per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
</tr>
<tr>
<td>China</td>
</tr>
<tr>
<td>India</td>
</tr>
<tr>
<td>Taiwan</td>
</tr>
</tbody>
</table>
Table 7 shows the enormous reliance of Bangladesh on aid compared to its much more dynamic neighbors. The highest per capita aid that Bangladesh got was in 1990 ($20.11). India’s highest aid was in 1980 ($3.18), China received its highest aid in 1995 ($2.88).

**Major Hurdles**

According to the World Economic Forum’s Global Competitiveness Report for 2007-2008, “the three most problematic factors for doing business are corruption, inadequate supply of infrastructure, and inefficient government bureaucracy.” Bangladesh Enterprise Institute (2003b) finds regulation and corruption to be serious obstacles to economic development. The infamy Bangladesh earned in terms of rampant corruption is well known. In the Transparency International (TI) Corruption Perceptions Index, from 2001 to 2004, Bangladesh consistently held the bottom place. For three years after that its ranking improved in a slow progression. Out of 163 countries surveyed by TI in 2006, Bangladesh ranked 156. In 2007, out of 179 countries surveyed, Bangladesh ranked 162nd. China and India tied last year at 72nd.

The ravaging feature of corruption in Bangladesh is not only that government officials are corrupt but also are the functionaries of the party in power who vie with vengeance against the previous party that was in power. Corruption is undoubtedly a debilitating factor impairing the growth prospects of Bangladesh and calls for radical reform.

Another factor that puts Bangladesh to considerable disadvantage in this highly competitive age is its labor productivity. International Labour Office (2007) reports labor productivity as value added per person employed from 1980 to 2005. Whereas the overall productivity growth rate in China increased at 5.7% per year on average over the period, in India it grew at 3.7% and in Bangladesh at 2.2%.8 (Another source puts India’s labor productivity from 1980 to 1990 at 6.1%, and from 1991 to 1997 at 4.7% -- which are very impressive rates.9) Though not highly satisfactory, the productivity growth rate for Bangladesh is impressive given that the annual average rate for many countries was negative or lower than 2.2%.

I have tried to analyze a number of factors that stand in the way of unlocking the growth potentials of Bangladesh: low level of economic freedom, burdensome web of government regulations, government ineffectiveness, high tariff rates hindering competition, ineffectual rule of law, lax property rights, lack of accountability, endemic corruption, political instability, insecurity and lawlessness, pathetic infrastructure, and crippling dependence on foreign aid.

But the factors are not new to policy makers and decision makers. How is it that the term ‘Bengal Tiger’ is not a revered term in the lexicon of economic growth as the term ‘Asian Tigers’ is? It is attributable to the lack in Bangladesh of visionary, inspiring, selfless and transcendental leadership – leadership that can bring about

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transformation in self-centered, self-serving, narrow mind-set, as well as outmoded institutions and inadequate infrastructure which are the impediments to growth. Such leadership will create mass awareness, and harness national energies and efforts towards creating an enabling environment, institutions, and incentives that can usher in economic growth and prosperity for all.

**Leadership**

The basic driving force that can propel a country to lofty economic development and overall progress is leadership: the ability to dream pragmatically, forge national unity, inspire people towards a lofty set of goals, create a sense of fierce urgency, and direct, control and coordinate their actions as they are inspired to march towards the goals. A big, radiant, incandescent candle of leadership should in turn lit tens of thousands of lamps showing the way at all levels of social, political, economic and religious activities. Corporate leaders set vision, mission, goals and strategies for a company. A country also should progress through a similar process.

For centuries the resources of Bangladesh have been siphoned off by non-Bangladeshi ruling classes. For much of the existence of Bangladesh it has been unscrupulously and shamelessly looted by the sons and daughters of the soil. A moot question is which more harmed to the country: the ravages of natural calamities or the plundering by those in positions of authority.

Though only about three decades back China, India and Bangladesh were at about the same level of economic underdevelopment, since then China and India have far surpassed Bangladesh. This is one of the great ironies of Bangladesh: the country that wrested independence from a well-disciplined professional army after fighting a bloody and devastating War of Liberation failed miserably in channeling that lofty spirit and idealism towards nation-building efforts. Its emergence into an independent country is attributable to the stirring effect of leadership. Its post-independence overall lackluster performance can be attributed to the lack of transformational leadership.

Arguably, the most important factor that can contribute to economic development is visionary, exemplary, inspiring, and transcendental and leadership. A transcendental leader can rise above race, religion, caste, creed, ethnicity, prejudice, intolerance, tribalism, regionalism, factionalism, party affiliation. He can create an enabling and inspiring environment that builds bridges and spans apparently insurmountable differences and narrow mindedness which are barriers to economic growth and growth of civil society. Nelson Mandela, Mahatma Gandhi and Abraham Lincoln are illuminating examples of transcendental leaders.

Corrupt leadership does not inspire because it is fraudulent. Corrupt leadership cannot project vision because it is self-absorbed. Corrupt leadership cannot lead because it is self-serving. For the last three decades the country has been ruled not by enlightened leaders but by self-serving regimes.
Corruption

An adequate compensation system is imperative in reducing corruption. The British Indian Civil Servants were compensated such that the British Raaj not only could attract the best and the brightest to the Indian Civil Service, but also operated a very efficient administrative system in the olden days in far flung India with the most rudimentary communications system.

This implies emphasis on tax collection, and doing away with conspicuous consumption so the government can pay the civil servants handsomely. This also implies revamping the education system such that we can create graduates who are equipped with the ethical compass that can guide them through life’s multiple dilemmas. Ethical considerations and reinforcements should be incorporated as much as possible in every course. The deterioration of moral values and the pervasiveness of corruption in the national fiber are in no small measure caused by lack of emphasis on values, ethics, and morality in our educational system and presumably to a great degree in our familial lives.

Failure of politicians

Politicians are taken to task for corruption. A more comprehensive charge should be the failure to discharge the trust placed on them by the people -- failure to ensure safety and security, failure to gear the country towards satisfactory economic development and provide economic opportunities for the masses, failure to ensure equitable distribution of wealth and render even-handed justice, and failure to provide basic necessities of life to those who do not have the means.

We do not have to reinvent the wheel. We simply have to learn and apply the best practices of other countries who were at about our level of economic development few decades back but are now vying with the countries of the so-called first world.

If we are not fortunate to benefit from visionary leadership at the national political level, that is not the end of the world if the nation can foster from the examples of Dr. Yunus and Mr. Abid what we may term “a thousand points of light” -- inspiring and exemplary leaders in various walks of national life. When countries like China, India, Singapore, South Korea, Taiwan, Malaysia, and even Thailand were blessed with inspiring leadership, they instituted reforms that created enabling environment to promote domestic investment and attract direct foreign investment.
The next step is to create environment conducive to investment that spurs economic growth. This involves not only reconfiguring the software (liberalizing and incentivizing investment policies, creating institutions that ensure accountability and transparency independent of political whims, instituting property rights and rule of law) but also strengthening the hardware (logistical support and adequate infrastructure). This also would involve instituting policies to develop educated, ethical, and skilled workforce.

Establishment of rule of law is a top priority. It involves a functioning economy, a free and fair political system, the development of civil society, and creating public confidence in police and the courts.

Bangladesh is beset with multifarious problems: cronyism, kleptocracy, bureaucratic entanglement, inconsistent policies, mismanagement, wastage, corruption, strike, instability, and indiscipline bordering on chaos. These are rather symptoms of the deep-rooted problem: lack of self-less, bold, and dynamic leadership.

**Developing manufacturing base**

Countries that achieved respectable levels of economic development did so to a large extent by developing its manufacturing base. Grameen Bank is one of the highly regarded success stories of Bangladesh. But it has basically extended a life line to marginal people so they can stay afloat until a strong manufacturing sector emerges and creates abundant and well-paying jobs that can enable people to rise to higher economic strata.

**Stability**

The importance of stability in promoting economic development can hardly be over-emphasized. Chaos and confusion are the big enemies of economic development. It is not surprising that countries that have achieved admirable levels of economic development experienced periods of political stability and economic liberalization. In many cases, the stability was the result of uplifting and charismatic leadership. Countries like South Korea, Taiwan, Thailand, and Malaysia benefitted from rulers who ensured political stability, liberalized the economy, instituted legal system, rule of law, and property rights. These forces in turn produced legitimate government, prosperity, and liberal democracy. Countries like North Korea, Iraq under Saddam Hussein, and Iran have seen periods of stability, but the absence of economic liberalization and rule of law did not allow these countries to prosper.

**Democracy and economic growth**

Does democracy help or hurt the economic growth of poor countries? Many surveys have been conducted but no conclusive answer has been found. Over the past 50 years, almost every success story in the developing world has taken place under a liberal authoritarian regime.\(^\text{10}\) India is a big exception to this rule. In spite of being a democracy,\(^\text{10}\) See Zaxaria (2004).
India has managed to retain a large degree of stability, and in the 1990s, instituted economic reforms that are changing the face of India and the region.

In an empirical study of about 100 countries from 1960 to 1990 Barro (1996) finds political freedom has only a weak effect on growth but also finds indication of a nonlinear relation: “At low levels of political rights, an expansion of these rights stimulates economic growth. However, once a moderate amount of democracy has been attained, a further expansion reduces growth”.

Natural resources and economic growth

Fareed Zakaria (2004) argues that wealth consisting of natural resources hinders both political modernization and economic growth. He draws support from two Harvard economists, Jeffrey D. Sachs and Andrew M. Warner, who looked at 97 developing countries over two decades (1971-89) and found that natural endowment was strongly correlated with economic failure.

It is not the natural resources a country possesses that determine the wealth of its people. It is how efficiently the resources are used, and how sound are its institutional framework. Russia and the Democratic Republic of Congo, for example, are resource rich, but their general population is poor, whereas, Hong Kong and Singapore are resource deprived, but the general people are prosperous.

Zakaria (2004) contends that on average the richer a country was in mineral, agricultural, and fuel deposits, the slower its economy grew. He cites the examples of Saudi Arabia and Nigeria. He points to the fact that countries with almost no resources – such as those in East Asia – grew the fastest, and those with some resources – as in Western Europe – grew at rates between these two extremes. He does not fail to note the few exceptions: Chile, Malaysia and the United States are all resource rich yet have developed economically and politically. He concludes that the basic rule holds up well. He also points out that unearned riches impede the development of modern political institutions, laws and bureaucracies.

The once poor, but now rich East Asian countries had to work hard to create effective government, institutions, and infrastructure. That in turn could enable the countries to harness and process knowledge and resources from all over the globe effectively and efficiently which created greater opportunities for the general populace and thus enriched the countries. Size and resources are no longer predominant factors that determine economic development.

Zakaria (2004) finds that governments with treasures in their soil have it too easy. He predicts that any state that has access to easy money will remain underdeveloped politically since it does not need to tax its citizens. He argues that when a government taxes its people it has to provide benefits in return: services, accountability, good governance, and finally liberty and representation, which are recipes for economic development.

It may be argued that since independence, subsequent governments in Bangladesh had access to easy money – foreign aid – which created less urgency to strengthen the tax collection apparatus. People have to comply with laws
to pay taxes. When governments – and their policies – lack legitimacy, they cannot coerce people to pay taxes or fortify tax collection system. By infusing easy money to successive governments, international donors in a sense contributed to the perpetuation of low tax collection rates, which in turn contributed to political and economic underdevelopment of Bangladesh.

**Fallout of economic growth**

Unfettered economic development is not an unmixed blessing. It has its fallout. One of them is damage to ecosystem which in the worst case scenario threatens human existence on a magnitude that can be worse than a World War. Other fallouts we see are inequitable distribution of wealth and vast disparity between rural and urban areas. This dual lethal combination is creating social unrest in various newly emerging economies.

On the eve of India's freedom, Mahatma Gandhi was asked if he wanted Free India to follow the development model of its former master. Gandhi answered in the negative and then added. "If it took Britain the rape of half the world to be where it is today, how many worlds would India need."

Free India abandoned Gandhi's vision of an India in which each village would be a self-reliant and self-sufficient economic unit. India adopted the western model of value-free, highly capital-based, energy intensive, socially divisive economic development model which has not only pushed over 300 million people – roughly equal to the population of the USA -- from lower economic stratum to the middle class, but has also created massive pollution, and wide-spread deforestation. As we know, virtually all countries following the western model of economic development are suffering from similar maladies.

The world's ecological capacity is insufficient to satisfy the ambitions of all countries. The gigantic challenge for Mankind is to devise a model of economic development based on technology requiring low consumption of natural resources that provides opportunity for all with marginal damage to the eco-system and optimal use of human resources. In other words it is value-based, environment friendly, and sustainable development model -- a model in which nobody is left behind. These considerations have to be taken into account by all nations. We share a common planet. But what is specially relevant for countries like Bangladesh is abiding by of the rules of engagement in a fiercely competitive world created by forces shaping globalization. I fear Bangladesh and its leaders do not understand how to wage economic warfare in an era of globalization. The proof of that is in our self-absorption and endless quarrels and squabbles. The proof of that is most projects and programs initiated by one government face sudden death when its opponent comes to power.

**Role of political parties**

The role of the party in power will be to rein on its greed and gluttony, and dedicate to nation building. Politics is a privilege to serve the people. It is not a means to gain overlordship. The role of political opposition party is not to thwart the party in power at every step. The role of the opposition party is not to wage movement to unseat the party.
in power long before its democratically elected tenure ends. The first job of a party that comes to power is not to stop all projects and programs started by the previous government. Not everything that a party does is necessarily good. But not everything is bad either. Intolerance, inconsideration and injustice are among our worst enemies.

Private sector and economic growth

Survival in this age of globalization involves making the private sector the engine of growth. This would involve:

1. Shrinking size of state bureaucracy
2. Aiming for balanced budget
3. Privatizing state-owned industries and utilities
4. Deregulating the economy and promoting competition

These actions would have the impact of limiting the size and role of the government so the private sector can assume greater role in economic development. In general, private sectors in economies around the globe have proved to be more efficient than governments in using scarce resources.

Asian tigers and economic growth

We have a great deal to learn from the experiences of Asian Tigers that wrought economic miracles. The economic development of these countries shares certain common denominators: work ethics, discipline, participative management, state protection of certain industries in their infancy, and easy loans. Some sort of protectionism initially would be helpful otherwise massive multinational corporations will devour domestic infant industries.

Justice

A country founded on and dedicated to a keen sense of justice will establish rule of law, ensure property rights, create motivating environment, ensure equitable distribution of wealth, establish value-based, environment friendly, and sustainable development model. These are essential ingredients for economic development. Such a country will be free from coercion, cruelty, domination, exploitation, oppression, repression, and subjugation of one man or institution by another man or institution. The hallmark of such a country will be absence of favoritism and nepotism, and even-handed dispensation of justice. Such a country will be unstoppable in its march to economic growth and equitable distribution of its wealth.

Conclusion

Armed with comprehension of the threat of globalization, political will, national resolve, appropriate policies, consistent application, transparency, free press, firm stand against lawlessness, insecurity and corruption, the cheap labor and natural resources of Bangladesh can be transformed into an asset in combating the ruthless challenges its faces in this era of globalization. What Bangladesh lacks most of all is transformational leadership – leadership that
will create mass motivation and harness national energies towards creating an enabling environment, institutions, and incentives that can foster economic growth and bring prosperity for all. Lack of natural resources is not a limiting factor as long as a country is inspired to harness and process knowledge and resources from all around.

Barro (1996) finds in his empirical study of around 100 countries that growth rate is enhanced at the government level by lower government consumption, better maintenance of the rule of law, lower inflation, and improvements in the terms of trade, and by higher initial schooling, higher life expectancy, and lower fertility. Barro also mentions the following as likely important factors of growth: tax distortions and regulations that affect labor, financial, and other markets, infrastructure investments, R&D outlays, the quality of education, and the distribution of income and wealth.

After the references, I present a number of extension tables showing data and statistics for a number of developing and few developed countries. In general, these tables show that when a country fares poorly on some of the key indicators of growth discussed above, they are likely to be less developed.
References

Bangladesh Enterprise Institute, 2003a, “Investment Policy in Bangladesh—An Agenda for Action”, Dhaka, Bangladesh, in collaboration with CUTS Centre for Competition, Investment, and Economic Regulation, Jaipur, India.


Table 1A: FDI Inflow into Selected Countries: 2003-2008 (in billions of US$)

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<td>0.350</td>
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<td>0.845</td>
<td>0.793</td>
<td>0.666</td>
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<td>(0.0620)</td>
<td>(0.0626)</td>
<td>(0.0868)</td>
<td>(0.0542)</td>
<td>(0.0337)</td>
<td>(0.0640)</td>
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<td>China</td>
<td>53.505</td>
<td>60.630</td>
<td>72.406</td>
<td>72.715</td>
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<td>(1.3919)</td>
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<td>(1.1190)</td>
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<td>(0.1670)</td>
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<td>(10.6898)</td>
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<td>(0.7531)</td>
<td>(1.3613)</td>
<td>(1.1199)</td>
<td>(0.8765)</td>
<td>(0.7169)</td>
<td>(0.8071)</td>
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<td>135.850</td>
<td>104.809</td>
<td>237.136</td>
<td>271.176</td>
<td>316.112</td>
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<td>0.237</td>
<td>2.157</td>
<td>5.376</td>
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<td>(0.0420)</td>
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<td>(0.5523)</td>
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<td>Jordan</td>
<td>0.443</td>
<td>0.816</td>
<td>1.774</td>
<td>3.268</td>
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<tr>
<td>Country</td>
<td>Year 2005</td>
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<td>Year 2007</td>
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<tr>
<td>(Rank)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Bangladesh</td>
<td>0.527 (142)</td>
<td>0.535 (148)</td>
<td>0.543 (146)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>China</td>
<td>0.756 (93)</td>
<td>0.763 (99)</td>
<td>0.772 (92)</td>
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<tr>
<td>India</td>
<td>0.596 (130)</td>
<td>0.604 (134)</td>
<td>0.612 (134)</td>
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<td>Japan</td>
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<td>0.958 (10)</td>
<td>0.960 (10)</td>
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<td>Nepal</td>
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<td>0.547 (144)</td>
<td>0.553 (144)</td>
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<td>Nigeria</td>
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<td>0.506 (157)</td>
<td>0.511 (158)</td>
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<td>Pakistan</td>
<td>0.555 (136)</td>
<td>0.568 (142)</td>
<td>0.572 (141)</td>
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Compiled from www.unctad.org/fdistatistics/.

Table 2A: Selected HDI Indexes/Indicators for Selected Countries
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<th>Country</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td>Saudi Arabia</td>
<td>0.837(53)</td>
<td>0.840(58)</td>
<td>0.843(59)</td>
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<tr>
<td>Singapore</td>
<td>-</td>
<td>0.942(24)</td>
<td>0.944(23)</td>
</tr>
<tr>
<td>Taiwan</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UK</td>
<td>0.947(19)</td>
<td>0.945(21)</td>
<td>0.947(21)</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>0.896(33)</td>
<td>0.896(37)</td>
<td>0.903(35)</td>
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<tr>
<td>USA</td>
<td>0.955(12)</td>
<td>0.955(12)</td>
<td>0.956(13)</td>
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<tr>
<td>Egypt</td>
<td>0.696(115)</td>
<td>0.700(122)</td>
<td>0.703(123)</td>
</tr>
<tr>
<td>Jordan</td>
<td>0.764(88)</td>
<td>0.767(95)</td>
<td>0.770(96)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0.821(62)</td>
<td>0.825(66)</td>
<td>0.829(66)</td>
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<tr>
<td>Qatar</td>
<td>0.903(31)</td>
<td>0.905(34)</td>
<td>0.910(33)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>0.752(97)</td>
<td>0.755(102)</td>
<td>0.759(102)</td>
</tr>
<tr>
<td>Sudan</td>
<td>0.515(144)</td>
<td>0.526(150)</td>
<td>0.531(150)</td>
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<tr>
<td>Tanzania</td>
<td>0.510(148)</td>
<td>0.519(151)</td>
<td>0.530(151)</td>
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Table 3A: Index of Economic Freedom: Selected Countries

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<th>Country</th>
<th>Year 2004</th>
<th>Year 2005</th>
<th>Year 2006</th>
<th>Year 2007</th>
<th>Year 2008</th>
<th>Year 2009</th>
<th>Year 2010</th>
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<td>Total 183 countries ranked</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>50.0 (133)</td>
<td>47.5 (142)</td>
<td>52.9 (123)</td>
<td>46.7 (147)</td>
<td>44.2 (151)</td>
<td>47.5 (160)</td>
<td>51.1 (137)</td>
</tr>
<tr>
<td>China</td>
<td>52.5 (124)</td>
<td>53.7 (113)</td>
<td>53.6 (117)</td>
<td>52.0 (133)</td>
<td>53.1 (123)</td>
<td>53.2 (132)</td>
<td>51.0 (139)</td>
</tr>
<tr>
<td>India</td>
<td>51.5 (127)</td>
<td>54.2 (108)</td>
<td>52.2 (130)</td>
<td>53.9 (119)</td>
<td>54.1 (116)</td>
<td>54.4 (123)</td>
<td>53.8 (124)</td>
</tr>
<tr>
<td>Japan</td>
<td>64.3 (50)</td>
<td>67.3 (32)</td>
<td>73.3 (16)</td>
<td>72.7 (17)</td>
<td>73.0 (17)</td>
<td>72.8 (19)</td>
<td>72.9 (19)</td>
</tr>
<tr>
<td>Nepal</td>
<td>51.2 (128)</td>
<td>51.4 (130)</td>
<td>53.7 (116)</td>
<td>54.4 (113)</td>
<td>54.1 (116)</td>
<td>53.2 (132)</td>
<td>52.7 (130)</td>
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<tr>
<td>Nigeria</td>
<td>49.2 (136)</td>
<td>48.4 (137)</td>
<td>48.7 (140)</td>
<td>55.6 (100)</td>
<td>55.1 (109)</td>
<td>55.1 (116)</td>
<td>56.8 (106)</td>
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<td>Pakistan</td>
<td>54.9 (106)</td>
<td>53.3 (116)</td>
<td>57.9 (86)</td>
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<td>55.6 (101)</td>
<td>57.0 (102)</td>
<td>55.2 (117)</td>
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<td>Saudi Arabia</td>
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<td>63.0 (54)</td>
<td>63.0 (57)</td>
<td>60.9 (68)</td>
<td>62.6 (60)</td>
<td>64.3 (59)</td>
<td>64.1 (65)</td>
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Source: The Heritage Foundation.
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**Country**

**Control of Corruption**

Units: Index: -2.5 worst governance, 0 average, 2.5 best governance

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### Knowledge Globalization Conference, Boston, October 16-17, 2011

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Goverment Regulations: A Comparative Analysis

Alexander Katkov
Johnson & Wales University,
Providence, Rhode Island, USA

The monetary policy as the tool that the government can use to regulate the national economy has been introduced in the United States more than 220. In 1791 Alexander Hamilton won the Congress support in the establishment of the Bank of the United States. The central bank was created to provide, as Hamilton defined it, “means” to finance the central government projects. The second of these tools – the fiscal policy was accepted by the federal government as the regulatory mechanism almost 150 years ago after the office of the Commissioner of Internal Revenue has been established in 1862 with all its powers that have not been changed much since that. So, there is the logical question: why economists are still fiercely debating should the federal government regulate the national economy or not? The government is regulating the national economy since the George Washington first term as the President of the United States, do we want to accept it or not. It is the historical fact. We probably should ask the different question: why the regulation is necessary and how regulation is different in different economic systems.

To address this issue I want to look at the governmental regulation from the perspective of the comparative analysis. I will discuss the role of the government regulation comparing three main economic systems: pure market, command, and mixed economies.

The mission of every economic system is the same: to satisfy unlimited human needs and wants using the set of limited economic resources. The differences between systems are in the systems structures and methods of the organization of processes of manufacturing and distribution of products and services that should satisfy human needs and wants.

The identity of three systems missions is defining the specifics of the list of main economic goals for all of them. There are differences in the secondary goals but the main four economic goals are the same for every economic system. They are economic efficiency, economic growth, economic stability and economic equality.

The list of major economic goal is the same but the priority or ranking of each goal from the list is different for every system. As the result, each system has used the different strategy for the functioning and the development. The specifics of sets of economic resources available for each country and differences in sets of secondary economic goals and their ranking are defining the differences in economic strategies for every country belonging to the same economic system. But want to look into the differences between ranking orders of four main economic goals by economic systems not countries.
PURE MARKET ECONOMY

Let start with the pure market economy. For the “pure” capitalism as traditionally pure market economy has been called the leading economic goal is the “efficiency”. Efficiency in this case is not only the productivity but also the correct allocation of resources accordingly to the existing combinations of needs and wants. Why efficiency is the leading goal of the market economic system? The brief historical excursion will help to find the answer to that question.

The classical capitalism of XVIII – XIX century is the simple enough economy consisting of many small producers who own, at least in the boundaries of the same geographical region, about the same economic resources: natural, technological and labor. So, to survive in the very intense and cruel competition with others the producer should develop two important abilities: 1) the ability of quick adaptation to demand changes, and 2) the ability to control the cost/price ratio. In the case of the “pure” competition the producer have no power to dictate to the consumer. The producer should react to demand changes that are results of permanent changes in sets of consumer needs and wants initiated by the process of the social and technological evolution of the society. The producer who did not possess those two abilities was doomed to the failure going bankrupt or being acquired by the more successful competitor.

As the result of that the need and the ability to grow became the consequences of efficient operations and the company should pursue the economic growth to survive in the future. When the loser is leaving the market the winner can get not only the loser’s market share but the loser’s business also. Because of that the increase in the volume of produced goods and services became closely related to the economic efficiency the goal of economic growth logically possesses the second rank among four major economic goals.

The economic stability cannot be the leading goal of the pure market economy because the pure competition are not establishing any factors that are blocking or braking attempts of individual producers to pursue their individual business interests. So, inevitable mistakes in the consumer demand’s assessment and the underestimation or the lack of the knowledge of the competitors’ abilities became the reasons of the overproduction with the following contractions of economic activities. A contraction that can grow into a recession or even a depression automatically will increase unemployment and will decrease the consumption which is the effect of the decline in the disposable income. Business would react to the demand decrease by the reduction of the production. This reduction of the output’s production will create the contradiction between the goal of economic stability and the goal of economic growth.

Another phase of the business cycle – a “prosperity” phase also will create the factor that would negatively affect the consumer demand and as the result will slow down the level of production. This factor is inflation. Increase in the consumer demand during the “prosperity” phase will increase the price level. So, as the result according to the Law of Demand the quantities of goods and services demanded would decline. As the result inflation as the unemployment would negatively affect the economic growth.

Unemployment and inflation are natural features of the free, non-regulated pure market economy. The control of unemployment and inflation only can be possessed by the sector of the national economy which is independent of the business sector, in other words by the government. So, the “economic stability” can be declared as the desirable goal of the national economy but only the government as the independent coordinator and the umpire of the big game called the “pure market competition” can provide resources and create policies that would help to keep economic development more stable. In this big game, where every “player” is representing interests of either businesses or households and playing/competing against and sometime in the coalition with others trying to
maximize its win, the government-umpire by issuing right decision in support of producers or consumers can diminish the negative consequences of unemployment and inflation. Or, in some cases, it can intensify them when decisions are wrong. Practically the goal of economic stability can be achieved by the pure market economy only randomly and partially.

The accessibility of products and services to the population in the pure market economy is determined by the level of the disposable income. Because in the capitalist economy the disposable income is the function of the economic resources involved into the process of production, people who do not own natural and technological resources (land and capital) and own the labor resource that have no demand (wrong skills, no skills, or low level of specific skills) do not have the access to products and services. They are doomed to the suffering and the death. The person who has no income is the only potential consumer. The larger number of people with no or low income the less demand for goods and services and lower the potential of the economic growth.

So, the structure of the pure market economy has the naturally built-in contradiction: the efficiency and the growth of the system became dependent of the lack of stability and of the high level of the income inequality. Those two factors are negatively affecting the economic growth. The entrance of the government onto the economic arena as the controller and the regulator became sooner or later the inevitable necessity. The government can and should try to moderate the effect of this contradiction via tools of the fiscal and monetary policies to improve economic stability and to redistribute incomes to soften their negative effects on the future economic growth.

The pure market economy needs the government regulation in the long run and its transformation into the mixed economy is inevitable.

THE COMMAND ECONOMY

In the command or centrally planned economy the order of ranking of the above mentioned four major economic goals is absolutely opposite to the order of their ranking in the pure market economy. In the command economy the function of the property ownership is not playing the leading structure forming role as it is playing in the pure market economy. In the pure market economy the boundaries separating one enterprise from another are often determined by the physical borders between pieces and units of land and capital resources. Stone walls separating one farm from another farm in New England is the good example of structure forming role of the property ownership function. In the command economy, where according to the law all production units are co-owners of land and capital resources, one business unit cannot be differentiated from another by the ownership boundaries. As the result the leading role of the structure forming function is transferred from the property ownership to the property management function.

Declared co-ownership of the national wealth for every citizen of the country will move goals of economy equality and economic stability into first two positions among the most important economic goals. The achievement of the goal of economic equality is guaranteeing everybody at least the access to goods and services satisfying the most basic needs and wants. The achievement of the goal of economic stability is guaranteeing everybody an employment and at least a minimal income earned or not earned to become a consumer. To pursue and achieve both of those goals the economy will need the governmental regulation. So, if those two goals have the highest priority for the economic system the government regulation and the control of the economy through the utilization of the management function of property became objectively inevitable. The main question in this situation what is the level and boundaries of that control.

It looks that there are two main choices. The first one is the “soft” version when the government became involved into the process of the regulation of the national economy taking the initiative in the control of some leading economic functions:
the function of the determination of the general strategy of the national economy development in the given country depending on the socio-economic priorities;

the function of the control and the maintenance of the harmony between the major needs of the society and the economy’s abilities to satisfy them;

the function of the income redistribution through the established system of the taxation and transfer payments to support needy members of the society;

the function of the maintenance of the stability of the economic development through the application of tools of the fiscal and monetary policies;

the function of the redistribution of economic resources to support socially and economically important projects and to limit projects that have negative effects on the recent and future development of the national economy and the society.

The second possible choice is the command economy. In this case the government is not just regulating the economy but is performing the absolute control of the economic activities and decisions made by managers of economy’s sectors and even individual economic business units. This option can be realized in the case of the nationalization of the economic resources at the maximum scale. Even the labor resource in the command economy practically became nationalized either through the “soft” form of the control when the ideological brain washing mechanism would name workers the “leading force” of the new society building process to make them enthusiastic about future changes and not demanding about the living standards. Or the nationalization can be realized through the “hard” form of the control when the large part of the population is converted into the “slaves” placed into the special labor camps.

The first choice of the government regulation has been used in the mixed economic system of Western Europe and later in the USA where there are different forms of the property are co-existing and are playing the different structure forming functions: the private property is realizing the function of the ownership, and the common property is realizing the function of the management. The second choice of the government regulation that has been used in the USSR, China, countries of the Eastern Europe, North Korea, Vietnam and Cuba was the choice of the dictate and the control known as the command economy.

Why the difference between structure’s organizing/forming functions of the ownership and the management so important? The structure organizing function of the property is defining the boundaries between business elements of the economic system and is prescribing the degree of the accepted governmental control of business elements activities. The higher degree of the nationalization then it is higher the degree of the governmental control. Because it is easy to control from one center the simple economic system then the complex system the higher the degree of the control traditionally used to manage naturally simple or artificially simplified systems. Because of that the chief managers of the command economies have developed the special standards of peoples’ behavior limiting the freedom of choices. In the extreme form such standardization of the people’s behavior has been practiced in China during the Cultural Revolution. The most recognized image of that standardization was the crowd of thousands people wearing the same uniformed clothes regardless of gender, waving the identical red books with quotations from Chairman Mao speeches, and shouting standard slogans.

It is obvious that there were also good features of the centrally planned system. For example the priority goals such system can realize often better than the pure market economy. But those priority goals: the access to the products and services to majority members of society and the economic stability, are getting into the contradiction with two
others: economic efficiency and economic growth. Those two can be achieved if business units would have the maximum of the freedom of choice outside the government control.

The goal of guaranteed access to products and services for all working people has been secured by the constitutional right to have a job and by the developed system of the social security. As the result, workers have received the guaranteed salary according to the specially developed salaries scales, and orphans, handicapped and retirees have received there disposable income from the government as co-owners of the national natural and technological resources. Their incomes were lower but they were guaranteed.

The economic stability has been achieved by the strict control of the frictional unemployment with the practice of the forceful employment of people who tried to find the reason not to work at all. The control of the inflation the government has performed through the state mechanism of the price setting and through subsidies of the products and services important for the satisfaction of the basic needs: food, housing, transportation, healthcare and education.

It would be incorrect to say that goals of economic efficiency and economic growth have been ignored by leaders of countries with command economics. Oppositely these goals would be declared as leading goals from the stages of party congresses. But as the history shows high growth rates have been achieved as the result of the high exploitation of the countries labor and natural resources. The exploitation of the labor resources, as it was mentioned earlier, has been fulfilled through the ideological “brain wash” and/or by forming the fear for the freedom or even the fear for life among prisoners of labor camps. Neither of these two motives: enthusiasm and fear can guarantee the high level of productivity in the long run. In addition, the labor force of the Soviet Union substantially declined as the result of wars and few waves of emigration. After the system of labor camps has been closed down and the fear as the motive to work hard was illuminated the lack of the material motivation to work and the shortage of the new labor because of the bad demographic situation became two main factors of the decreasing productivity and the very low rates of the economic growth.

Of course, the history of the Soviet Union is unique. The XXth century brought very many challenges and hardships to citizens of the Soviet Union, so the poor results of the grandiose social and economic experiment that had the goal of the creation of the new economic system. May be the choice of the command economy was determined by the historical specifics of the process of the country’s development interrupted and affected by revolutions and wars. Revolutions and wars need the strong command style of management based on the strict hierarchy and the dictate of the supreme leadership – commanders. People who lead the October revolt and the Civil war in Russia after war became the economy’s chief administrators without the knowledge of the economic laws and very often with very basic or very primitive education. If the mistakes of managers of individual business units in case of non-hierarchical market economy can provoke the recession but not the stagnation of the entire system and the possible economic collapse (the Great Depression as the very specific case should be considered as the exemption from the rule), the mistakes of the leadership of the command economy would be multiplied by managers of lower levels of hierarchy and would stimulate the crisis of the whole command system. This crisis can be resolved only through the transformation of the entire economic system and through the liquidation of the centralized dictate of the government.

Even the general analysis of the planning mechanism is showing the less flexibility of the planned economy compare with the market economy. In the command economy there is the transfer of decision making freedom from the level of the individual producers who are interested in the satisfaction of needs and wants of their direct consumers to be able to stay in the business (Adam Smith “invisible hand”) to the level of the centralized bureaucracy. This bureaucracy is interested not in peoples’ needs and wants satisfaction but wants to ensure the
quantitative balance between available set of economic resources and the planned set of produced products and services assigned for the set of the abstract consumers. The substitution of the needs’ satisfaction as the major aim of the economy by the aim of the provision of the inputs-outputs balance has liquidated the possibility of the satisfactory realization of the principle of allocative efficiency. Allocative efficiency is measuring the existing level of utility derived from the output produced when the structure and the volume of the produced goods and services are reflecting the structure and the volume of the population’s needs and wants.

The complex system cannot be successfully managed from the single center without the center’s attempt to simplify this system. According to the law of cybernetics the level of the complexity of the management (administrative) system should be higher or at least of the equal level of complexity of the managing (guided) system. So, to deal with are emerging complexity of the national economy the State Central Planning Board has been forced to diminish the complexity of the economy growth by decreasing the number of producers in every industry. This strategy gave birth to oligopolies and even monopolies in some sectors of the soviet economy especially in the machine building industry. The inefficiency and possible dictate of monopolies have been widely recognized as the negative characteristics hindering the economic growth.

Monopolies are less economically efficient than competitive industries. Monopolies produced less, their prices are higher, and the quality of products and services are lower than products and services produced by competitive producers. They are playing the negative role in the process of the realization of goals of economic efficiency and economic growth. So, we can conclude that the command economy build in the Soviet Union has generated the system of state monopolies. As the result, there was the emergence of the inevitable contradiction between goals of equality and stability from one side and efficiency and growth from another. When the function of management/administration became the leading structure forming function of the economy the growth of the centralized control is inevitable because the state is taking and performing the role of the “protector” of the common interest of all co-owners of the common wealth of the country against possible threats to the system from outside and possible mistakes and confusions emerged inside of the system.

The state using mechanisms of the centralized control and administration is capable to manage simple tasks of the income redistribution and the maintenance of the some desirable level of the economic stability. But the state cannot ensure the economic efficiency because the freedom of choice and the economic initiative are limited to the minimum by the government directives. This discussed above conflict between economic goals probably never can be resolved. We only can hope to find more or less acceptable alternatives of its resolution by decreasing the centralized government control of the national economy and by diminishing the chaos the contraction phase of the pure market economy’s business cycle through finding the acceptable complementation between functions of ownership and administration. In other words we should welcome the mixed economy.

THE MIXED ECONOMY

The mixed economy is more flexible than command economy and more stable and just than market economy because it includes features of both and operates as the synthesis of the market and regulation. Almost all countries of the world today have one or another form of mixed economy. I want to comment on some specifics of the U.S. mixed economy where the market co-exists with the government regulation almost 80 years. I would not discuss the processes of the government regulation in the USA in all details but I would try to offer very general analysis of the most important tools of the government regulation: fiscal and monetary policies.
The economic role of the government is broadly discussed by philosophers, economists and politicians for the almost 400 years period since Thomas Hobbes and John Locke published in XVI and XVII centuries their works analyzing the processes of interactions between individuals and the state. Most of them agree that two most important functions that people want the government to perform are: 1) the function of the protection of individuals and their property from possible encroachment of others, and 2) the function of the provision to the society goods and services that private sector are not able to offer, for example, big infrastructural projects and policies regulating market and compensating market imperfections. These good and services are known as public goods and services. When this function is realized efficiently the processes of manufacturing and exchange are stable.

The controlling and regulating function of the government is realized through two market regulating policies: fiscal policy which is affecting the level of consumption through the mechanism of taxation and transfer payments redistributing incomes in favor of low income earners, and which determining the level and boundaries of the government expenditures; monetary policy which is controlling the money supply.

Fiscal policy can be defined as the mechanism that use taxation and government spending to support the economy’s attempt to reach the level of full employment and low inflation, in other words, to reach the highest of possible levels of stability and at the same time to stimulate the economic growth. The Roosevelt’s “New Deal” was the first attempt to use the fiscal policy mechanism at the macro level to help economy to get out the depression. If aggregate expenditures of households, businesses, the government and the foreign sectors are less than the value of the gross national product produced by the full employed economy the production in the future will decline, the unemployment will increase and the market powers would not be able to return the economy back to the full employment level of the potential gross national/domestic product. The economy will face the contraction. It is the moment when the government can help by increasing the government spending for example financing the new infrastructural projects. The rise of the government spending can increase the government borrowing needs. As the result, the government will sell bonds. But the emerging deficit of the federal budget would become the lesser of two evils and should be accepted.

In reality the deficit growth became the self-feeding monster because the guaranteed interests’ payments often can be obtained only from the next borrowing efforts. In addition to this problem there are some others that are affecting the debt growth. The changes in the demographic structure of the population are increasing the government obligations to the growing group of elderly citizens in the form of social security payments and Medicare. Plus the military-industrial complex is constantly lobbing its interests forcing the government to increase the military expenditures. As the result, the federal government expenditures for the last 80 years since 1929 through 2009 have been grown from 7.7% of GDP to 36.2%. We are not including into the consideration the pick of the government expenditures during the full scale World War II when the government spending has reached almost 50% of GDP(1). In the dollar amount this total government spending increased from $8.0 billion in 1929 to $5,261.8 billion in 2010 in current dollars (2). The deficit of the Federal budget jumps to $1,554.9 billion dollars in 2009. The last surplus of $121.0 billion dollars the U.S. Federal budget had in 2000 (3). The national debt has reached the astonishing level of 14.78 trillion dollars in September of 2011(4). This amount is practically equal of U.S. current GDP in current dollars. The U.S. GDP in 2010 was $14,526.5 billion dollars (5).

The Keynesian economic model of the government regulation based upon the idea that the aggregate demand should be stimulated to achieve the economic growth. To stimulate consumption of households, which is by far the largest component of the formula of GDP, taxes should be decreased. But lower taxes means less government receipts. So, to keep government spending high to support their growth during the recessions the government must increase the borrowing. As the result, to pursue the goal of economic growth and at the same time to make the access to goods and services more equal through the income redistribution strategies and the creation of new jobs (mostly in the
public sector), the government should accept the growth of the national debt and the perspectives of the future inflation. That means that again all economic goals cannot be achieved simultaneously. Even the mixed economy has its own weaknesses, and the goals’ prioritization should become the important issue of the government economic strategy.

During the last 40 years the attitude towards the fiscal policy has been changed few times. Probably it was the effect of the ability of the mechanism of the government regulation to adapt towards changing economic environment. In 1960-s most economists and politicians have considered the fiscal policy as the very efficient tool of the national economy regulation. But high levels of the government spending during the Vietnam War have increased the federal budget deficit and have provoked the growth of the inflation. Taxes’ increases as the government’s response to the situation have negatively affected consumption. The decline in consumption caused two recessions of 1970 and 1974-1975 and the long period of stagflation of 1970s when low rate of the economic growth have been complemented by high rates of inflation.

The so called “reaganomics” that has been introduced in 1980-s has used as the weapon against the stagflation the expansionary fiscal policy. The major argument used then was against the high tax rates. High tax rates are negatively affecting consumption and business investments but not capable in slow growing economy to generate enough tax revenues for the government. As the result, the highest marginal personal income tax rate reaching during Eisenhower and Kennedy terms 91% has been lowered down during the Reagan term to 28% in 1988 (6). The tax rate for highest income earners have been decreased more than 3 times but in 2004 the half percent of people with highest income have contributed 26.1% of personal income tax receipts collected by the federal government. In 1960 the taxes paid by that half percent of the taxpayers with highest incomes have contributed 14% of the federal government personal income tax receipts. The decrease in tax rates did worked. During 8 years when Reagan was in office the tax rates have been decreased about 2.5 times but the federal government receipts from income tax almost doubled: from 308.7 billion in 1980 to $549.0 billion in 1989 (7). If military spending is rising as it was during Reagan presidential term the deficit has the tendency to grow and this rise in government spending has stimulated the economic growth. If military spending is declining as it was during Clinton presidential term the economic growth has stimulated the budget surplus.

In XXI century Bush and Obama administrations both used the expansionary fiscal policy. During the recession of 2001 this policy has helped very quickly recover the economic growth. But later on the growing military expenditures caused by wars in Iraq and Afghanistan have intensified negative effects of other crises emerged from decisions and actions of the previous administrations: deregulation of financial markets during the Reagan presidential term, and the deregulation of the housing market during Clinton presidential term. As the result uncontrolled growth of the federal deficit and the national debt and the very deep financial crisis that was caused by the collapse of the real estate market have pushed the national economy into very deep and painful recession of 2009-2010. The first stimulus package of 787 billion dollars was not big enough to be able to stimulate if not quick but at least substantial recovery. It became obvious that economy needs more help from the government and this help should be provided not only in the form the second financial stimulus package. It looks that the structure of the U.S. economy needed to be changed and more manufacturing should be returned from the overseas to the USA.

Today’s economic situation is the result of mistakes that have been made at least by five different administrations during the last 30 years. Mixed economy that has features of both market and command economies is reacting to those mistakes by decreasing level of economic stability as market economy will do in the crisis situation, and at the same time the mixed economy is decreasing its efficiency as the command economy will do. How to solve this
problem and how to make economy again efficient and stable? It is the most important problem of contemporary economic theory and practice which is waiting to be solved.

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Lessons Learned: A Comparison of the Textile and Apparel Industry of China Today and Early Nineteenth Century Lawrence and Lowell

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In this paper, the textile and apparel industry of early Nineteenth century Lawrence and Lowell will be compared with the industry in China today. A critical 30 year period in each regions industrial development will be considered focusing on the motivations and challenges presented by rapid industrialization. By looking at the lives of the workers and work environment in which they toil a comparative perspective emerges. Existing social conditions and resulting political reforms are discussed.

Today, China is seen as a dominant force in the global market in every manufactured product category from inexpensive “junk type” items, to a wide range of textile and apparel, to electronics and automobiles and everything in between. Deng Xiaoping’s policies of reform and opening established in 1978 were followed by rapid development which continues today. The coastal province of Zhejiang provides a glimpse into the high degree of product specialization and volume of production found in some regions of China. The town of Qiaotou has 380 factories and manufactures more than 70 percent of the buttons for clothes made in China. In Wuyi, one billion decks of playing cards per year are produced providing cards for half of China’s domestic market. Fifty miles away, the town of Yiwu makes one quarter of the worlds drinking straws and in another part of Zhejiang, Songxia turns out 350 million umbrellas every year (Hessler, 2010). Much is made of the oversupply of Chinese products flooding the US market as well as the working conditions of those producing the products. This paper will highlight those concerns and draw the parallel between China today and the United States during the early industrial revolution. Lowell is credited with being first planned industrial community in the United States and was the economic model for similar development in the surrounding industrial communities of Lawrence and others in the greater Merrimac Valley.

In the early days of the American Industrial Revolution, the New England textile industry emerged as a global leader. The most recognizable of trademarks carried over the Pacific to Shanghai and Singapore were the symbols of American made textiles. The image of a dragon imprinted on cloth signified it was produced in the Pepperell Mill in Biddeford, Maine. An Indian head with three feathers told the world that the cloth was made in Nashua, New Hampshire. American merchant John Cushing wrote in 1830 that in China, “from the Emperor to the laborer,” everyone wore clothing made of cotton produced in New England. Cushing correctly predicted that the American mills would dominate the Asian market. Two decades later a British reporter in India wrote, “American cotton manufacturers are already clothing our own Indian army,” The mills had commercial customers too, in Africa, Argentina, Brazil, Chile, Mexico, and Turkey. The looms of New England ran faster and harder to keep up. The mill owners made fortunes, even as social critics scorned them for exploiting their workers and abolitionists condemned them for using cotton picked by slaves.” (Moran, 2002, pg.15)

Working conditions found in the factories of Lowell and Lawrence in the early to mid-19th century through the turn of the 20th century were hauntingly similar to some of the poor working conditions still found in factories today in
China and other developing nations. Why nearly 200 years later are things so similar and yet different at the same time? The question of what lessons can be learned from the struggles of those who came before us, their relevance today and how those lessons might assist in the development of both ethical and safe work places will be discussed.

**China Today, 1978 onwards, post Reform and Opening**

**Historical Perspective and Economic Development**

China is one of the world’s oldest continuous civilizations, with more than 4000 years of recorded history. Beijing has been the capital for over 800 years and is the country’s political, economic and cultural hub. Ruled by strong dynasties for thousands of years, the last dynasty, the Ch’ing ended in 1911. China has produced some of the most important cultural achievements in history including paper making, the compass, gunpowder and moveable-type print. After the fall of the last dynasty, Sun Yat-sen founded the republic of China and was succeeded by Chaing Kai-shek in 1927. Mao Tse-Tung’s communist forces took control in 1949 and established the communist government that exists today (Morrison and Conaway, 2006). Mao Tse-Tung’s greatest achievement was the unification of China under a central government after a long period of European domination. Deng Xiaoping took over after Mao’s death as head of the communist party. The austerity and challenges of daily life during the Maoist period set the tone for the Chinese people’s acceptance of the market economy that would soon be ushered in by the next leader of China, Comrade Deng Xiaoping.

Today, China is the world’s largest producer and exporter of textile and apparel and is responsible for one third of global market share (“textile global”). China has attracted textile and apparel manufacturers from around the world due to its abundant supply of low cost and skilled labor force (Li & Fung, 2007). The policies of reform and opening initiated by Deng Xiaoping in 1978 made it easier for foreign companies to conduct business and invest in China. The government’s active role in establishing Special Economic Zones, (SEZ’s) along China’s coastal provinces, improvements in infrastructure and easing of domestic immigration policies has supported rapid industrial development in China.

**Shenzhen, Special Economic Zone**

SEZ’s have played an important role in advancing economic reform and opening up China’s economy to the rest of the world (Guo & Feng, 2007). Shenzhen was established in 1980 by Deng Xiaoping as China’s first SEZ. Located on China’s southern coast, less than one hour from Hong Kong by train, Shenzhen is an example of the government’s very successful and carefully planned economic strategy (Snyder, 2009). Establishing a business in Shenzhen or one of China’s other SEZ’s offers “preferential policies” on land acquisition and use, taxation, customs clearance, the use of foreign capital by foreign investors, imports and exports, finance and logistics (Guo & Feng, 2007). In addition to attracting foreign direct investment (FDI), Shenzhen has attracted young and skilled migrants from across the country. Over the past few decades, Shenzhen has developed at a phenomenal rate and has been transformed from a small fishing village in Guangdong province to a major industrial and financial center (Snyder, 2009). Shenzhen’s rapid development, now famously known as “Shenzhen speed” showcases the advantages of “open door” policies and market-oriented reforms initiated by China’s central government and how industrialization and urbanization can act as catalysts for economic development. From 1990 to 2005, the average annual growth rate of the gross domestic product (GDP) of Shenzhen was 27% (Guo & Feng, 2007). In 2005, Shenzhen was responsible for 13 percent of China’s total exports. Today, nearly eight million people live in Shenzhen and it’s port is the sixth biggest in the world (Snyder, 2009). In 2006, the per capita GDP of Shenzhen was ranked first in the country at $8619 compared with the national average of about $2000.

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Shenzhen is regarded as one of the richest cities in the People’s Republic of China, PRC (Guo & Feng). In 2010, the port of Shenzhen was ranked as the fourth busiest after Singapore, Shanghai and Hong Kong with 7 of the 10 busiest ports calculated according to 20 foot standard cargo box units located in China (“Freight Forwarder”).

Like Lowell, Shenzhen is a “type” of planned industrial community. Both were established with the primary goal of stimulating economic activity and amassing wealth for the principals. Lowell was planned by the Boston Associates, a private corporation, while Shenzhen is one of seven SEZ’s established by the central government of China. At the start of the industrial revolution in America, Lowell’s development of the power loom, transformed the previously laborious process of weaving cloth and provided abundant supplies of textiles in a great variety of fabric types and designs. Textiles produced in Lowell and throughout New England came to dominate the world market. Since the establishment of Shenzhen, it has undergone rapid and continual transformations from traditional to high-tech manufacturing, from small-scale to large-scale and group based companies and from assembling and processing to independent manufacturing. 141 of the world’s top 500 multinational companies have invested in Shenzhen and in 2005, telecommunications, computers and electronics accounted for almost 60% of the total industrial output of Shenzhen (Guo & Feng, 2007).

The textile and apparel industry has traditionally been located within China’s SEZ’s, benefitting from their strategic location along the coastal areas with easy access to ports and transport networks and close proximity to China’s Internationalized cities, economic hubs, or neighboring countries (Gua & Feng, 2007).

In the early days of Shenzhen’s development, apparel assembly plants were found throughout Shenzhen. Rapid growth and development of the special zone was accompanied by rapid increases in startup and property costs and low skilled manufacturing jobs including garment assembly were soon priced out of the zone. While some apparel manufacturers remain today, the majority have been pushed out to the surrounding suburbs of the city and into Guangdong province. (Snyder, 2009).

In 1978, the Taiping Handbag Factory of Hong Kong opened the first foreign factory in Dongguan. A “processing factory” which imported supplies and materials from Hong Kong for assembly and returned finished products to Hong Kong for export to the world. In the first year, the company made one million Hong Kong dollars (~128,000 USD) and became the model for thousands of factories to follow (Chang, 2008). In the early to mid 1980’s domestically produced fabrics were not export quality and fabrics were imported from other Asian markets such as Korea, Taiwan and Japan (Wu, 1999).

Dongguan was a different type of city and place than Shenzhen, developing from no special plan and benefitting from its close proximity to Shenzhen and Hong Kong. The first investors in Dongguan were Taiwanese and Hong Kong businesses that made clothing, toys and shoes. To be successful they only need cheap land, an abundant labor supply and weak regulations. All were in abundant supply in the city of Dongguan (Chang, 2008). Many of the early factories were two or three story houses, or makeshift buildings where workers sat completing repetitive tasks. In the 1990’s the city’s manufacturing shifted to electronics but labor intensive factories continue to dominate. While the products being assembled have gotten more sophisticated, the work itself has not (Chang, 2008).

While many small to medium sized factories as well as factories the size of small cities can be found in Dongguan. “If you wear athletic shoes, chances are you have worn a pair that was made in the Yue Yuen factory in Dongguan. The Taiwanese-owned factory is the biggest manufacturer for Nike, Addias and Reebok, along with smaller brands like Puma and Asics, all of whom stopped making shoes years ago and farmed out production to factories that could do it more cheaply. Yue Yuen’s secret is vertical integration: It controls every step of the manufacturing process from initial design to making glues, soles and molds and lasts to cutting, stitching, and assembling the finished
products. One-third of the worlds shoes are made in Guangdong Province and the Yue Yuen plant is the biggest of them all." (Chang, 2008, pg.99)

Seventy-thousand people work at the Yue Yuen factory in Dogguan. Most are under the age of thirty and all are involved in the activity of making athletic shoes. Inside the factories walls, workers sleep in factory dorms, eat in factory cafeterias and shop at factory commissaries. The factory runs a kindergarten for employees’ children and maintains a hospital with a 150 staff members. There is a movie theater, a performance troupe, volunteer activities and English classes. It operates its own power plant and fire station. (Chang, 2008).

A company such as Yue Yuen offers stability providing an average salary paid monthly, on time and relatively good living and working conditions. Upward mobility is possible. Many of the companies manager’s and line supervisors are rural migrants who started out on the assembly line. Middlemen are paid by migrant workers to secure jobs at the Yue Yan factory (Chang, 2008).

The Work Force and Working Conditions

To help understand the scale of China, a comparison of the work force numbering 17,000 during Lowell’s peak production years to 70,000 workers at just one factory should be considered. The Yue Yeun athletic footwear factory is an example of just one factory, producing one product category of footwear, located close to one SEZ in Southern China. The challenges faced by the factory of maintaining profitability, providing a safe and clean work environment, providing fair and equitable wages and living conditions for thousands of migrant workers remain the same today as was faced by the New England capitalists. The challenge in China however, is far greater in scope and scale due to the sheer magnitude of the number of factories and workers.

Millions on the Move

Waves of immigrants from all regions of China descended on the coastal cities where countless numbers of jobs and an untold variety of manufacturing opportunities were available to anyone showing up at the factory door willing to work. Encouraged by relaxed immigration policies of the central government and a strong desire to improve their lives and the lives of their families, they left the countryside by the millions.

Like Lowell, China’s endless supply of labor both male and female came from the rural farms from the inland regions of the vast country of China. Throughout the 1980s and 1990s mass migration to the manufacturing towns occurred. In 1984, a government directive permitted farmers to settle in small market towns and it was not longer a crime to be on the move. By 1990, the country had sixty million migrants. Today, China has 130 million migrant workers. Employed in factories, restaurants, construction sites, as delivery workers, in house cleaning, almost every worker is a rural migrant. The migrants “power the assembly lines of China’s export economy” and represent the largest migration in human history accounting for three times the number of people who immigrated to America from Europe over a century (Chang, 2008).

Why They Go and What They Find?

Like the mill girls of New England, migrant workers left their rural homes to improve their lives and the lives of their families. Money sent home to families is currently the biggest source of wealth accumulation in rural China.
Most children reflect the traditional Chinese view that children should be grateful to their parents for the gift of their existence (Chang, 2008).

More than money motivates the migrant workers and many include “seeing the world”, “developing myself” and “learning new skills” as important as increasing their income. Some also report idleness as a motivation. With small plots of land easily managed by their parents and few opportunities in the rural towns many choose to “go out” (Chang, 2008).

Many leave the farm alone and for the first time, embarking on long train journeys to unknown destinations. Some have a factory name or destination in mind provided by a cousin or neighbor who has had success, others just go. Many journeys end at the Guangzhou train station in southern China. A common method to search for work is by visiting a local “talent market” where all types of jobs and the requirements for those jobs are posted and interviews are sometimes conducted. Once in Guangzhou, long distance buses are available to transport the migrants to their new homes. The bus to Dongguan, thirty miles away, leaves every ten minutes (Chang, 2008).

A great variety of factory work is available. Factories are large and small and have different types of ownership. Some factories are state owned, others are privately owned by local Chinese entrepreneurs, some are joint ventures with foreign investors and others are foreign owned (Gu, 1999). The migrants find out very quickly which are the best factories to work in and begin to understand quickly, the hierarchy of nations. American and European bosses treat the workers best, followed by Japanese, Korean, Hong Kong and then Taiwanese workers. Domestic Chinese are said to be the worst “because they always go bankrupt” (Chang, 2008). Housing is provided by the factory and, like the early boarding houses of Lowell, several workers share one room. While a variety of living conditions exist, they are similar in many ways to the housing provided to the early mill girls in Lowell with the factory providing room and board and with several workers sharing the same dormitory room. Generally located within the factory complex, dormitories are a short distance from the production lines. Depending on the factory, Up to 10 workers could share one room sleeping in rows of metal bunks beds. Each worker generally has a wall cabinet with some private space assigned for their personal belongings. Some have toilets and running water in the rooms and others have facilities located at the ends of the halls. The dorms offer no privacy and workers can be seen combing their hair in the hallways and grooming themselves with hand held mirrors. Most rooms’ smell of wet laundry as space allows for only a few changes of clothes. Wash is done during time off and hung to dry in the room and on balconies. Meals are provided by the factory and are served in cafeterias or taken to the dormitories. One dormitory at the Yue Yeun factory in Donnguan houses two thousand female workers (Chang, 2008).

On the Factory Floor

Working conditions vary. The minimum wage is set regionally and for Shenzhen in Guangdong province it is the equivalent $100 USD per month (Snyder, 2009). Shenzhen’s minimum wage rate is the highest in China. The China Daily recently reported that the minimum wage will be raised 20% in Shenzhen on April 1, 2012 to 1320 yuan per month or $200 USD (Xinhau, 2011). Room and board is provided by the factory and may or may not be deducted from a worker’s salary. In the Yue Yeun factory, work is capped at eleven hours per day and sixty hours a week with Sundays off (Chang, 2008). This is not the case at all factories. China Blue (ITVS Interactive, 2007) a documentary film tells the life of Jasmine, a migrant worker who left her family and farm in the countryside and travelled to work in a blue jean factory in Southern China. The working conditions portrayed in the film include working past midnight on a regular basis and being charged for the meals provided for mid night snack break, pay being withheld for months, fatigue so great that workers clipped their eyelids open with clothes pins so they could sleep on the job and not be noticed. The documentary showcases the viewpoint of a local Chinese factory owner who feels compelled to push his workers to complete the order on time to get paid, otherwise there would be no
money to pay the workers and no hope for reorders from the British buyer. The repetitive nature of the work done by Jasmine is highlighted as she snips threads in the finishing department hour after hour each day.

**The Role of Multi-National Companies**

In the mid-1990’s labor abuses in factories under contact by the Gap, Nike and other large multi-national apparel companies created public scandals when labor conditions were exposed. In 1995, Charles Kerrigan, from the National Labor Committee, organized a tour across the United States with two Central American teenage factory workers sewing garments for the Gap who were being paid 12 cents an hour. Public outcry followed and this century’s sweat shop story emerged. Gap responded by revamping their corporate guidelines, guaranteeing workers’ rights in the factories around the world and establishing independent monitoring by third party auditors (Snyder, 2009). Most multi-national companies now have codes of social compliance required of manufacturers they contract with and contractors must agree to factory monitoring by third party Vendor Compliance Auditor’s (VCO’s). VCO’s may visit factories announced or unannounced and conduct extensive inspection of production facilities. VCO’s investigate everything from working hours and overtime, factory output, living conditions in the dormitories, ages of workers, safety regulations including broken needle records, use of protective gear including use of protective gloves and eyewear, location and condition of electrical cords, door size at exits and much more (Snyder, 2009).

The challenge for the factory is to keep up with the high degree of auditing required by their multinational partners. While the requirement for social compliance auditing is similar among companies, presently there is no uniform system of inspection by multinationals (Snyder, 2009). In addition, there is widespread speculation on the legitimacy of records presented by some factories for inspection (ITVS Interactive, 2007). Gap and Nike in an effort to recover from bad publicity and to salvage their brand are leading the way in efforts at changing the system. The jury is still out on the effectiveness of this system.

Consumer demand in the United States and other parts of the world for an abundance of low price products continues and has fueled the growth in manufacturing throughout China. However, the question of the role of the consumer and the need for more and more low priced “stuff” should be asked.

**The Role of Labor Law, Trade Unions and Social Activists**

There are laws that have been on the books since 1995 that promise a five-day, forty hour work week, $48 a week minimum wage and guaranteed overtime pay. It is widely held that these laws are probably ignored more than they are followed. It is illegal to hire workers under the age of 16 years old but teenagers routinely borrow or present fake identity cards to employers and this behavior is seldom challenged. A new labor law implemented in 2008 requires employers to pay overtime, provide insurance and give laid off workers one month of severance pay for every year worked. The law also makes it harder to lay off workers. Credit Suisse estimates that these laws add fifteen to twenty percent to the cost of running a business (Chinese Labor Rights, 2011). This can be more than profit margin for some companies, causing them to evade the law or go out of business. The new laws, designed to give the workers a voice and channel worker frustration through a system of arbitration has created a backlog of cases. The Communist Party-run system cannot cope with the exploding number of labor disputes. In 2008, the year factory shutdowns surged, 700,000 labor disputes went to arbitration, more than double the previous year. Publicity of existing labor laws seem to have the most affect on raising worker consciousness. Chinese workers are much more willing these days to defend their rights and demand higher wages (Wong, 2002).

Though unreported in the Western press, strikes are frequent in China. Nearly every week, thousands of workers protest their working conditions (Snyder, 2009). Strikes are illegal and strike leaders can be imprisoned, and still they occur (Chinese Labor Rights, 2011). In China, no independent trade unions exist. Under the current system,
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only the government-run union, the All-China Federation of Trade Unions, which has more than 170 million members, is permitted. The union has a wide presence in state owned enterprises and has made a big push to establish branches in foreign companies. Its most notable victory was in unionizing Walmart stores is 2006. The All-China Federation of Trade Unions is generally seen to side with industry and is rarely seen as an advocate for workers (Wong, 2010).

In June 2010, Xintang, China’s denim production capital was rocked by several days of unrest when migrant workers took to the street to protest maltreatment of fellow migrant workers. Two dozen people were arrested and thousands took to the street. Several thousand factories produce nearly all of China’s denim representing a significant share of denim made for the rest of the world. The strike is reported to be in protest of both general labor conditions and broader social problems resulting from the emerging wealth gap between locals and migrants who have limited rights in the Chinese system. Chinese citizens are tied to the city of their birth by a household registration system that makes it difficult to get basic benefits like health care and education for their children when they move for work (McLaughlin, 2011). Western experts say that if Chinese officials were to allow independent trade unions, it might help to diffuse labor discontent (Wong, 2010).

Early 19th Century Lowell 1814-1850

Francis Cabot Lowell was the man most responsible for the development of textile manufacturing industry in New England. While spending time in England, Lowell studied the British textile industry, the mightiest in the world. As a prominent Boston businessman, he had many contacts who arranged for him to see what few foreigners were allowed to see: the operations of the mills of Lancashire, Birmingham, Manchester and Leeds. He marveled at the machinery created by James Hargreaves, Richard Arkright, and Samuel Crompton that spun yarn with dazzling speed; most of all, Edmunds Cartwright’s power loom fascinated Lowell as it turned out finished cloth (Moran, 2002). It was during this time it is said that Lowell memorized the workings of the power looms commonly found in the mills (Lowell National Park Ranger, 4/8/11).

Lowell was spellbound by the genius of British technology, but he also witnessed the brutality of the British system. He saw firsthand the horrors of the English factory system and was skeptical. Corporal punishment and child labor were common and widespread in the textile factories of England. Both children and adults were taken against their will from the poorhouses and workers were recruited from the poverty stricken masses on the streets. Men, women and children, were forced to work for countless hours in intolerable conditions (Moran, 2002). It is said that Lowell may also have visited a few of the Scottish “improvement” planned villages established by some enlightened land owners offering living and working conditions that provided decent and healthy surroundings (Lowell handbook, 1992). Lowell’s original motivation was to make manufacturing a civilized enterprise and Lowell became determined to instill in his corporation a “sense of decency” (Moran, 2002).

By 1814, Lowell together with Paul Moody, an inventive mechanic, developed a power loom partly based on what he had seen in England (Lowell handbook, 1992). This was a great achievement which reduced the amount of labor needed to produce finished cloth considerably. Pooling resources with his brother-in-law Patrick Jackson and with the help of investors, the Boston Manufacturing Company was established. Their first mill was built in Waltham a few miles up the Charles River from Boston. The factory in Waltham, Massachusetts was the first fully integrated textile mill. All of the processes involved in producing cotton fabric from “bale (of raw cotton) to bolt (of finished fabric)” were conducted in one mill. This innovation became known as the “Waltham-Lowell system” (Moran, 2002).
The Boston Associates and the Merrimac Manufacturing Company

Francis Cabot Lowell died in 1817 at the age of 42 and never lived to see his dream fulfilled. Nathan Appleton and Patrick Jackson, as principals of the Boston Associates, oversaw the growth of the mills after Lowell’s death. The Waltham site did not provide enough water power to support the type of mill complex they hoped to build so a new location was sought. That new location was a little farming town of East Chelmsford, Massachusetts, located 28 miles northwest of Boston, at the confluence of the Concord and Merrimack Rivers (Moran, 2002).

The nearby Pawtucket Falls provided a power source and the Pawtucket Canal built earlier to skirt the falls became the spine of the canal system that would power Lowell. The small farming town, with its abundant water supply and available land was renamed in Lowell’s honor. Established as a town in 1826, the city of Lowell is credited with being the first large scale planned industrial community in the United States (Lowell Handbook, 1992).

The Boston Associates gave the Merrimack Manufacturing Company control of both land and water power. Construction began in 1822 and Kirk Boott was designated to run the operation in Lowell. Boott was born in Boston, the son of an English merchant and educated in England at the Royal Military academy and at Harvard. He served as a British military officer until the United States and Britain went to war in 1812 when he resigned his commission. Boott had made a name for himself in the import business and was recognized by Appleton and Jackson. Kirk Boott was said to be an imposing, decisive and strict disciplinarian (martinet). Kirk Boott was called by some the “Emperor of Lowell” (Moran, 2002).

Boott was a planner, architect, engineer and construction boss. He oversaw the building of the canals, locks, mills, machine shops, worker housing. Boott designed the buildings, laid out the streets and established rules for workers (Lowell handbook, 1992). One of the earliest construction crews was a band of 30 Irish immigrants who walked the 28 miles from Boston to dig the canals. In 1823 the Irish completed the first branch of the canal known as the Merrimack canal. The Irish laborer’s earned less than their Yankee coworkers and toiled from sunrise to sunset earning 75 cents a day. They lived in the worst of conditions which were considered an eyesore by their Yankee neighbors. Workers lived in crowded tents and shacks in the “paddy camp lands” later know as the Acre (Lowell handbook, 1992).

The living conditions of the laborer’s were of little concern to Kirk Boot and the Boston Associates. Their only concern was that the immigrants did not corrupt the Yankee neighborhoods. The eventual tragedy of Lowell was not in these initial conditions but in the fact that they became progressively worse as time went on. The Irish were the first wave of immigrants from across the sea that would come to inhabit Lowell over the next century. The New England textile industry became forever linked to the growth of urban slums and the Irish were only the first of many ethnic groups to inhabit them (Moran, 2002). Once the first factory, the Merrimack Manufacturing Company mill was up and running in 1825, the Boston Associates set out to expand their operation. They saw great potential in real estate and the sale of water rights. They restructured the Proprietors of Locks and Canals Company (the original owner of the old Pawtucket Canal) as a tool to manage these activities. Their first accomplishment was the completion of the canal system and the damming of the Merrimack River in 1826 (Lowell handbook, 1992). Between 1823 and 1848 five and a half miles of canals were built (Lowell National Park Ranger, 4/8/11).

The Boston Companies formidable power came from control of land and water rights. They took charge of every aspect of establishing a new textile mill. They sold the land, leased the water rights, put up the buildings, supplied the machines which were fabricated in their machine shops and constructed whatever new roads and canals might be needed. They basically, sold prepackaged mills to new textile firms. However, those setting up the new firms were Conference papers and Abstracts: © Knowledge Globalization Institute, Boston, Massachusetts, USA 2012
the same investors who controlled the Boston and Merrimack Manufacturing companies (Lowell handbook, 1998). The mills became so intertwined that they shared top managers and directors who maintained the power to set wages at the same level making it impossible for workers to shop around for better pay. Sharing black list’s of workers who had been released from employment allowed management to control the work force. Workers knew that if they were released from one company in would be impossible to find work in another giving the mill agents tight control of their labor force (Moran, 2002).

Lowell was an immediate success as a manufacturing center and a real estate development and mills sprung up in rapid succession. The Merrimack Manufacturing Company mill was followed by the Hamilton (1826), Appleton (1828), Lowell (1829), Middlesex (1831), Suffolk and Tremont (1832), Lawrence (1833), Boot (1836) and Massachusetts (1840) filling up all of the power sites along the canals. By 1846, the mills in Lowell were turning out almost one million yards of clot per week and by 1850 there were ten large mill complexes employing more than 10,000 people. Until the civil war, Lowell was the largest concentration of industry in America (Lowell handbook, 1992).

Following the model of Lowell, what was known as “mill fever” broke out across New England. Preposterous valuations were place on every river and stream that could turn a water wheel. The Boston Associates extended their empire further up the Merrimack River at the Amoskeag Falls, establishing the Amoskeag mill complex in Manchester and Nashua, New Hampshire (Moran, 2002).

Ten miles North of Lowell, Amos and Abbott Lawrence bought up land in Methuen and Andover for their first mill the Essex Company. In 1845 Charles Storrow was hired to design the city of Lawrence and within a few years there were fourteen churches, fourteen public schools and fifteen thousand people. Modeled after Lowell, the river was dammed and canals built to power the many mills that would follow, a boarding house system was set up for women workers and cultural activities including the building of a new city library was established (Moran, 2002). Despite Abbott Lawrence’s hopes for the city and Storrow’s urban plan, the city of Lawrence was built hastily and with shoddy materials. While the development of Lowell had been “dignified, steady and orderly: the development of Lawrence was seen as crude, thoughtless, boom-or-bust.” Lawrence would later become the scene of turmoil seeing a mill dam collapsing in 1847 with fifteen Irish immigrants losing their lives and in 1860, the Pemberton Mill collapsing and burning, killing eighty-eight persons, most of them Irish women workers (Moran, 2002).

The Work Force and Working Conditions

The Mill Girls

The first wave of mill girls came to Lowell from rural New England. They came to improve their lives and those of their families. Francis Cabot Lowell thought that women should work in the mills for only three years or so, then move on to further their education, marry or find new careers. He did not want thousands of women to become economically dependent on the mills all their working lives (Moran, 2002).

Required to live in well supervised boarding houses, their wages were set at two dollars above the cost of room and board. In the early years, living conditions were good. The boarding houses had six to seven bedrooms, three beds to a room, and two women to a bed. There was a spacious dining room where generous servings of high calorie meals were served three times a day. In the evening, the dining room served as a social gathering place where local vendor’s sold their wares and women socialized. Strict rules of protocol and decorum were observed and the doors were locked tight at 10 pm. The common living experience in the boarding houses provided a unique solidarity

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among the mill girls that aided the workers a bit later as they fought for their rights (Moran, 2002). The boarding houses provided improved conditions compared with the conditions of the typical English textile worker but they were crowded and poorly ventilated (Lowell handbook, 1992). There was no indoor plumbing and privies or outhouses located in the back yard were used. Some privies contaminated the wells that were the source of drinking water; the fear of cholera outbreak was always present. Visits to the public bathhouse were only occasional and maintaining personal cleanliness was difficult (Moran, 2002).

Most of the mill girls had never advanced beyond eighth grade, but they were determined to learn. They spent evenings in “Self Improvement Circles” that they organized, discussing classical literature and reading aloud from their own writings. Some of the mill girls attended evening lectures by such notable Americans as John Quincy Adams, Ralph Waldo Emerson and Henry David Thoreau (Moran, 2002). In the intervals of changing bobbins in the looms and their little free time, they managed to form debating clubs, charitable associations, and missionary societies. They also shared information about new colleges and new seminars opening for women and some would save their wages and eventually leave the mill to attend and begin to live independent lives. Many worked long enough to pay off the family farm, put their brothers through college or save for their weddings. Some left after a time to venture to the western frontier while others walked out of the mill and into the schools of higher education that were beginning to admit women (Moran, 2002).

The first mill owners, the Boston capitalists were men of social conscience. Francis Cabot Lowell envisioned the creation of a manufacturing enterprise that would bring about vast social change. He envisioned a system that would avoid the abuses seen in England, one that would not only provide jobs but would also take care of “his” women workers. The mill girls in the early factories of Lowell shared with the owners a common bond of language, place, religious heritage and were both descendants of those who only a few decades earlier had fought and gained independence from Britain. The mill girls were seen as the first-generation daughters of the American Revolution and Lowell and his associates established strict paternalistic policies to support the vision for his workers. In the early days, Lowell was seen as the city of the future and the wonder of a nation (Moran, 2002). Unfortunately, Lowell’s utopian idea, though well intended was short-lived. As the forces of rapid industrialization took root, the ideas supporting dignity of workers and of positive social change would soon vanish.

The Factory Rules – Environmental and Occupational Hazards

It was said that you could feel and hear the city long before you arrived in Lowell. Except for meal breaks, the howl of the machinery never stopped during the twelve to thirteen to sometimes fourteen hour workday. The floorboards trembled under the workers feet and the workers inhaled the dust that cycloned around them. Most came to Lowell of their own free will, determined to improve the economic status of their families and themselves and were compelled to live with the noise, the repetitive tasks and the regimentation, and despite the horrible working conditions, they stayed. They were hearty New England women who were not afraid of work who took pride in “spinning a smooth thread” (Moran, 2002).

The women experienced a new found freedom yet they became ruled by the factory bell. The bells rang to wake the workers, to commence the start of work, to begin and end meal times and to signal the close of the work day as well as the final 10 pm curfew in the evening. To verify the time kept by the mills, workers raised money to erect public clocks in town squares and church steeples. Fourteen hour days were common, although a bit shorter in the winter, where they worked by whale-oil lamp after sunset (Moran, 2002).

Windows were nailed shut to achieve high humidity needed to keep threads pliable so that breakage would be minimized and the looms would not have to stop often for thread repairs. The humidity resulted in respiratory
ailments, including tuberculosis and influenza. Cotton dust filled the work rooms “as snow falls in winter” and people were covered in it from head to toe (Moran, 2002). Lung illnesses plagued the mills. 70 percent of the early mill workers died of respiratory diseases compared with four percent of farmers. “Textile workers” were among the first to be diagnosed with “brown lung” or Byssinosis (Moran, 2002).

Byssinosis is a disease of cotton mill workers caused by the inhalation of cotton dust. As early as 1837, physicians testified to the dangers of conditions in the cotton mills. Exposure to cotton dust leads to reduced lung capacity causing coughing and shortness of breath. Eventually the disease progresses to a point where the worker experiences chronic shortness of breath and other severe respiratory problems. Symptoms remain with individuals even after they are no longer exposed to cotton dust. It is worth noting that it was not until the mid 1970’s that byssinosis was recognized as an occupational disease by the federal government (Levenstein, DeLaurier & Dunn, 2002).

The earliest attempt to regulate occupational disease came in Massachusetts in 1911 with the banning of the suck shuttle on weaving looms which was thought to be a cause of tuberculosis, TB. The weaver had to mouth her loom’s shuttle, constantly rethreading the shuttle by placing her mouth over the “eye” of the shuttle and sucking the filling thread through. Since more than one weaver often used the same shuttle and hundreds of shuttles were “kissed” each day, it was thought to be a transmitter of infectious disease. Seen as landmark legislation in occupational health, it was later determined that the suck shuttle did not cause TB. Many textile workers suffered from consumption including symptoms of cotton dust-related lung disease- byssinosis but no direct link has been made between the suck shuttle and incidence of byssinosis (Levenstein et al, 2002).

Rules of the Game

In Support of Workers

As the industrial revolution began, there were no rules and regulations that supported the workers general health and well being. The women who made up the majority of the work force did not even have the right to vote. The only rules that existed were those imposed by the mill agents on the workers. Appropriate social conduct and behavior was expected of the mill girls including weekly attendance at church services. Any infractions were reported. The mill agents adopted a strict paternalism and saw great value in controlling the “newly independent women” and assuring a skeptical rural public of the value of this endeavor and providing a steady flow of new workers from the countryside (Moran, 2002).

In the mid 1830’s a short decade after the first mill was opened in Lowell, protest erupted. The abundance of textiles produced in Lowell and across New England resulted in a general oversupply of finished cloth and lower prices paid for finished cloth resulted. Rather than lowering dividends to stock holders, the mill owners decided to reduce the take home pay of women workers. In 1834, the first “turn out” in protest of wage reductions was staged by 800 women workers. The workers demanded that their wages be restored but the mill agents held fast and were outraged that “women would have the audacity to make such demands” (Moran,2002). In October 1836 a more successful strike was staged when mill owner’s increased the amount deducted from workers pay for room and board. More than 2000 women, one third of female workers, walked off the job. Reduced output was reported for several months and mill agents rescinded the higher charges for many workers. These two turnouts showed the pride and determination of the young Yankee mill girls. Those dismissed were blacklisted and would not be hired by any other mills. Despite this, they stood strong (Lowell handbook, 1998).

Social Reformers
In the 1840’s lead by Sarah Bagley, president of the Lowell Female Labor Reform Association (LFLRA) and joined by other works across New England, they petitioned the state legislature for a 10 hour work day for men and women. In 1846 petitions flooded the state legislature. Despite signatures from 10,000 workers statewide, with more than 4000 from Lowell alone, Lowell’s state representative sided with the corporations and opposed the petition. As a result, women workers lobbied male voters and he was defeated in the polls. Yankee women voted with their feet and eventually left the mills and the harsh conditions of employment. They were replaced by a ready work force of Irish immigrants who were fleeing their homeland in masses during the great famine in Ireland which began in 1845 and lasted until 1850. It was not until 1874 that the state enacted a 10 hour labor law and it applied only to women and children (Lowell handbook, 1998).

Role of Corporations in Reform

The corporations in Lowell mandated and controlled just about everything, from the workers daily schedule to the productivity expected on the factory floor to the work environment where thousands toiled each day. The Boston capitalists had pledged to deal honorably with

their employees but as time passed, a new generation of managers placed no limits on how much work would be expected of workers and there was inattention to industrial safety and a clean work environment (Moran, 2002). The goal of the factory owners as in all capitalist ventures is to maximize profits. Management maintained control over the technology of production and its right to do so was never challenged (Levenstein et al., 2002). Corporations demonstrated little regard for workers health and well being.

Role of Unions

Women led the first strikes in Lowell but after the Civil war labor protests were led by male protestors (Lowell handbook, 1992). The initial focus of organized labor was for the reduction of working hours and the removal of children and some women, seen as vulnerable to occupational hazards, from the work place. It took nearly 100 years for a successful national union to emerge with the Congress of Industrial Worker’s establishment of the Textile Workers Organizing Committee in 1925 (Levenstein et al., 2002).

Yankee women were predominant in the work force during the first three decades of Lowell’s early development. From mid-century on, successive immigrant groups, beginning with the Irish, filled the low paying jobs. After the Irish came the French Canadians in the 1860s and 1870s and the Greek and Polish and other nationalities in the 1890s and early 1900s. Lowell became a city of immigrants with each ethnic group living together in their own neighborhoods (Lowell handbook, 1998).

Competitive Forces

The textile industry in Lowell continued to expand through the second half of the century but it lost its dominant role to Fall River, Massachusetts. By 1890 Fall River’s textile work force numbered 19,000 mill hands, compared with Lowell’s 15,000. Technological innovation resulting in the general use of steam power combined with Lowell’s inland location accounted for this shift out of its accustomed leading role. With the use of steam power, it was no longer necessary to locate mills near rivers. Lowell’s inland location on the falls which provided a crucial advantage in the early industrial revolution hindered its growth. The coastal towns of Fall River and New Bedford were more accessible to coastal shipping and sea-borne coal, the energy used to power the steam engines (Lowell handbook, 1998).

Discussion and Lessons Learned
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The purpose of this paper is to compare the textile and apparel industry of early 19th century Lowell with China today by looking at a critical 30 year period in each regions development. What commonalities can be seen and what lessons learned?

It is the story of industrialization, not a new one but a similar and slightly different one. Francis Cabot Lowell through the innovation and development of the power loom developed the “Lowell-Waltham system” of vertical integration allowing for the production of finished cloth from “bale to bolt” in one location. The city of Lowell became the model for textile production, spreading the technology throughout the greater Merrimack Valley resulting in New England becoming a global leader in textile production. The great variety and abundance of finished cloth combined with another major innovation of the Industrial Revolution, the introduction of the “sewing machine” in 1846 resulted in the birth of the ready-to wear industry (RTW). RTW refers to clothing produced in factories to standardized measurements, which was seen first in men’s wear and was followed by women’s wear about 1910 (Stone, 2008).

The textile and apparel industry throughout history has been synonymous with the term sweat shop. One of the first industries to develop during the American industrial revolution, the mills of New England are well documented as treacherous places to work. The ready-to-wear industry was no better. Requiring only a table for cutting fabric and the sewing machine to assemble garments, many small factories and manufacturing workshops popped up throughout the urban centers, specifically in New York City. Work places with poor ventilation and little room to move with poor exits were accident’s waiting to happen. The treacherous fire at the Triangle Shirtwaist Factory in New York City on March 25, 1911 claimed 146 lives. Those who perished were young immigrant women and girls who all were killed in less than one hour. This tragedy became a catalyst for long awaited labor reform and the emergence of worker’s rights in the United States. The fire led to legislation requiring improved factory safety standards and helped spur the growth of the International Ladies’ Garment Workers’ Union, which fought for better working conditions for sweatshop workers.

Garment assembly is often the first industry to enter developing markets. Requiring little technology and a large labor force, garment manufacturing takes advantage of cheap labor in the next “best place.” Developing countries with generally unregulated and often difficult working conditions will survive for a time but eventually will lead to labor unrest which paves the way for labor reform.

The shift of production from China, to other developing countries in the region is already being seen. Apparel assembly in Shenzhen quickly became expensive and moved to the boarders of the SEZ’s, maintaining close proximity to the special economic zone while benefitting from the improved infrastructure and access to ports. Initially, fabrics and accessories were imported from other Asian and sometimes European countries for assembly in China. As technological advancements took hold through the region, textile and apparel clusters emerged. Presently, the majority of raw materials needed to produce most garments are available locally in China avoiding the need to import raw materials. Presently, industry buyers and sellers within China fear for the future of the business and report that profit margins have all but disappeared. The central government’s policy is focused around high-end production and high-tech goods, offering incentives to companies to engage in those businesses. There is little attention paid to lower-end manufacturing like basic clothing and textiles without added value. With the rising costs for personnel and raw materials across China and pressure to keep costs low for buyers, factories have been shutting down in quick succession across the Pearl River Delta and other manufacturing zones. Factories moving to the poorer, less developed regions within the interior of China face the challenge of transporting finished goods from China’s land locked interior, negating any savings in overall production costs. Despite the shift away from China
for basic garment production, China continues to offer enormous flexibility and skill level (Friedman and Ellis, 2011).

A visit to your local Walmart and a quick survey of the women’s department provides you with an overview of the challenges now facing China. Women’s tops, bottoms, swimwear and jean’s ranging in price from $6 to $22 USD with the majority of pricing in the $10 to $14 dollar range can be found. Highly embellished garments sometimes with hand beading, macramé treatments and heat set labels as well as highly constructed garments such as jeans and woven shirts make up the merchandise selection. Where are these garments made? India, Bangladesh, Pakistan, Vietnam, Cambodia, Indonesia and other emerging textile and apparel producing countries. Very few garments in the women’s department of your local Walmart, one of the world’s largest discount stores are made in China. The prices are too high. To remain active in the textile and apparel sector, China will need to continue its’ technological development in textile production and specialty textiles, providing raw materials to the emerging markets in Asia, make use of CAD systems (Computer Aided Design) to add value to the production process as they produce higher end products and adapt manufacturing to smaller scale production runs allowing factories to be more responsive to smaller orders and short lead times currently being demanded by the industry and consumers.

The development periods discussed in this paper in Lowell and China were both planned industrial communities and regions. In the case of Lowell, the planning was done by individuals with the primary goal of amassing personal wealth. In China’s case, the planning was done by the central government on a very large scale with the goal of accumulating wealth to support economic growth. The government’s policy shifts made it relatively easy to do business in China and they invited the world.

In both Lowell and China, there were no laws to support workers rights at the onset of each period in history discussed. In the United States, workers suffered for a very long time. Massachusetts was the first state to regulate occupational disease with the banning of the suck shuttle in 1911 which at the time was thought to be responsible for the spread of tuberculosis. The dangers of exposure to cotton dust were first reported in 1837 and it took 143 years for the federal government to recognize Byssinosis, or “brown lung” as an occupational disease in 1970. Protest in support of a 10 hour work day began in 1840 but it was not until 1874, 34 years later, that the state enacted a 10 hour labor law in support of workers. Social reformers and trade unions were the mechanisms of change in the United States. In China today, no independent trade unions exist and they have played less of a role. Consumer outrage and boycotts that resulted in lost revenue for many multi-national companies has forced many to adopt more socially responsible policies for doing business with overseas counterparts.

Despite the very harsh working conditions and often long hours worked in pursuit of financial gain, during both periods discussed, workers have managed to find time for personal development, learning and enrichment for themselves and their families.

**Lessons Learned**

China today has a great variety of industries and types of factories which represent a broad range of working conditions. Although the horror and brutality of working conditions is commonly reported, it is important to note that many factories are “doing it right”. A vast number of factories in China provide an ethical work environment which supports economic growth of individuals, corporations and the country of China.

It has taken the US a very long time to do what many Americans believe is “the right thing” in support workers rights, occupational health and safety and environmental protection. Regulation and enforcement of laws remain far from perfect. Learning from both the successes and failures of the United States and other developed countries successes can assist China going forward. Giving workers a voice through independent free trade unions along with
the freedom to assemble and strike will allow Chinese worker to participate in the struggle to protect workers’ rights.

Perhaps Americans should not be so quick to criticize. Considering our very short history of 235 years compared with China’s 4000. China will view what they are doing now in a much longer and broader context. “Stay the course for the next 100 years” was the quote by Comrade Deng Xiaoping seen on billboards throughout China in the early days of reform and opening. China will view their success and failure through the long lens of history.

This comparison highlights both similarities and differences in present day China and early New England at the onset of the American Industrial revolution. What emerges is recognition of the importance of ethical behavior by employees and the pivotal role played by workers movements in effecting change. The role of the consumer in creating demand and influencing multi-national corporations to employ ethical business practices should not be understated. Consideration to international trade requirements should also be given, but was not covered in the scope of this paper. As apparel and textile manufacturing and other industries move to places with even fewer rights and regulations, it is important to consider the lessons learned.
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The Negotiation of Socio-Cultural and Economic Traditions in the era of Globalization: “Marriage Settlements” in African Bantu Communities

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Abstract

The practice of making payments either in exchange of, during or after the marriage of an individual, in traditional weddings or formal marriages is characterized as dowry/bride-price, or, marriage settlement. While in the past marriage settlement was considered to be a way of cementing relations between communities, these payments primarily served as insurance in the event of the loss of the husband, a means of providing for the surviving children. Marriage settlements were quite prevalent among agrarian communities. The emergence of industrialization (modernization / westernization) gradually saw the decline of marriage payments amongst western industrial societies due to the comparative advantage of marriage settlement as a wealth transfer mechanism as opposed to formal labor/wages.

A comparative trajectory should be expected amongst rural, agrarian Bantu communities. However, post-colonial, post-independence periods, despite entering the industrial / modern / globalized era, have retained marriage settlements as key variables in their family and marriage structures. I hypothesize that a) marriage settlements in contemporary Sub-Saharan African Bantu societies are based more on economic concerns, rather than cultural factors, b) that daughters are still valued for economic reasons as a mechanism of wealth and heritage transmission, and c) globalization and modernization have only affected the form, not the philosophy of marriage settlements, which are unlikely to diminish in practice or its importance even with increasing levels of involvement in formal economic production through process of globalization.

This paper posits the issue of marriage settlement as a culturally-informed, residual and significant constraint to women economic empowerment from a socialist feminist theoretical perspective, discussing the structures of economic (re)production, and how these intersections enable disenfranchisement of women through class, gender, race and cultural and social traditions.
Brief overview

The history of payment of dowry/bride-price/bride-wealth during marriage in African, Asian and Middle Eastern countries dates back several centuries. As far back as the biblical Solomon, David, Koranic Mohammed and others, payment of a certain amount of money by husbands, sons, tribes and clans has been common practice. The evolution, definition and distinctions of dowry, bride-price and bride-price are often couched in western literature and ethnography: among the Kikuyu, for instance, compensation paid to the bride’s family is simply known as rūracio. Among the Swahili, it is referred to as mahari.

Dowry is defined as “the transfer of significant amounts of goods from the bride's family (or, indirectly, from the groom's family through the bride's family) to a conjugal fund of the new couple" (Harrell & Dickey, 1985). Goody, in Parkin & Stone, 2004, defines "...dowry is essentially a process whereby parental property is distributed to a daughter at her marriage...rather than at the holder's death" For Parkin and Nyamwaya (1987: 10), bride-wealth functions as "a whole series of exchange, principally among women of the two families, further reinforced the idea that lobola was, at least in part, a form of gift exchange..."

Scholars generally agree that dowry is paid in matrilineal societies, rather than in patrilineal societies. Such societies are likely to practice polyandry, and payments are often made to the groom’s family (e.g. in India). On the other hand, bride-price (also, marriage settlement) is paid to a bride’s family and is seen to involve more competition for women for marriage. Both forms of settlements have traditionally been made in different forms, e.g. cowry-shells, livestock, farmland, and more recently, in monetary forms.

Literature review: some approaches to understanding ‘marriage settlements’

Thus, literature has contending views on the evolution of the practice. For example, in Tambiah et al (1989), as early as 1930’s, dowry was perceived in terms of "trafficking in daughters", "indemnity" for the clan that loses a member or the more benign “marriage settlement” (414). Payment of dowry/bride-price/bride-wealth is often done by the bride’s family in some society, but for the purposes of this paper, I shall restrict the definition of the exchange of property and/or any compensation in whatever form, paid to the bride’s family by the groom’s family upon the marriage of a daughter, to “marriage settlement”.

Marriage settlements have been conceived as being paid in different forms, and serving varied social, cultural and economic functions. These functions ranged from determining "the price of the joint value of marriage over the utility in the single state of the spouses, when division of income within the marriage is inflexible" (Becker, quoted in Rao (1993)) to a mode of transfer of wealth to their children (Botticini and Siow, 2003: 1385). Becker (1981: 108) suggests that "obstacles to the efficient pricing of participants arise when the gains from marriage cannot be divided...Bride prices, dowries and divorce settlements and other capital transfers evolved partly to overcome such obstacles". In traditional societies, marriage settlements were often used to create social and cultural ties that enabled pacific settlements of disputes amongst clans and tribes.

Of great import is the work of Gaulin and Boster (1990), who emphasize that "dowry societies feature low female contribution to agriculture (typically plow-cultivation systems), high levels of dependence of women and children on husband's economic support, and low incidence of polygyny" (994). Although the clear delineation of the differences between dowry and bride-price/bride-wealth are not the focus of this article, the marriage-settlements (bride-price) model was prevalent amongst many Bantu communities, whose main economic activity was agricultural production as opposed to other traditional economic activities such as blacksmithing, trading, hunting and gathering, or pastoralism.

The role of the payment of marriage settlement is wide and varied, from the notion that it serves as “compensation” of the loss of a daughter, the “appreciation” of the groom’s family of increasing their membership, to “wealth (re)distribution” and “improvement of relations with the new in-laws”. In most modern, “western countries” payment of dowry is not widely practiced except by diasporic communities. Despite “civilization”, “modernization” and economic liberalization, the practice of marriage settlement payment persists in diasporic, economically globalized communities resident in urban centers and in developed countries.

Different and varied reasons have been advanced by literature and proponents of its continued practice. In the 17th and 18th century agrarian African communities, the nature of production favored mostly agrarian forms of manual labor and reproduction, and communal landholding often at distance from the residences. Therefore, some form of division of labor was desirable. Also, due to diseases, childhood mortality, wars and other natural causes, few children survived to adulthood. In contrast, western industrialized countries were embarking on the industrial revolution, and the beginning of modern practices which included technological advances, medicine and other areas, improving longevity.

It can be argued that the underdeveloped communities, mechanisms that encouraged the valuing of, and encourage the desirability of marriage and wealth transfer were often needed and formed part of the identity of the bride/groom and their families. In addition, the lack of advanced industrial/economic production means necessitated different forms of wealth transfer and control mechanisms especially within individual “households”. As Goody (2004) further notes, "the systems of property devolution in Africa differ from those associated with the major Eurasian civilizations, being of the homogeneous rather than the diverging kind" (113, my emphasis).

Dowry is inextricably intertwined with individual and cultural group identity as a socially constructed concept. Different communities, not just the agrarian, African Bantu communities applied similar concepts of attaching value to some mechanism that was verifiable by the community, as part of identity-forming and shaming mechanisms in the event that the established standards were not met. For example, Gonzalez-Lopez (2005) states that “…sexuality - attitudes, behaviors, beliefs, practices, emotions, feelings, fantasies and other erotic experiences are socially constructed, shaped by and interwoven with social, economic and daily life contexts” (19). Therefore, marriage settlement is not just a function of social order; it became part of the social status and identity of a woman, who would otherwise suffer social constraints/costs if marriage settlement is not paid upon marriage. Indeed, this view is supported by Parkin and Nyamwaya (1987) who suggest that;

"payments range from those which are mainly cattle to those which have a large cash element, from those which are agreed before payment begins to those which are partly paid but for which there is not yet agreement as to how much will be needed to complete the transaction, and so on" (9)

Further, they suggest that even where societies embrace modernity, payment of bride-wealth in its many forms negotiates the position of a woman and her offspring within the family structure.

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14 ibid

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(Re) production and property ownership in the age of globalization

The role of women in society in the last three centuries has expanded from care-giving in the home (as mothers, wives, sisters, caregivers) to socialized, professionalized care (nannies, housewives, professional-cum-mother-cum-wife, the factory production worker, and professional sex-worker) among other roles. In a rapidly globalizing world, the rapid change in the role of gendered labor has not always followed global trends, and has generally left women marginalized. Individuals struggle with societal perceptions of their roles, individual experiences and preferences, and matching these with the expectations and a need to conform to societal norms / constructed identities (Parrenas, 2005: 120-125).

Gender roles are only a smaller part of the constructed identity, of the expectation of the continuance of the structure of society. Overall, the effect of globalization on traditional families is thought to have mixed outcomes. The general thrust of Rhacel Parrenas work, *Children of Global Migration* - with migration as a consequence of globalization - suggests both an "institutional rupture to the order of gender" (2005: 5), constitution of transnational households but also, increasing their "abilities to provide for the family" (ibid, 61) in the case of Filipino families. Browning (2003: 4) supports this view, suggesting that "in fact, many of them (changes) are very positive. Higher incomes for large families must be seen as a plus. Better health and longer lives for millions are goods that are universally affirmed". This analogy can be applied to the consequences of modernization, also considered by some to be globalization.

While the above illustrations are positive in their thrust, John Tomlinson argues that "cultural globalization inevitably takes the form of a spread of cultural practices - and habits, values, products, experiences, ways of life - from certain dominant places to others" (1983: 49). By this logic, one would expect that values of abolishment of marriage settlements would be distributive and widely practiced, especially considering that its roots reflected an Anglo-Saxon mechanism of "dealing with immediate financial concerns of the impending union, the provision of adequate income to support the prospective household and the stipulation of maintenance for the bride should she survive her husband" (Bonfield, 1983: 298).

Even among the non-Anglo-Saxon traditions, specifically African cultures, brides were not considered to have been "sold" or "exchanged" for any amount of compensatory wealth. Torday (1929: 5-7) characterizes these stringent denials and conceptions of dowry and marriage settlements as anything but payments, noting that the exchanged presents were seen as "proof that the girl is not sold as a slave, but given in marriage as a free woman" (Torday, 1929: 6). Yet, this exchange necessarily bound the woman to the new family, and implied pressure on the individual even where the marriage had the potential to break down.

Individuals and communities have significant input in the construction of nations and national identities, which in turn are instituted to manage affairs over some set geographical boundaries (i.e. the nation-state). Over the past 50 years, different nation-states’ economies have increasingly been integrated due to economic theories such as development theories, comparative advantage, among others. These theories affect the processes of production and economic management and thereby economic activities undertaken by individuals. Walters (1995: 3) suggests that "many globalizing forces are impersonal and beyond the control and intentions of any individual or group of individuals". Globalization is seen as affecting the nation-state, its constituent communities, but seldom are the specific cultural traditions that have an economic impact considered. Engel's discussion of the modern family notes that "large-scale industry has transferred the woman from the house to the labor market and the factory, and makes her, often enough, the bread-winner of the family..." (Engels, 1988: 723-724), thereby changing the roles and functions of gendered labor and methods of assuring economic welfare for women.
Intersections of gendered socio-cultural realities and contemporary economic development

The study of women economic empowerment and development in African societies straddles cultural, historical, religious, legal, colonial and contemporary norms. The problem of modern African economic development cannot be fully understood without considering productivity and the role/contribution or even absence of women in formal economic development and production, highlighted by the Women in Development and Gender and Development approaches, which are revisited in the next section. While the causes of underdevelopment cannot be exclusively attributed to relegation of women to non-economic reasons their exclusion in no way mitigates the problem of underdevelopment.

Prior to the onset of formal economic production especially in developing countries, wealth and property-ownership was structured along family and communal identities. For most communities, property was passed down through male descendants. The transition to formal industrial-based economic activity and production was preceded by formal schooling. Due to the eventuality of marriage, many communities chose not to educate daughters, suggesting that since daughters would be married, it was not economically viable to educate daughters. Biological gender discrimination in accessing formal education to prepare individuals for economic production was not limited to African communities. Odaga and Heneveld (1995) write that,

“…when the colonial state became central in education, the education of women was not an important concern. There was much resistance to western schools in the early days and the idea of sending children, particularly girls, was considered preposterous by local communities” (7)

Women are keenly aware of the impact of these gendered disparities; disparities in access to education, formal employment, property ownership and other antecedent factors, which relegate their socio-economic status to a subsumed position to that of men. As Egbo writes:

"…an educated person and an uneducated person are never the same. I see the difference in my friends. I know that I would have lived a happier and better life if I had gone to school. It is possible that I would not have been involved in petty trading as a way of making a living..." (123)

These limitations are further compounded by the institutional structures of both modernity and of the traditional sort. Patrilineal inheritance patterns, reduced or non-existent access to formal credit, lack of institutionalized, equitable legal structures, absence of traditions of property ownership rights, gendered (re)production and diminished economic means is reflected in the socio-cultural norms, including dowry payment, women inheritance and polygamy / polygyny. This trend, Tertilt notes, has outlived pre-colonial, colonial and post-colonial societies. Practices of male property ownership have other effects, e.g. encouraging polygamy. Polygamy is most prevalent in Sub-Saharan Africa, ranging from 10% in Malawi to 55% in Cameroon. Surprisingly, despite the varied polygyny ratios, the gender ratio to total population in these countries – similar to those of many African countries – range from 48.8% (Guinea) to 51.8% (Swaziland). Both Cameroon and Malawi’s gender ratio is 50.3%15. The problem of marriage settlement payment a disincentive for economic empowerment for women is linked with property ownership and social construction of social identity, gender roles, division of labor and means of production (and reproduction) and widely enforced through shaming processes. The desire for husbands to have more daughters in order to insure that when these are married off, the “return on investment” is sufficiently significant to ensure welfare in the fathers’ old age, therefore a change in status quo through employment, empowerment and less dependency on marriage as a form of economic security gains traction.


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The argument against property ownership for women therefore, is one that revolves around socially and culturally constructed control of social structures, economic production and wealth transfer through patrilinearity. This process is primarily an economic strategy ensuring the maintenance and propagation of the status quo where women are subjugated through ‘male ownership’. If the daughters/wives owned property, or if men had no socially sanctioned power of ownership over women, there would be diminished opportunities for the men to maintain the status quo as husbands, brothers or fathers and collect dowry on the daughters/sisters.

The existence of other means of production and economic independence, such as formal employment and property ownership, which would ensure economic survival for women independent of men, would change the local social, political, cultural and economic balance of power. Women would have more options to support themselves economically, and marriage would not be the sole consideration or means of securing an economically viable future for the self or escaping poverty for women. This would also increase the individual’s agency in dealing with difficult homes, abusive relationships and other gendered, oppressive practices.

Property and inheritance within agrarian communities was linked with propagation of family lineages. This was often reflected in the order of child-naming protocols which reflected the privileging of male children even in inheritance. As Goody (2004) notes "even in the matrilineal societies, property is sex-linked... (...) property descends "homogeneously", e.g. between males, even when it goes through females"(110). The import of the change in wealth ownership and transfer system is linked with a non-agrarian, industrial production model.

Assessing the exact impact of dowry on the status of women is a difficult task. One has to consider a number of dimensions and how the outcomes of marriage settlement impact relations and influence economic freedom. As Tambiah et al (1989) propose the one of the ways of assessing this is undertaking a "study of differences between men and women, both within and between societies, in terms of the relative degree of control over persons in a variety of domains"16 which they then outline. These domains are: inheritance/transmission/ownership/disposal; property rights during marriage and upon death; economic roles & occupational activities including remuneration; freedom to initiate divorce and allocation of children to partners thereafter; degree of freedom of physical movement & social interaction at different stages; level of participation in economic/religious/political forms; preference for social separation (groups, associations); special features of speech codes/linguistic forms signaling difference (413-414)

Gonzalez-Lopez (2005) argues that cultures socialize individuals to think, and conduct themselves in a certain way, with the potential of social costs and ostracization where these self-reinforcing cultural traits are not observed in the gender divisions. The situation is similar in African communities: the social stratification and positioning of individuals was determined by their (re)productivity to society.

Modernity, globalization, production and property ownership

A growing body of literature concentrates on the effect globalization has on marginalized communities and gendered worldviews, and their effect on individuals. For example, Chantal Thomas (2000) notes that, "one troubling aspect of globalization is that it may tend to concentrate costs on populations that are already socioeconomically disadvantaged" (1451).17 While such inquiry has tended to concentrate on either entire economic blocs, divisions

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16 Stanley J. Tambiah, et al., “Bridewealth and Dowry Revisited…”
between the global north and south, countries or communities, seldom are the effects on traditional and agrarian societies or between individuals investigated.

Globalization does not affect all individuals and communities in the same way. As Akhter and Ward (2009) note, "The impacts of globalization are not the same for everyone. It expands opportunities and enhances prosperity for some nations, whereas for others it produces inequality, poverty and helplessness" (42). It is especially those individuals for whom it produces inequality, poverty and helplessness that are of major concern here. Traditionally, due to patrilineal social constructions of power, women are often quite disadvantaged and disproportionately represented amongst those for whom globalization’s benefits are not as evident.

In the era of investment in stock-markets, paperless transactions, and other electronic forms of wealth ownership, how do agrarian societies and pastoralist societies whose primary wealth-holding is in land and animals contribute to bridging this divide? How do traditional forms of wealth-holding adapt to modern economic realities? Gaulin and Boster provide a poignant reasoning for the keen interest and participation in the selection of wives and offspring:

Regardless of whether dowry or bride wealth is paid, parents and other kin frequently aid in amassing the transferred wealth and often negotiate the marriage contract. These facts are consistent with the generalization that humans invest in their offspring (and other kin) over many years. From a neo-Darwinian perspective, individuals should allocate resources so as to maximize their own genetic representation in future generations (995)

On the other hand, Botticini & Siow (1995) find that the general absence of pecuniary transfers at the time of marriage in modern industrial societies suggests that these transfers are an inefficient way to redistribute resources between husbands and wives, and not that there is no redistribution between spouses (1386)

Questions of gender equality and diffusion of cultural practices amongst the different identities and ethnic groups in modern western countries, and the pursuit of a homogeneous identity (such as an American, Canadian or British identity national) may have diluted the extent of traditional practices, such as marriage settlements. On the other hand, the puzzle of modernizing societies in which marriage settlements (whether dowry or bride-price) occurs defies the argument that marriage settlements are an inefficient way of transfer of wealth.

Since sons face comparative advantage working in their parents’ businesses and married daughters having an increased level of access to the formal labor, globalization ought to affect these formerly agrarian societies that are in the process of modernizing, in such a way that eventually abolishes the marriage transfers. However, as preliminary qualitative sampling and studies have shown, this has not happened especially among the Bantu, and the support for marriage settlements is still prevalent.

This is one of the puzzles of the intersections between globalization as a social, cultural and economic ‘respatialization’ of intimate spaces, and marriage settlements as a social, economic and cultural practice. It gives rise to the view that marriage settlements are not only a cultural practice, but also a lucrative economic activity, anchored in traditions and social construction of identities. This grounding in family and social power structures allows fathers to continue anticipating and collecting marriage settlements at the risk of the married couples’ potential societal shaming if / when dowry and marriage settlements are not paid as expected by society.

One of the concerns of the effect of modernization (globalization / westernization / Americanization) is the contending view that marriage and family institutions will not survive the onslaught of "modernity’s speed of change, its capacity to subdue intimate relations to the dictates of rational production, the mobility that it includes and its tendency to move labor and capital around the world without respect for enduring human relations” (Browning, 2003: 9). While the rates of divorce and non-traditional families have increased over the past 50 years, this in no way suggests that the prevalence of the family, or marriage settlements, have fundamentally changed.
Indeed, Fukuyama (1999) points to an phenomenon that views the western societies as characterized by "...increasing levels of crime and social disorder, the decline of families and kinship as a source of social cohesion, and decreasing levels of trust" (60). The durability of marriage settlements among non-western societies, grounded in the economic, social and cultural traditions of such societies, may be a positive residual outcome. The continued involvement of families and communities, rather than individuals as the focus of the family and such exchanges provides for a regulatory mechanism, but disadvantages the bride in the event of a marriage breakdown since the economic and social costs of repaying dowry are quite substantial.

Globalization, on the other hand, offers a different lens with which to view the consequences of bride-wealth. The rise of feminist theory introduced formalization of studies into the effect and relationship between globalization and women, specifically the effects of production and reproduction, and the structural and societal constraints women must overcome. The Women in Development (WID) approach, an extension of globalization and dependency theories espouses a world-systems approach that emphasizes equal opportunities for women regarding access to education, training, property, credit and better living conditions. On the other hand, the Gender and Development (GAD) approach argues that women's position in the society is affected by their material conditions of life, by the nature of patriarchal power in their societies and by their positions in national and global economies (pp. 143-144).  

Marriage and the Multi-National Corporation

One of the enduring mechanisms of economic globalization is the Multi National Company / Corporation (MNC). MNCs are at the forefront of driving the integrative processes of globalization with off-shoring and outsourcing operations in pursuit of profit for their shareholders. Whether their operations and effects on target countries (read Third World Countries) are benevolent or conjure up the imagery of economic rape as discussed by J.K. Gibson-Graham (1996), the economic impact MNC's has been life-changing at both the individual and the national level.

In developing countries, MNCs have often provided disenfranchised individuals, especially women, with the opportunity to reduce dependency on male benevolence through provision of paid employment. Even as Gonzalez-Lopez (2005) discusses the biased preferences of MNCs’ employment of women, on the other hand the working conditions are oppressive, but on the other hand, it empowers the individual to accumulate alternative means of self-support, including property, and therefore expands individual choice.

Still, even as the MNC and Foreign Direct Investments, both hallmarks of modern economic globalization, provide economic opportunities for women, there are contested questions of the nature of equity, choices, pay, working and living conditions, levels of empowerment, social costs of working rather than being a home-maker, among other concerns, that the employed women must face. In this, individual rational choice and exercise of agency even within such constrained environment cannot be dismissed. Is it normatively better for women to be dependent on existing social structures of gendered construction of roles, which often suggest for men to be seen as "pillars", as "providers"? In almost all cases, research is more likely to find that women in developing countries are better off...

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18 see, for example, Alison Curd, Amelia Julian, Adam Sabow and Leigh Seligman, The Impact of Foreign Direct Investment on Chinese Women; pp. 79; ['...the marriage law of 1980, the Inheritance Law of 1985, and the Law on the Protection of Rights and Interests of Women of 1992 - expanded the legal rights of women and broadened the scope of their economic activities']

19 See Rhacel Salazar Parrenas, Children of Global Migration: Transnational Families and Gendered Woes, Stanford University Press (2005), ch. 4-5
when they are more financially independent. Working in MNC-driven factories is more likely to decrease the binary of gender division, even if it entails working under "factory" conditions.

Empirically, scholarship on benefits of working shows mixed reviews. The work opportunities provided for women have increased not only their participation in the workforce (Akhter & Ward), but also their collective bargaining power, paradoxically through the placement of production factories in poor countries and exploiting the young, inexperienced (mostly female) labor force and remaining globally competitive (Wilson, 1992: 2)

The property-ownership nature of agrarian communities and the gradual shift towards industrial (MNC) production has gradually changed the level and ease of access to alternative sources of ownership and production. Indeed, (Akter & Ward, 2009: 144) suggest that "women's access to paid work can increase women's decision-making power in many different ways such as shifting the balance in the family", including becoming breadwinners.

Discussion

As previously discussed, communities manage their affairs in a way that maximizes the utility of social harmony, cohesion and development. They order their preferences in distinct ways, and allocate social status based on well defined criteria, such as kinship, age-groups, traditions, beliefs and other accepted mechanism. One such allocation of social status and acceptability is through marriage settlements upon the payment of dowry, and raising a family. Compensation for the loss of a daughter, or ‘appreciation’ of the bride’s family, often took (and still takes) the form of dowry or marriage settlements. Some communities used marriage settlements as a wealth-transfer mechanism, but also to improve their status with the acquisition of wealth upon the marriage of a daughter. From these concepts, I contend that marriage settlements serve more than a cultural function: they are an economic function especially in the age of industrialization, acquisition of technical skills and formal employment.

Improved life conditions, including education, healthcare and access to industrial production and work opportunities have affected the payment of marriage settlement only to the extent that the form of payment is different than the forms it previously took (of animals, lands and such). The increased opportunities of formal education, non-agrarian employment and economic liberalization amongst societies, families, couples and women have not affected the philosophy of marriage settlement. Payment of marriage settlements evoke social status and acceptability of the individual, and simultaneously transfer wealth to the groom’s family.

Similarly, economic globalization has affected the form, not the philosophy of marriage settlements. While significant scholarship suggests that marriage settlements serve primarily as a wealth redistributive and economic function of insuring the economic welfare of the bride and the offspring in the event of death of the male spouse, the cultural kinship bonds that are associated with marriage settlements are as important. Marriage settlement then is not paid as a wealth transfer mechanism with cultural connotations, but as an extension of both the subjugating women, increasing their economic dependence on the new family and as “a source of income”.

The payment of bride wealth takes on traditional forms (typically, a pre-determined number of animals, grains, farm-land or other means) and modern methods of payment (cash, stocks, bonds, investments, tangible property, trusts etc). Indeed, with the continuation of the ceremonies surrounding this practice, and given rising levels of criminal activity, bride wealth payment has co-opted technology: payments are increasingly being made through electronic money-transfer mechanisms (e.g. M-Pesa) between the families of the bride and the groom.

Arguments have been advanced that the changing nature of the frequency, type of payment of bride-wealth has been affected by modernization and diminished dependency on the importance of the wealth transfer function. Similarly, an argument that the cash payment privatizes, individualizes, commercializes, secularizes and indeed trivializes the bride-wealth has been advanced by Ngubane (in Parkin & Nyamwaya, 1987). Within migrant communities, the
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importance of the bride-wealth is thought to be diminishing, and the social functions, such as elaborate ceremonies involving entire communities, which characterized its exchange, have been "efficientized" through wire money transfers.

**Individuals and agency**

Individual agency within the social-feminist structural conception of factors that oppress and disadvantage women is bound to be a contentious issue. However, as Constable points out in the discussion of a somewhat related women agency issue, stating that in studying what actions individuals take given the constraints of their situations, “…it becomes possible to uncover resistances to, and contestations of, oppressive and exploitative structures and regimes as well as the visions and ideologies inscribed in women’s practices” (Constable, 2003: 89).

Agency may take a number of different avenues especially with regard to women’s economic empowerment. While on the one hand marriage within existing structures of communities’ construction is a desirable, safe and non-controversial individual choice, the practice of payment of marriage settlements has potential to disenfranchise an individual, and decrease their agency in dealing with difficult marriages. The social pressure applied to the individual through the elaborate ceremony, and the potential communal shaming attendant to marriage breakdown may preclude the individual’s ability to exercise freedom to leave an abusive marriage.

Cultural traditions do not just disappear; however, decreasing the incentive to stay in such marriages out of the fear of ostracization has great potential in changing the social power dynamics especially in marriages. Highlighting the difficulties women go through, creation of support groups to help eliminate social stigma, legislative action, activism and education are but a few of the possible avenues individuals could choose to participate in, in order to improve their access to opportunities later in life, for themselves and their children.

**Proposed avenues for further research**

This paper provides a background and conceptual framework on the literature regarding the intersections of globalization and how gendered property ownership and labor conspire to disenfranchise women in industrializing, traditional and formerly agrarian societies whose primary wealth transfer mechanism is through bride-wealth and marriage settlement payments. One of the potential shortcomings of the paper is the assumption made, that globalization does not significantly change the attitudes amongst brides and grooms, regarding payment (necessity, practice, form, frequency, gender, age, income and education variables), and whether these factors affect the rate at which dowry is paid. It is entirely plausible that individuals who are highly educated and more integrated into the globalized economy have a diminished appreciation for dowry in present day marriages, due to alternatives that allow for the transfer of wealth (e.g. through education, industrial production and other modern economic activities).

One area of possible inquiry is on the possible difference in attitudes of diasporic, “globalized” members of communities that traditionally paid dowry, but which are increasingly becoming integrated in the global economy, versus those of in-country community members. In other words, does immersion in “globalizing practices” affect the philosophy and likelihood of the payment of dowry, especially considering that mixed, inter-tribal and foreign-spouse marriages occur at a higher rate? This is one of the future areas of exploration in this field.

Another possible area of scholarship would be to quantitatively determine the probability of an individual’s future likelihood of paying dowry and whether it is more of one of the cultural relics (like female genital mutilation (FGM), or whether bride-wealth and marriage settlement is an enduring part of the identity of individuals and their
culture, similar to language. The conjecture that dowry is disenfranchising could also be wrong, and subject to quantitative study.

Conclusions

I have argued in this paper that Economic globalization has only affected the form, not the philosophy, of the payment of dowry/bride-price/bride-wealth. I have also sought to show that due to the prevailing property-ownership link with marriage (including inability of daughters to inherit from their paternal kin); marriage becomes entrenched as an economic activity/incentive for women. Payment of marriage settlements (also known as bride-wealth) constitutes a culturally sanctioned, systemic, gendered social system of reduction of opportunities for women to be economically independent of their husbands, which can be facilitated by the processes of economic globalization.

The continuation of marriage-settlements, dowry and bride-price is conceivably modern-day economic enslavement of women and contributes to further gendering of labor, through disenfranchisement and denial of economic and proprietary/inheritance rights of women through cultural practices without regard to gender. The practice of dowry/bride-price/bride-wealth payment continues to interfere with the independence and ability of women to develop and own resources independent of the patriarchal system and is an economic rather than a cultural necessity that promotes a methodological, representative and equitable wealth transfer.

A number of feminist theoretical propositions can help structure the debate on the role and impact of marriage settlements in disenfranchising women. Some of these strategies and propositions include activist support for individual, group and community agency, formation of partnerships with individuals and organizations dedicated to promoting equality and processes that enable greater independence from such economically repressive cultural practices that promote inequality. These strategies to combat such individual and community disempowerment practices will enable women to live dignified lives with opportunities to fully participate equitably in a globalizing world on equal terms. On the other hand, the possibility of globalization’s loss of “cheap” labor and men’s sense of loss of economic, cultural and political power may render this quite the battle for social supremacy in such communities.

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A Study on Dynamic Budgeting of Real Estate Enterprise Based on Project Management

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Abstract:
Based on the characteristics of real estate enterprise, using the theory of project management and dynamic budgeting, this paper first proposed a sub-level, multi-dimensional budget management theory which guided by strategic budget, based on Annual Budget and supported by Project Budget. Then it designed a dynamic budgeting system of real estate enterprise based on project management, the system is divided into two parts: Budget Management and Infrastructure Support. Supported by information technology, cash flow, business flow and data flow of budget management achieved synchronization generation and integration; through the closed loop cycle, the changing of external environment will be rapidly passed to budget management system, in order to achieve dynamic management and real-time control.

Keywords: Dynamic Budgeting, Project Management, Real Estate Enterprise

Introduction
In recent years, real estate industry ushered in the rapid development with China's economic growth, while at the same time company with growing competition on the associated resources and fund within the industry and enhanced market-oriented, customer-based orientation. Some real estate companies bought into a comprehensive budget management method in order to make full use of limited resources and establish a standard, highly efficient modern enterprise. However, the real estate industry has a large investment, high risks, project-management and other business features, it is difficult to copy other industries overall budget management. This paper first pointed out and analyzed the characteristics of the real estate which made its budget different from others, then introduced the ideas of project management and dynamic systems to budget management, at last, proposed a budget management model based on project-management.

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Characteristics of Real Estate Business Affected Budget Management

Main Development Mode—Project Company Development

Real estate enterprises always adopt Project Company Development (PCD) as the main development mode, which determines the Project Budget is in the central position of the budget system. PCD means that parent companies establish sub-company of independent legal entity to specific project development. They usually wholly own the project company, have the responsible service system and also take the project company as an independent unit of economic accounting [1]. In view of particular operations mode, overall budget management system should not only cover all aspects of traditional budget, but also focus on the Project Budget. Meanwhile, real estate development project cost and expense is always complicated and difficult to control which also decide the Project Budget in the central position of real estate business overall budget management system.

Large and Uncertain Capital Flows

The overall budget management of the real estate business is different from conventional industrial enterprises determined by uncertainty of large capital flow. The real estate industry is a highly capital-intensive industry and a huge amount of initial capital flow is required. The cash flow has the characteristics of uncertainty which mainly showed in two aspects: First, the require time and amount is uncertainty. Second, the sources of funding and financial cost are uncertainty. Most of the project capital is either debt-based financing from banks or other financial institutions or the investment by the owner as well as financing from stock market. Financing costs, scale and duration, of both methods, are mostly influenced by the country's macroeconomic situation, fiscal policy, monetary policy. In order to avoid capital-chain broken and cause "the contractor on schedule" project, real estate enterprises should focus on cash flow budget as well as maintain "forward-looking" and "dynamic."

Product development, a long construction period and high risks

Development of a long construction period, the uncertainty of many factors influencing the risk of higher characteristic determines the overall budget management of real estate companies must be able to change with the timely adjustment of the external environment and maintain good performance and flexibility. As the real estate project development cycle is longer, including planning and design, feasibility studies, land acquisition and demolition, resettlement compensation, seven connections and one leveling, construction, foundation engineering, supporting projects, a forestation projects and other development stages, from at least one year, more than then a few years to complete, the construction period, may affect the real estate project development and dynamics of many variable factors. Country’s economic situation, macroeconomic policy, industry trends and other macroeconomic indicators; building materials market, labor market and related industries such as micro-economic environment, cost standards; and its strategic business objectives, capital structure, technological level, management level and other internal factors, affect the project's product cost and sales market, influence the industry's value creation. Meanwhile real estate development of the policy changes on the sensitivity of a strong, resulting in the development of real estate projects with high risks. Therefore, the real estate business should have strong budget management dynamic, to adapt to the complex and volatile business environment.
The content and applications of dynamic budget management based on project management

The Content of dynamic budget management based on project management

Dynamic budget management (DBM) based on project management is a multi-dimensional budget management system which is based on annual Budget, combines total budget and project Budget under the corporate strategic. It developed a sub-level, multi-dimensional budget management system which include "Strategic Budget - Annual Budget - Project Budget ", and integrate advanced information technology, management methods, etc., to improve flexibility and adaptability of budget management, so as to adapt the dynamic and complex enterprise organization and business environment, realize enterprise value creation.

Three-Dimensional budget management based on project management

Three-Dimensional budget management based on project management of Real Estate Company includes two-level, three dimensions. The first level is Strategic Budget. It is an overall, comprehensive budget starting from the corporate strategic to ensure the strategic action carried out correctly. It stands on the perspective of long-term development goals, divides the budget activities according to strategic actions. It is higher than Project Budget and Annual Budget in the status, and plays a guiding role on the formulation of the latter two. The second level is composed of Annual Budget and Project Budget. Annual Budget, also known as the annual overall budget, is strategic goal-oriented, covering all business functions of the budget. Generally, real estate companies may have multiple projects simultaneously; therefore, Annual Budget is budget aggregation from the time dimension. Project Budget is a management activity determining the project implementation costs around the four stages of starting, planning, executing, ending and monitoring the whole process of budget implementation [2]. As the project has cycles of varying lengths, most likely across multi-year, Project Budget also includes the overall project Budget and annual project Budget. The annual project budget is for the project which has a development cycle more than one year.

Three-Dimensional budget management is also a budget management system which has three dimensions of time, project and function (Figure1). Each time axis section (the First Year) contains several projects budget (Project 1 and Project2), and every Project Budget contains various function budgets (Design, Development); Each project axis section (the First Year) contains several Annual Budget (the First Year and the Second Year), and every Annual Budget also contains various function budgets (Design, Development). This Three-Dimensional budget management system made the company avoid the excessive dependence on the project as its principal profit part and development direction negligence; on the other hand, it made the company decide which project is departing or being beyond the normal budgetary based on understanding the overall situation, to provide a basis for enterprises decisions in the future.
The dynamic budget management of real estate companies

The implementation of dynamic budget management is complicated system engineering [3], it needs to improve flexibility and adaptability of every aspect of budget management to achieve the goal. It has four characters. First, because the Real Estate Company usually faces different complicated environment and its business activities relate to residential, commercial, hotel and others, the goal of dynamic budget management is innovate its own operating and management mechanism and actively adapt and use the dynamic complexity of the business environment to complete the business strategic objectives. Second, rolling forecast as a precondition to ensure the budget input dynamic reasonable. In the budget management cycle, the forecast is the premise of budget and the budget is the program and planning against the forecast result. Therefore, the scientific and accuracy of forecasting methods is critical for the determination of budget targets and budgeting, it directly affects the budget target, base and preparation, and even determine the budget level and quality [4]; Third, Closed budget management can achieve the two-way interaction of every part of the budget. The traditional budget follows the way of "Budget Goals — Budget Determine — Budget Execution — budget check ", however, closed budget based on rolling forecast focus on process control instead of on target only. Fourth, dynamic budget realize real-time control and fast feedback based on information technology. According to the budget performance information for real-time control, when the budget exceeded, the budget system will automatically alert, budget managers will implement multi-way interaction about the budget to find out the problem. The system can conduct a comprehensive analysis of the budget exceeded and provide variance analysis reporting as the real estate industry budget is more prone to exceeded than others. Managers at different levels can make appropriate adjustments to ensure that budget goals are met, to achieve budget leap from static to dynamic according to budget variance analysis reports.

Dynamic budget management system based on project management of Real Estate Company

Dynamic budget management system includes two parts: Budget Management and Infrastructure Support. Budget Management is composed of three main modules: Strategy Budget, Annual Budget and Project Budget; infrastructure support is composed of two modules: Information Support and Operational Functions (Figure 2). The companies take strategic goals as a selected item of the benchmark requirements to make project overall budget and Annual Budget, also make Annul budget of the whole company according to strategic objectives. Every aspect of the budget management system can achieved two-way interaction. In order to meet the requirements of dynamic budget, the system integrate the whole process of budget management and supply chain, development and

Fig. 1: Three-Dimensional budget management of Real Estate Company
construction, customer relationship management and other core business functions together with the help of advanced information technology platform. When environment changes, the real estate company can respond quickly and successfully, to determine the impact of change on the budget and make a reasonable control and timely adjustment [5]. The following will introduce each module respectively.

**Strategy Budget module**

Strategic budget module is the source of the budget management system, composed of "strategic objective adjustment - rolling forecast - strategic objective determination" forms a closed loop. Rolling forecast is connected the strategic budget to Project Budgets and Annual Budget. Through this link, the strategic budget adjustment can be quickly passed down, affecting the lower budget target setting, and adjustment; at the same time, variance analysis of the dynamics budget execution result in the underlying level can be traced back to the strategic level. This abbreviates the gap between the real estate companies budget and company strategy.

**Project Budget module**

Projects are always playing a core role in Real Estate Company; Project Budget module is also the core module of the dynamic budget management system. Different from the traditional budget management, there also include "project rural budget" between the rolling forecasts and budget object decision with the purpose of estimating the total project cost and its changes scope. According to the dynamic budget, budget management changed from the straight line into a network-like, form a complete two-way closed-loop. Every step of closed-loop pay attention to the strategic value goals, two-way interaction between each part can eliminate the information asymmetry, improve budget implementation efficiency, and achieve continuous improvement of the budget process.

Project Rural Budget.

Project rural budget formed in the base of rolling forecast, is fundamental basis to set up budget goal.

Budget Targeting.

On the basis of the project rural budget, the company can determine the project's budget goals by decomposition of the target layer by layer through the refinement, to provide protection for the budget implementation. Enterprise value is the basic orientation of the budget target, so, setting up the budget goal according to the enterprise value is the key to implement the dynamic budget management; it can not only achieve combination of strategic management and business, but also make a good response to dynamic and complex environment.

**Budgeting.**

A number of budget templates and programs are built in the information support System. After Project Budget goals are determined, the appropriate budget template can be dynamically generated according to the type of budget targets and the characteristics of the Project Budget.

**Budget Execution and Variance Analysis.**

Only after the budget is fully implemented, static budget management system can make variance analysis according to the implementation of the budget. While, in dynamic budget system, business information and budget execution information can be generated simultaneously by information technology support, variance analysis can be executed in the process of budget implementation for dynamic. Through the separation of powers by proper mechanism, it can transfer the power of budget management and decision-making responsibilities from the traditional high-level to the
project staff that is closer to market. Providing real-time, open and transparent budget information through their information systems for them, can give full play to their initiative during the budget implementation and consciously correct the deviations from the budget target of negative activities, quickly and effectively respond to customer and market decisions.

**Budget Adjustment.**

Budget adjustment means to adjust the budget when due to significant changes in the actual situation in the budget implementation process to ensure the adaptability of the budget and evaluation of objectivity. In dynamic budget framework, business development strategy change will quickly scroll through the forecast module passed to the Project Budget and Annual Budget module, achieve real-time adjustments to budget and maintain the consistency of the strategy. While, the changes in cost estimate and details adjustment which does not affect the budget targets of the responsibility budget unit, can be adjusted of their own in accordance with the internal separation of powers and licensing mechanism.

**Budget Evaluation.**

Budget evaluation, including assessment and evaluation of the budget, is to evaluate execution effect through the timely, flexible budget analysis and multi-angle, multi-level evaluation. Use of standard methods of analysis as the basic evaluation, set the evaluation criteria above the benchmark results, analysis budget implementation results and performance through the comparison of industry-leading indicators, performance and benchmark of competitors within the same company or other companies of similar functions [6]. In a dynamic budget system, the benchmark dynamics can effectively guide the continuous improvement of budget management to achieve the benchmark standard, thus achieving long-term value creation of the company's overall performance goals.

In addition, for multi-year project, Project Budget module should also include project Annual Budget, assigned the overall cost of the project to each year according to a reasonable time order, thus providing important support for Annual Budget.
Fig. 2: Budget Management System of Real Estate Company

Annual Budget module

The distinction between Annual Budget and Project Budget module reflects the surface-based project management thinking. Annual Budget classified the project annual budget taking time (years) as the unit in horizon, but is not a simple summary. The aggregate difference between Annual Budget and Project Budget is the commitment of the proposed project; at the same time, it classified the project annual budget taking function as the unit in vertical forming the company's overall operating budget, capital expenditure budget, financial budget.

Information Technology Support modules

Dynamic budgets rely heavily on information technology support. The module's supporting role is mainly reflected in four aspects: support dynamic operation and dynamic capabilities achievement of all aspects of the Project Budget level; support budget summary and imputation of Annual Budget level; support function system operations of the business level; support module integration of Project Budget, Annual Budget and operational functions, to
achieve seamless connectivity of two levels. Currently, we can use advanced information technologies including data warehousing (DW), data mining (DM), online analytical processing (OLAP), etc. [7], to integrate budget information, analysis and excavate budget information in-depth and provide valuable information for decision-making. The use of local area network management can achieve the budget information resource sharing, real-time control and dynamic analysis; realize accurate, real-time, dynamic budget management.

**Business Functions Support**

All aspects of budget management are closely related to business activities. Real estate companies include Projects, Engineering, Design, Sales and other business functions department, as well as Human Resources, Finance and other infrastructure support department. In dynamic budget management system, in the support of advanced information-based mining technology and office automation platform, business information and budget information can be synchronized generate, the whole process of budget management is integrated with business operations and customer relationship management and other core business functions. Data integrated while business integration completed implemented logistics flow, capital flow and information flow high degree unity and budget real-time management, to adopt the project development and meet the market requirements of individual product development of real estate enterprise project.

**Conclusions and recommendations**

Three-dimensional budget management thinking this paper proposed, realize some functions: taken the strategic budget as a guide and the value creation as the long-term business development goals embodied in the everyday business of every aspect; the dynamic budget management system based on project management put the Project Budget on the core position of budget management; achieve the cash flow, business flow, data flow synchronization generation and integration supported by information systems to; External or internal environment changes can quickly passed to all the aspects of budget management cycle through the closed loop to ensure timely budget adjustments, meet the dynamic and real-time control requirements. This paper applied the dynamic project management and budget management thinking to the field of real estate which has become a direction for future research. In addition, how to use the advanced management methods and information technology this paper mentioned used in the dynamic budget management, is still worth a long-term in-depth study of theoretical and practical proposition.

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An Exploration on the Factors Influencing the Credibility of Management Disclosures

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Abstract
This paper explores and summarizes Mercer (2004)’s factors that determine management disclosure credibility. Mercer (2004) critically examined various existing academic literature on disclosure credibility to find that investors, while determining the credibility of a management disclosure, examine four basic factors—the situational incentives at the time of the disclosure, management’s trustworthiness and competence, the degree of assurance for the message from internal and external sources, and several characteristics of the disclosure such as its precision, venue of release and time horizon.

Keywords: disclosure credibility, narratives.

Introduction
The concerns about disclosures seem to be ever present since the time financial scandals such as Enron and WorldCom have adversely affected investor confidence on the reliability of financial disclosures (Barrett, 2002). Generally, disclosures by the management can only be a useful source of information for investors and other users if they are deemed to be reliable and credible (Mercer, 2004). Investors are not only seen to react to surprise information contained in the disclosure but also react to the extent or degree of the disclosure, and hence both may be seen as equally important (Jennings, 1987). Due to the importance of the integrity of management disclosures, recent research identifies a number of factors that may influence disclosure credibility.

Disclosure credibility is an investor’s perceptions of the believability of a particular disclosure (Mercer, 2004). Disclosure credibility may not be the same as management credibility, although previous accounting literature has seldom interchangeably used the two notions. Mercer (2004) purports that disclosure credibility is analyzed or evaluated by investors, separately for each narrative or disclosure. Hence the same firm may obtain different appraisals for different disclosures. Conversely, management credibility is often a function of the credibility of the firm’s managers, i.e. their competence and trustworthiness (Hovland et al., 1953; Birnbaum and Stegner, 1979; Petty and Wegener, 1998; Mercer, 2004)

Determinants of Disclosure Credibility
Mercer (2004) identified four broad factors of disclosure credibility—situational incentives at the time of the disclosure, management’s competence and trustworthiness, i.e. credibility, the degree of assurance provided, both externally and internally, and the characteristics of the disclosure itself.

Situational Incentives
The credibility of a disclosure is influenced by the perceived incentive of the source of the disclosure. Studies suggest that the audience are less likely to believe messages that are reflective of the source’s incentives. People view messages reflective of the source’s incentives to those incentives, rather than with the source’s true beliefs (Kelley, 1972, Mercer, 2004). Similarly, messages inconsistent with the source’s incentives are inferred to reflect the source’s ulterior incentives.

Agency theory suggests that the incentives of managers are likely to be different from that of owners. Where owners are concerned about the share price and profitability of the enterprise, managers are akin to their salaries and other forms of compensation, promotion and termination prospects, etc. Hence investors are unlikely to believe management disclosures when the management has high motives for being untruthful. Prior studies suggest that managers tend to have greater incentives to disclose positive information than negative information. Hence bad news are expected to be, and are often viewed, to be more credible than good news, ceteris paribus (McNichols, 1989; Williams, 1996; Hutton et al., 2003). In addition, management disclosures that contain bad news result in greater stock price reactions and more analyst forecast revisions than those containing good news (Hassell et al., 1988; Williams, 1996; Cairney and Richardson, 1999; Hutton et al., 2003).

Comparing the disclosure credibility of financially distressed and non-financially distressed firms, Koch (1999) stated that firms in the verge of financial disclosures or bankruptcy have greater motivations to provide misleading statements as they have greater benefits and fewer costs of providing inaccurate narratives. Frost (1997) supplements this by stating that disclosures by financially distressed firms yield lesser share price reaction that firms in good financial position.

Management’s Competence and Trustworthiness

The credibility of the managers of the firm often influence the believability of a disclosure (Birnbaum and Stegner, 1979). Managers who can develop reputations for credible disclosures are able to increase the believability of their disclosures subsequently. Hence the management’s prior forecast accuracy affects the size of the analyst’s forecast revisions for subsequent forecasts (Williams, 1996, Hirst et al., 1999, Hodge et al., 2000).

Degree of Assurance

The degree of assurance provided for a management disclosure affect its credibility. This assurance can be provided both from an internal or an external source. External sources of such assurance are provided by parties such as financial analysts, auditors, journalists. Internal sources of such assurance are provided by board of directors, audit committee, and internal auditors (Mercer, 2004).

Various studies examine the effects of auditing on the credibility of disclosure to find that audited messages are more credible than non-audited messages, to users such as bankers and financial analysts (Libby, 1979; Leftwich, 1983; Blackwell et al., 1998; Hodge, 2001). The evidence of this is demonstrated by Blackwell et al. (1998) who found that bankers charge lower interest rates to firms providing audited financial statements and by Leftwich (1983) who stated that banks required private companies to supply audited financial statements (Mercer, 2004). The reactions of financial analysts to disclosures of management can also affect their credibility. For instance Gogoi (2001):

When analyst David Tice published a newsletter in October 1999 accusing Tyco of providing misleading disclosures about its acquisitions, investors questioned the credibility of Tyco’s disclosures and the stock price fell precipitously.

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Similarly Li (2002) stated:

When JP Morgan analyst Thomas Lee … criticized Nextel’s bad debt and customer turnover disclosures, Nextel’s stock fell 5% on the day the report was released.

Assurance may also be derived from sources internal to the firm. An independent internal audit committee signifies diligence and tends to assure higher quality disclosures. Mercer (2004) noted that several studies found that firms with independent board of governors and internal audit committees (i.e. those that carry a significant number of external members not otherwise related to the firm), or where the board and audit committee meets more frequently and have greater expertise in financial affairs experience less ‘fraud’ and earnings management and may experience higher market valuations (Beasley, 1996; Klein, 1999; Black et al., 2003). Internal auditors are expected to screen out errors resulting from a firm’s weak or inefficient internal control system, and hence if investors can evaluate the quality of internal audit, firms with rated with a strong internal audit committee signifies credible disclosure (Mercer, 2004).

**Characteristics of the Disclosure**

Mercer (2004) stated that the disclosure’s characteristics in terms of its precision, venue and time horizon often influence its assessment and credibility.

Not all management forecasts are similarly precise (Mercer, 2004). Imprecise disclosure suggests uncertainty of the management and is deemed to be less credible than precise ones (Hassell et al., 1988; King et al., 1990). Investors are more confident depending on one point of forecast than a range of forecasts (Hirst et al., 1999) and more precise results have stronger relationships between unexpected earnings and unexpected returns (Baginski et al., 1993).

Managers may disclose information in various places, such as in audited financial statements, meetings with reporters, conference calls and analysts, annual shareholder’s meetings, or special press releases (Mercer, 2004). Difficult-to-understand messages are most persuasive when they are written, and easy-to-understand messages are more persuasive when they are communicated through videotapes (Chaiken and Eagley, 1976).

The time horizon of disclosure also affects its credibility. For instance, forecasts about the short term (e.g. interim statements) are perceived to be more credible than those about the long term as managers are presumed to have better information about more immediate outcomes (Mercer, 2004). In the same go, Pownall et al. (1993) demonstrated that interim management earnings forecasts generate greater stock price reactions than annual management earnings forecasts.

**Conclusion**

This paper has explored Mercer’s (2004) determinants of disclosure credibility. When the management has greater incentives to mislead, or are not very reputable and trustworthy, or when there is a lack of adequate assurance from internal or external sources, disclosures are deemed to be less credible. In addition, certain traits of the disclosure itself, including its precision, venue and time horizon can affect its credibility for investor assessment (Mercer, 2004). What have remained unexplored in this paper are the interactions among and between various disclosure characteristics, understanding of which can provide firms with greater control to adjust this characteristics in the future.
References


Volume, Opinion Divergence and Book-to-Market Anomaly

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Abstract
Ali et al (2003)’s finding about the mispricing explanation on B/M anomaly is replicated and then tested by including risk compensation explanation. The proxy for opinion divergence is unexpected volume that is used by Garfinkel and Sokobin (2006). The finding supported the investors’ treatment of unexpected volume proxies’ opinion divergence as an additional risk that requires ex post compensation. We documented that B/M effect increases with the opinion divergence. We also directly test Varian (1985)’s argument empirically and provide support for the compensation for risk to the B/M-based portfolio returns as suggested by Fama and French (1992, 1993, 1997).

JEL Classification: G11: G14

Keywords: Opinion Divergence; Arbitrage risk; Book-to-market

1. Introduction
In this study, Ali et al (2003)’s finding about mispricing explanation about B/M anomaly is examined by including opinion divergence explanation into risk compensation explanation. Our proxy for opinion divergence is unexpected volume which is also used by Garfinkel and Sokobin (2006). Their finding supported investors’ treatment of unexpected volume proxies’ opinion divergence as an additional risk that requires ex post compensation. We also directly test Varian (1985)’s argument empirically and provide support for the compensation for risk to the B/M-based portfolio returns as suggested by Fama and French (1992, 1993, 1997).

Prior literature shows that predictable size adjusted returns over three to five years for portfolios long in high book-to-market (B/M) stocks and short in low B/M stocks (Rosenberg et al., 1984; Fama and French, 1992; Lakonishok et al., 1994). This finding is called B/M anomaly in the literature. There are two competing explanations for this anomaly. First, the return to B/M based on portfolios strategies represents compensation for risk as proposed by Fama and French (1992, 1993, and 1997). Second, B/M effect exists because of mispricing of high B/M securities. This explanation proposes investors overestimate of high B/M stocks’ future performance and underestimate of low B/M stocks’ future performance.
Shleifer and Vishny (1997) argue that arbitrage is costly and any systematic mispricing would not be quickly and completely traded away in situations where arbitrage costs exceed arbitrage benefits, therefore risk due to volatility of arbitrage returns deters arbitrage activity as is likely to be important reason for B/M anomaly. Ali et al (2003) examines this argument empirically and documents that the B/M effect is greater for stocks with higher idiosyncratic return volatility, higher transaction costs, and lower investor’s sophistication. Their findings are consistent with the Shleifer and Vishny (1997)’s argument that risk associated with the volatility of arbitrage returns deters arbitrage activity and is an important reason why the B/M effect exists. They reported that B/M effect is greater for stocks with greater volatility that is consistent with the mispricing explanation in the literature for the reason of existence of B/M anomaly.

Several papers accepted high trading volume as an indicator of divergent in investor opinions. Bamber (1987) and Bamber, Barron and Stober (1997, 1999) find that total trading volume is higher around earnings events that are more likely associated with more divergent investor opinions. Ajinkya, Atiase and Gift (2001) document a positive correlation between trading activity and analysts’ forecast variability. Kandel and Pearson (1995) find that earnings events that generate no price change, suggesting little reason to trade for information reasons, still cause abnormally large trading volume. They interpret this result as evidence that volume reflects diverging opinions about the value implications of earnings news. Volume is accepted to give important signal about the content of information in security markets. It is also proxies for opinion divergence which is basically disagreement (Garfinkel and Sokobin (2006)). They showed that post announcement of earnings’ returns increases with ex-ante opinion divergence that is proxied by unexpected volume.

However, trading volume may proxy for more than just opinion divergence. For example, Benston and Hagerman (1974), Branch and Freed (1977) and Petersen and Fialkowski (1994) use volume to proxy for liquidity. In other words, high volume after a trading halt may simply be due to the fact that a stock always exhibits large volume. Numerous papers use dispersion in analysts’ forecasts as a proxy for investor opinion divergence (e.g. Ajinkya, Atiase and Gift (2001), Diether, Malloy and Scherbina (2002)). The presumption is that analysts express their unbiased opinion in their earnings forecasts, and that investors’ opinions follow analysts’, therefore I investigate the relationship between analyst forecast dispersion and trading volume overtime. I try to document the relationship between firms’ events around the high volume days and low volume days, and then test for the disagreement through the investors about firms’ news announcements, or any trading day that I can calculate opinion divergence measure.

Varian (1985) argues that opinion divergence may be treated as additional risk factor affecting asset prices. This study extends Ali et al (2003)’s study, because investors’ opinion divergence proxied by unexpected volume at the date of last quarter earnings announcement date prior to the B/M portfolio formation date may be treated as an additional risk factor in determining stock prices by investors instead of investors mispricing.

Our study continues with methodology section that explains motivation, hypothesis developments, empirical models to be used and sample, and then result section documents the findings about the research question. We conclude and summarize our study at the last section.

2. Methodology

2.1. Sample

I use all firms in NYSE and AMEX from the period 1976 to 1997 and also have the book value data available from COMPUSTAT, return data from CRSP, volume data also from CRSP daily database, and analyst related data from I/B/E/S. B/M is calculated as book value in year k-1 divided by Market Value of Equity at the last trading day of
the June of year k. Most of the last trading days in my sample are June 30th. By following prior literature I dropped negative book-valued observations and also observations with the highest and lowest 0.5% of values for B/M.

2.2. Measure of Unexpected Volume

By following Garfinkel and Sokobin (2006) I calculated different measures of unexpected volume. Garfinkel and Sokobin (2006) used these measures for a specific event date; therefore I used last quarter earnings announcement date prior to the B/M portfolio formation date as my event date. The reason for this is that the last quarter earnings announcement before the B/M portfolio formation date (at the last trading day of June of year k) can be considered as the announcement of an event and the opinion divergence measures can be calculated by following Garfinkel and Sokobin (2006). I assumed that opinion divergence at the announcement of last quarter earnings announcement can be proxied as the opinion divergence at the date of B/M portfolio formation date.

2.2.1 Change in Turnover Calculation:

I measure portfolio formation day turnover as the average daily market-adjusted turnover across my portfolio formation date window (t-1, t) where t is the last quarter earnings announcement date prior to the B/M portfolio formation date. TO is calculated for each firm and for each year k as follows:

$$ TO_{i,k} = \left\{ \sum_{t=1}^{t=5} \left[ \frac{Vol_{i,k,t}}{Shs_{i,k,t}}_{firm} \left( \frac{Vol_{i,k,t}}{Shs_{i,k,t}}_{mkt} \right) \right] / 2 \right\} / 50 $$

where $Vol_{i,k,t}$ is the volume for firm i, at year k on day t (t=0 is the last quarter earnings announcement date prior to the B/M portfolio formation day). $Shs_{i,k,t}$ is firm i’s shares outstanding at year k on day t. In order to control for liquidity aspects of trading volume I adjusted $TO_{i,k}$ by subtracting market adjusted turnover averaged over pre last quarter earnings announcement prior to the B/M portfolio formation day (t-54, t-5) as follows:

$$ \Delta TO_{i,k} = \left\{ \sum_{t=1}^{t=5} \left[ \frac{Vol_{i,k,t}}{Shs_{i,k,t}}_{firm} \left( \frac{Vol_{i,k,t}}{Shs_{i,k,t}}_{mkt} \right) \right] / 2 \right\} / 50 $$

My change measure captures the opinion divergence about the value of firm at the earning announcement date and for year k. The bigger the $\Delta TO_{i,k}$ for firm i at year k, the bigger the opinion divergence for firm i at year k at the portfolio formation date.

---

20 This procedure will be repeated for each firm, and for each year, since I form my B/M portfolio one time every year at the end the June. I will have single TO measure for each firm for a year.

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2.2.2. Standardized Unexpected Volume Calculation

I calculate standardized unexpected volume by following Crabbe and Post (1994). This measure is designed to control for both liquidity effect and informedness effect in volume. I construct standardized unexpected volume (SUV), calculated as standardized prediction error from a univariate model of trading volume on the absolute value of returns for firm i at year k:

\[
SUV_{i,k} = \frac{UV_{i,k}}{S_{i,k}}
\]

\[
UV_{i,k} = Volume_{i,k} - E\left[Volume_{i,k}\right] = \hat{\alpha} + \hat{\beta}_1 |R_{i,k}| + \hat{\beta}_2 |R_{i,k}|
\]

(3)

where the positive and negative subscripts on the absolute valued returns indicate positive or negative returns. This is calculated this way because negative and positive returns have different sensitivity effects on volume (Karpoff (1987)). \(S_{i,k}\) is the standard deviation of the residuals from the regression, calculated over the models estimation period ([t-54, t-5]) where t is the last quarter earnings announcement date prior to the B/M portfolio formation date for firm i at year k.

Earnings announcement period return and volume are measured over the period of [t-1, t] for each firm at the last quarter earnings announcement date for each year. Parameter estimates of coefficients of expected volume regression are generated from the daily volume on the absolute value of daily returns, separate slope coefficients for positive versus negative returns. The interpretation of SUV is consistent with the interpretation of TO. The greater the unexpected volume at the portfolio formation date for firm i at the year of formation, the greater divergence of opinion about the firm value at that time.

All two measures of unexpected volume \(\Delta TO_{i,k}\) and SUV\(_{i,k}\) capture the opinion divergence measure of my interest. By following Garfinkel and Sokobin (2006) I put them in my regression analysis separately with the control variables in Ali et al (2003) study, I expect to find same signed and statistically significant coefficient of estimates for my opinion divergence measures with size adjusted returns as arbitrage risk measure (Ivolatility) and size adjusted returns. I explain my research design in the analysis section of my study in the subsequent chapter.

2.3. Hypothesis

My argument supports the compensation for risk story behind the existence of B/M anomaly. Therefore I expect to test the following hypothesis in alternative format:

\textit{Hypothesis 1: B/M effect increases with the increase in opinion divergence}

---

21 B/M portfolio formation date is last day of June in the portfolio formation year. t is the portfolio formation date and t-1 is one day before the portfolio formation date. Given a two day prediction error my individual SUV for each firm for each year (on portfolio formation day and one day before) are summed and then scaled by the square root of 2 to construct my variable of interest (Garfinkel and Sokobin (2006)). To replicate Ali et al (2003) study I estimate Eq. (4)
2.4. Analysis

Following prior literature I form quintile portfolios with the lowest B/M observations placed in portfolio Q1, and the highest in Q5. I calculate buy-and-hold returns for each quintile for one-two and three year ahead.

In addition to Ali et al (2003) I consider my unexpected volume measures in forming portfolios. This procedure works as follows. Firms first ranked each year on the magnitude of B/M, and each firm assigned to quintiles. Independent of B/M rankings firms are ranked each year in descending order of unexpected volume measures of ΔTO and VSHRS. The result of this procedure is 50 portfolios each year for each unexpected volume measure. Then I calculate 3 year returns (Decret36) for each decile and find overall effect of unexpected volume (opinion divergence) at the day of portfolio formation. This univariate analysis gives my idea about the cross-sectional relation between opinion divergence and B/M effect, and documents whether B/M anomaly is resulted from risk compensation.

In order to test Hypothesis 1, I employ the following regression model by following Ali et al (2003) and including risk proxy which is opinion divergence measure.

\[
\text{Decret36} = a_0 + a_1 \text{Beta} + a_2 B/M + a_3 B/M \times \text{Ivolatility}^{-1} + a_4 B/M \times \text{Price} \\
+ a_5 B/M \times \text{Ln(Volume)} + a_6 B/M \times \text{Zerofreq}^{-1} + a_7 B/M \times \text{Analysts} \\
+ a_8 B/M \times \text{Ln(ME)} + a_9 \text{Ivolatility}^{-1} + a_{10} \text{Price} + a_{11} \text{Ln(Volume)} \\
+ a_{12} \text{Zerofreq}^{-1} + a_{13} \text{Analysts} + a_{14} \text{Ln(ME)} + \varepsilon 
\] (4)

To test H1 with first opinion divergence measure of change in turnover for firm i at year k (ΔTO\textsubscript{i,k}) I estimate following Eq. (5). I expect to get negative and significant coefficient estimate for B/M * ΔTO\textsuperscript{-1} which is a\textsubscript{4}. If statistical significance of B/M*Ivolatility\textsuperscript{-1} disappears then B/M anomaly effect would not be explained by mispricing story as presented at Ali et al (2003).

\[
\text{Decret36} = a_0 + a_1 \text{Beta} + a_2 B/M + a_3 B/M \times \text{Ivolatility}^{-1} + a_4 B/M \times \Delta \text{TO}^{-1} \\
+ a_5 B/M \times \text{Price} + a_6 B/M \times \text{Ln(Volume)} + a_7 B/M \times \text{Zerofreq}^{-1} \\
+ a_8 B/M \times \text{Analysts} + a_9 B/M \times \text{Ln(ME)} + a_{10} \Delta \text{TO}^{-1} + a_{11} \text{Ivolatility}^{-1} \\
+ a_{12} \text{Price} + a_{13} \text{Ln(Volume)} + a_{14} \text{Zerofreq}^{-1} + a_{15} \text{Analysts} + a_{16} \text{Ln(ME)} + \\
+ \varepsilon 
\] (5)

To test H1 with second opinion divergence measure of standardized unexpected volume for firm i at year k (SUV\textsubscript{i,k}) I estimate following Eq. (6). I expect to get negative and significant coefficient estimate for B/M * SUV\textsubscript{i,k} which is a\textsubscript{4}. This supports my result at Eq. (6).
Decret36 = a₀ + a₁Beta + a₂B/M + a₃B/M xivolatility⁻¹ + a₄B/M xSUV⁻¹ + a₅B/M xPrice + a₆B/M xLn(Volume) + a₇B/M xZerofreq⁻¹ + a₈B/M xAnalysts + a₉B/M xLn(ME) + a₁₀SUV⁻¹ + a₁₁Ivolatility⁻¹ + a₁₂Price + a₁₃Ln(Volume) + a₁₄Zerofreq⁻¹ + a₁₅Analysts + a₁₆Ln(ME) + a₁₇Beta + a₁₈ΔTO + + ε

where Decret36 is size-adjusted 3 years buy and hold return, Ivolatility is obtained by regressing daily returns on a value-weighted market index over maximum of 250 days ending on June 30 of year k. Price is the closing price at June of year k. Volume is the annual volume of trade in the firms shares in the firm’s shares ending in June of year k, in millions of dollars. Zerofreq is the frequency of zero daily returns over one year ending June of year k. Analyst is the number of analyst following, and this value is zero if IBES data is not available for firm. ME is market value of equity at the end of June of year k. Beta is firm’s stocks risk indicator. ΔTO is change in turnover of stock. VSHRS is market adjusted volume at the day of portfolio formation, and SUV is standardized unexpected volume.


3. Results

3.1. Returns to B/M based portfolio strategies

By following Ali et al (2003) I formed quintile portfolios with the lowest B/M observations placed in portfolio Q1 and highest B/M observations in Q5. Decret12, Decret24, and Decret36 are the size adjusted buy and hold returns for 12 months, 24 months and 36 months respectively. I then computed Q5-Q1 difference for each variable and reported in table 1. I calculated t-statistics by dividing mean by standard error of the annual estimate, and Z-statistics was computed in a similar manner except that rank measures of annual estimates are used (Wilcoxon rank-sum test). Newey and West (1987) procedure is used to avoid serial correlation because of overlapping holding periods. According to table 1 the Q5-Q1 size adjusted returns are 0.024, 0.052 and 0.099 for one-, two-, and three year holding periods. They are all significant indicates that B/M ratio has ability to predict future return. I also found that market capitalization (ME) is significantly higher for low B/M portfolio. My other variables’ results for Q5-Q1 difference are similar to Ali et al (2003)’s study. My opinion divergence measure ΔTO increases with the highest B/M portfolio. This indicates compensation of risk related to opinion divergence, and disagreements of investors at the time of portfolio formation which is at the last day of June of year k.

3.2. Correlations among the variables

All variables are calculated by following Ali et Al (2003)’s study. In table 2 I reported Spearman correlations among my measure of interests. Almost all the variables are correlated with each other’s significantly. Our opinion divergence measures ΔTO and SUV measures are correlated with all variables dependent and independent except price variable, this result offer that I should include ΔTO and SUV measures in my univariate tests, otherwise it would cause correlated omitted variable problem.

3.3. Portfolio tests
By following Ali et al (2003) firms are ranked each year on the magnitude of B/M, and each firm is assigned to quintile group (Q1-Q5) based on this ranking. Independent of the B/M rankings, firms are ranked each year in descending order of independent variables, and are assigned to decile groups (G1 to G10) based on this ranking. The result of this procedure is 50 portfolios each year. I calculated the size-adjusted returns of the Q5-Q1 portfolio for the three years following portfolio formation (Q5-Q1 Decret36) and then computed for each of the groups (G1-G10). The first column reports the average of the annual estimates of Decret36 for the Q5-Q1 portfolios for each of the ten ΔTO-based groups. The mean difference for G10 is bigger than G1. The difference is positive and the magnitude is 0.025 with t-statistics 3.531 and Z-statistics 2.223. I also reported the correlation among the decile groups and Q5-Q1 Decret36. This correlation is negative and significant. The second column reports the average of the annual estimates of Decret36 for the Q5-Q1 portfolios for each of the ten SUV-based groups. The mean difference for G10 is bigger than G1. The difference is positive and the magnitude is 0.013 with t-statistics 2.786 and Z-statistics 2.456. I also reported the correlation among the decile groups and Q5-Q1 Decret36. This correlation is negative and significant. Other results are similar with the Ali et al (2003)’s findings.

### 3.4. Incremental Role of Risk because of Opinion Divergence

In the prior section I showed that B/M is cross-sectional correlated with my measure of opinion divergence. I also documented the same results like Ali et al (2003)’s study. Ali et Al (2003) concluded that the B/M effect is likely to be due to market mispricing, but my findings about ΔTO also indicates that risk compensation because of opinion divergence is another factor for the existence of B/M effect. My findings support the idea of risk compensation for the existence of B/M suggested by Fama and French (1992, 1993, and 1997). In this section, I would like to show incremental contribution of measure of opinion divergence in the existence of B/M effect. In table 4, columns 1 and 2 are the replication of Ali et al (2003)’s study and I found the similar results like them. In column 3 I reported the regression results only with ΔTO-1 and found significant negative coefficient with interaction variable between B/M and opinion divergence measure with the value of -0.034 (t-statistics= -3.64). This result suggests that the B/M effect increases with the increase in opinion divergence. This evidence consistent with the predictions from Varian (1985) who posited that asset prices would be lower when investors’ opinions are more dispersed. This is because of risk adjustments of opinion divergence by investors. In fourth column I included Ali et al (2003) measure of arbitrage risk (Ivolatility), and the coefficient for B/M x ΔTO-1 is -0.027 (t statistics=-3.72), which shows that my opinion divergence measure incrementally explains beyond arbitrage risk measure. In the fifth column I included all the control variables for other arbitrage cost and investor sophistication measures. My result in that regression remains negative and significant -0.142 (t statistics=-2.79). This finding suggests that beyond all control for arbitrage risk and investor sophistication, opinion divergence measure explains the cross-sectional variation in the B/M effect, but still Ivolatility measures negative and significant. I reported my regression results for second opinion divergence measure in Table 5. My results show that as the first opinion divergence measure, SUV measure is also statistically significant and supports H1. Moreover, the statistical significance of Ivolatility measure that is used by Ali et al (2003) decreases and even disappears if we include all control variables.

This results show that mispricing explanation to the existence of B/M effect is not enough. Therefore I must also take into account the compensation for the risk existence because of dispersion in investors’ opinions at the time of portfolio formation. The univariate analysis and multivariate regression analysis support my hypothesis.
4. Conclusion

Varian (1985) argues that opinion divergence may be treated as additional risk factor affecting asset prices. This study extends Ali et al (2003) study, because investors’ opinion divergence proxied by unexpected volume at the date of B/M portfolio formation may be treated as an additional risk factor in determining stock prices by investors. In this study, Ali et al (2003)’s finding about mispricing explanation about B/M anomaly is investigated by including risk compensation explanation. My proxy for opinion divergence is unexpected volume measure (Garfinkel and Sokobin (2006)). My finding support investors’ treatment of unexpected volume proxies opinion divergence as an additional risk that requires ex post compensation as Garfinkel and Sokobin (2006) resulted. I also test Varian (1985)’s argument empirically and provide support for the compensation for risk to the B/M-based portfolio returns as suggested by Fama and French (1992, 1993, and 1997) beyond the arbitrage risk and investor sophistication measures.

References


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Appendix

Table 1: Characteristics of the book-to-market (B/M) quintile portfolios over the 1976 and 1997

By following Ali et al (2003) for each year, stocks are assigned to five quintiles based on the value of B/M which is calculated as book value of equity at the end of year k-1 divided by market value of equity at the end of June of year k. MV is the Market Value of equity which is price times share outstanding at the end of June at year k. Beta is systematic risk estimated using monthly returns over a maximum of 36 months beginning of July of year k. AF is average number of analyst following in June of year k. Volume is the annual volume of trade in the firm’s shares ending in June of year k in millions of dollars. ΔTO is change in turnover measure which is proxy for the inventors’ opinion divergence. Zerofreq is the frequency of zero daily returns over one year ending in June of year k. Decret12, Decret24 and Decret36 are the size adjusted one year, two years, and three years buy and hold return respectively beginning in July of year k, defined as raw buy-and-hold return less size deciles return of NYSE/AMEX firms. ***, **, and * indicates significance at 1%, 5% and 10% respectively.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Q1 (Low B/M)</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5 (High B/M)</th>
<th>All firms</th>
<th>Q5-Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/M</td>
<td>0.243</td>
<td>0.468</td>
<td>0.680</td>
<td>0.965</td>
<td>1.919</td>
<td>0.855</td>
<td>1.677***</td>
</tr>
<tr>
<td>MV</td>
<td>3.813</td>
<td>1.827</td>
<td>1.186</td>
<td>701</td>
<td>303</td>
<td>1.566</td>
<td>-3.510***</td>
</tr>
<tr>
<td>Beta</td>
<td>1.046</td>
<td>0.975</td>
<td>0.921</td>
<td>0.922</td>
<td>0.970</td>
<td>0.967</td>
<td>-0.076***</td>
</tr>
<tr>
<td>AF</td>
<td>2.015</td>
<td>1.781</td>
<td>1.369</td>
<td>0.809</td>
<td>0.398</td>
<td>1.274</td>
<td>-1.617***</td>
</tr>
<tr>
<td>Zerofreq</td>
<td>37.295</td>
<td>43.290</td>
<td>50.197</td>
<td>58.748</td>
<td>72.578</td>
<td>52.422</td>
<td>35.283***</td>
</tr>
<tr>
<td>Decret12</td>
<td>0.003</td>
<td>0.007</td>
<td>0.023</td>
<td>0.023</td>
<td>0.027</td>
<td>0.017</td>
<td>0.024***</td>
</tr>
<tr>
<td>Decret24</td>
<td>0.004</td>
<td>0.021</td>
<td>0.042</td>
<td>0.055</td>
<td>0.056</td>
<td>0.036</td>
<td>0.052***</td>
</tr>
<tr>
<td>Decret36</td>
<td>-0.007</td>
<td>0.025</td>
<td>0.057</td>
<td>0.074</td>
<td>0.092</td>
<td>0.048</td>
<td>0.099***</td>
</tr>
</tbody>
</table>

Table 2: Correlations among the variables

ΔTO is change in turnover measure which is proxy for the inventors’ opinion divergence and calculated in several steps by adjusting for market volume reactions and shown in the text. Ivolatility is obtained by regressing daily returns on a value-weighted market index over a maximum of 250 days ending on June 30 of year k. Decret36 is the size adjusted three years buy and hold return respectively beginning in July of year k, defined as raw buy-and-hold return less size deciles return of NYSE/AMEX firms. Price is the closing price at the end of June of year k. Volume is the annual volume of trade in the firm’s shares ending in June of year k in millions of dollars. MV is the Market
Value of equity which is price times share outstanding at the end of June at year k. AF is average number of analyst following in June of year k. Zerofreq is the frequency of zero daily returns over one year ending in June of year k. Beta is systematic risk estimated using monthly returns over a maximum of 36 months beginning of July of year k. ***, **, and * indicates significance at 1%, 5% and 10% respectively.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ΔTO</th>
<th>SUV</th>
<th>Ivolatility</th>
<th>Decret36</th>
<th>Price</th>
<th>Volume</th>
<th>AF</th>
<th>MV</th>
<th>Zerofreq</th>
</tr>
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<tr>
<td>SUV</td>
<td>0.437***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ivolatility</td>
<td>-0.055***</td>
<td>-0.068***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decret36</td>
<td>0.029***</td>
<td>0.013***</td>
<td>0.040***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>-0.003</td>
<td>-0.001**</td>
<td>-0.238***</td>
<td>-0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>-0.419***</td>
<td>-0.234***</td>
<td>-0.419***</td>
<td>-0.013***</td>
<td>0.017***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AF</td>
<td>-0.246***</td>
<td>-0.079***</td>
<td>-0.058***</td>
<td>-0.006</td>
<td>0.006</td>
<td>0.351***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MV</td>
<td>-0.064*</td>
<td>-0.072***</td>
<td>-0.186***</td>
<td>-0.017***</td>
<td>0.115***</td>
<td>0.823***</td>
<td>0.244***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zerofreq</td>
<td>0.175***</td>
<td>0.345***</td>
<td>0.146***</td>
<td>0.429***</td>
<td>-0.033***</td>
<td>-0.295***</td>
<td>-0.320***</td>
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<td></td>
</tr>
<tr>
<td>Beta</td>
<td>-0.036***</td>
<td>-0.017***</td>
<td>0.259***</td>
<td>0.109***</td>
<td>-0.006</td>
<td>0.005</td>
<td>0.044***</td>
<td>-0.034***</td>
<td>-0.088***</td>
</tr>
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</table>

Table 3

Three-year size-adjusted returns (Decret36) to Q5-Q1 portfolios, based magnitude of across deciles of the variables

ΔTO is change in turnover measure which is proxy for the inventors’ opinion divergence and calculated in several steps by adjusting for market volume reactions and shown in the text. Ivolatility is obtained by regressing daily returns on a value-weighted market index over a maximum of 250 days ending on June 30 of year k. Decret36 is the size adjusted three years buy and hold return respectively beginning in July of year k, defined as raw buy-and-hold return less size deciles return of NYSE/AMEX firms. Price is the closing price at the end of June of year k. Volume is the annual volume of trade in the firm’s shares ending in June of year k in millions of dollars. MV is the Market Value of equity which is price times share outstanding at the end of June at year k. AF is average number of analyst following in June of year k. Zerofreq is the frequency of zero daily returns over one year ending in June of year k. Beta is systematic risk estimated using monthly returns over a maximum of 36 months beginning of July of year k. The k-statistic is computed as mean divided by standard error of annual estimates, and Z-statistics is computed in a similar manner except that rank measures of annual.
Table 4

Multivariate analysis test of incremental role of opinion divergence risk

All the variables are defined at the previous tables. Regression models are estimated for each year from 1976 to 1997 using 54,285 available observations, and means of annual estimates are reported. To avoid extreme observations I eliminated smallest and largest of 0.5% of Decret36, and also 0.5% of smallest and largest variables of regression variables are winsorized. The k-statistic is calculated as mean divided by standard error of the annual estimates. To correct for serial correlation in return induces by overlapping holding periods Newey and West (1987) procedure is used. ***, **, and * indicates significance at 1%, 5% and 10% respectively. All variables are multiplied by $10^{-2}$ except Beta and B/M variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\Delta TO$</th>
<th>$SUV$</th>
<th>$Ivolatility$</th>
<th>Price</th>
<th>Volume</th>
<th>$AF$</th>
<th>$MV$</th>
<th>Zerofreq</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>0.176</td>
<td>0.219</td>
<td>0.224</td>
<td>0.165</td>
<td>0.019</td>
<td>0.265</td>
<td>-0.024</td>
<td>0.104</td>
</tr>
<tr>
<td>G2</td>
<td>0.133</td>
<td>0.129</td>
<td>0.114</td>
<td>0.187</td>
<td>0.099</td>
<td>0.167</td>
<td>0.169</td>
<td>0.069</td>
</tr>
<tr>
<td>G3</td>
<td>0.068</td>
<td>0.115</td>
<td>0.129</td>
<td>0.117</td>
<td>0.167</td>
<td>0.134</td>
<td>0.184</td>
<td>0.017</td>
</tr>
<tr>
<td>G4</td>
<td>0.039</td>
<td>0.098</td>
<td>0.083</td>
<td>0.067</td>
<td>0.132</td>
<td>0.203</td>
<td>0.083</td>
<td>0.079</td>
</tr>
<tr>
<td>G5</td>
<td>0.128</td>
<td>0.076</td>
<td>0.068</td>
<td>0.043</td>
<td>0.051</td>
<td>0.345</td>
<td>0.039</td>
<td>0.052</td>
</tr>
<tr>
<td>G6</td>
<td>0.075</td>
<td>0.118</td>
<td>0.094</td>
<td>0.090</td>
<td>0.049</td>
<td>0.176</td>
<td>0.029</td>
<td>0.063</td>
</tr>
<tr>
<td>G7</td>
<td>0.082</td>
<td>0.170</td>
<td>0.063</td>
<td>0.057</td>
<td>0.065</td>
<td>0.128</td>
<td>0.062</td>
<td>0.129</td>
</tr>
<tr>
<td>G8</td>
<td>0.027</td>
<td>0.187</td>
<td>0.074</td>
<td>0.092</td>
<td>0.066</td>
<td>0.001</td>
<td>0.115</td>
<td>0.124</td>
</tr>
<tr>
<td>G9</td>
<td>0.099</td>
<td>0.201</td>
<td>0.065</td>
<td>0.128</td>
<td>0.122</td>
<td>0.248</td>
<td>0.151</td>
<td>0.144</td>
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<tr>
<td>G10</td>
<td>0.151</td>
<td>0.206</td>
<td>-0.020</td>
<td>0.084</td>
<td>0.183</td>
<td>0.179</td>
<td>0.132</td>
<td>0.061</td>
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<td>G1-G10</td>
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<td>0.013</td>
<td>0.244</td>
<td>0.081</td>
<td>-0.164</td>
<td>0.086</td>
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<td>t-stat</td>
<td>3.531***</td>
<td>2.786***</td>
<td>3.453***</td>
<td>2.687***</td>
<td>-1.981***</td>
<td>1.236</td>
<td>-1.148</td>
<td>0.976</td>
</tr>
<tr>
<td>Z-stat</td>
<td>2.223**</td>
<td>2.456**</td>
<td>2.321**</td>
<td>2.012**</td>
<td>-1.346</td>
<td>0.876</td>
<td>-0.973</td>
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<td>Correlation</td>
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<td>-0.756</td>
<td>-0.581</td>
<td>-0.623</td>
<td>-0.348</td>
<td>-0.321</td>
<td>-0.543</td>
<td>-0.549</td>
</tr>
<tr>
<td>p-value</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.092*</td>
<td>0.269</td>
<td>0.121</td>
<td>0.095*</td>
</tr>
</tbody>
</table>
Table 5 Multivariate analysis test of incremental role of opinion divergence risk

All the variables are defined at the previous tables. Regression models are estimated for each year from 1976 to 1997 using 54,285 available observations, and means of annual estimates are reported. To avoid extreme observations I eliminated smallest and largest of 0.5% of Decret36, and also 0.5% of smallest and largest variables of regression variables are winsorized. The k-statistic is calculated as mean divided by standard error of the annual estimates. To correct for serial correlation in return induces by overlapping holding periods Newey and West (1987) procedure is
used. ***, **, and * indicates significance at 1%, 5% and 10% respectively. All variables are multiplied by $10^2$ except Beta and B/M variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intercept</strong></td>
<td>-0.090***</td>
<td>-0.059***</td>
<td>-0.032***</td>
<td>-0.069***</td>
<td>-0.078***</td>
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<tr>
<td></td>
<td>(-6.43)</td>
<td>(-4.32)</td>
<td>(-4.56)</td>
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<td>(-3.21)</td>
</tr>
<tr>
<td><strong>Beta</strong></td>
<td>0.031***</td>
<td>0.020**</td>
<td>0.089***</td>
<td>0.108***</td>
<td>0.097**</td>
</tr>
<tr>
<td></td>
<td>(3.43)</td>
<td>(2.41)</td>
<td>(2.89)</td>
<td>(4.28)</td>
<td>(2.28)</td>
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<tr>
<td><strong>B/M</strong></td>
<td>0.134***</td>
<td>0.137***</td>
<td>0.108***</td>
<td>0.024***</td>
<td>0.017***</td>
</tr>
<tr>
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<td>(3.49)</td>
<td>(3.06)</td>
<td>(3.04)</td>
<td>(3.52)</td>
<td>(3.10)</td>
</tr>
<tr>
<td><strong>B/M x Ivolatility</strong></td>
<td>-0.020***</td>
<td>-0.018*</td>
<td>-0.019**</td>
<td>-0.019**</td>
<td>-0.019**</td>
</tr>
<tr>
<td></td>
<td>(-2.58)</td>
<td>(-1.92)</td>
<td>(-1.54)</td>
<td>(-1.54)</td>
<td>(-1.54)</td>
</tr>
<tr>
<td><strong>B/M x SUV</strong></td>
<td>-0.078***</td>
<td>-0.035***</td>
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<td>-0.098***</td>
<td>-0.098***</td>
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<tr>
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<td>(-4.52)</td>
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<td>(-3.24)</td>
<td>(-3.24)</td>
<td>(-3.24)</td>
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<td><strong>B/M x Price</strong></td>
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<tr>
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<td></td>
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<td>(0.78)</td>
</tr>
<tr>
<td><strong>B/M x Ln(Volume)</strong></td>
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<td></td>
<td></td>
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<td>-0.786</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td>(-1.23)</td>
</tr>
<tr>
<td><strong>B/M x Zerofreq</strong></td>
<td></td>
<td></td>
<td>-0.148</td>
<td>-0.148</td>
<td>-0.148</td>
</tr>
<tr>
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<td></td>
<td>(-0.56)</td>
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<td><strong>B/M x Analyst</strong></td>
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<tr>
<td></td>
<td></td>
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<td>(1.24)</td>
<td>(1.24)</td>
<td>(1.24)</td>
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<tr>
<td><strong>B/M x Ln(ME)</strong></td>
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</tr>
<tr>
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<td></td>
<td>(1.67)</td>
<td>(1.67)</td>
<td>(1.67)</td>
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<tr>
<td><strong>Ivolatility</strong></td>
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<tr>
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<tr>
<td><strong>SUV</strong></td>
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<td>0.065***</td>
<td>0.102***</td>
<td>0.102***</td>
</tr>
<tr>
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<td>(5.62)</td>
<td>(5.73)</td>
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<td>(2.32)</td>
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<tr>
<td><strong>Price</strong></td>
<td></td>
<td></td>
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<td>0.123**</td>
<td>0.123**</td>
</tr>
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<td>(2.07)</td>
<td>(2.07)</td>
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<td><strong>Ln (Volume)</strong></td>
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<td>-1.098***</td>
<td>-1.098***</td>
</tr>
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<td>(-2.98)</td>
<td>(-2.98)</td>
</tr>
<tr>
<td><strong>Zerofreq</strong></td>
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<td>-0.987</td>
<td>-0.987</td>
<td>-0.987</td>
</tr>
<tr>
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<td></td>
<td>(-0.78)</td>
<td>(-0.78)</td>
<td>(-0.78)</td>
</tr>
<tr>
<td><strong>Analyst</strong></td>
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<td></td>
<td>0.378*</td>
<td></td>
<td>0.378*</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>(1.85)</td>
<td></td>
<td>(1.85)</td>
</tr>
<tr>
<td><strong>Ln(ME)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.113</td>
<td>1.113</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>(1.29)</td>
<td>(1.29)</td>
</tr>
<tr>
<td><strong>Average Adj R²</strong></td>
<td>0.026</td>
<td>0.033</td>
<td>0.042</td>
<td>0.051</td>
<td>0.068</td>
</tr>
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</table>