Online ISSN : 2249-4588
Print ISSN : 0975-5853
DOI : 10.17406/GJMBR

Global Journal

of Management and Business Research: B

Economics and Commerce

An Empirical Investigation

Examination of Herding Behavior

Highlights

Study of Indian Stock Market

Public Debt and Economic Growth

Discovering Thoughts, Inventing Future

VOLUME 16 ISSUE 5 VERSION 1.0

Global Journal of Management and Business Research: B
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Volume 16 Issue 5 (Ver. 1.0)

Open Association of Research Society

Incorporation No.: 0423089
License No.: 42125/022010/1186
Registration No.: 430374
Import-Export Code: 1109007027
Employer Identification Number (EIN):
USA Tax ID: 98-0673427

Global Journals Inc.

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Open Scientific Standards

Publisher's Headquarters office

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945th Concord Streets,
Framingham Massachusetts Pin: 01701,
United States of America
USA Toll Free: +001-888-839-7392
USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

Global Journals Incorporated
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Pin: CR9 2ER, United Kingdom

Packaging & Continental Dispatching

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Pricing (Including by Air Parcel Charges):

For Authors:

22 USD (B/W) & 50 USD (Color)

Yearly Subscription (Personal & Institutional):

200 USD (B/W) & 250 USD (Color)

Contents of the Issue

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Impact of E-Commerce on Retail

By Mesfer Alsubaie
Saudi Arabian Cultural Mission, United States

Abstract- The research focus of my paper is e-commerce influence as new category of sales activity in US. The problem understanding is described in conceptual model below. In the end I want to know do e-commerce any influence on sales volume in US market and in retail sales category. I have to use methods which extract the dependences between how e-commerce is performing, and what is an influence of e-commerce branch on US market.

The research method of to solve this tasks is multiple linear regression. I select this method in statistics, linear regression is an approach for modeling the relationship between a scalar dependent variable y and one or more explanatory variables (David A. Freedman, 2009).

Keywords: e-commerce, retail, us market, sales, technology, market size, demand, supply, satisfaction.

GJMBR - B Classification : JEL Code : L81

THEIMPACTOFECOMMERCEONRETAIL

Strictly as per the compliance and regulations of:

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The research method of to solve this tasks is multiple linear regression. I select this method in statistics, linear regression is an approach for modeling the relationship between a scalar dependent variable y and one or more explanatory variables (David A. Freedman, 2009).

The possible results of this research are confirmation and describing influence of e-commerce on US market and within retail sales. If such relation will found, I will present formula to measure this.

This research was made in study purposes. For professional understanding of topic, the right data for conceptual model have to be gathered and analyzed. Under the right data I understand real retail research on topic. And research about consumer's perceptions.

Keywords: e-commerce, retail, us market, sales, technology, market size, demand, supply, satisfaction.

I. Introduction

The new era of information technologies gives me new understanding of retail sales and how they are performing. In nowadays the retail opened a new way of products selling – this is e-commerce. What is e-commerce, how it performs on US market, what new opportunities e-commerce gives to me and how it works? How e-commerce influent on traditional sales, how retail is developing today? These are the topics of my study.

From my understanding the e-commerce sales are a part of retail sales. In other words, e-commerce is simply alternative way of selling and buying products. How new technologies is connected to traditional understanding? From my point of view, I have two parts for investigation. First is – how e-commerce influences on sales via global understanding and trends? Is it produce new opportunities for money moving, is it create new demand? Second, is e-commerce something more modern and advanced, can new technologies replace traditional sales on market?

The first answer is what is e-commerce? E-commerce, known as electronic commerce, is one of the technological undertakings that have seen companies using computer networks, like the internet, in facilitating trading activities as far as products and services are put into consideration. Electronic commerce brings in such technologies as electronic funds transfer, internet marketing, supply chain management and online transaction processing among others. It should be pointed out that some outstanding transactions that occur under the influence of e-commerce include business–to-consumer, business-to-business and consumer to consumer among other operations found relevant.

II. Literature Review

Internet marketing and online transaction processing have received significant attention all over the world. According to Monga, the author believes that modern electronic commerce entails the unlimited use of the World Wide Web in the transaction's life-cycle. The author believes that e-commerce can only find ground in businesses through the internet and other relevant network communication technologies. It, therefore, facilitates an automated process of commercial transactions thereby making the operations in business much simpler and easier to handle. Monga looks on the good side of Internet commerce where e-commerce seems to allow people to run their businesses without experiencing any barriers of distance or time. All it demands is to log in the web and access products and services of one's choice.

However, what the author saw to be the most important thing revolved around the impact of E-commerce on business. It is true that the internet has changed even the way people communicate as well as keep finances. It means that electronic commerce has developed a big impact in the society. Monga fostered on the effects of e-commerce on significant dimensions felt relevant in the business context. She focused on the impact of e-commerce on direct marketing where the author found out that electronic commerce was seen enhancing the promotion of products and services through attractive, direct and interactive contact with clients. It remained paramount that the subject further led to the creation of new sales channel for the popular products and offered a bi-directional nature of communication.

Also, the cost involved in delivering information to potential parties over the net led to substantial savings as far as comparisons between physical delivery and digitized products are in consideration. Monga also focused on reduced cycle time where delivery of digitized products and services could be reduced to a few seconds. Saving time in business is

Author: *Saudi Arabian Cultural Mission. e-mail: mesfer66@gmail.com*

very essential and further defines the performance stand of the business in context. Monga believes that that consumer service can essentially be enhanced given the fact that e-commerce makes it easier for customers to access details online and further forward complaints through email, which can only be done in a few seconds. Apart from easy access to details online, it is also important to look at the corporate image, which is crucial to winning the trust of the clients.

The impact of e-commerce can further be identified regarding manufacturing and finance. The two affect business flow and one should approach these regarding what e-commerce can do to influence their performance in the world of business (Bothma and Geldenhuys). E-commerce is evidently changing most manufacturing systems with pragmatic consideration of the transition from mass production to demand driven as well as just-in-time manufacturing. Most production systems are argued to share integration with marketing, finance, and other systems. Making use of Web-based ERP systems has seen orders taken from customers and directed to designers happening in the shortest time possible. With e-commerce in place, the production cycle time can be cut by almost 50% depending on the type of designers and engineers found in a location.

Jeff Jordan said "we're approaching a sea change in retail where physical retail is displaced by e-commerce in a multitude of categories. The argument at a high level:

Online retail is relentlessly taking share in many specialty retail categories, resulting in total dollars available to physical retailers stagnating or even declining. This is starting to put intense pressure on their top lines.

Physical retailers are very highly leveraged and often have narrow profit margins. Material declines in their top lines make them unprofitable and quickly bankrupt.

Online retail will benefit greatly from the elimination of their physical competition and their growth should accelerate."

III. Hypothesis

HOa: E-commerce opens new opportunities to retail sales growth.

HOb: E-commerce substitutes traditional sales on market.

IV. Data Specifications

The main sources where I found trends are: economic research Federal Reserve Bank site for population, GDP per cap, Households Income, Households dept., Working population, GDP for working population, PPI for US producers and PPI for US E-commerce; Bureau of Labor Statistics for Employment, Unemployment rate trends; Internet World Statistics site for internet penetration in US; US census site for US retail total sales, stores sales, E-commerce sales, and E-commerce as a Percent of Total Sales.

I tried to obtain all trends in quarter scale for 2000-2015 period. In the end I have problems to find e-commerce within retail category data. That's why data about satisfaction were copied from report.

The Working Population and GDP for working population were found only for 2000Q1-2015Q1 period. I used linear approximation to complete these trends because they have close to linear nature according to graphical examination.

For within retail analysis I found that PPI trend is only for 2006 Q2- 2015 Q4 is available. That's why I make time scale for retail analysis shorter. The PPI and PPIE are actually only one measure for retail analysis that was found in quarter scale from beginning from trusted source. I can't drop it, because other scales – satisfaction and penetration for 2000-2015 years have annual scale in reports and were approximated. And sources are not gives me 100% confidence because these scales are taking from survey results, I don't know data and methodology. I understand that these scales Satisfaction and Penetration can be not very good connected because not right scale, and they haven't same regular base of measurement, and only can help me to evaluate general dependence if they present because for such analysis I need real retail data such firm as Nielsen for example, and full consumer's satisfaction research in history. That's why I used these scales approximation for 2006Q2-2015 period only.

V. Conceptual Model

Macroeconomics is a branch of economics dealing with the performance, structure, behavior, and decision-making of an economy as a whole, rather than individual markets. This includes national, regional, and global economies. (Blaug, Mark, 1986; Sullivan, Arthur, Sheffrin, Steven M., 2003).

Macroeconomics deal with such indicators of economy as GDP, unemployment rates, Households income etc. I as macroeconomists can develop models that figure out the relationships between these factors. In my topic I have to include macroeconomic analysis of retail sales by general factors which reflect my understanding of the retail sales, and e-commerce global factors in this model too.

My economic understanding of retail sales value is described as mix of such factors as: size of US market, volume of US market, and the market demands. What I mean when tell this:

The goods are buying by people. This means that population of active consumer's influence on sales volume. How this population can be described? It can be described as total population of US for traditional sales and internet penetration for e-commerce, as base for internet sales.

Global Journal of Management and Business Research (B) Volume XVI Issue V Version I Year 2016

How I can think about buyers? How buyers influence on sales volume? The buyers go to market and buy goods if they have money to buy and demand. What characteristics of buyers form the volume? The possible answer is GDP, GDP per cap, Income of household, Income of households per cap etc. If I will use general data of GDP or Total income for households I have to adjust this volume using population value, or target population size. Who make sales for retailers? Households? Or Households + Firms/ Government=GDP? This is interesting question. I propose to check which trend from these two, and select better one.

The other good characteristic of buyers is demand. If people have money but if they needn't to buy goods, they will not buy. If people have demand but they have negative trend (expectations) in economy, the people will try to save money for future. How this parameter can be reflected? If you suffer to lose or find new job you will save money. I propose to figure out this dependence using unemployment rate with lag checking. The total influence of economy is present in GDP/Income data already.

Next good question is about factors of economy which influence on possible volume of sales is situation when I have same economy characteristics in economy but growth of sales. How is this possible? The good example is: if you a man who use e-commerce to sell some needn't goods from home and buy "new". You have same income and GDP approximately (only taxes from e-commerce are added actually), but already have additional not registered income which you can use to buy. The affects like this will describe using US Internet penetration trend. The meaning of such step is that how new technologies rise sales due their development?

Okay, what are the conclusions of upper discussion? I have global factors which influence on retail sales volume. The function for total sales is looking like: Sales = F (Market size (Population), Economy (GDP, income), Demand (Unemployment rate), E-commerce influence). How this parameter performs. Size multiply on economy value gives the possible volume from which buyers can buy goods. The demand will represent by number of persons which can have demand in goods. The possible trend is unemployment rate, size of target category etc. All that I wrote upper describes my understanding of market to confirm or reject H0a hypothesis, for confirming which I will use US model and trends.

The next understanding describes the process of H0b checking. For confirmation of this hypothesis I will design Retail model and trends. The e-commerce sales are alternative way of buying. This means that within retail, the e-commerce is driven by same understanding in general but I will use other trends which reflect this understanding within retail. The main definitions are: Market size, market values – economy, demand – the benefits of e-commerce use, other unexplored influences. Which data/trends were selected to determine this influence in my study?

The size factor is coverage: internet penetration, count of e-shop's buyers etc. Can I buy product if I'm not internet user and don't know how to make this? Of course not! During my mining process I found only one trend – internet penetration. The number of shops, its volume, and count of e-shop's buyers are information which can be bought only as part of retail researches provided by marketing agencies.

The most powerful driver on market in all times is when your products in your shops are affordable/cheaper than others. To investigate this factor, I have to find trend which reflects economy. According to economic theory this can be price elasticity or differences in prices. If proposition in your e-shop is better than in traditional the people will like to buy goods in your shop. If goods produced by your industry is cheaper than they are more concurrent. During my investigation I found only Producers price index (PPI) as part of governmental statistics. The Consumers price index (CPI) was found only for total retail. The CPI for e-commerce goods can be obtained only in marketing agencies again.

Demand? Why I have to buy goods in Ecommerce shops? Why I need to do this? The possible answer is a satisfaction about e-shops use compare to other solutions. This trend has to include emotional, functional and other benefits characteristics of e-shops usage. This topic is a part of special researches again. But I found report which have satisfaction trend in annual scale to reflect my understanding.

VI. Data Analysis

The data analysis includes the trends analysis which I found according to description from conceptual model. How these data were transformed and computed to reflect my economic understanding. According to model I have two steps, two regression models. First is reflecting the US market understanding/prediction of US retail sales to find the influence of e-commerce on global level. Second is working within US retail to figure out how e-commerce is performing as alternative way of buying. In other words, my model can be used for prediction, forecasting, or to study the relationships between the independent variables and the dependent variable, and to explore the forms of these relationships (Armstrong, J. Scott, 2012).

According to upper discussion I found such trends: Total retail sales, Stores sales, E-commerce sales, E-commerce as a Percent of Total Sales in quarter scale for 2000-2015 years. These trends are representing retail data for both parts of analysis.

The CPI; Internet Penetration; Employment; GDP per capita; Households Dept.; Households

Income; Population; Unemployment; Working population quarter or yearly to quarter approximation trends for US retail model.

Customer Satisfaction with E-Commerce, and Retail Trade; Internet Penetration; CPI; PPI; PPI for E-commerce;

According to understanding of regression analysis I have to make 5 steps of data analysis: Data validation, Data transformation, Correlation analysis, Outliers identifying, Checking multivariate assumptions - normality.

VII. Data Validation

This is the process which validate can be trends used in model to logical criteria.

The employment trend can't be used because it is reflected in percentage of population. This measure is not reflecting the aging. This means that this parameter is dropping people in high age as not consumers. But this is not connected to real situation. Thus only unemployment rate can be used.

CPI is not used because I have not found same statistics for e-commerce. Households dept. was dropped because household's income trend shows lower correlation in future correlation analysis.

Working population is dropped because it not reflects total consumer population means target category of analysis.

I found other trends except listed in data analysis part. But they are not passed validation process.

I continued with the overview of and checked for potential multicollinearity issue, skewness and kurtosis issue. From the rule of the thumb I can estimate that I'm having challenge with skewness and kurtosis. I run a description analysis for this:

Table 1 : Descriptive statistics of US trends

	N	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Working Population	64	178274.000	207535.595	194140.345	1005.496	8043.970	64705455.964	-.418	.299	-.929	.590
Unemployment Rate	64	3.800	10.000	6.295	.223	1.788	3.195	.688	.299	-.775	.590
Population	64	281304.000	322693.000	302622.234	1535.440	12283.520	150884875.230	-.079	.299	-1.234	.590
Employement	64	58.200	64.700	61.150	.271	2.172	4.717	-.114	.299	-1.635	.590
GDPPC	64	12359.100	16470.600	14451.189	140.710	1125.679	1267153.134	-.233	.299	-.861	.590
GDP Work	64	2203306193.400	3349511675.586	2811181894.911	40606814.525	324854516.202	105530456696851000.000	-.295	.299	-.953	.590
GDP pop	64	3476664266.400	5314947325.800	4386380689.352	63988993.812	511911950.494	262053845058295000.000	-.108	.299	-.947	.590
GDPpop4	64	347666.427	531494.733	438638.069	6398.899	51191.195	2620538450.583	-.108	.299	-.947	.590
Penetration	64	43.100	88.910	69.326	1.524	12.194	148.682	-.481	.299	-.168	.590
Sales	64	715102.000	1187169.000	975369.219	16185.214	129481.712	16765513697.412	-.127	.299	-.774	.590
Valid N (listwise)	64										

Table 2 : Descriptive statistics of Retail trends

	N	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SalesGrapPPIDif2	39.000	0.017	0.064	0.039	0.003	0.016	0.000	0.108	0.378	-1.563	0.741
CurSatDif	39.000	0.002	0.003	0.002	0.000	0.001	0.000	0.659	0.378	-0.906	0.741
Penetration	39.000	68.675	88.910	76.888	1.084	6.767	45.794	0.625	0.378	-1.235	0.741
PercentOfESales	39.000	0.027	0.075	0.047	0.002	0.014	2.007	0.498	0.378	-0.954	0.741
Valid N (listwise)	39.000										

How many observations I have to have in my models. The scientific criteria are: "The general rule of thumb (based on stuff in Frank Harrell's book, Regression Modeling Strategies) is that if you expect to be able to detect reasonable-size effects with reasonable power, you need 10-20 observations per parameter (covariate) estimated. Harrell discusses a lot of options for "dimension reduction" (getting your number of covariates down to a more reasonable size), such as PCA, but the most important thing is that in order to have any confidence in the results dimension reduction must be done without looking at the response variable. Doing the regression again with just the significant variables, as you suggest above, is in almost every case a bad idea". (Harrell, Frank., 2001).

In my analysis I have 64 observations for US trends. That's why I can use 3 or 2 trend model for linear regression.

For second part which describes retail trends I have to use 2 trends for good estimation and 3 trends possible can give low power of model because I have 39 observations only. I have problems in data for Retail model. Because, penetration and satisfaction are adjusted from yearly level, this means that possible only

VIII. Data Transformation

The example I have US GDP per capita and population. This data has to be multiplied according to understanding of market volume = size * value.

The penetration value has to be transformed into volume value same as in previous paragraph.

The unemployment rate is in percentage. And it has not to be transformed because according to my plan it has to reflect the demand – value between 0 and 1 when 1 there is not demand present when 0 people buy all that they can. Of course other trend of demand may be found through market researches according to customers spent survey or something like this. But current trend looks good in my logic too.

I predict a percent of e-commerce sales to find, how this factors substitute traditional retail. The data difference in satisfaction and difference in PPI are not implemented directly. It demonstrates a moving process of shoppers according to perceptions. The moving process is connected to importance of e-commerce for people and advertising. The best trend which reflects the importance of e-commerce sales within retail is e-commerce sales value. So I decided to multiply e-commerce sales from previous period on this difference to reflect this understanding correctly. In other words, people who are using e-commerce can describe to others why they are using it, and agitate them to use this way of buying.

The other problem is difference in data measurement scale. When I multiply GDP per capita on Population I received a big number. I decided to divide it on 10-4 to make regression coefficients more comfortable to view and understand.

IX. Correlation Analysis

I have to check are my variable related to each other somehow? To make this, I used Pearson correlation. The most familiar measure of dependence between two quantities is the Pearson product-moment correlation coefficient, or "Pearson's correlation coefficient", commonly called simply "the correlation coefficient". It is obtained by dividing the covariance of the two variables by the product of their standard deviations. Karl Pearson developed the coefficient from a similar but slightly different idea by Francis Galton. (Rodgers, J. L.; Nicewander, W. A., 1988).

I carried on with the correlation examination in order to find out the relationships between predicting variables to select better one list of trends.

I analyzed bigger number of trends when searching for appropriate data and model. But last trends are reflecting model well, I used few from others to demonstrate selection process. According to table 3 I have 10 trends related to our data. I have to select only needed. For example, I have trends which described Income. This is GDP per capita, GDP work – GDP for working part of society. According to this tables GDP per capita have highest correlation, thus I decide to select it as trend for analysis. Next I see that population trend have big correlation value too. But in my understanding my model in logic purposes can't be like a*pop + b*gdp per cap because these data have to be connected via multiplying to show the total volume. That's why GDPpop4 trend was designed. The unemployment rate was selected instead Employment because I select total population instead working population and only this trend relate to these data. The penetration represents the measure of high technology understanding in society, to outline how connection to internet and its usage lead people to use new capabilities. This parameter helps to understand how understanding (4) performing in US model.

Table 3 : Correlations between list of US model trends.

		Time scale	WorkingPopulation	UnemploymentRate	Population	Employement	GDPPC	GDPWork	GDPpop	GDPpop4	Penetration	Sales
Time scale	Pearson	1	.984**	.537**	.999**	-.880**	.965**	.979**	.986**	.986**	.941**	.939**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
WorkingPopulation	Pearson	.984**	1	.541**	.988**	-.846**	.975**	.988**	.985**	.985**	.958**	.935**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
UnemploymentRate	Pearson	.537**	.541**	1	.553**	-.838**	.363**	.432**	.424**	.424**	.375**	.314*
	Sig. (2-tailed)	.000	.000		.000	.000	.003	.000	.000	.000	.002	.012
	N	64	64	64	64	64	64	64	64	64	64	64
Population	Pearson	.999**	.988**	.553**	1	-.882**	.965**	.981**	.985**	.985**	.941**	.936**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
Employement	Pearson	-.880**	-.846**	-.838**	-.882**	1	-.747**	-.791**	-.800**	-.800**	-.738**	-.728**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
GDPPC	Pearson	.965**	.975**	.363**	.965**	-.747**	1	.997**	.995**	.995**	.968**	.976**
	Sig. (2-tailed)	.000	.000	.003	.000	.000		.000	.000	.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
GDPWork	Pearson	.979**	.988**	.432**	.981**	-.791**	.997**	1	.998**	.998**	.969**	.969**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
GDPpop	Pearson	.986**	.985**	.424**	.985**	-.800**	.995**	.998**	1	1.000**	.964**	.970**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		0.000	.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
GDPpop4	Pearson	.986**	.985**	.424**	.985**	-.800**	.995**	.998**	1.000**	1	.964**	.970**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	0.000		.000	.000
	N	64	64	64	64	64	64	64	64	64	64	64
Penetration	Pearson	.941**	.958**	.375**	.941**	-.738**	.968**	.969**	.964**	.964**	1	.949**
	Sig. (2-tailed)	.000	.000	.002	.000	.000	.000	.000	.000	.000		.000
	N	64	64	64	64	64	64	64	64	64	64	64
Sales	Pearson	.939**	.935**	.314*	.936**	-.728**	.976**	.969**	.970**	.970**	.949**	1
	Sig. (2-tailed)	.000	.000	.012	.000	.000	.000	.000	.000	.000	.000	
	N	64	64	64	64	64	64	64	64	64	64	64

**. Correlation is significant at the 0.01 level (2 tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4 : Correlations between list of Retail model trends

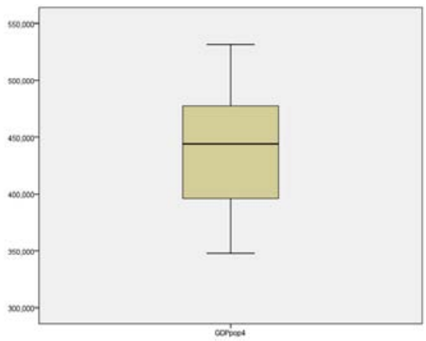
		SalesGrapPPIDif2	CurSatDif	Penetration	PercentOfESales
SalesGrapPPIDif2	Pearson Correlation	1	.775**	.867**	.952**
	Sig. (2-tailed)		.000	.000	.000
	N	39	39	39	39
CurSatDif	Pearson Correlation	.775**	1	.945**	.848**
	Sig. (2-tailed)	.000		.000	.000
	N	39	39	39	39
Penetration	Pearson Correlation	.867**	.945**	1	.908**
	Sig. (2-tailed)	.000	.000		.000
	N	39	39	39	39
PercentOfESales	Pearson Correlation	.952**	.848**	.908**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	39	39	39	39

**. Correlation is significant at the 0.01 level (2 tailed).

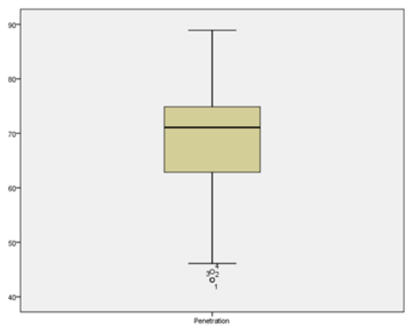
In table 4 I see that all trends have high correlation with target variable. This is good. This means that they can be used as predictors for Percent-Of-Sales variable.

X. Outliers Identifying

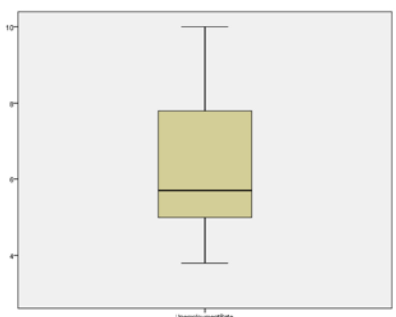
I continued with graphical examination in order to visually detect missing data, outliers in influential points.



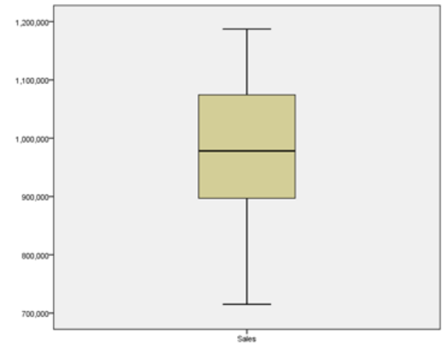
Graph 1 : GDPpop4



Graph 2 : Penetration



Graph 3 : Unemployment rate



Graph 4 : Retail sales

According to outlier's examination that values have be in 95% probability interval I found 4 outliers in Penetration trend for points in 2000 year (points 1-4). The other values lay in confidence interval. Other variables have not outliers.

XI. Checking Multivariate Assumptions – Normality

According to understanding of model I are not searching for one value, which is true. I want to examine all diapason. That's why my trends have to be not normally distributed, or better say maximum scattered.

To check this, I used Kolmogorov-Smirnov test of normality. But this test is not very powerful. Then I decide to make Shapiro-Wilk test same time If I will need confirmation. (Stephens, M. A., 1974).

Table 5 : Kolmogorov-Smirnov test of normality for US trends

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Time scale	.063	64	.200*	.955	64	.021
Working Population	.119	64	.026	.945	64	.007
Unemployment Rate	.178	64	.000	.902	64	.000
Population	.074	64	.200*	.951	64	.014
Employement	.216	64	.000	.853	64	.000
GDPPC	.110	64	.051	.951	64	.013
GDP Work	.113	64	.042	.948	64	.009
GDP pop	.090	64	.200*	.959	64	.033
GDPpop4	.090	64	.200*	.959	64	.033
Penetration	.113	64	.041	.945	64	.007
Sales	.056	64	.200*	.970	64	.121

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

As I see in this table the selected trends for US model have not normal distribution, or on border. This means that I can use it in my analysis. The values are not grouping near one value.

Table 6 : Kolmogorov-Smirnov test of normality for Retail trends.

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SalesGrapPPIDif2	.145	39	.038	.902	39	.003
CurSatDif	.153	39	.023	.883	39	.001
Penetration	.225	39	.000	.851	39	.000
PercentOfESales	.124	39	.136	.929	39	.017

a. Lilliefors Significance Correction

As I see in this table the selected trends for Retail model have not normal distribution. This means that I can use it in my analysis. The values are not grouping near one value.

XII. Regression Models

In statistics, linear regression is an approach for modeling the relationship between a scalar dependent variable y and one or more explanatory variables (or independent variables) denoted X. The case of one explanatory variable is called simple linear regression. For more than one explanatory variable, the process is called multiple linear regression (David A. Freedman, 2009).

XIII. Why I used Multiple Linear Regression?

In my model I am sure that data have linear relations with dependent variable, because this leads from my conceptual model which was built on real economic understanding and logic of market, and trends transformations which were made to represent data in same scale and same logical understanding according to conceptual model for US's and Retail's regression models.

XIV. US Regression Model Results

Table 7 : US Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.977[a]	.954	.952	28348.8418	.954	418.092	3	60	.000	1.439

a. Predictors: (Constant), Penetration, UnemploymentRate, GDPpop4
b. Dependent Variable: Sales

In Table 7 of US Model Summary I see that R Square = 0.954. I could explain 95.4% of variability in the dependent variable with this multiple linear regression model according to the model summary. This is what exactly I needed, because I want to receive model which is close to real life.

According to ANOVA table 8 in this multiple linear regression model is a statistically sigrficant predictor of the dependent variable, with p-value = 0,000 (which significantly below the 0.05 critical value).

Table 8 : ANOVA results for US model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1008007953152.950	3	336002651050.985	418.092	.000[b]
	Residual	48219409783.983	60	803656829.733		
	Total	1056227362936.940	63			

a. Dependent Variable: Sales
b. Predictors: (Constant), Penetration, UnemploymentRate, GDPpop4

Table 9 : Regression coefficients of US model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-58609.607	46818.938		-1.252	.215					
	GDPpop4	2.253	.273	.891	8.259	.000	.970	.729	.228	.065	15.289
	Unemployment Rate	-8220.564	2227.332	-.113	-3.691	.000	.314	-.430	-.102	.805	1.243
	Penetration	1405.082	1119.278	.132	1.255	.214	.949	.160	.035	.068	14.602

a. Dependent Variable: Sales

According to Table 9, I have 2 statistically significant coefficients. This is GDPpop4 and Unemployment Rate. The Penetration is not statistically significant. This means that penetration has not statisticaly significant influence on this model (or very small which can't be recognized), and can be excluded if I want to build equation for model.

Backing to my hypothesis I have to reject HOa that E-commerce opens the new opportunities to retail sales growth, or they are not significant. In other words, internet usage and internet penetration not leads to changes and raising retail sales significantly.

There is variance inflation factor VIF that explains colinearity level between independent variables that is quite higher than 10 meaning there is not colinearity level between independent variables for GDPpop4 and penetration. This is bad result.

I re-run US model and I excluded penetration variable to obtain better equation for Retail sales.

Table 10 : Regression coefficients for US model without influence of Internet penetration

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-714922.523	222746.132		-3.210	.002					
	Employement	8070.848	2897.795	.135	2.785	.007	-.728	.336	.081	.360	2.780
	GDPpop4	2.728	.123	1.079	22.191	.000	.970	.943	.647	.360	2.780

a. Dependent Variable: Sales

This second model looks much better in prediction. And can be used to predict results. I drop all other outputs and explanations about this model because this is not my primary objective according to my tasks. But I can confirm that this model explains 94.6 % of variance. It is very significant. All predictors are significant on very strong level.

There is variance inflation factor VIF that explains collinearity level between independent variables that is quite lower than 10 meaning there is collinearity level between independent variables for GDPpop4 and penetration.

All other possible outputs are great too. This means that I can use this second US model without influence of Internet penetration to predict sales volume.

XV. Retail Regression Model Results

Table 11 : Retail model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.968[a]	.938	.932	.36894%	.938	175.106	3	35	.000	.263

a. Predictors: (Constant), Penetration, SalesGrapPPIDif2, CurSatDif
b. Dependent Variable: PercentOfESales

In Table 11 of Retail Model Summary I see that R Square = 0.938. I could explain 93.8% of variability in the dependent variable with this multiple linear regression model according to the model summary. This is what exactly I needed, because I want to receive model which is close to real life.

According to ANOVA table 12 in this multiple linear regression model is a statistically significant predictor of the dependent variable, with p-value = 0,000 (which significantly below the 0.05 critical value).

Table 12 : ANOVA results for Retail model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.504	3	23.835	175.106	.000[b]
	Residual	4.764	35	.136		
	Total	76.268	38			

a. Dependent Variable: PercentOfESales
b. Predictors: (Constant), Penetration, SalesGrapPPIDif2, CurSatDif

Table 13 : Regression coefficients of Retail model

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	-.841	1.813		-.464	.645					
	SalesGrapPPIDif2	61.931	7.806	.701	7.934	.000	.952	.802	.335	.229	4.373
	CurSatDif	556.679	378.240	.198	1.472	.150	.848	.241	.062	.099	10.149
	Penetration	.024	.036	.113	.659	.514	.908	.111	.028	.061	16.386

a. Dependent Variable: PercentOfESales

According to Table 13, I have only one statistically significant coefficient. I see that Penetration is breaking my model again. That's why I decide to exclude this parameter and re run model again. Other problem of this model is that I was used adjusted coefficients of Satisfaction and Penetration from Yearly level. I see that penetration is not significant. But I will use satisfaction trend again, because I want to save my economic logic from conceptual model. If I have no success this will means that I have to scout for data again. Ok. Let's try.

Table 14 : Retail model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	Change Statistics F Change	Change Statistics df1	Change Statistics df2	Change Statistics Sig. F Change	Durbin-Watson
1	.968[a]	.937	.933	.36603%	.937	266.630	2	36	.000	.258

a. Predictors: (Constant), CurSatDif, SalesGrapPPIDif2

b. Dependent Variable: PercentOfESales

In Table 14 of Retail Model Summary I see that R Square = 0.933. I could explain 93.3% of variability in the dependent variable with this multiple linear regression model according to the model summary. This is what exactly I needed, because I want to receive model which is close to real life. This value is high and not low much than in previous model. This means that I didn't lose anything by excluding of penetration trend.

According to ANOVA table 15 in this multiple linear regression model is a statistically signi ficant predictor of the dependent variable, with p-value = 0,000 (which significantly below the 0.05 critical value).

Table 15 : ANOVA results for Retail model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.445	2	35.722	266.630	.000[b]
	Residual	4.823	36	.134		
	Total	76.268	38			

a. Dependent Variable: PercentOfESales

b. Predictors: (Constant), CurSatDif, SalesGrapPPIDif2

Table 16 : Regression coefficients of Retail model

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.337	.299		1.126	.268					
	SalesGrapPPIDif2	65.299	5.855	.739	11.152	.000	.952	.881	.467	.400	2.500
	CurSatDif	773.139	186.242	.275	4.151	.000	.848	.569	.174	.400	2.500

a. Dependent Variable: PercentOfESales

According to Table 16, I have 2 statistically significant coefficients. These are SalesGrapPPIDif2 and CurSatDif. The constant value is not statistically significant. This means that this model is very strong and it hasn't unexplained fluctuations in constant. I can build equation for percentage of e-commerce sales using this model and these trends.

Backing to my hypothesis I have to accept HOb: E-commerce substitute traditional sales on market. What drivers of this process and how are they measuring? I find that positive differences in satisfaction and Producers index leads to popularizing of shopping.

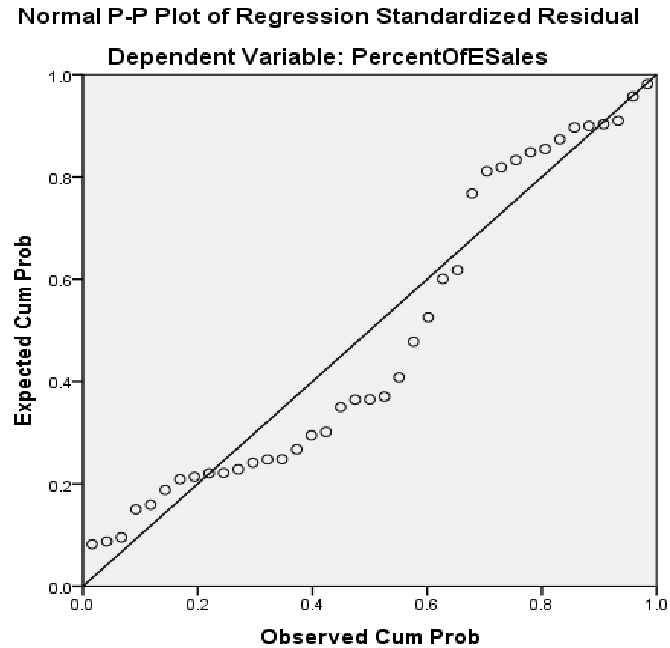
There is variance inflation factor VIF that explains collinearity level between independent variables that is quite lower than 10 meaning there is collinearity level between independent variables for SalesGrapPPIDif2 and CurSatDif. This is good.

Table 17 : Residual statistics of Retail model

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0339%	6.8710%	4.7077%	1.37117%	39
Residual	-.45409%	.76846%	.00000%	.35627%	39
Std. Predicted Value	-1.221	1.578	.000	1.000	39
Std. Residual	-1.241	2.099	.000	.973	39

a. Dependent Variable: PercentOfESales

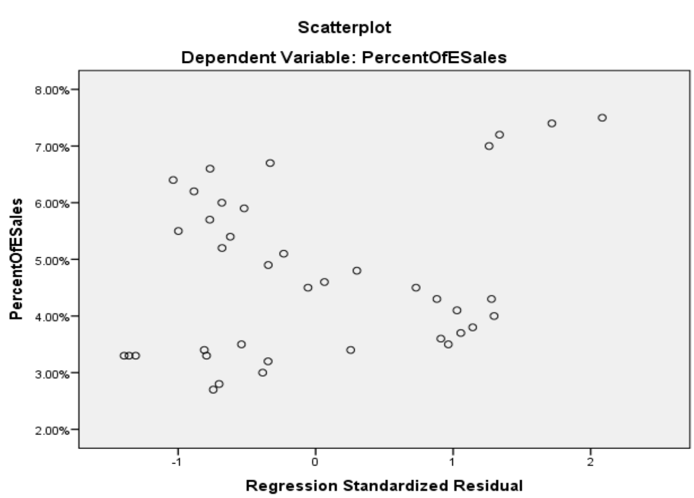
Table 17 demonstrates the residual statistics. From my point of view, it gives me understanding that my model is working good, without significant fluctuations.



Plot 1 : Normal P-P Plot of Regression Standardized Residual

The Plot 1 shows the differences between observed and estimated value. I see there that I have some disconnection from my point of view. I will describe this in conclusions better.

I also checked for homoscedasticity issues of my database as show and according to the graphical examination from where I can conclude that I haven't got problem with heteroscedasticity (Goldberger, Arthur S., 1964).



Plot 2 : Scatter plot of dependent variable and standardized residuals

XVI. Conclusion and Recommendation

As results, I have to reject HOa: E-commerce opens the new opportunities to retail sales growth, and how is this measuring? This measurement, according to results, is not significant. Possible I can find some other trends but internet access and growing number of internet users are not gives significant impact on retail volume.

The retails sales are measuring according to general understanding of economics. According to demand. The possible formula to obtain significant value of US retail is:

Population*10-3 *GDP per capita *2.581695207*10-4 + Unemployment Rate %*-8609.253793 - 102862.6385 = sales. The minus value of constant can be explained as minimum level of market volume needed + expectations to start retail sales. According to this analysis I can recommend to develop e-commerce solutions like in paragraph (4) of conceptual model to obtain influence which will significant. But for now such influence on market are not significant.

According to results I have to accept HOb: E-commerce substitute traditional sales on market. What drivers of this process and how are they measuring? The drivers of this process is higher satisfactions of using e-commerce and differences in prices. The PPI of e-commerce firms is lower. That's means that goods and services are cheaper and affordable compare to traditional solution. The other conclusion is that if you use internet, this does not mean that you use e-commerce. But you begin to use ecommerce if somebody who use it already recommend and describe you the profits in price and satisfaction.

The formula for e-commerce percentage in retail sales is:
(SatisfactionE-commerce%-SatisfactionTraditional%)*E Sales*7.731388+(PPI-PPIE) *ESales* 0.652988531 +0.003371% = ESales%.

This formula tells me that Positive satisfaction and positive difference in sales index between E-commerce and Traditional attributes leads to growth of ESales. If difference become "- ", then I will have observed decreasing of E-commerce percentage. I find that E-commerce sales is driven by consumer's logic, and not connected to popularization of information technologies, only to economic logic.

XVII. Further Research

The further investigations can deal only with more concrete data which can be obtained only in marketing agencies which conduct retail researches.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Socio-Economic Contribution of Women Entrepreneurs in Bangladesh

By Ishita Roy

Bangabandhu Sheikh Mujibur Rahman Science & Technology University

Abstract- The present study examines the contribution of women entrepreneur in different sectors of business and commerce that contribute to the national economic development in Bangladesh. The sectors to which they contribute most are Agriculture, Readymade Garments and Small Business Enterprises. A large majority of the households in Bangladesh depend upon agriculture and related activities like livestock rearing, fisheries and forestry. The ready-made garment (RMG) industry of Bangladesh started in the late 1970s and became an important player in the economy. The industry has contributed to export earnings, foreign exchange earnings, employment creation, poverty alleviation and the empowerment of women. SME plays a significant role in the economy and it is also considered a major sector to contribute to sustainable development of our country. In Bangladesh SME provides over 87% of the total industrial employment and is responsible for the creation of over 33% of industrial value added goals. At present women entrepreneurs constitute less than 10% of the total business entrepreneur in Bangladesh.

Keywords: women entrepreneur, agriculture, RMG, SME, bangladesh.

GJMBR - B Classification : JEL Code : L26

THESOCIOECONOMICCONTRIBUTIONOFWOMENENTREPRENEURSINBANGLADESH

Strictly as per the compliance and regulations of:

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Keywords: women entrepreneur, agriculture, RMG, SME, bangladesh.

I. Introduction

Bangladesh is a resource-limited and overpopulated country where society is highly stratified, services and opportunities are determined by gender, class and location. However, women make nearly half of the population which means huge potential to be utilized for socio-economic development of the country. Development and enrichment of women entrepreneurship are the means of promoting national competitiveness and sustainability. Its represent the individual and community level initiative and contribution towards the greater national economy, poverty alleviation models pursued by both the GOs and NGOs consider the above mentioned phenomenon as one of the prior sector of intervention. Bangladesh is one of the countries, which rectified the UN Convention on the Elimination of all Forms of Discrimination against Women (CEDAW). The Constitution of Bangladesh also grants equal rights to women and men in all spheres of public life [Article 28(1), and 28(3). The Constitution also keeps an obligation for the state to ensure women's active and meaningful participation in all spheres of public life (Article-10).

Author: Assistant Professor, Department of Management Studies, Bangabandhu Sheikh Mujibur Rahman Science & Technology University, Gopalgonj-8100. e-mail: royishitadu@gmail.com

Existing sex ratio in demographic structure of Bangladesh indicates that women comprise almost 50% of the total population (BBS, 2006). They are essential part of nation's human resources. Due to this demographic structure, the issue of the participation of women in the mainstream economy is imperative. Without a meaningful and active participation of women, half of the total population, in regular economic activities, a dynamic and sustainable economy is impossible. A sustainable economy is a precondition for national growth and prosperity including institutionalization of a democratic system. It is also impossible to achieve the target of a poverty-free society without incorporation of women in the mainstream economy. Women's economic empowerment is an inevitable part of development discourse. Excluding women from the mainstream development program, institutionalization of a sustainable development process is just unthinkable. It is inspiring to mention here that a new woman's entrepreneurs' class is increasingly emerging each year taking on the challenge to work in a male-dominated, competitive and complex economic and business environment (BWCCI, 2008).

II. Objectives of the Study

The overall objective of the study is to examine the key gender issue involved in development in the SME, RMG and Agriculture sectors, with a view to addressing the problems of exclusion of women from access to market, technology and finance and make recommendations to understand the present condition and contribution of women in Bangladesh.

III. Limitations of the Study

Since the study is an experiential one based on secondary data largely, it has some obvious limitations. These are as follows:

1. I cannot guarantee that all data presented are reliable. Present study covered women engaged in Agriculture, RMG & SME only.
2. Large scale business had been kept outside the preview of the present study.
3. In view of time and resource constraints, conducting a comprehensive study in full depth and width has not been possible.

IV. Data and Methodology

This report is based on the information collected from diverse sources following a specific methodology. This report has been written on the basis of information collected from secondary sources. The details are as follows:

Secondary Data: For collecting data I have to use the website, different published articles, and journal over the internet.

V. Economic Contribution of Women Entrepreneur in Bangladesh

In Bangladesh men are considered to be the head of the family and it's most important member, since it is most often men earn the income that houses, feeds, and clothes for the family. Men also have a far easier time than women in seeking paid employment. Works typically divided along gender lines, with men being responsible for "outside" work and women for housework and child care. Bangladeshi women suddenly changed their activities. They are now working in different economic activities and paying important role in national economy. They are adding value in GDP. Here we will discuss the role of women in national economy in terms of Agriculture, RMG and SME.

a) *Agriculture*

In Bangladesh though most of the farmers are male but a lot of women are now playing an important role in the improvement of agricultural sector as well as the economy of Bangladesh. Agriculture continues to play an important role in most non-industrial economies, as a major contributor to the country's export earnings and as a source of employment and livelihood. Official statistics often underestimate the value of women's work and their overall contribution to national wealth. Women continue to provide a large proportion of the labor that goes into agriculture. Bangladesh is an agricultural country. And almost 80 percent people directly or indirectly depends on agriculture. Bangladesh agriculture is dominated by rice, the staple food crop, which occupies about 75 percent of the total cropped area. Since the early 1980s wheat production has increased significantly and is now around 5 percent of the total cropped area. Potato, chilies, pulses, and oil seeds are complementary nonce real food crops that supplement the staple diet. Besides rice, wheat, and jute, sugarcane and tobacco are major crops. On an experimental basis rubber, coffee, and palm trees are cultivated on a small scale in some areas. Small and medium-sized households produce barely enough food crops to meet their own consumption requirements. Only large farm households can generally sell their surplus cereal products in the market. Bangladesh has one of the lowest per capita annual incomes in the world ($345 in 1998).Income levels in rural and urban areas differ significantly. In rural areas opportunities for wage employment are limited, and wage rates are low. The level and composition of consumption expenditure also differ in rural and urban areas. In Bangladesh the share of women in the total economically active population is 39%, indicating relatively lower economic participation by women. Most often, activities such as care of livestock and poultry, vegetable growing, post-harvest processing and preservation, usually done by women in the farm households. Revised enumeration methods documented that about 65% of the employed population has been engaged in agriculture and related industrial activities. In this sector 71.5% of women were employed compared to 60.3% of men. Women, who primarily work as unpaid family workers, accounted for 45.6% of total employment in agriculture. The second largest employment sector is agricultural product manufacturing -engaged 21.6% of women. Among all people employed, women accounted for 64%. Particulars percentage people engaged in agriculture and 65% of total population related activities Women engaged in agriculture and 71.5% of total female population related activities. Men engaged in agriculture and related 60.3% of total male population activities Women engaged in agriculture 45.6% of total population engaged in agriculture. 54.4% off men of total population engaged in agriculture. 21.6% of women of total population engaged in product manufacturing. 78.4% of men of total population engaged in manufacturing agricultural product. Average women engaged in agricultural 64% of the total women activities (Source: Ministry of Agriculture, 2009-2010).

A large majority of the households in Bangladesh depend upon agriculture and related activities like livestock rearing, fisheries and forestry. In 2009-2010, crops accounted for 77.7% of the total agricultural production, fisheries 7.8%, livestock 7.7% and forestry 6.8%. Sectors Contribution Crops 77.7% Fisheries 7.8% Livestock 7.7% Forestry 6.8% Total 100% (Source: Ministry of Agriculture, 2009-2010). Despite their routine domestic work, women are very actively involved in agricultural production in Bangladesh. Women in rural Bangladesh are in general responsible for most of the agricultural work in the homestead. They traditionally undertake home gardening. Farm activities in the homesteads, ranging from selection of seed to harvesting and storing of crops, are predominantly managed by women. Despite women's important role in agriculture, the traditional social norms and customary laws combined with the purdah system deprive Bangladeshi women of equitable economic opportunities and access to resources. The primary activities of women in agriculture sector are as follows; Cultivation, Home Gardening, Livestock, Poultry, Vegetable growing, Post-harvest processing and Preservation .In Bangladesh, 120355263 people are engaged in agriculture and agriculture based industrial activities. Among those people 64091508 are men which is 53.25% of the total population and56263719 are women which is 46.75% of the total population. Statistics is given below:

Contribution in GDP: The Gross Domestic Product (GDP) of Bangladesh is US$ 115.387 billion. The Sector wise contribution in GDP is follows:

Agricultural Sector	Manufacturing Sector	Services Sector	Others	Total
23.50%	28.60%	41.80%	6.10%	100%

(Source: Bangladesh Bank; Data released on November 2010).

The agricultural sector accounted for nearly 23.50% of Gross Domestic Product which provides US$ 27.16 billion. Women contribution in GDP is US$ 10.58 billion. (Source: Bangladesh Bank; Data released on November 2010). It is estimated that women represent a substantial share of the total agricultural labor force, as individual food producers or as agricultural workers, and that around two-thirds of the female labor force in developing economies is engaged in agricultural work. Part of the overall decline in the percentage of economically active women in agriculture globally is attributable to the greater involvement of rural populations in employment, in addition to the ongoing increase in migration to urban areas. The low-income countries of the world - where agricultural production is still labor-intensive -also tend to have the highest percentages of economically active women working in agriculture, particularly in the LDCs.

The female contribution to the overall economy is high throughout Asia and the Pacific region, particularly in terms of labor input into agriculture. Bangladesh, Bhutan, Cambodia, China, India, Myanmar, Nepal, Pakistan and Vietnam have particularly high percentages of women employed in the agricultural sector, with estimates ranging between 60 and 98 percent. Indeed, in most Asian countries the number of women employed in agriculture as a percentage of the women contribution is higher than that of men. This finding is even more significant given that data for the economically active population in agriculture tends to exclude the unpaid work by rural women in farm and family economies. If unpaid work were included, the figures for female employment in agriculture would be even higher. Women's increased responsibilities in recent decades for reproducing and maintaining the family, in most lower-income countries, have resulted in rather complex and demanding livelihood strategies. These diversified livelihood strategies have to respond to the internal and external dynamics that typically influence rural families, such as: Increased out-migration by men, leaving women with sole responsibility for their families. Increased economic vulnerability to global market forces as traditional foods become less economical to produce, rural incomes decline and commercial-agriculture becomes more input-intensive and productive resources are dominated by agribusiness. Food security and family well-being are clear reasons for protecting or enhancing women's access and control over land and other productive resources. Studies have shown that resources controlled by women are more likely to be used to improve family food consumption and welfare, reduce child malnutrition and increase overall well-being of the family. The necessity for thorough assessments of how trade liberalization may or may not impact on food security, nutritional status and/or access to agricultural inputs and other productive factors - from a gender-differentiated perspective - should be seen in this context. Creating such assessments is crucial to the successful development of any programmer or policy ultimately concerned with improving food security or poverty alleviation. Women have always worked in the production of food and other products in rural areas. However, official statistics are determined by reporting in line with official definitions of agricultural work, which tend not to recognize women's contribution to agricultural activities, despite efforts to improve gender-differentiated data in agricultural census and household surveys. Moreover, the increased female labor input into agricultural exports is not associated with greater access to or control of agricultural resources.

Our government and conscious people should emphasis on the betterment and increasing participation of women in the society for easily doing agricultural activities.

b) Ready-Made Garment (RMG)

Garments sector is the largest employer of women in Bangladesh. The garment sector has provided employment opportunities to women from the rural areas that previously did not have any opportunity to be part of the formal workforce. This has given women the chance to be financially independent and have a voice in the family because now they contribute financially. Women are also adding vale in national economy from this sector. At present 2.88million (78% of the total garment worker) female workers engaged in RMG sector of Bangladesh.

The ready-made garment (RMG) industry of Bangladesh started in the late 1970s and became an important player in the economy. The industry has contributed to export earnings, foreign exchange earnings, employment creation, poverty alleviation and the empowerment of women. Like other 3rd world

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countries Bangladesh is a developing country. Economic development depends firstly on Agriculture and secondly on Industry. Although Bangladesh is not developed in industry, it has been enriched in Garment industries in the recent past years. For Bangladesh, the readymade garment export industry has been the proverbial goose that lays the golden eggs for over fifteen years now. It is making significant contribution in the field of our export income and in the economic development of our country. The RMG industry enjoyed a meteoric rise from 30 enterprises in 1980 increased to about 5150 in 2010-11 fiscal years. The growth of Garment industries & number of workers of over 5 years is follows:

Year	Garment factories	Employment(million)	Women worker(million)
2006-2007	4490	2.40	1.92
2007-2008	4743	2.80	2.24
2008-2009	4925	3.50	2.80
2009-2010	5063	3.60	2.88
2010-2011	5150	3.60	2.88

(Source: BGMEA, 2011)

In 2011, Out of 3.6 million manpower employed in BGMEA member factories, 2.88 million are women (78%), majorities of them are disadvantaged and economically poverty stricken women folk. Woman in RMG Employment in the RMG (Ready Made Garments) industry has provided direct access to cash income for the first time to many poor women. Bangladesh has abundant human resources especially women workers but most of the human resources are unskilled, not trained, underutilized and not educated as required. RMG is mainly human resource especially human resources intensive industry and its paramount proportion of human resources are women workers. RMG is the key contributive sector in economic development of Bangladesh. In Bangladesh maximum proportion of the garments workers are women. The garments industry has been leading the Bangladesh economy since the early 1990s. Garments are the country's principal export making up about 70% of total exports, and the industry is a symbol of the country's dynamism in the world economy.

The greater part of the work force is female; less educated, and has migrated from rural areas. Garment sector is the largest employer of women in Bangladesh. The garment sector has provided employment opportunities to women from the rural areas. This has given women the chance to be financially independent and have a voice in the family because now they contribute financially. In 1999, the industry employed directly more than 1.4 million workers, about 80% of whom were female. With the growth of RMG industry, linkage industries supplying fabrics, yarns, accessories, packaging materials, etc. have also expanded. Many women are getting opportunities to work in those industries. The economic empowerment of these workingwomen has changed their status in the family. Particulars Figure Total worker 3.60 Million. Total women worker 2.88 Million (78%). It is the largest exporting industry in Bangladesh which is increased during the last 20 years. It attained a high profile in terms of foreign exchange earnings, exports, industrialization and contribution to GDP within a short span of time. The contribution of women in RMG sector can be viewed in following topic: Chip Labor: Bangladesh is a third world country. Labor is chip here particularly women labor. Garments industry has become flourishing here because of chip labor of women. Skill: Bangladeshi women are traditionally expert in sewing. They are creative in clothing. With their creative work, they put an importance in the success of garment industry here. Bangladeshi women are expert garment related work. Bangladeshi govt. also provides training for them. So, they become an asset to RMG. As a result, foreign investor feels interest to invest in Bangladesh. Earning Foreign Currency: Bangladesh exports garment products. By exporting garment products, she earns huge foreign currency. Women are like engine of RMG sector of Bangladesh. So, there is no doubt the participation of women in earning foreign currency is very important. Adding value in GDP: Garment industry added 10% of the total GDP in the year 2009-2010. As women drive the garment sector, we can say, women are adding value in GDP.EPZ: In Bangladesh, there are 9 EPZs. In these EPZs women are the main labor. Because of the labor of women, these EPZs are running successfully. So, they are also adding contribution in our EPZs. Standard of living: In past Bangladeshi women were confined in home. But time has changed. They are working in different sectors. Among the sectors garment industry is one. They are also earning money from working in garments. As a result, standard of living is increasing day by day. In this regards, their contribution can't be eliminated. Increasing face value of Bangladesh: Bangladesh exports RMG products in different parts of the globe. People of those countries praise the quality garment products of Bangladesh. The face value of Bangladesh increases.

c) Small and Medium Enterprise (SME)

SME plays a significant role in the economy and it is also considered a major sector to contribute to sustainable development of our country. In Bangladesh SME provides over 87% of the total industrial employment and is responsible for the creation of over 33% of industrial value added goals. At present women entrepreneurs constitute less than 10% of the total business entrepreneur in Bangladesh. Whereas women in advanced market economics own more than 25% of a business. Establishment of women entrepreneurs' enterprises started growing during 1970s and increased during the 1980s and 1990s. The highest record of enterprise establishment was during 2001-2005, nearly 50% enterprise were established from 2000 to 2010.

Bangladesh is a developing nation, rich in human resources where women constitute slightly less than half the population. The majority of them are underprivileged, under nourished, illiterate and poor. Moreover, there are not enough employment opportunities for women. Therefore, economic activities, through self-employment have become essential for potential working women. As a matter of fact, women entrepreneurship or "women in business" has gained

Manufacturing and trading(%)	Only Export	Whole sell	Service	Only Import	Retail	Both export and import	OTHER	TOTAL
41.6%	10.6%	6.2%	12.8%	0%	13%	1.6%	14.2%	100%

(Source: Bangladesh Women Chamber of commerce and Industries, 2010).

importance and acts as a very recent phenomenon in Bangladesh. Although women are taking to entrepreneurship in many challenging fields, their activities in Bangladesh are not that extensive. However, in spite of fewer opportunities, many women have succeeded in business, though they are still very small in number. Despite its importance for the economy, the emergence of women entrepreneurship in SMEs is a new phenomenon all over the world. In Bangladesh, women entrepreneurship started developing in fact after the Liberation of Bangladesh. Very few women entered the profession of business before the seventies. Bangladeshi women entrepreneurs need to have an extra quality in the form of dogged determination and resilience since this is needed to fight with adverse situations which seem to confront the female entrepreneurs than their male counterparts in the present-day context. Economic activities of women entrepreneur in Bangladesh is below:

According to the Bangladesh Economic Review 2009, around 6 percent of the country's $90billion economy comes from SMEs. Bangladesh is rightly dubbed as a country of the SMEs. Bangladesh industrial economy is thickly populated by these industries which amount for over99 percent of the private sector industrial establishments and provide more than 80 percent of industrial employment. The relative SME shares in total GDP range between 25-30 percent and that in manufacturing value added vary between 40-45 percent. The age of the majority of the women entrepreneurs were between 31 to 40 years where the women had the capacity to run enterprises with stability and reliability, overcome obstacles with courage, face the social criticism and make decisions with confidence. It was found that the greater the age, the lesser was their participation in the business profession and activities. Majority of the women entrepreneurs had education below SSC, while some had completed HSC, but no women entrepreneurs were found to be illiterate. A recent survey of SME Foundation informed that 4.98% women entrepreneurs in SMEs were graduates, while only 4.44% had completed their Masters Degree, and a few had professional degrees. It has been found that the majority of the women entrepreneurs of Bangladesh were married. The average marital status is given below: Status Percentage Married 83.39% unmarried 10.63% widows 4.15% divorced 1.35% separated 0.48%. Women entrepreneurs lack resources or capital due mostly to unequal inheritance. For bank loan women need to give collateral. It is a social problem that loans to women need to be guaranteed by their husbands or fathers.

On the other hand, families feel more comfortable supporting financially a son, than a daughter for capital. The majority of the women entrepreneurs 87.5% managed their sources of initial capital out of their own savings. 21.84% women entrepreneurs in SMEs did inherit some property which they utilized for business. A recent survey mentions that less than 50% women entrepreneurs owned or rented showrooms for the marketing and sale of products. Around 48% of women entrepreneurs were involved with their own business promotional activities and direct sale of their products and services, while others utilized the services of distributors, whole-sellers, retailers, hawkers and commission agents. Business development and increase of promotional activities depended toa great extent on the modern system of access to IT but only few had access to IT and less than90% did not have any training on computer operations. Internet facilities were available to only 5% women entrepreneurs and business enterprises of 96% women entrepreneurs did not have email account and only 1.2% had a website.

Sector contribution of women in Bangladesh economy:

Name of the sectors	% Enterprises
Garments/Home textile	16.1%
Printing	1.6%
Handicraft	69.4%
Agro based	3.2%
Parlor	4.8%
Food	3.2%
Others	1.6%
Total	100%

(Source: Bangladesh Women Chamber of commerce and Industries, 2010)

About 83% of enterprises were established between the years 2000-2007 indicating that young women are gradually becoming interested in business and entrepreneurial activities and women's visibility in economic sector.

VI. Recent Information about Women Entrepreneur Development and Achievement

Today a 12 member delegation from Bangladesh Women Chamber of Commerce and Industry (BWCCI) led by its President Ms. Selima Ahmad met with Mr. AbulMaal Abdul Muhith, Honorable Minister, Ministry of Finance, Government of Peoples Republic of Bangladesh to discuss issues in further promoting women entrepreneurship development in Bangladesh. BWCCI President Ms. Selima Ahmad thanked Honorable Finance Minister for the continuation of 100 crores taka as grant for women entrepreneurs as well as the announcement to extend the credit facilities to women entrepreneurs in the national budget 2014-15 and for the initiative taken very recently to develop a separate women entrepreneurship development policy. She informed the minister about BWCCI's latest endeavor 'Empower 5000' and said that BWCCI has undertaken this new venture to graduate 5000 micro women entrepreneurs to SME level by 2020 through engaging them more into mainstream diversified business sectors with a view to make Bangladesh a mid-income country. She then handed over the keynote of 'Empower 5000' along with a crest to honorable minister and expressed hope that the government will extend every support to materialize this.

Giving his speech Honorable Finance Minister Mr. AbulMaal Abdul Muhith said that the Government is committed to implement women development policy fruitfully. He stated that in last one decade, women entrepreneurs in Bangladesh has developed themselves considerably and has made notable contribution in the national economy. He said that on behalf of the government his ministry will continue to support initiatives that promote women entrepreneurship development (BWCCI, 2014).

Bangladesh Women Chamber of Commerce and Industry (BWCCI) have received an international award in recognition of its extraordinary efforts in promoting the development of women entrepreneurship in Bangladesh and in enhancing the status of women as important contributors to the local economy and the society in general.

This year 7 women entrepreneurs from 7 divisions who are also BWCCI members were awarded for their significant achievement in business; they were- Aysha Akter from Barisal division, Shamim AraLipy from Chittagong division, Farjana Fatema Borna from Dhaka division, Tanjima Jesmin from Khulna division, Chandona Ghosh from Rangpur division, Moreom Begum from Rajshahi division and Farida Alam from Sylhet division. With them, 2 media representatives also received award this year for their contributions towards women entrepreneurship development in the country who are –Imtiaz Shahriar Emon, Senior Reporter from Boishakhi Television in electronic media category and Shamsul Hoque Mohammad Miraj from the Daily Samakal in print media category. Honorable industries minister Mr. Amir Hossain Amu handed over the awards to the winners which included a trophy, a certificate and prize money of Tk 15,000.

VII. Conclusions

About two-fifths of the economy is now connected with the global economy through exports, imports, factor and commodity markets; the degree of openness of the economy currently stands at 40%. Bangladesh can now rightfully claim that she has graduated from a predominantly aid receiving nation to a trading nation. It is well recognized that women's participation in income generation activities lends them a better status within the family and provides them with considerable freedom. Role of women in working environment also give them opportunity to exercise their rights and responsibilities, which contribute organizational as well as economic development of the country. It also reduces the possibility of domestic violence against women.

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Global Journal of Management and Business Research (B) Volume XVI Issue V Version I Year 2016

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

An Empirical Investigation of the Exchange Rate Pass-Through to Prices in Morocco

By Chatri Abdellatif, Maarouf Abdelouahab & Ragbi Aziz

Mohammed V University

Abstract- In this paper, we use Structural Vector Autoregressive model to evaluate the degree of exchanges rate pass-through to domestic prices. Our results suggest that the responsiveness of the later is low overall, decreases over time and it is higher for tradable than non-tradable goods. The low inflation environment, the modernization of the monetary policy framework and the country's import structure are the main factors explaining these results. This would facilitate the implementation of a more flexible exchange rate regime and explicit long-run inflation objective in Morocco.

Keywords: pass-through, exchange rate, monetary policy and inflation.

GJMBR - B Classification : JEL Code : P22 , E30

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An Empirical Investigation of the Exchange Rate Pass-Through to Prices in Morocco

Chatri Abdellatif [α], Maarouf Abdelouahab [σ] & Ragbi Aziz [ρ]

Abstract- In this paper, we use Structural Vector Autoregressive model to evaluate the degree of exchanges rate pass-through to domestic prices. Our results suggest that the responsiveness of the later is low overall, decreases over time and it is higher for tradable than non-tradable goods. The low inflation environment, the modernization of the monetary policy framework and the country's import structure are the main factors explaining these results. This would facilitate the implementation of a more flexible exchange rate regime and explicit long-run inflation objective in Morocco.

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I. Introduction

The exchange rate changes influence prices directly or indirectly, through its effects on the recomposition and the level of the aggregate demand and affect, consequently, the monetary policy targets. Therefore, it is important to take into account the degree of reaction of prices to the exchange rate movements for improving the effectiveness of the monetary policy and facilitating the achievement of prices stability objective. The degree of pass-through, i.e. the degree of transmission of changes in the exchange rate to domestic prices, is valuable information for an effective implementation of monetary policy. More fundamentally, the degree of Exchange Rate Pass-Through (ERPT) could impact the effectiveness of certain choices relating to monetary policy and exchange rates regimes, particularly those related to the transition towards an explicit inflation targeting framework and a flexible exchange rate regime (Choudhri and Hakura (2001)).

For these and many others a reason, an abundant literature on the determinants and measurement of the degree of ERPT to prices has been developed. Some works adopt microeconomic explanations, while others are rather favorable to the macroeconomic considerations. The available empirical literature has identified some stylized facts. Four facts of them deserve to be recalled.

First, it is broadly verified that the ERPT is incomplete and weak, by contrast to the law of one price (LOP) and the principle of purchasing power parity (PPP), that suggest a complete transmission and long term pass-through equal to one. Secondly, this transmission takes time and operates with a more or less long lag. It is less obvious in the short term compared to the long term. Thirdly, this transmission differs according to the nature of products; it is less important for the differentiated and non-tradable products than the basic and tradable ones. Finally, from the dynamic point of view, the degree of transmission has declined significantly over time.

Given these stylized facts widely verified internationally, it is important to measure the degree of that pass-through in the particular context of Morocco for the following main considerations.

First, because Morocco is a small economy that currently has one of the highest openness rate (nearly 65%). This exposes it naturally to various exogenous shocks, and imposes the exchange rate management as key variable of the macroeconomic stabilization policies and, in some cases, of the price competitiveness policy. Second, as Morocco has just devoted his price liberalization policy, by dismantling its price support mechanism for petroleum products1, the responsiveness of domestic to import prices should significantly increase in the future[2]. Third, because Morocco achieves for the last twenty years moderate inflation permitted, among other reasons, by modernizing of the monetary policy framework, which is conducted independently, since 2006, to ensure the price stability objective. In this case, low inflation environment, coupled with a credible monetary policy, reduces the degree of pass-through, as claimed by many theoretical and empirical works.

Last but not least, the measurement of pass-through in the particular context of Morocco is justified by the ambition to migrate to a more flexible exchange rate regime and an explicit inflation targeting framework

Author α σ ρ: Mohammed V University, Rabat, Morocco.
e-mails: abdelchatri76@gmail.com, abdelmaarouf@gmail.com, Ragbi.aziz@gmail.com

[1] Under increasing budget pressure, Morocco carried out an extensive set of *subsidy reforms, including* a complete liberalization of prices of that products. For more details on the measures preceding the full liberalization of these prices, see the Ministry of economy and Finance, "report on compensation", 2016: http://www.finances.gov.ma/Docs/DB/2016/compens_fr.pdf

[2] It should be emphasized that Bank Al Maghrib, having confided broad autonomy in the conduct of monetary policy, has abandoned monetary targeting strategy, in terms of an annual increase of a relevant monetary aggregate as intermediate target in favor to a multi-criteria strategy without intermediate target. This strategy is based on the analyze of risks of inflationary pressure through five families of indicators, including the import prices dynamic.

recently announced by the national authorities. The available literature shows that a low degree of pass-through is likely to promote this transition.

Moreover, the merit of this paper is that it aims to measure the degree of the exchange rate pass-through not only to the Consumer Price Index (CPI), but also to each of its two components; i.e. prices of tradable and non-tradable goods. Indeed, it is widely accepted that the adequate condition for conducting effective monetary policy, is when the pass-through is high for the firsts and low for the seconds.

Given the foregoing, this paper aims, in particular, to verify the following two assumptions: i) Does modernization of the framework for monetary policy, intervened in 2006, has impacted the degree of the exchange rate pass-through? ii) Is this pass-through more important for tradable than non-tradable goods?

The remainder of the paper is structured as follows. Section 2 presents a brief overview of literature on the determinants of the ERPT. Section 3 presents some stylized facts of the exchange rate and prices dynamics in Morocco. Section 4 exposed the adopted methodology. Section 5 discusses the results. Finally, section 6 is served to conclude.

II. The Determinants of Pass-Through: Literature Review

The available literature can be classified into two opposite approaches (Campa and Goldberg (2002)). The first, the micro-economic one, explains the degree of the ERPT to prices by strategic interaction between firms in an imperfect competition framework and by some structural features of international trade. The second highlights the macroeconomic foundations, such as nominal rigidities and monetary policy framework. These two approaches highlight different explanatory factors for the degree of pass-through, which were subject to numerous empirical works.

a) *Microeconomic determinants of pass-through*

Several researches attribute the incomplete and weak responsiveness of local prices to the exchange rate changes to the microeconomic factors (Divir (2007), Bacchetta and van Wincoop (2005); Corseti Dedola, (2003); Burstein, Eichenbaum and Rebelo , (2002); Betts and Kehoe, (2001) and Bergin and Feenstra, (1998)).

The major explanation, in this respect, is what is known as pricing to market (PTM) policy applied by international firms in the particular context of imperfectly competitive market structures. PTM refers to the phenomenon of firms adjusting the magnitude of their markups for each export market, so as to smooth the impact of the exchange rate fluctuations. The magnitude of the ERPT reflects, in this case, the trade-off between sustaining the profit margins versus market share of the exporter.

The subsequent extensions of this theory of price discrimination, based on the pioneering work of Betts and Devereux (1996), have abandoned the assumption of producer currency pricing (PCP) in favor of local currency pricing (LCP) hypothesis. In this context, the local prices would be naturally insensitive to any exchange rate shock, if import prices have been fixed in advance in local currency. Releasing the latter hypothesis, numerous works have shown that the responsiveness of prices to the exchange rates changes becomes different to zero but remains incomplete, due to the sticky import prices in local currency. Indeed, firms change rarely their prices or at least gradually, given the explicit costs of such adjustment. Similarly, the less responsive of consumer prices to exchange rate movements is attributed also to the well known nominal rigidities (Devereux and Yetman, 2002).

Other works have shown that the degree of transmission of the exchange rate changes on local prices depends also on the basket of the index consumer prices. Indeed, as the process of that transmission comprises two stages, on import prices firstly, and then on global price index, the respective shares of tradable goods and non-tradable ones in that basket influence significantly the degree of transmission of exchange rate fluctuations to domestic prices (Betts and Kehoe (2001); Corsetti and Dedola, (2002); Burstein, Neves and Rebelo (2000)).

In this perspective, we note that the tradable goods prices movements are transmitted to domestic prices through two channels. The first refers to the prices of imported goods that influence directly domestic prices through the imported component in the consumer price index. The second channel relates to the exported goods, so that any depreciation of the local currency could increase their prices, which are exogenously determined on the world market and are therefore “imposed” to the small and open economies.

For its part, the transmission of exchange rate changes to the price of non-tradable goods is based on two mechanisms. The first is the "Balassa-Samuelson" effect wish explains the increase of those prices as a response to the increase of tradable goods prices recorded during the developing countries catching up. The second relates to the behavior of producers who tend to substitute local products to those imported (Burstein, Eichenbaum and Rebelo (2002); Caramazza (1986)). Indeed, a depreciation of the local currency, which tends to push up the prices of imported goods, should have an effect more pronounced on demand of competing goods produced locally when the cross-elasticity of the concerned goods is high. In that case, pressure on local prices and local nominal wages should increase too.

Moreover, even assuming that the prices of domestic products are insensitive to exchange rates movement, the transmission to consumer prices may not be full, even if the transmission to the import prices is. Two main reasons explain that. First, the distribution costs (transportation costs, marketing ...) could be adjusted in response to the local currency changes. Second, the application by foreign wholesalers pricing strategies on the domestic market which are different than these applied by the local retailers (Bacchetta and Van Wincoop (2002)).

In addition to the pricing differentiation strategies, the product differentiation strategies have also been advanced by the literature as an explanation of the incomplete transmission of exchange rates changes to domestic prices. The available literature have, in particular, highlighted the impact of significant change in the structure of international trade, notably the growing part of intermediate and semi-finished products, in relationship with the increasing integration of the world economy and the global value chains.

Indeed, this vertical integration involves, among others, two effects that are likely to reduce the transmission of the exchange rate changes to domestic prices. On the one hand, the distribution of production among many countries which are exposed to different currency movements is effectively likely to reduce the final impact of the exchange rate on the domestic prices (among others, Aksoy and Riyanto, (2000), Murray (2008)). On the other hand, this incomplete transmission could be attributed also to the growing weight of emerging markets in international trade and the exchange rate regimes they apply (Bussiere and Peltonen (2008), Marazzi and Sheets, 2007)).

Moreover, Goldbeg (2005) considers that the decrease of the ERPT depends to the change recorded on the imported goods basket; to more differentiated products to the detriment of commodities.

b) Macro-economic determinants of the pass-through

Unlike previous works, a no less abundant literature argues the macroeconomic determinants of the exchange rate pass-through. The well-known nominal rigidities phenomenon, i.e. the slow adjustment of consumer prices, is the basic foundation in this regard (Taylor (2000), Engel (2002)).

The recent literature has examined the relationship between the ERPT and the monetary policy regime. It shown that the decline of the transmission of the exchange rate movements to domestic prices is attributable, in large measure, to the modernization of monetary policy frameworks, which are more oriented towards prices stabilization and provide, for this purpose, a credible anchor for inflation expectations (Taylor (2000); Bailliu Fujii (2004); Gagnon and Ihrig (2004); Bouakez Rebei (2008); and Murchison (2009)).

In this respect, two levers, that are intended to reinforce each other, can be distinguished, namely the decrease in the persistence exchange rate and prices shocks and the reinforcing of the monetary policy credibility. Thus, according to these studies, made in different analytical frameworks (dynamic stochastic general equilibrium models, Structural VAR ... ..), the transmission of shocks tends to decrease in economies where inflation is low and where monetary policy is more credible. Thus, the credibility and effectiveness of monetary policy to fight inflation should lead firms to reduce their perception of the persistence of any negative impact of the exchange rate on inflation. In this perspective, the degree of pass-through drops because these firms will be less eager to transmit the fluctuations in exchange rates to prices.

Indeed, Devereux and Yetman (2002) have shown, in their model with nominal rigidities, that firms choose the optimal frequency of price adjustments, comparing the expected discounted value of losses triggered by indexing or not prices to the anticipated inflation related to the exchange rate movements. These authors have found that the losses caused by the absence of price adjustments are low, when monetary policy is credible and inflation is low and stable. Therefore, they have suggested that the ERPT is sensitive to the monetary policy regime, precisely because the degree of price stickiness is endogenous to the monetary regime.

This negative correlation between the credibility of monetary policy and the degree of the ERPT is so obvious in the context of inflation targeting policies. Indeed, when the central bank announces its explicit inflation target and acts to keep inflation around that target, the depreciation of the exchange rate forces the central bank to quickly tighten policy for preventing the negative impact of that depreciation on inflation, which is likely to reinforce the anchoring of inflation expectations (Eckstein and Soffer, Y. (2008)).

In fact, the decline of the degree of transmission of the exchange rate movements to prices is observed today even in developing countries, where that transmission was in the past stronger and faster than in advanced economies (Frankel, Parsley and Wei, 2005). The survey of the Bank for International Settlements shows that the decline of that transmission is explained in ten of the fifteen emerging countries of the sample by the implementation of inflation targeting policy (Mihaljek and Klau, 2008).

Conversely, a low degree of the ERPT could provide greater flexibility to the monetary policy and facilitate the implementation of an inflation targeting strategy (Choudhri and Hakura, 2001). Moreover, according to Devereux (2001), in a small and open economy with a high pass-through, the trade-off between output volatility and inflation volatility is more pronounced, regardless the rule of the monetary policy. But, with low pass-through, this trade-off disappears. In addition, several empirical works have shown that tradable goods are more sensitive to the exchange rates changes than the non-tradable ones. This differentiated response could also improve the effectiveness of the monetary policy (Edwards (2006); Belaisch (2003)).

Given the above, it turns out that the available literature attributes the decrease of the degree of the ERPT to prices to both micro and macro-economic variables. This has led some researchers to combine these two considerations. Campa and Goldberg (2002) have shown, in this context, that both factors affect that in OECD countries. Nevertheless, the micro-economic determinants outweigh at the long term.

III. Exchange Rate and Inflation in Morocco

Morocco has adopted a conventional anchoring system of its nominal exchange rate to a currency basket, replacing the exchange rate peg to the French franc which prevailed until May 1973. The composition and weighting of this basket has been modified at several times in order to better reflect the structure of its external economic relationship.

This administered floating regime and the real appreciation of the Moroccan dirham (MAD) that ensued have involved repeated devaluation policies during the 1980s and early 1990s to for reestablishing the external balance. However, despite this policy, the MAD has accumulated a nominal effective appreciation of nearly 25% during the 1990s.

This situation has penalized economic operators and affected seriously their international competitiveness, which has forced the authorities to abandon these policies of devaluation. This did not allow either to stabilize the MAD value (Figure 1).

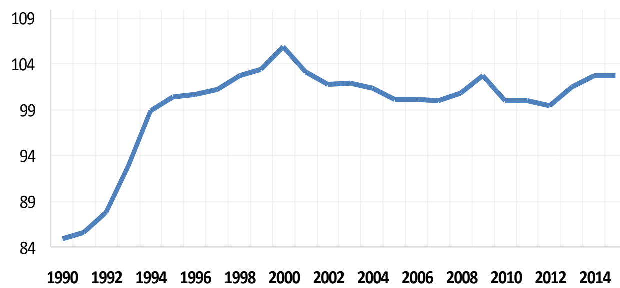

Figure 1 : Evolution of the index Nominal Effective Exchange Rate (NEER)

Source: IMF (IFS)

Anyway, it is widely admitted that the fixed exchange regime in Morocco has provided an important nominal anchor and protected the national economy of nominal shocks[3]. Thus, inflation has remained moderate and moved around an average of 2.5% over the period 1990-2015. It is only of 1.7% in average since 1996, year when Morocco has supplanted quantitative monetary policy in favor of a market techniques based policy. Not only inflation declined in level but also in volatility; which is clearly weaker than the NEER. Nevertheless, by categories, it turns out that the relative volatility of consumer price index of non-tradable goods (CPINT) to NEER is less important than that of consumer price index of tradable goods (CPIT).

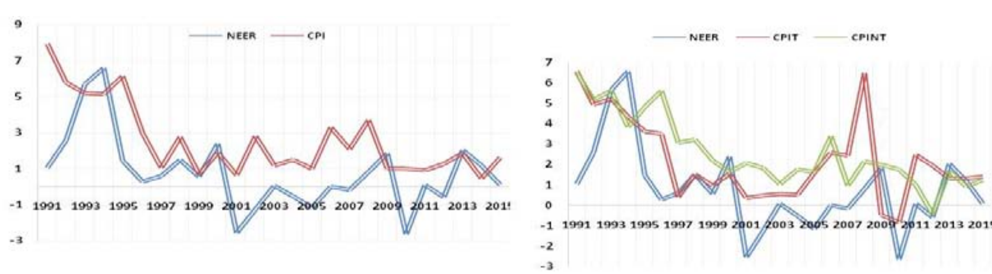

Figure 2 : Evolution of the NEER and CPI (Y toY change)

Source: IMF, BKAM et HCP

This dynamic of prices and the exchange rate suggests that variation of the later is not completely diffused to the domestic price. Does the supposed moderation of the exchange rate pass-through in Morocco can be explained the low inflation environment and the reform of monetary policy framework or, conversely, by microeconomic considerations? The following developments tend to give some elements of response.

[3] Several studies show, moreover, that there is no sign of misalignment of the MAD that could be prejudicial Moroccan economy in the last 20 years (see for example the reports of the IMF under the IV Article).

IV. Methodology

The empirical literature provides three main approaches to measure ERPT: Single equation econometric models (Olivei (2002), Campa and Goldberg (2005)), reduced VAR models (Faruqee (2006), McCarty (1999)), and structural macroeconomic models (Mwase (2006) Ca 'Zorzi et al (2007)).

In this work, we estimate the ERPT using a Structural VAR model, which has the advantage of distinguishing different shocks in the exchange rate derived from the dynamics of the economy. Three specifications are developed to measure the degree of transmission of the NEER changes to a particular price index: the general consumer price index, the tradable price index and the non tradable price index.

In its general form, the unrestricted VAR is defined as follows:

$$A(L)y_t = u_t \qquad with \qquad A(L) = \sum_{t=0}^{p} A_t L^t$$

With $A(L)$ a polynomial matrix; L: The lag operator; y_t vector of endogenous variables; u_{it} the series of innovations, which are expressed as linear combinations of the structural shocks:

$$u_t = \beta e_t (1) \qquad e_t : iid$$

The vector of endogenous variables is constituted by the following variables: the harmonized price index of partner countries $(hcpi_t)$, the nominal effective exchange rate (s_t), the consumer price index (p_t) and the output gap (gap_t).

The β matrix is obtained by introducing restrictions based on theoretical *priors*. The matrix presentation shock has the following form:

$$\begin{pmatrix} u_t^{hcpi} \\ u_t^{s} \\ u_t^{p} \\ u_t^{gap} \end{pmatrix} = \begin{pmatrix} 1 & \theta_1 & \theta_2 & \theta_3 \\ \alpha & 1 & \theta_4 & \theta_5 \\ \beta & \gamma & 1 & \theta_6 \\ \delta & \chi & \phi & 1 \end{pmatrix} \times \begin{pmatrix} e_t^{hcpi} \\ e_t^{s} \\ e_t^{p} \\ e_t^{gap} \end{pmatrix} \qquad (2)$$

Regarding the first specification, small economies such as Morocco cannot influence the dynamics of foreign prices unexpected movements, which are influenced by their own shocks. Therefore, we can write:

$$u_t^{ipch} = e_t^{ipch} \qquad (3)$$

Unexpected movements of the exchange rate are due to their own structural shocks because the exchange rate regime is fixed and managed exogenously by the monetary authority. Consequently, we can write:

$$u_t^{s} = e_t^{s} \qquad (4)$$

Unexpected movements of the CPI are due to unexpected movements in foreign prices, the structural shocks of the exchange rate and to the responses to its own shocks. However, they are not immediately affected by unexpected movements of the output gap. Under these assumptions, we can write:

$$u_t^{p} = \beta e_t^{hcpi} + \gamma e_t^{s} + e_t^{p} \qquad (5)$$

Finally, the output gap unexpected movements are due to the unexpected movements in foreign and domestic prices and structural shocks of the exchange rate:

$$u_t^{gap} = \delta e_t^{hcpi} + \chi e_t^{s} + \phi e_t^{p} + e_t^{gap} \qquad (6)$$

Overall, the shock system has the following form:

$$\begin{pmatrix} u_t^{hcpi} \\ u_t^{s} \\ u_t^{p} \\ u_t^{gap} \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ \beta & \gamma & 1 & 0 \\ \delta & \chi & \phi & 1 \end{pmatrix} \times \begin{pmatrix} e_t^{hcpi} \\ e_t^{s} \\ e_t^{p} \\ e_t^{gap} \end{pmatrix} \qquad (7)$$

As indicated above, our goal is to measure also the pass-through of changes in the exchange rate to both CPI components: the price index of tradable goods $(cpit_t)$ and the price index of non tradable goods $(cpint_t)$. In this perspective, we have developed, in addition to the general specification above, two other specifications to verify if the prices of these two categories of goods react differently to the exchange rate changes.

It should be noted that the specification to capture the sensitivity of tradable goods to changes in the exchange rate maintains the same shocks system above:

$$\begin{pmatrix} u_t^{hcpi} \\ u_t^{s} \\ u_t^{cpit} \\ u_t^{gap} \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ \beta & \gamma & 1 & 0 \\ \delta & \chi & \phi & 1 \end{pmatrix} \times \begin{pmatrix} e_t^{hcpi} \\ e_t^{s} \\ e_t^{cpit} \\ e_t^{gap} \end{pmatrix} \qquad (8)$$

The matrix to measure the degree of pass-through of non-tradable goods includes has implied certain arrangements in order to capture the Balassa-Samuelson effect and the substitution effect. Thus, the matrix representation of shocks has the following form:

$$\begin{pmatrix} u_t^{s} \\ u_t^{cpit} \\ u_t^{cpint} \\ u_t^{gap} \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 & 0 \\ \alpha & 1 & 0 & 0 \\ \beta & \gamma & 1 & 0 \\ \delta & \chi & \phi & 1 \end{pmatrix} \times \begin{pmatrix} e_t^{s} \\ e_t^{cpit} \\ e_t^{cpint} \\ e_t^{gap} \end{pmatrix} \qquad (9)$$

With e_t^s exchange rate shock, e_t^{cpit} prices shock of tradable goods, e_t^{cpint} price shock of non tradable goods and e_t^{gap} excess demand shock (output gap).

It follows in particular that unexpected movements in prices of non-tradable goods depend on both the structural shocks of the exchange rate and unexpected movements of the prices of tradable goods, which will depend, in contrast, only on the rate exchange shock. The following equations illustrate these restrictions:

$$u_t^{cpit} = \alpha e_t^s + e_t^{cpit} \quad (10)$$

$$u_t^{cpint} = \beta e_t^s + \gamma e_t^{cpit} + e_t^{cpint} \quad (11)$$

V. Results and Discussions

The methodology described above is applied to quarterly data covering the period 1990-2015. The following table provides some descriptive statistics of the data.

Table 1 : Descriptive statistics of the data

Variables	Mean	Median	Max	Min	S.D	S.D related to NEER volatility	N
CPIH	1,41	2,07	4,40	-14,42	3,33	-	99
CPI	2,50	1,98	8,90	-0,53	2,09	0,88	100
Non tradable CPI	2,54	2,08	7,52	-1,09	1,76	0,74	100
Tradable CPI	2,15	1,61	7,56	-1,71	2,02	0,85	100
Output gap	0,00	0,00	0,12	-0,07	0,03	0,01	104
NEER	0,77	0,54	7,68	-5,39	2,38	1,00	100

Source: Authors' calculations

Tests show that all of the series are stationary in first difference, except that of the output gap, which is stationary in level.

Table 2 : Tests of unit roots

Variables	ADF p-Value in level	ADF p-Value in first difference	Phillips-Perron in level	Phillips-Perron in first difference
p_t	0.151	0.000	0.151	0.000
gap_t	0.000	-	0.000	-
$cpit_t$	0.098	0.000	0.177	0.000
$cpint_t$	0.572	0.000	0.321	0.000
s_t	0.136	0.000	0.784	0.000
$hcpi_t$	0.718	0.000	0.699	0.000

Source: Authors' calculations

Overall, the empirical results validate the stylized facts of the particular context of Morocco. First, the impulse response analysis (Figures A.1, A.2 and A.3) suggests that a depreciation of the exchange rate leads to an immediate increase in the various price indices.

Nevertheless, the reaction of the price of tradable goods to the exchange rate changes is higher than that of non-tradable ones. Compared with the period 1990-2005, the impact of the exchange rate shock on prices decreased significantly over the period 2006-2015 and that shock dissipates today more quickly (6 quarters).

The incompleteness and the decline in responsiveness of prices to the exchange rate shocks are confirmed by our calculations of ERPT $\left(PT_{t,t+j}\right)$, understood as the ratio of the cumulative impulse responses prices $\left(P_{t,t+j}\right)$ following a shock in the exchange rate and cumulative impulse responses the exchange rate following its own shock: $PT_{t,t+j} = \sum_{i=1}^{T} P_{t,t+j} / \sum_{i=1}^{T} E_{t,t+j}$

The results show that ERPT is incomplete. It does not exceed 0.17 on average over the period 1990-2015. This incompleteness is confirmed by other similar works covering practically the same period of analysis. Indeed, the IMF estimated the short-term ERPT at 0.25 at end-2013 (IMF, 2016, p.16). Abeida and Sghaeir

(2012) found, for their part, an ERPT of 0.23 over the period 1990-2010 (Abeida and Sghaeir (2012), p.85). This is virtually the same level found by Bakkou and all (2015, p 519).

In addition to its incompleteness, the EPPT has dropped significantly over time, particularly since the modernization of the framework of monetary policy in 2006. The following table shows the ERPT price during the two periods under retained. It shows, moreover, the high reactivity of tradable prices to changes in exchange rates compared to prices of non-tradable.

Table 3 : Exchange Pass-through to prices

	1990-2005	2006-2015
ERPT to CPI	0.20	0.13
ERPT to tradable CPI	0.34	0.16
ERPT to non tradable CPI	0.13	0.08

Source: Authors' calculations

Several factors explain the low and the decreasing degree of ERPT in Morocco.

First, and as suggested by the theoretical works, the weak degree of the ERPT in Morocco would be linked to the low level of inflation observed since the mid-90s, which was favored notably by i) the fixed exchange rate regime that allowed import price stability (Figure A.4), ii) the compensation and price support mechanism, which has received significant budget allocations (Table A.2) iii) the fiscal policy oriented to the reduction of the public deficit over the period (1990-2008) and iv) the decrease in the frequency and level of the minimum wage increase (Table A3).

Second, the independence conferred to the central bank's monetary policy and the consecration of price stability as the primary objective since 2006 have contributed to reducing the ERPT degree. Indeed, a credible monetary policy that manages to effectively anchor inflation expectations reduces the level of ERPT. The estimation results confirm this fact widely verified internationally.

Third, the decline of the ERPT can be also explained by to the structure of imports, which is dominated by semi-manufactures and capital goods that undergo less the impact of transitory changes in the exchange rate. Indeed, these two categories of goods represent about half of imports over the period analyzed. Similarly, the importance of imports under the temporary admission regime (about a quarter on averages) may also explain the lower level of the ERPT.

Finally, the increasing openness of the national economy (opening rate of nearly 65% in 2014 against 40% in 1990) and the proliferation of free and preferential trade agreements with the its partners (about 60 countries) have allowed to the Moroccan economy to diversify its sources of supply and reduce consequently the degree of exposure to external price shocks.

VI. Conclusion

Measuring the impact of the exchange rate changes on inflation is particularly important for the case of Morocco, which plans to adopt an inflation targeting. To conduct such a policy, a thorough understanding in terms of the degree and magnitude of the effect of changes in exchange rates on different categories of the CPI is necessary.

In this paper, we showed that pass-through of exchange rate changes on prices in Morocco is incomplete, low and falling. Several factors explain this stylized fact: the structure of imports, the level of inflation, the modernization of the monetary policy, and the degree of openness of the Moroccan economy. The results also indicate that the reaction of prices of tradable goods is higher than the prices of non-tradable. These results are consistent with theoretical lessons as well as results of empirical investigations.

A moderate ERPT in Morocco is decisive at both for future direction of monetary policy and for choice of an optimal exchange rate regime. The current level of ERPT to CPI would be likely to strengthen the transition to a more flexible exchange rate regime, since than the variations in the exchange rate would be transmitted only partially. Similarly, this level of pass-through is also likely to fulfill successfully the targeting inflation strategy requirements.

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Appendix

Figure A.1 : Impulse responses of the CPI to shocks of exchange rate

1990-2005 | 2006-2015

Response to Structural One S.D. Innovations ± 2 S.E.
Response of DCPI to Shock 2

Response of DCPI to Structural One S.D. Shock 2

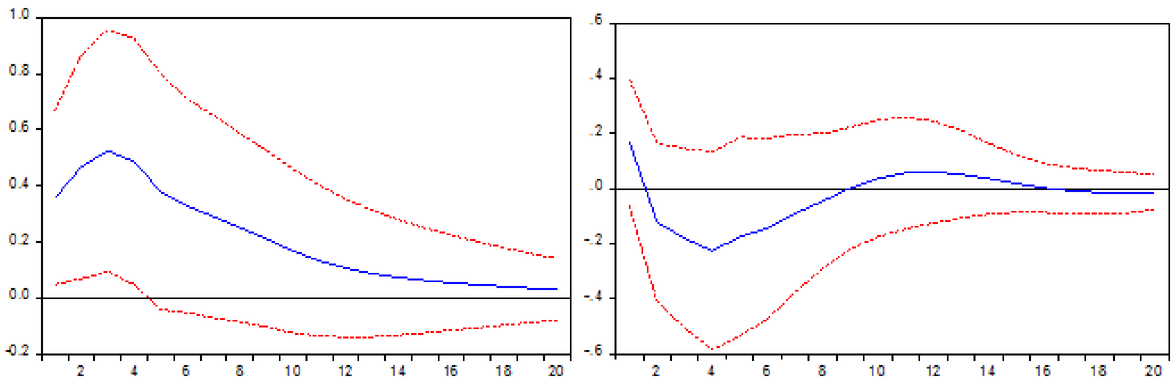


Figure A.2 : Impulse responses of the CPIT to shocks of exchange rate

1990-2005 | 2006-2015

Response to Structural One S.D. Innovations ± 2 S.E.
Response of DCPI_TRAD to Shock 2

Response to Structural One S.D. Innovations ± 2 S.E.
Response of DCPI_TRAD to Shock 2

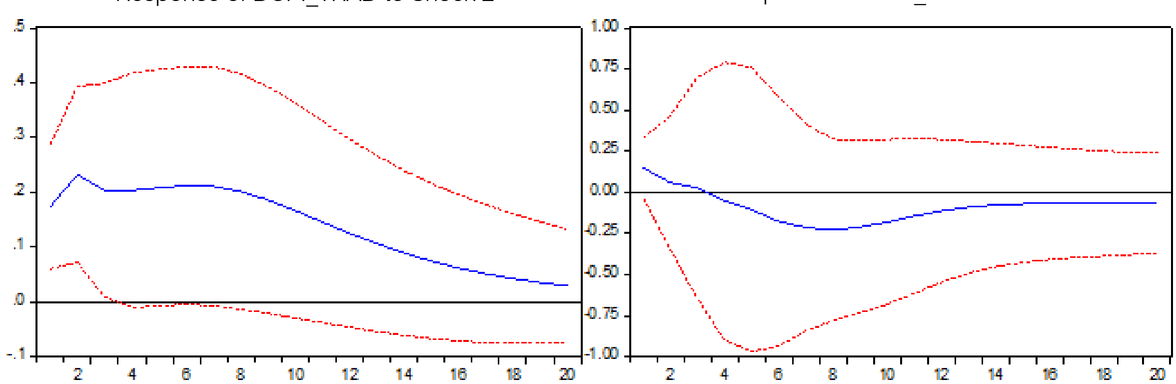


Figure A.3 : Impulse responses of the CPINT to shocks of exchange rate

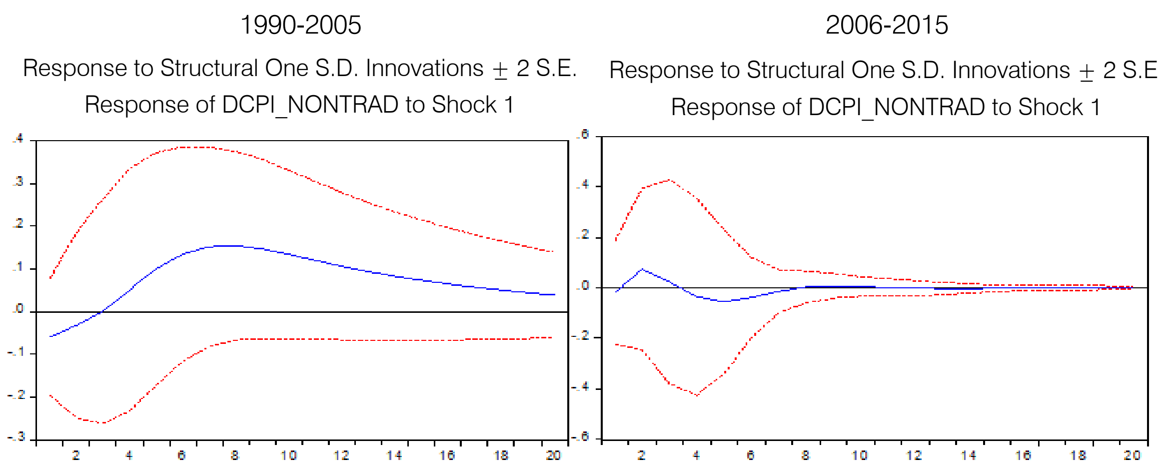
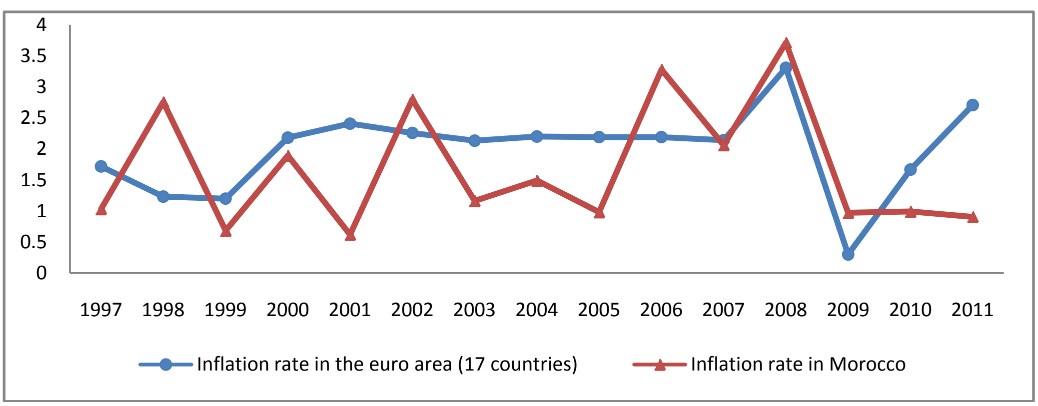


Table A.1 : Percentage share of imports by group of Use

	1998	2001	2003	2005	2009	2011	2012	2013	2014
Supplies, Beverages and Tobacco	11,6	12,4	8,4	8,5	9,2	10,8	10,7	10,7	9,32
Raw products	7,8	6,3	7,5	6,5	5,2	6,2	25,1	27,6	26,8
Semifinished products	23,1	21,2	22,6	22,2	20,3	21,4	6,34	5,94	4,67
Capital goods	25	18,5	22	20,9	24,8	19,1	21,4	19,9	21
Consumer goods	23,5	23,9	23,7	20,3	20	17,2	19,0	18,9	21,1
Energy and lubricants	9	17,6	15,6	21,4	20,5	25,3	17,2	16,8	16,9

Source : Exchange Office (Morocco)

Figure A.4 : Inflation in Morocco and in Euro area



Source : Eurostat and HCP; Authors' calculations

Table A.2 : Compensation expenditures and oil prices

	2000-2005	2006-2010	2011	2012	2013	2014
Compensation (MAD MM)	6522,0	20282,8	48830,0	54870,0	41600,0	32648,0
Compensation as % of total public expenditures	5,5	11,4	20,3	21,2	16,5	12,6
Brent Oil Price ($ / barrel)	30,3	72,7	106,0	105,0	104,1	96,2

Source: World Bank & Ministry of Economy and Finance (Morocco)

Table A.3 : Revaluation of the minimum wage and public deficit

	Growth rate of the minimum wage		Budget balance (% of GDP)
01/05/1990	10%	1990	-3,5
01/01/1991	15%	1994	-3,29
01/05/1992	10%	1996	-3
01/07/1994	10%	1998	-3,4
01/07/1996	10%	2000-05	-3,7
01/07/2000	10%	2006	-1,7
07/06/2004	5%	2007	0,6
01/07/2004	5%	2008	0,4
01/07/2008	5%	2009	-2,2
01/07/2009	5%	2010	-4,7
01/07/2011	10%	2011	-6,1
02/07/2012	5%	PLF 2012	-5

Source: Ministry of Economy and Finance and Ministry of Employment and Social Affairs (Morocco)

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Impact of Fair-Trade Coffee Certification on Smallholder Producers: Review Paper

By Rijalu Negash
Jimma University

Abstract- This paper is focus on the impact of Fair trade-certified coffee and the impact of the broader social movement termed Fair Trade. Many of the studies focus on the outcomes (e.g. higher incomes, or new skills) or livelihood impacts. In this paper different dimension of Fair trade impact including: economic, quality of life/wellbeing, social, empowerment and environmental impacts are explored.

Key Terms: *fair-trade, income, social, environments.*

GJMBR - B Classification : *JEL Code : E20*

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Impact of Fair-Trade Coffee Certification on Smallholder Producers: Review Paper

Rijalu Negash

Abstract- This paper is focus on the impact of Fair trade-certified coffee and the impact of the broader social movement termed Fair Trade. Many of the studies focus on the outcomes (e.g. higher incomes, or new skills) or livelihood impacts. In this paper different dimension of Fair trade impact including: economic, quality of life/wellbeing, social, empowerment and environmental impacts are explored.

Key Terms: fair-trade, income, social, environments.

I. Introduction

Growing coffee has traditionally provided a precarious existence for the 25 million smallholders who grow 80 per cent of the world's coffee. A lack of government or private investment in their often isolated rural communities means many growers live in rudimentary conditions lacking basic amenities such as decent housing, clean water and electricity, with insufficient provision of healthcare and education, and poor roads and transport links.

Income is closely linked to coffee production which is frequently disrupted by unfavorable weather. Now climate change is making livelihoods even more unpredictable. Being organized in co-operatives strengthens the position of farmers in commercial activities. Selling on Fair trade terms provides a more stable income, while the Fair trade Premium can be invested in building farm businesses, diversifying income to reduce dependence on coffee and in community improvements. Fair trade offers security in good times and bad, and in addition to the price paid for their coffee, helps them to improve their crop, strengthen their businesses and build a stronger future for their communities. This paper review the welfare impact of coffee certification on small-scale coffee producers and evaluate the potential of fairtrade coffee in reducing poverty.

With climate change threatening shortfalls in production and higher prices, it is more important than ever that manufacturer; retailers and consumers support coffee growers in ensuring a sustainable supply of a commodity enjoyed by millions of people around the world (fair-trade foundation, 2012).

Ethiopia is the origin of Arabica coffee. Coffee is deep-rooted in both the economy and culture of the country. Though coffee is a traditionally worldwide traded cash crop with new markets emerging, many coffee-dependent developing countries such as Ethiopia are struggling with production and marketing of their coffee. In the early 2000s, a historic world market price slump hit millions of coffee farmers hard, especially smallholder producers in Africa and Latin America (Ponte, 2002). The volatility of coffee markets in combination with poor production infrastructure and services have sunk the majority of coffee producers in developing countries in low-input-low-output cycles and structural poverty. In the recent past, due to the interplay between increasing poverty of coffee smallholders in major producer countries and growing demands for healthier and more socially and environmentally-friendly produced coffee in larger consumer countries, certification of cooperatives has gradually gained wider significance worldwide (Petit, 2007; Stellmacher and Grote, 2011). Especially Fair trade certification is expected to significantly contribute to better livelihoods of smallholder coffee farmers by enhancing their income through premium prices and stabilizing it through minimum prices.

II. Definition of Fair-Trade

The Fair-Trade movement is an effort to link socially and environmentally conscious consumers in the North with producers engaged in socially progressive and environmentally sound farming in the South. It is an attempt to build more direct links between consumers and producers that provide the latter with greater benefits from the marketing of their products than conventional production and trade have allowed, while breaking down the traditional alienation of consumers from the products they purchase.

Fair-trades a movement with considerable potential, though it makes no claim to be able to resolve single-handed the seemingly down ward spiral of problems associated with the current neo-liberal globalization regime, which has led to increasing impoverishment, disempowerment, and alienation on a worldwide scale. It is one of the more dynamic examples of the initiatives, campaigns, and movements that are constituent elements of what Peter Evans has described as 'counter hegemonic networks' (Evans,2000), characterizing a process of 'globalization from below' (Portes1999). These efforts represent a multi faceted response to globalization that seeks to re-regulate global production, trade, and consumption in ways

Author: Jimma University College of Agriculture and Veterinary Medicine, Department of Agricultural Economics and Extension.
e-mails: rijalunegash@yahoo.com, rnegash@gmail.com

more protective of and beneficial to people and the environment. In this context Fair Trade becomes a case worthy of investigation in its own right, and also a vehicle for understanding the broader incipient pursuit of a fundamentally different form of globalization.

Fair-trade began in European early 50 years ago with church-based initiatives to sell handcrafts from Africa and elsewhere (Stecklow and White 2004).

III. Economic Impact of Fair-Trade Certification on Coffee Producers

Smallholder farmers producing for Fair Trade market outlets are usually considered to benefit from better prices and stable market outlets. Ruben R. And Ricardo Fort, (2011), compare the net effects on production, income and expenditures, wealth and investments, and attitudes and perceptions Fair Trade farmers and non Fair Trade producers of organic and conventional coffee from Peru. After careful matching, find only modest direct income and production effects, but significant changes in organization, input use, wealth and assets, and risk attitudes.

Moreover, important differences between farmers with early and more recent FT affiliation are registered.

Eco-certification of food and other agricultural products has been promoted as a way of making markets work for sustainability. Certification programs offer a price premium to producers who invest in more sustainable practices. The literature on the impacts of certification has focused primarily on the economic benefits farmers perceive from participating in these schemes. These benefits, however, are often subject to price variability, offering only a partial explanation of why farmers join and stay in certification programs.

In Ethiopia, the use of socio-economic, environmental and/or health-concerned fair trade certification standards in agriculture is a new phenomenon compared to other countries particularly in Latin America (Stellmacher & Grote, 2011).

In recent years, however, certification of agricultural products in Ethiopia increasingly gained attention of international certification agencies and standard holders, governmental and non-governmental development agencies, and private companies supplying to specialty markets. The overwhelming majority of fair-trade certification activities in Ethiopia focus on coffee (coffea Arabica) which is both: a) the backbone of the countries' economy and income source for millions of Ethiopian smallholders that live in or close to poverty and b) a resource with considerable high potential to be marketed as a specialty gourmet product on the worlds' major coffee markets. Coffee fir trade certification in Ethiopia is mainly undertaken within cooperative systems being historically rooted in local Agricultural Service Cooperatives established in the 1970s by the then military derggovernment. Since the 1990s, the ruling coalition in Ethiopia, the EPRDF-led government, promoted restructuring of cooperatives in the coffee sector and formation of coffee cooperative unions as umbrella associations. These unions are legally allowed to by-pass the national coffee auction system since 2001 and the Ethiopian Commodity Exchange1 (ECX) since 2009, to directly sell to international exporters (McCarthy, 2001; Petit, 2007; Stellmacher, 2007; FDRE, 2008). Despite the growing number and vigor of newly established value chains for fair-trade coffees from Ethiopia with presumably drastic and multidimensional impacts on livelihoods of thousands of coffee producing smallholders throughout the country, there is still a considerable lack of empirical local studies that can substantiate and quantify the welfare impact of certification on small-scale coffee producers' livelihoods in Ethiopia.

Certification of coffee cooperatives has in total a low impact on small-scale coffee producers' livelihoods mainly due to (1) low productivity, (2) an insignificant price premium, and (3) poor access to credit and information from the cooperative. Differences in production and organizational capacities between the local cooperatives are mirrored in the extent of the certification benefits for the smallholders. 'Good' cooperatives have reaped the benefits of certification, whereas 'bad' ones did not fare well. In this regard the "cooperative effect" overlies the "certification effect" (Pradyot Ranjan., 2012). In the study carried out assesses the impact of Fair Trade organic coffee production on the well-being of small-scale farmers in Nicaragua, the results reveals that Fair Trade organic production raises farmer income when low intensity organic farming is an alternative to low-intensity conventional farming. With higher intensities of management, the economic advantages of Fair Trade organic production largely depend on prices in the mainstream market. (Valkila Joni, 2009)

Fair-trade offers a means of strengthening the livelihood system of many small producers in the northern regions of Nicaragua by generating a new source of income and employment. Producers' general understanding of fair-trade is that a better price can be obtained for higher quality coffee. Producers were eager to learn new production methods to improve quality even though this initial transition could result in significantly lower coffee yields and increase the time spent on farming activities (Bacon, 2002a). Evidence of the impacts of coffee certification around the world is mixed but generally positive in terms of producer benefits for Fair trade (although for relatively small numbers of producers as supply exceeds demand) and more mixed for other certifications depending on the location and the practices of growers before certification. Some growers, eg in Salvador, have been disappointed by low sales and low premiums. The evidence from the Brazil survey is broadly consistent with this picture worldwide. Revenues for fair-trade coffee growers have generally increased as a result of fair-trade certification and access to export markets has been facilitated. This is particularly striking for the Fair trade certified growers. (Pagiola S., and Ruthenberg, M, 2002).

In many cases, the principal advantage of fair trade to small-scale producers is its access to the world market and its niche markets (organic, gourmet, high quality). But fair trade is not confined to economic impacts. Over and above higher income, those involved in it believe that fair trade makes an important contribution to development. This comes in many forms, which include the creation and maintenance of a sometimes complex system of co-operatives; the training of small-scale producers and the development of their entrepreneurial spirit; and, probably most important, the sense of solidarity generated within the producer groups. Although most studies focus on the economic impact of fair trade, its greatest advantages may well be far broader. Previously marginalized and isolated, driven to take risks as a result of their dependence, fair trade has given small-scale producers the economic security to enable them to develop and take charge of their own lives within the co-operative network (Pirotte Gautier, et.el.2006)

Governments, donors and NGOs have promoted environmental and social certification schemes for coffee producers as certified market channels are assumed to offer higher prices and better incomes. Additionally, it is presumed that these certifications contribute to poverty reduction of smallholders. The results of the study conducted in Nicaragua show that although farm-gate prices of certified coffees are higher than of conventional coffees, the profitability of certified coffee production and its subsequent effect on poverty levels is not clear-cut. Per capita net coffee incomes are insufficient to cover basic needs of all coffee producing households. Certified producers are more often found below the absolute poverty line than conventional producers. Over a period of ten years, the analysis shows that organic and organic-fair trade farmers have become poorer relative to conventional producers. The authors conclude that coffee yield levels, profitability and efficiency need to be increased, because prices for certified coffee cannot compensate for low productivity, land or labor constraints (Tina D. Beuchelt, Manfred Zeller, 2011).

The Fair trade guaranteed minimum price is of particular value when market prices fall below production costs – reducing the need to migrate or to mine assets during such periods of hardship. According to Imhoff and Lee (2007), the guaranteed floor price paid to producers through Fair trade results in more stable incomes and is consequently one of the most important direct benefits that accrue to coffee producers (Hopkins, 2000; Raynolds, 2002;Murray et al, 2003; Pérezgrovas & Cervantes, 2002; Milford, 2004; Imhoff and Lee, 2007). Their own study in Bolivia shows that Fair trade also gave higher returns to producers than other organizational arrangements available to producers in their study area in Bolivia. Arnould*et.Al.* (2006), in their study reveals that "participation in Fair trade is like a life jacket, a shock absorber, or a buffer against the effects of the volatility global market capitalism visits on the poor in developing countries. It is a safety net, but given current pricing levels, production regimes, and farm sizes, Fair trade coffee alone is not the solution to the problems of the rural poor".

Utting-Chamorro (2005) maintains that Fair trade played an important role in providing small coffee farmers in Nicaragua with an alternative economic approach. Even though producers received only between 1/3 and 2/3 of the Fair trade price due to deductions for community fund, export costs, processing costs, capitalization fund and debt repayments (deductions which may benefit producers in the long-term), this was still sufficient for them to remain secure when others were losing their land .Cooperative in Bolivia showed that, through Fair trade, it has become the main motor for economic development in the Yungas Mountains. Income from Fair trade has provided economic stability for the organization and its members, enabling it to build up its working capital such that it now no longer needs external credit or pre-financing. The cooperative has a good internal financial management system and external auditing, resulting in transparent resource mobilization. This stable financial situation has translated into benefits for members, such as increased ability to keep children in school and send them for further education.

A comparative study of impact of Fair trade on coffee and banana producers in Peru, Costa Rica and Ghana was made by Ruben, Fort and Zuniga (2008). In most cases, involvement in Fair trade increased output and/or yield of their key crops. They also found that positive average net household income effects were registered for most Fair trade situations. In most of their case studies, revenues derived from Fair trade activities represent by far the major income component, with an average income share of between 70 to 90 percent. They also found that, in general, those involved with Fair trade devoted relatively more of their expenditure on long-term investments in household durables, house improvements and particularly education.

Fair trade cannot remove all market risks for small producers. Jaffee, (2007), while noting that Fair trade farmers are still affected by market fluctuations, also finds positive economic benefits accruing to participants from the guarantee that a fair price is available to them, enabling them to make longer-term

Global Journal of Management and Business Research (B) Volume XVI Issue V Version I Year 2016

investment decisions. A number of authors provide evidence that Fair trade producers enjoy greater access to credit than their non-Fair trade counterparts to cover harvest expenses & other costs. Such credit arises from pre-financing by the buyer, credit schemes run by the producer organisation (at advantageous interest rates), or from traditional credit sources, who view the Fair trade farmers as having a better credit rating than others due to their better incomes and long-term contracts. In Ghana, access to credit permitted farmers to engage in alternative livelihood activities (Ronchi, 2002b) while the case studies on banana and coffee in Peru, Costa Rica and Ghana reviewed by Ruben et al (2008) reveal substantial and significant positive effects for Fair trade households with respect to credit access and asset value

IV. Social and Empowerment Impacts

The study analyzes the possibilities and challenges involved in the Fair Trade certification as a movement that seeks to improve the living conditions of small-scale coffee growers and coffee laborers in the global South. Six months of fieldwork was conducted in 2005–2006 to study a wide range of farmers, laborers, cooperative administrators, and export companies involved in Fair Trade coffee production and trade in Nicaragua. The study conducted by Valkila Joni.et.al, (2008) in Fair Trade coffee production and trade in Nicaragua indicate that the Fair Trade's opportunities to provide a significant price premium for participating farmers largely depend on the world coffee prices in the mainstream markets. While Fair Trade has encouraged the social networks of participating farmers and strengthened the institutional capacities of the involved cooperatives, the ability of the Fair Trade to significantly enhance the working conditions of hired coffee laborers remain limited.

Fair Trade seeks to transform North/South relations by fostering ethical consumption, producer empowerment, and certified commodity sales. This initiative joins an array of labor and environmental standard and certification systems which are often conceptualized as "private regulations" since they depend on the voluntary participation of firms. The author argue that these new institutional arrangements are better understood as "social regulations" since they operate beyond the traditional bounds of private and public (corporate and state) domains and are animated by individual and collective actors. In the case of Fair Trade, the author illuminate how relational and civic values are embedded in economic practices and institutions and how new quality assessments are promoted as much by social movement groups and loosely aligned consumers and producers as they are by market forces. This initiative's recent commercial success has deepened price competition and buyer control and eroded its traditional peasant base, yet it has simultaneously created new openings for progressive politics. The study reveals the complex and contested nature of social regulation in the global food market as movement efforts move beyond critique to institution building (Laura T. Raynolds, 2012).

Fair Trade certification may have important social effects on small-scale producers but empirical evidence is limited. The study conducted in Rwandan coffee farmers show a negative association between Fair Trade and farmer trust in cooperative leadership and a positive association with a perceived higher level of participation of women. Social capital is linked most significantly to farmers' interaction with their neighbors. (Sara D.et al., 2012).

Increased investments and integrated strategies will be needed to reduce threats to food security, livelihoods, and biodiversity associated with the rapid spread of coffee leaf rust and falling commodity prices (Christopher M., Bacon. et.el, 2014).

V. Environmental Impacts

In recent years, shade coffee certification programs have attracted increasing attention from conservation and development organizations. Certification programs offer an opportunity to link environmental and economic goals by providing a premium price to producers and thereby contributing to forest conservation.

However, the significance of the conservation efforts of certification programs remains unclear because of a lack of empirical evidence. The study conducted on impact of a shade coffee certification program on forest conservation in the Belete-Gera Regional Forest Priority Area in Ethiopia, found that forests under the coffee certification program were less likely to be deforested than forests without forest coffee. By contrast, the difference in the degree of deforestation between forests with forest coffee but not under the certification program and forests with no forest coffee is statistically insignificant. These results suggest that the certification program has had a large effect on forest protection, decreasing the probability of deforestation by 1.7 percentage points (Ryo Takahashi, Yasuyuki Todo, 2013).

Good environmental practices were commonly found to be being practised according the majority of studies, although it is not possible to generalise across different commodities and situations without more systematic evidence. For instance, non-Fair trade farmers are almost twice as likely as Fair trade producers in Guatemala to use agrochemicals (Arnouldet al 2006). Mexican Fair trade coffee production is now almost synonymous with organic production, leading to clear environmental benefits (Jaffee, 2007).

Given the benefits of shade-grown over sun-grown coffee, the authors feel that it is important that FLO weigh up the social, environmental and economic benefits and costs of including a requirement for shade(and, if possible, forest-mimicking multi-strata shade) production in Fair-trade coffee in order to ensure that positive environmental impacts are maximized. Murray et al (2003) report that the Majomut cooperative in Chiapas used part of its Premium to hire a community organic farming promoter, which has allowed farmers to convert their coffee and other crops to higher-income generating, diversified and more ecologically sound organic production.

VI. Conclusions

This extensive review of the literature finds strong evidence that Fair trade provides a favourable economic opportunity for smallholder farming families who are able to form producer organizations and provide products of the right specifications for the market. A high proportion of the studies reviewed found higher returns and more stable incomes as clear benefits enjoyed by Fair trade producers from sales to Fair trade markets compared to sale into conventional ones. Unfortunately, there is limited evidence of the impact on workers of participation in Fair trade, and more research is required to shed light on the changes occurring on plantations as a result of engagement with Fair trade.

Many of the studies emphasize the importance of basing assessments of Fair trade impact on more than income differentials. Consideration of a broad range of welfare/quality of life and empowerment indicators is required. A more thorny issue is the degree to which Fair trade alone can enable producers to escape poverty. Whilst a few of the studies mention dramatic improvements in livelihoods, most emphasize that producer families are still only surviving and covering basic needs. Those within the Fair trade movement would not claim that Fair trade can solve all the problems of rural development, and it is important not to expect too much of Fair trade. But in assessing impact it is important to consider the relative contribution that Fair trade can make to tackling poverty, the cost effectiveness of the approach compared to other kinds of intervention and what else needs to be done in a particular situation to tackle poverty

Fair trade is seen as having a positive effect in enabling smallholder producer organizations convert to certified organic coffee production, bringing environmental benefits. There is strong evidence that in relation to access to credit Fair trade has performed well – a number of authors provide evidence that Fair trade provides greater access to credit than their non Fair trade counterparts. With regard to the Fair trade premium there is a dearth of information about the impact of activities undertaken. The use of the premium varies. In some cases the premium has been valued more as a means of survival for economically vulnerable producers, rather than as a source of funding for social initiatives.

There is evidence that Fair trade is promoting good environmental practices in agricultural production, especially in coffee, although more evidence is needed before generalization across commodities is possible. There is strong evidence of positive empowerment impacts for individual producers and producer organizations flowing from Fair trade participation. A large number of studies found improvements in smallholder market knowledge and negotiating skills (an important strategic impact) with Fair trade support being of particular importance in contexts of marketing and trading reform.

A few of the studies focus on wider impacts and, a number of studies highlight demonstration effects. Organic production in coffee and vegetables has spread between farmers in one example and improved labour standards on a Fair trade banana plantations has encouraged other plantations in the region to make changes. A small number of studies suggest that there might be negative externalities, but no empirical evidence was found of this occurring in practice and in fact a higher number found positive influence on local market prices for non-Fair trade farmers.

Several studies note the critical role Fair trade has played not only in supporting individual producers in times of real hardship, but of enabling co-operatives to survive economic shocks and stresses – particularly the Fair trade coffee co-operatives during the coffee crisis. It is also necessary to assess how Fair trade can help farmers and workers and their organisations to cope in the face of sudden shocks as well as longer term trends and uncertainties such as climate change. There is strong evidence that Fair trade support leads to a strengthening of producer organizations, in terms of their internal democratic workings and participation, although there are still weaknesses to be addressed in some cases. Crucially, Fair trade impact assessment should be based on the views of participating farmers and workers (as well as other affected stakeholders). There is no easy solution, but furthering understanding of how Fair trade has an impact in different contexts based on the perspectives of farmers and workers is a critical first step along the way.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

A Study of Women Workforce in Corporate Sector: With Reference Provision of Companies Act, 2013

By Dr. Soma Roy Dey Choudhury
Assam University

Abstract- Gender inequality, which is sometimes called sex discrimination, means receiving unequal treatment based solely on gender. Women are most commonly the subject of gender inequality in the workplace. The contribution of women in corporate sector is essential for the success and prosperity of nations across the world. In spite of many odds women across the glove continued to make incredible progress. However the role of women in economic value creation has not been recognized universally rather they are playing a supportive role in economic value creation. According to NASSCAM, the ratio of men and women in Information Technology and Information Technology Enabled Services sector is 65:35 by the year 2010. The Watson Wyatt study says that the younger generation of women in India is expected to achieve educational parity with men by 2016. So corporate recruiters, are also enthusiastic to hire women for successful management practices and adopted a new provision for women representation on Board in Companies Act 2013.

Keywords: women, gender, inequality, income disparity, companies act 2013 and corporate world.

GJMBR - B Classification : JEL Code : E29

ASTUDYOFWOMENWORKFORCEINCORPORATESECTORWITHREFERENCEPROVISIONOFCOMPANIESACT2013

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Keywords: women, gender, inequality, income disparity, companies act 2013 and corporate world.

I. Introduction

Women have always helped men and the society, for achieving well-rounded development and progress, significantly both in domestic and social life. Again, in the occupational and professional domains, women have an ever-increasing participation in almost all fields of the broad economic sectors of business and commerce, professions, industries, and services, at the levels varying from lower to higher hierarchies. Women have also entered the board rooms of many companies, of course in a limited way.

The importance of women's participation in economic activities bringing women in reach of the development process is widely recognised as vital for the advancement and growth of women in India. History says women has participated in developmental activities but has remain un-recognised. In a country like India, agriculture continues to absorb and employ 2/3rd of the female work force but fails to give them recognition of employed labour (Ghosh and Ghosh, 2014).

The Government of India declared 2001 as the Year of Women's Empowerment (Swashakti). The National Policy for the Empowerment of Women was passed in the same year. According to a report by Thomson Reuters, India is the "fourth most dangerous country" in the world for women, India was also noted as the worst country for women among the G20 countries, however, this report has faced criticism for its inaccuracy. In 9 March 2010, one day after International Women's day, Rajya Sabha passed the Women's Reservation Bill requiring that 33% of seats in India's Parliament and state legislative bodies be reserved for women.

On March 9th 2010, one day after International Women's Day, Rajya sabha passed the Women's Reservation Bill, ensuring 33% reservation to women in Parliament and state legislative bodies.

According to the findings of a new study by Grant Thornton, titled International Business Report, the position of women in senior positions in the Indian work force fell from 19% in 2013 to 14% in 2014. What is even more alarming the report notes , is that despite the increasing impetus to improve female participation in the work force and address the lack of women at the top, half of all Indian business have no program to support or mentor women nor do they plan one in the near future. The Universal Declaration of Human Rights, adopted in 1948, enshrines "the equal rights of men and women", and addressed both the equality and equity issues. In 1979 the United Nations General Assembly adopted the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) for legal implementation of the Declaration on the Elimination of Discrimination against Women. Described as an international bill of rights for women, it came into force on 3 September 1981.

Any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field.

Author: Assistant Professor, Commerce Assam University, Silchar.
e-mail: sribasgoswami@hotmail.com

Inequalities in India can be seen indifferent areas like

Sex ratio-survival inequality

Life expectancy at birth-natality inequality

Women literacy, women in politics-unequal facilities

Employment and property rights-ownership inequality

Domestic violence and physical victimization

The Gender related Development Index (GDI) is an indication of the standard of living in a country developed by the United Nations (UN)

It aims to show the Inequalities between men and women in the following areas

Life expectancy

Education (the adult literacy rate and the combined primary to tertiary gross enrollment ratio

Estimated Earned Income

Human Development Report 2004-05

HDI Value 0.619 Rank 128	Life Expectancy at Birth 63.7 (in Years)	Adult Literacy Rate (% of ages 15 and older) 61.0	Combined Gross School Enrollment Ratio (%) 63.8	GDP per capita (PPPUS $) 3452
GDI as % of HDI 97.0% Rank 138	Life Expectancy at Birth (in Years) 104.7%	Adult Literacy Rate (% of ages 15 and older) 65.2%	Combined Gross School Enrollment Ratio 87.7%	

Taking into consideration the productive and optimistic participation of women in corporate sector, the present study “Analysis of Women Participation in Indian corporate Sector has been undertaken with the following specific objectives

II. Objectives of the Study

a. To study the trend of women participation in corporate sector in India
b. To study the contribution made the Companies Act 2013 for the development and empowerment of women in India.

III. Methodology

The present research paper is based on the secondary data. The data has been collected from, different annual reports and other websites. The data covered is from 2004-05 to 2013-14. The data is analysed by using different Table.

Only five percent of working women in India make it to senior leadership positions in the corporate sector, compared to the global average of 20 percent, said a study released by NDTV.

The gender-based research carried out by Anupriya Singh of Delhi-based Lal Bahadur Shastri Institute of Management said there was "gender inequality" in placement of women in the corporate sector in India. According to the study, women's representation at the board level was lesser at just two percent.

The study said that in India, women's strength in the labour force stands at 28 percent at the junior level, 14.91 at the middle level and 9.32 percent at the senior level.

From being the lowest in the list of overall women's participation in the workforce, India ranks at the top in the dropout rate as well. The primary reasons for high dropout rate in India are child care and family responsibilities, including care for the elderly. Women often succumb to the 'daughterly guilt' where they take upon themselves the responsibility for the care of elders in the family and are thus forced to push their careers behind as 'secondary'," Singh said. India is once again the worst performer in this regard, with 48 percent of women dropping out between the junior and middle level, Singh said.

The research was carried out following the Companies Act 2013 - that made it mandatory for public and private companies with a given yearly turnover to have at least one woman director - and now the SEBI's extended deadline to enforce the same.

a) *Trend of women participation in corporate sector in India*

"Women make 70% of the purchasing decisions at home. Yet, women entrepreneurs get only 1% of the global procurement business. They are missing in the supply chain. They need to understand the needs of the market better (Elizabeth Vazquez, CEO of WeConnect International).

In 2012, an international consulting and management firm called Booz & Company released “The Third Billion”, a global ranking of the level of economic empowerment attained by woman on 128 countries. The indicators used included equal pay for equal work, non-discrimination policies, the male-to-female-male employee ratio, and equality in terms of female managers and senior business leaders. India rated quite poorly at spot 115. Further, the International Labour Force recently reported that the rate of female participation in the total labour force in India has fallen from 37% in 2004-05 to 29% in 2009-10, leaving India at the 11th lowest spot out of 131 countries.

Gathering of quantitative and qualitative data from the six largest publicly-traded Indian software companies, provide insight into state of female employment in one of the most important and rapidly growing economic sectors in the country. Using NASSCOM's annual industry ratings from 2007-2012, the study has put together a list of the six software companies headquartered in India that appeared in the top five spots at least twice between the years 2007-2012. These companies are Tata Consultancy Services Ltd., Infosys Ltd., Wipro Ltd., HCL Tech Ltd., Tech Mahindra and Mahindra Satyam.

Table 1.1 : Representation of Women in Indian IT Industry

Name of IT Industry	Number of Women on Board	Number of Women Holding Executive Management Position
Tata Consultancy Services Ltd	1/14	2/30
Wipro Ltd	0/12	2/23
Infosys Ltd	1/15	1/14
HCL Tech Ltd	1/19	0/18
Tech Mahindra	0/11	1/7
Mahindra Satyam	1/16	0/6

Source: NASSOCAM's Annual Report

Women's participation in the organized workforce in India is lower than in the other countries due to historic, traditional and cultural reasons, says Subash A.K. Rao, director of human resources at Cisco's India arm. "They (the other countries) have had their women participate in the organized workforce earlier than us (Indians). It is a journey... and we are only going up."

The percentage of women in multinational companies in India is just 25% compared with 42.9% in China, a study has found.

In India, the percentage of women in junior management in the 11 multinational firms surveyed is at least 30, but drops to less than 10 at the senior level.

In a study on four countries the Gender Diversity Benchmark for Asia was done, the proportion of women in multinationals across junior, middle and senior management levels was the lowest in India. The proportion of women employees in Japan and Singapore is 33.8% and 43.8%, respectively.

Women exit from corporate sector due to family pressure and child rearing which is one of the biggest problems, says Jessie Paul, chief marketing officer and a member of the diversity council at Wipro Technologies Ltd, the global arm of India's third largest software firm by revenues. "It is not so easy to come back after passing a long time at home. The other people (whom you worked with) would have reached a certain place" (Poornima Mohandas, 2009). Motherhood is traditionally the fulcrum of an Indian women's identity her higest achievement (kakar 1988). It confers on her a sense of respectability and authority, thus strengthening her position in her conjugal home.

Chaplin, (1985) stated that women rarely engage in paid employment as it is stigmatized as a sign of financial misfortune and a claim on their husband's bread winning capabilities.

Fernandes, (2006) argues that due to restructuring and retrenchment many multinational companies are offloading complex managerial tasks to secretarial staff. In spite of having their management degrees many secretarial and administrative staff find it difficult to join the management track due to their lack of cultural capital. They remain in administrative jobs which are usually associated with short term contracts and often at risk of retrenchment.

Table 1.2 : Gender wise Estimates of Employment in India

Employment Measures	Men	Women	Total
Workforce (in thousands)[a]	3,36,592	1,29,678	4,66,270
Workforce Participation Rate (%)[a]	81.1 % of Population aged over 15 years	33.1% of Population aged over 15 years	57.8% of Population aged over 15 years
Employment in Organised Sector (in thousands)[b]	45,784	10,716	56,450
Gender Composition of Organised Sector (%)[b]	81%	19%	100%

IT Workforce in (in thousands)[c]	1629	671	2300
Gender Composition of IT workforce (%)[c]	70% of IT workers	30% of IT workers	100%

a ILO EAPEP (Estimate and Projections for Economically active population for 2008
b National Informatics Centre, Ministry of Labour, Government of India (2009); the above estimates are for the year 2006,published in 2009
c Estimates for 2008 based on (NASSCOM, 2010a) and (NASSCOM,2009)

The above Table 1.2states the proportion of adult women in paid employment in India is only about 33%. The unorganized sector itself accounts for over 90% of the total workforce according to the National Sample Survey 2004-05

b) Has Companies Act, 2013 really enhanced position of women in Corporate World?

Section 149(1) of Companies Act 2013[1] makes it necessary for the listed companies and certain other public companies to appoint at least one women director on its board. As per the new Companies Rules of 2014, the following categories of companies are mandatorily compelled to appoint at least one woman director to their respective board of directors:

1. Every listed Company
2. Every Other Public Limited Company which has
   a. Paid-up Share Capital of One Hundred Crore Rupees or more; Or
   b. Turnover of Three Hundred Crore Rupees or more

Companies incorporated under Companies Act, 2013 shall be required to comply with its provision within six months from date of incorporation. In case of companies incorporated under Companies Act, 1956, companies are required to comply with the provision within a period of one year from the commencement of the Act. Gender bias has been the problem not only in India, but even in developed countries like USA, UK, Germany, etc. The present Act can give equal opportunities to female employees for betterment of humanity. To reduce this gender bias a provision in law is not enough rather they should be treated in such a way so that they can really add value to the company. So presence of women on Board of Directors appears to have a positive influence on shareholder value at the global level. According to the Report of Research Organisation, 'Catalyst' stated that companies with the highest representation of women Board Directors attained significantly higher financial performance than those with the lowest representation of women board directors.

According to the Report published on Economic Times online edition on July 10, 2014 listed the name of several companies and their recently appointed women directors and also mentioned that appointed women directors are either too popular or a family member.

The Report published the Business Standard noted that only 4% of Indian company directors are women according to a report. India has two companies in the Fortune 500, Reliance Industries and Indian Oil, but only one of their Directors is a woman among thirty Directors.

According to the Report of Economic Times of India dated 07-07-2014, 904 listed companies were yet to appoint women Directors. This non-compliance is a serious issue unless the Securities and Exchange Board of India (SEBI) consider it seriously.

As India is one of the major and fast growing economies of the world, this initiative taken by Ministry of Corporate Affairs for empowerment of women in the giant and pivotal corporate world, is indeed, highly commendable. Thus, facilitating the lawful entry of woman to the Board of Directors of prescribed class of companies is surely a bright and prudent decision for enhancement of the cherished contributions of women in the economic progress and growth of the country.

The Companies Act, 2013 has Done its part by putting provisions but now it is up to these companies to use these provisions in a constructive manner. One of such constructive way is to build a pipeline of women executive Directors from within the rank along with rigorous mentoring programmes. The programme is initiated by Shriram Capital, TCS, Aditya Birla Group, Vodafone and Capegemini as they are the members of the WILL forum and have been putting high potential women executives to build their aspiration level for acquiring board position.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

An Examination of Herding Behavior in an Emerging Economy – A Study of Indian Stock Market

By Dr. Ashish Kumar, Ms Bharti & Dr. Sanchita Bansal

Guru Gobind Singh Indraprastha University

Abstract- The present study makes an attempt to examine the presence of herding in Indian stock market amongst the investors, using the daily closing price of NSE's benchmark index Nifty and thirty six companies forming part of it for a period commencing from January 1, 2008 to December 31, 2015. It explores the likely consequences of different levels of herding in Indian stock market. The study employs the methodology suggested by Chang et al. (2000) of cross sectional absolute deviation (CSAD) to test herd formation. The results of the study do not provide any evidence of herding in the Indian security market during the chosen period. The study further denies the evidence of herding during bull and bear phases of markets and also during the extreme market conditions. These results indicate that Indian security market investors tend to take investment decisions of their own and do not indulge in any herd tendency and imitate the investment behavior of other fellow investors.

Keywords: herd behavior, indian stock market, investors, emerging market, cross sectional absolute deviation.

GJMBR - B Classification : JEL Code : E29

ANEXAMINATIONOFHERDINGBEHAVIORINANEMERGINGECONOMYASTUDYOFINDIANSTOCKMARKET

Strictly as per the compliance and regulations of:

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Dr. Ashish Kumar [α], Ms Bharti [σ] & Dr. Sanchita Bansal [ρ]

Abstract- The present study makes an attempt to examine the presence of herding in Indian stock market amongst the investors, using the daily closing price of NSE's benchmark index Nifty and thirty six companies forming part of it for a period commencing from January 1, 2008 to December 31, 2015.It explores the likely consequences of different levels of herding in Indian stock market. The study employs the methodology suggested by Chang et al. (2000) of cross sectional absolute deviation (CSAD) to test herd formation. The results of the study do not provide any evidence of herding in the Indian security market during the chosen period. The study further denies the evidence of herding during bull and bear phases of markets and also during the extreme market conditions. These results indicate that Indian security market investors tend to take investment decisions of their own and do not indulge in any herd tendency and imitate the investment behavior of other fellow investors. The study has practical implications as the consideration of herding factor is very important for the correct valuation of stocks resulting in rational investment decision making. The present piece of research contributes to the body of knowledge by assessing the herding behavior in the emerging economy that of India as most of the prior studies have been carried out in developed markets.

Keywords: herd behavior, indian stock market, investors, emerging market, cross sectional absolute deviation.

I. Introduction

The existing asset pricing models that have evolved over the past decade assume investors are utility maximizing and rational and evaluate the investments based on the trade-off between risk and reward. The traditional finance framework ignores that investors make systematic errors in the way they think and create distortions in the process. The underlying assumption of investor rationality is a flawed one and that alone has led to the capital markets across the globe witnessing major booms and busts. Behavior finance is a paradigm that has emerged in response to investor irrationality. The present paper examines one such concept of behavior finance on investor herding in Indian stock market. Herding is characterized by mimicking the actions of other investors, which constitute the market consensus (Bikhchandani and Sharma, 2000). It prevails in the market because investors are concerned with what others think of their decisions (Scharfstein and Stein, 1990). It is an investment practice where investors imitate the actions of others and follow the "group" rather than their own information and take investment actions that are not in congruence with their information. Herding can be spurious when its outcome is efficient, i.e. when all investors take the same action because of the same information present with them. On the other hand, it can be intentional where an investor just follows the group without any thought to his information which may tell him to act otherwise (Banerjee, 1992). According to Devenow and Welch (1991) herding requires coordination in order to follow some signal or to observe the action of others. Avery and Zemsky (1998) define herding as the behavior which occurs when agents imitate the prior actions (buying or selling) of others. Hirshleifer and Teoh (2003) also define herding as any behavior similarity or dissimilarity brought about by the direct or indirect interaction of individuals. There are various reasons why herding prevails with the most obvious one being the pressure of social conformity (West, 1988). Also the group knows something that an individual might be missing. Herding in stock market make the prices move away from their fundamental value besides increasing volatility in their returns (Tan et al., 2008). It further has the tendency to weaken the financial markets which may make the entire financial system look fragile.

The study provides a thorough analysis of herd behavior in Indian stock market by examining the presence of herding during bear and bull phases and extreme stress period both in benchmark index and its ingredient companies for the period under reference. The findings of our study may be extremely useful in gaining an insight into the functioning of the Indian stock market for both academicians as well as policy makers. An understanding of the herd phenomenon will help the investors in making apt valuation of the stocks and correct forecasting of their future movements.

The rest of the paper is divided into 4 sections. The second section provides a brief review of the previous studies, followed by the objectives of the study. The next section is the methodology and interpretation of results. The paper concludes followed by references.

Author α σ ρ: Assistant Professor, University School of Management Studies, Guru Gobind Singh Indraprastha University, Dwarka.
e-mails: ashish_prl@yahoo.com, bharti.1119@gmail.com, bansalsanchita@gmail.com

II. Review of Literature

The existing literature on herd behavior suggests that the pattern is not uniform across financial markets of the world. The results of the studies on the topic are quite contrasting on the basis of country and time. One school of analysis observes that markets exhibit herding pattern although with varying intensities across different phases and market conditions (Chang et al, 2000; Chiang and Zeng, 2010, Lindhe, 2012; Prosad et al, 2012). In contrast to this, the second group opines that no significant herding exists in the financial markets (Demirer and Kutan, 2010; Garg and Jindal, 2014). This section is divided into two parts; one which enumerates the presence of herding and the other which examines for the absence of herding.

a) Studies on presence of herding

A large number of empirical studies have found evidence of herding behaviour in different markets across the globe among market participants. The studies of Oslen (1996); Cote and Sanders (1997) confirm the presence of herding in the forecast by analysts in their respective studies. The mutual fund houses also exhibit herding (Wermers, 1999). Wermers (1999) concludes higher levels of herding in small stocks and growth stocks using the trading activity of mutual funds from 1975 to 1994.Chang et al. (2000) examine the markets of US, Hong Kong, Japan, South Korea and Taiwan for herding and find that South Korea and Taiwan exhibit significant herding while Japan exhibits partial herding and U.S. and Hong Kong stock markets do not show any evidence of herd pattern. Bikhchandani and Sharma (2000) examine the causes and effects of herding and the empirical measures used in the studies in the past. The authors conclude that more research needs to be done for developing markets as there is greater degree of information asymmetry and momentum strategies could be more profitable. Chiang and Zheng (2010) in their study on a panel of countries support the existence of herding in all countries covered in the study, especially in Asian markets during bull phases, except in U.S. and Latin America. My and Truong (2011) observe the Vietnamese stock market and conclude that herding exists with respect to different market periods. Lao and Singh (2010) state that herding is present in Indian and Chinese markets by using CSAD approach of Chang et al. (2000). Their study says that the intensity of herding increases during extreme market conditions in both the markets. Herding is reported to be greater for Chinese market during bear phase and high trading volume while it is more prevalent during bull phase in India. Lindhe (2012) examines herding in Nordic countries of Finland, Sweden, Norway and Denmark by using the model of Chiang and Zheng (2010). The study concludes that that Finland exhibits significant local market wide herding while all countries herd around European market in addition to each other. Khan et al. (2011) analyze the presence of herding in the stock markets of Great Britain, France, Germany and Italy with the help of model proposed by Hwang and Salmon (2001, 2004, and 2008). The study provides evidence of herding behaviour in all the markets under consideration forming part of the study. Yao et al. (2013) use the CSSD methodology to examine the presence of herding in Chinese stock market in both A and B sectors. The results of their study provide the evidence in favor of herding during the period from 1999 to 2008 only for B sector and it has also been observed that herding is more prominent during periods of market decline. Chen et al. (2012); Hsieh (2013) report in their respective studies that herding is present amongst foreign institutional investors in Taiwan between the period from 2002 to 2006. Filip et al. (2015) study the Central and South Eastern European markets from 2008 to 2010 and observe that investors herd during decline periods and it exists across all markets except Poland. Ramadan (2015) in his study on Amman stock exchange concludes that investors prefer to emulate the stock market return as the deviation between stock return and market return and the deviation decreases and investors follow the herding pattern.

Even though the literature on herding behavior is extensive, less research is available for Indian markets. Some of the prominent studies on India have also been included in the review to comment on the presence of herding in Indian stock market under different periods and phases of stock market in the country. Lao & Singh (2010) examine herding patterns in Indian and Chinese stock markets. The study reports that herding behavior is more during extreme market conditions in both the markets but the pattern is dissimilar. Prosad et al. (2012) in their study on Indian stock market find that herding is present in Indian stock market during the bull phase. Poshakwale and Mandal (2014) examine the herd behavior on Nifty from 1997–2012 using Kalman filter test and conclude that investors in Indian market exhibit herding behavior in both bull and bear market, however it rises more in bear phase.

b) Studies on absence of herding

In contrast to the above studies, there have been many researchers who are of the view that significant herding is absent across the financial markets. Demirer and Kutan (2010) investigate the presence of herd behavior in China by using both individual firm and sector-level data. The authors find that equity return dispersions are higher during large changes in index and herding does not exist in Chinese markets. Lakonishok et al. (1992) in one of the pioneer study on herding in Indian context deny the presence of herding amongst pension fund managers in Indian stock market. The data set used in their study comprises of quarterly portfolio holdings of 769 all-equity pension funds from year 1985 to1989. Garg and Jindal (2014) study the Indian equity markets from 2000 to 2012 using the methodology suggested by Christie and Huang (1995) and Chang et al. (2000) and find no evidence of herding pattern and conclude that rational asset pricing models are applicable in Indian context.

III. Objectives of the Study

1. To examine the existence of herding behavior in Indian equity market.
2. To understand and analyze the presence of herding in bear and bull market.
3. To interpret the occurrence of herding in extreme market scenario defined as the upper and lower end tails of the return distribution.

IV. Data & Methodology

a) Data Description

To accomplish the above objectives, the data for daily values of CNX Nifty Index and thirty six companies that form a part of Nifty Index over a period from January 1, 2008 to December 31, 2015 has been collected from Prowess, Centre for Monitoring Indian Economy. The study employs Nifty index as it is the benchmark index of the country and also records the highest stock turnover. The data consists of a total of 1982 observations and is adjusted for any bonus issues or stock splits during the period for correct analysis.

b) Methodology

The present study makes use of the Christie and Huang (1995) model of cross sectional standard deviation (CSSD) to understand, analyze and interpret the concept of herding. According to this model, the dispersion between the market return and individual stock return decreases as the investors ignore their individual information and rely on the "crowd behavior" and herd. Chang et al. (2000) modify the existing model and propose to calculate cross sectional absolute deviation (CSAD). CSAD is the absolute average of the total of the difference between the expected return of individual securities and market return.

$$CSAD_t = \frac{1}{n}\sum_{i=1}^{n} \left| r_{it} - r_{mt} \right| \qquad (1)$$

Where, n is the number of securities, r_{it} is the return on individual stock at time t, r_{mt} is the market return calculated on daily basis at t. The present paper uses CSAD approach to evaluate the presence of herding using OLS regression method. Accordingly, following regression equation is formed:

$$CSAD_t = \beta_0 + \beta_1 \left| r_{mt} \right| + \beta_2 (r_{mt}^2) + \epsilon_t \qquad (2)$$

Where, r_{mt} is the return on market at time t and β_0, $\beta_1$and β_2 are regression coefficients and ε_t is the error term. The term $|r_{mt}|$ is the absolute return on market for the time t. For herding to be present, the coefficient of $(r_{mt})^2$, i.e. β_2 should be negative and significant. The above equation (2) examines the existence of herding behavior in Indian equity market.

In congruence with other objectives of the paper, the following regression equations are formed:

- To understand and analyze the presence of herding in bear and bull market.

$$CSAD_t^{up} = \beta_0 + \beta_1^{up} \left| r_{mt}^{up} \right| + \beta_2^{up} (r_{mt}^{2\,up}) + \epsilon_t \qquad (3)$$

$$CSAD_t^{down} = \beta_0 + \beta_1^{down} \left| r_{mt}^{down} \right| + \beta_2^{down} (r_{mt}^{2\,down}) + \epsilon_t \qquad (4)$$

Where $r_{m,t}<0$ for bear or down market and $r_{m,t}>0$ for bull or up market.

- To interpret the occurrence of herding in extreme market scenario defined as the upper and lower end tails of the return distribution.

$$CSAD_t^{U} = \beta_0 + \beta_1^{U} \left| r_{mt}^{U} \right| D_t^U + \beta_2^{U} (r_{mt}^{2\,U}) D_t^U + \epsilon_t \qquad (5)$$

$$CSAD_t^{L} = \beta_0 + \beta_1^{L} \left| r_{mt}^{L} \right| D_t^L + \beta_2^{L} (r_{mt}^{2\,L}) D_t^L + \epsilon_t \qquad (6)$$

Here, D is the dummy variable and takes the value 1 or 0 at time t. $D^L_t = 1$ if the return lies in the lower tail of the return distribution at 5 percent significance level and zero otherwise. Similarly, $D^U_t=1$ if the market return lies in the upper tail of the return distribution and zero otherwise.

V. Analysis and Interpretation of Results

a) Descriptive Statistics

Table 1 shows the descriptive statistics of the whole market return and CSAD for daily data. From table 1, it is observed that the mean value of CSAD of the whole period is 0.0177 and standard deviation is 0.010 while mean return on daily basis for Nifty index is 0.00013. Kurtosis is greater than 3, implying that the market return and CSAD series are non-normal in nature. The Jarque-Bera test statistics are significant for both CSAD and return series which too leads to the rejection of the null hypothesis of a normal distribution for both the series. Nevertheless, the ordinary least squares – regression has still been employed as the sample used in the study has a sufficiently large size[1]. The higher values of skewness and kurtosis can be because of the presence of outliers. The removal of outliers will not have any significant effect on the regression coefficients (Yao et al., 2013). Therefore, original data has been used in the study. The Augmented Dickey–Fuller test statistics are significant

[1] The central limit theorem states that the test statistics will asymptotically follow the appropriate distributions even in the absence of error normality.

for both $CSAD_t$ and r_{mt} for the Indian stock market which means null hypothesis of presence of unit root can be rejected and both the series are stationary at levels. Table 1 below also shows the descriptive statistics of $CSAD_t$ and r_{mt} during up and down market movements. The mean return of the market during up market is 1.023 percent while during down market is -1.072 percent at time t.

i. *Regression results for the complete market period*

Herding behavior is tested using regression model on equation (2) and the results are presented in table 2. From here it may be observed that the coefficient of r_{mt}^2 i.e. β_2 is positive and significant which indicates that herding is not present in the Indian stock market during the chosen period of study. These results are in contrast to the results of the study carried by Chang et al. (2000) which confirmed the presence of herding in emerging economies of Taiwan and South Korea.

ii. *Regression results for the bull and bear markets (Asymmetry in herding behavior)*

Table 3 gives the results for the presence of herding in Indian market during bull and bear phase. The table shows that herding is not present in both phases of market as the regression coefficients of nonlinear coefficient of return (β_2) are positive for both the phases of the capital market and asymmetry in herding behavior is not observed in Indian stock market. The results of our study refute the results of several studies which have documented the asymmetric pattern in herding behavior (Christie and Huang, 1995; Demirer and Kutan, 2006).From our results it can easily be concluded that investors in Indian stock market tend to take rational investment decisions atleast when it pertains to the blue chip stocks present in the Nifty index.

iii. *Regression results for the extreme market conditions*

Table 4 reveals the results for extreme up and down market conditions. Extreme up market condition is when the market returns lie in the 5 percent of the upper tail of the return distribution curve whereas extreme down market is defined when the returns lie in 5 percent of the lower tail of the distribution. Further, from the same table it may be observed that the value of herding coefficient measured by β_2 is not significant during extremely down conditions thus denying the presence of herding during extremely downward market. Likewise, there is no hint of herding in the extreme up movement of the market as well.

VI. Conclusion

The study intends to understand, analyze and interpret the existence of herding behavior in Indian stock market. The study focuses on Nifty (benchmark index of NSE) and the companies that form part of this index. The study also examines the herding pattern in up and down market and during extreme market conditions in the stock market. The empirical results based on Chang et al. (2000) model confirm no herding in the stock market for the complete period of study, for up and down market and also during the extreme price movements in the market. According to the Chang et al (2000) model of herding, presence of significant negative non-linear coefficient indicates the presence of herding, else a statistically positive value of non-linear coefficient in regression equation denies the evidence of herding. Thus, on the basis of our results it may safely be stated that there is no herding in the Indian equity market. Lao and Singh (2010) in their study using weekly data have also observed that herding is a short lived phenomenon and it is not apparent in the Indian stock market. The reason for absence of herding can be attributed to the fact that there is a limited participation by retail investors in the financial market and the institutional investors are the major participants in the Indian equity markets who have better access to information, reports by equity research analysts, skilled traders and managers. Therefore, it reduces the scope of herding as private information is followed rather than the crowd. The herding behavior during down movement might exist due to the principle of loss aversion (Tversky, and Kahneman, 1991). However, the results are not significant for a conclusive argument due to the major institutional shareholders employing their private information to make informed decisions.

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Table 1 : Descriptive statistics of CSAD and Market Return

Descriptives	$CSAD_t$ (whole period)	r_{mt} (whole period)	$CSAD_t$ (up market movement)	r_{mt} (up market movement)	$CSAD_t$ (down market movement)	r_{mt} (down market movement)
Mean	0.017783	0.000130	0.015463	0.010236	0.020274	-0.01072
Median	0.015026	0.000448	0.013121	0.00709	0.017234	-0.00745
Maximum	0.132163	0.163343	0.132163	0.163343	0.111453	0.00000
Minimum	0.003595	-0.13014	0.003595	0.00000933	0.006362	-0.13014
Std. Dev.	0.010220	0.015484	0.008865	0.011167	0.010968	0.011662
Skewness	3.472892	0.096935	4.718842	4.082581	2.916753	-3.03846
Kurtosis	23.76960	14.32539	44.53274	40.73473	15.89384	20.00362
Jarque-Bera	39568.66	10584.92	77474.55	63660.18	7969.508	12974.16
Probability	0.000000	0.000000	0.0000	0.0000	0.0000	0.0000
No. of observations	1980	1980	1025	1025	955	955
Augmented Dickey Fuller test (CSADt)	-23.2252 (0.0000*)					
Augmented Dickey Fuller test (Rmt)	-21.10808(0.0000*)					

Source: Author's calculations.
**significant at 5 percent level*

Table 2 : Herding Behavior in Nifty

Variable	Coeff.	S.E	t-Stat	Prob.
β_0	0.01150	0.00027	48.5972	0.0000*
β_1	0.55943	0.02217	25.2027	0.0000*
β_2	1.76376	0.28936	6.09547	0.0000*
R square	0.56379			
Adjusted R square	0.56335			

Source: Author's calculations
** Significant at 5 percent level*

Table 3 : Regression Results for Bull and Bear Markets

	Regression for Bull Market					Regression for Bear Market			
Variable	Coeff	S.E	t-Stat	Prob	Variable	Coeff	S.E	t-Stat	Prob
β_0	0.011190	0.0003	36.9656	0.0000*	β_0	0.01203	0.00031	38.3223	0.0000 *
β_1^{up}	0.353141	0.0277	12.70392	0.0000*	β_1^{down}	0.758764	0.03121	24.31166	0.0000 *
β_2^{up}	2.851348	0.32686	8.724896	0.0000*	β_2^{down}	0.44023	0.46219 9	0.952468	0.3411
R square	0.502267				R squared	0.694781			
Adj. R square	0.501293				Adj R-squared	0.694139			
F-statistic	515.6556				F-statistic	1083.534			
Prob (F-stat)	0.0000*				Prob(F-stat)	0.0000*			

Source: Author's calculation
**Significant at 5 percent level*

Table 4 : Regression Results for Extreme Market Conditions

	Regression for Extreme Up Market					Regression for Extreme Down Market			
Variable	Coeff	S.E	t-Stat	Prob.	Variable	Coeff	S.E	t-Stat	Prob.
β_0	0.00334	0.00397	0.84152	0.4044	β_0	0.000091	0.01310	0.00697	0.9945
β_1^U	0.73518	0.12212	6.01981	0.0000*	β_1^L	1.14765	0.37053	3.09732	0.0049*
β_2^U	0.33791	0.67707	0.49908	0.6201	β_2^L	-2.1357	2.29148	-0.9320	0.3606
R square	0.92231				R squared	0.84214			
Adj. R square	0.91893				Adj R squared	0.82898			
F-stat	273.064				F-stat	64.0186			
Prob(F-stat)	0.0000*				Prob(F-stat)	0.0000*			

Source: Author's calculation

** Significant at 5 percent level*

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 16 Issue 5 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Public Debt and Economic Growth: Evidence from Bangladesh

By Md. Saifuddin
University of Chittagong

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Keywords: public debt, investment, economic growth, TSLS.

GJMBR - B Classification : JEL Code : F43

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Strictly as per the compliance and regulations of:

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I. Introduction

The issue of overall public debt has long been a major concern for policy makers of both fiscal and monetary authority in Bangladesh. Bangladesh after independence opted for economic planning with a leading role assigned to the public debt on the consideration that it shall be used for planned investment to achieve rapid economic growth. Given the present trend towards incurring public debt, it is important to know how public debt may influence economic growth. What empirical evidence exists on the direct relationship between public debt and economic growth? Does public debt have an indirect impact on economic growth through its impact on investment? If public debt negatively influences economic growth directly or indirectly, policy makers need to be aware of these relationships when formulating and implementing macroeconomic policy. On the other hand, if debt enhances economic growth, or at a minimum does not present obstacles to capital formation and hence growth, the case for public debt may be strengthened and policy makers need to focus their attention on the potential influences of public debt. However, it is important for overall macroeconomic policy to manage the debt and it needs to be coordinated closely with fiscal, monetary and other macroeconomic policies.

Author: Lecturer of Economics, University of Chittagong.
e-mail: saifmcu@gmail.com

Furthermore, the relationship between public debt and economic growth is much debated one. There is no agreement among economists whether financing government expenditure by incurring debt is good, bad or neutral in terms of its real effects, particularly on investment and growth. As far as the relationship between debt and economic growth is concerned, a reasonable level of debt for developing country is likely to enhance growth, through capital accumulation and productivity growth (Chowdhury, 2001). Some macroeconomic theory tells that public expenditure has a positive impact on growth. Supporting this theory, an earlier study (Freeman & Webber, 2009) found that the productive type of public expenditure in education and health can lead to long-term economic returns. On the other hand, if the majority of public expenditure is channeled to unproductive types of expenditure, it may cause a decline in economic growth (Teles & Mussolini, 2014).

Public debt is the amount of money owed by the government to institutions, government agencies and other bodies either resident in or outside a country (Hassan & Akhter, 2012). It can be classified in two ways: domestic public debt and external debt. When debts are owed to residents within a country, it is known as domestic debt. Specifically in Bangladesh, the main sources of domestic debt are (i) Bangladesh Bank (BB), (ii) deposit money banks (DMBs), and (iii) non-banks including National Savings Directorate (NSD). And most of the external loans received are through the concessional window of IDA, ADB and Japan (Islam, 2007).

Total public debt of Bangladesh government has accumulated over time because of persistent fiscal deficit along with widening trade deficit and savings-investment gap (Islam, 2007). In the recent past, the large increase in public debt was due to the priority of the current government to make Bangladesh a middle-income country by the year 2021, in line with the vision 2021 objective.

This study aims at exploring whether public debt has a direct impact on economic growth in Bangladesh. Furthermore, as investment is the basic channel through which public debt affects growth, it becomes very important to know the indirect influence of public debt on growth through its impact on investment channel. In the paper, following an introductory section, section II of the paper describes the findings of the related literature review. The section III analyses the trends in public debt and economic growth. The section IV and V deal with the research objective, models specification, sample size and sources of data and definitions of the related variables. A sub-section of the section V presents the estimations and interpretations of the results. The final section summarizes the findings and concludes the study.

II. Review of Literature

A large body of literature on public debt is available in the international research studies which focuses on different issues of debt like its impact on economic growth, effect on investment, debt sustainability etc. However, the issue of public debt and economic growth is not very much focused in the context of Bangladesh.

To assess the impact of government debt on economic growth for 9 Latin American countries over a period of 12 years (1974-1986), Geiger (1990) used the lag distributional model and found a statistically significant inverse relationship between debt burden and economic growth. While analyzing 13 developing countries for a period of 1960-1981 and 1982-1989, Warner (1992) could not find any conclusive evidence whether debt has any negative effect on economic growth or it may have depressed investment in those developing countries.

An econometric study conducted by Abbas and Christensen (2007) to investigate optimal domestic debt levels in low-income countries (including 40 sub-Saharan Africa countries) and emerging markets between 1975 and 2004 and found that moderate levels of domestic debt as a percentage of GDP have significant positive effects on economic growth. Muhdi and Sasaki (2009) examined the macroeconomic effects of external and domestic debt in Indonesia by applying Ordinary Least Square (OLS) estimation for the period 1991 to 2006. The study found the positive effects of the rising trend of external debt on both investment and economic growth.

Ogunmuyiwa (2011) investigated the relationship between external debt and economic growth in developing countries using Nigeria as a case study. Time series data from 1970-2007 were fitted into the regression equation employing various econometric techniques such as Augmented Dickey Fuller (ADF) test, Granger causality test, Johansen co-integration test and Vector Error Correction Method (VECM). His study reveals that causality does not exist between external debt and economic growth as causation between debt and growth was also found to be weak and insignificant in Nigeria.

Chowdhury (1994) attempted to resolve the controversy of cause and effect relationship between external debt and economic growth, by conducting Granger causality tests for Asian and Pacific countries over a period of 1970-1988. He found that both public and private external debts have a relatively very small impact on GNP and both have opposite signs. Additionally, he found that any increase in GNP leads to a higher level of external debt, but overall external debt does not have any negative impact on economic growth.

Hassan and Akhter (2012) analyzed the effect of public debt burden on the economic growth of Bangladesh. The sample period was 1980-2011 and the authors used various econometric techniques such as Augmented Dickey-Fuller (ADF) test, Johansen co-integration test, Error Correction Model (ECM) and Vector Error Correction Model (VECM). Empirical results reveal that there is no significant negative relationship between external debt and economic growth. They also found domestic debt has a negative impact on growth with little statistical significance.

Schclarek (2004) investigated a sample of 59 developing countries and 24 industrial economies with data averaged over seven 5-year periods from 1970 to 2002 (such as 1970-74, 1975-79, 1980-84, etc.) to know the impact of debt on economic growth. The author did not find any linear or nonlinear relationship between gross government debt and economic growth in advanced economies. Empirical results also imply that higher public debt levels are not necessarily associated with lower growth rates.

Qureshi and Ali (2010) empirically explored the impact of high public debt burden on the economy of Pakistan. The sample of the study was 1981 to 2008. From their study a vast negative impact of public debt on the economy of Pakistan had been found by the authors.

The above mentioned studies show a mixed impact of public debt on economic growth. Some studies are of the view that public debt impedes the economic growth but some are of the opinion that public debt positively affects the economic growth.

III. Public Debt, Investment and Economic Growth in Bangladesh

To understand the behavior of public debt is important for considering its impact on investment and hence on growth. For this purpose, the researcher looks at the trends of growth of GDP, investment and public debt since independence (1974 to 2014) of Bangladesh.

Table 1 : Public debt Relative to GDP, Growth and Investment (in Crore Taka)

Year	GDP_{mp}	GDP Growth Rate	Public Debt	Debt Growth Rate	Investment	Investment Rate
1974-1979(average)	16826	-	5720	-	1664	-
1980s(average)	56132	-	31433	-	20930	-
1989	92389	11.4	53585	12.5	14894	16.1
1990	103958	12.4	63816	19.0	17110	16.4
1991	110518	6.3	67214	5.3	18673	16.9
1992	119542	8.1	69552	3.5	20686	17.3
1993	125369	4.8	71938	3.4	22499	17.9
1994	135412	8.0	74075	2.9	24919	18.4
1995	152517	12.6	84243	12.9	29161	19.1
1996	189933	24.5	101326	19.4	39373	20.7
1997	202003	8.4	105041	3.6	44942	21.8
1998	226929	10.1	111195	5.8	50200	22.2
1999	246508	8.6	118333	6.4	56010	22.7
2000	268503	8.9	128196	8.3	63926	23.8
2001	291337	8.5	142755	11.3	70428	24.1
2002	314280	7.8	163425	14.5	76500	24.3
2003	348320	10.8	179036	9.5	85962	24.7
2004	383294	10.0	195474	9.1	95792	25.0
2005	427074	11.4	216091	10.5	110315	25.8
2006	482336	12.9	231521	7.1	126102	26.1
2007	549799	13.9	258876	11.8	143929	26.1
2008	628682	14.3	277877	7.3	164729	26.2
2009	705071	12.1	296129	6.5	184771	26.2
2010	797538	13.1	326990	10.4	209327	26.2
2011	915828	14.8	365563	11.8	251129	27.4
2012	1055204	15.2	400977	9.6	298225	28.3
2013	1198923	13.6	431612	7.6	340369	28.4
2014	1343674	12.0	470285	8.9	385435	28.7

Source: (1) External Relation Division (ERD), Ministry of Finance; (2) Economic Trends, Bangladesh Bank; (3) World Development Indicator (WDI), World Bank; (4) National Savings Directorate (NSD).

Table-1 portrays the data on nominal value of Gross Domestic Product (GDPmp), Public debt and investment for the period from 1974 to 2014. Total outstanding public debt of Bangladesh increased more than 82 times between 1974-1979 and 2014. Over the period 1974 to 2014, the nominal value of public debt grew at the rate of 10 percent per annum. Total public debt as a percent of GDP in Bangladesh, on average, rose sharply from 33 percent during the 1970s to nearly 52 percent in the 2000s and came down to 35 percent in 2014. The rate of investment as a percent of GDP has sharply risen to 28 percent, on average, during 2010-2014 from 10 percent in the 1975.

Another important matter is to study the trend in growth rates of public debt, GDP and investment to understand the relationship of public debt with investment and growth.

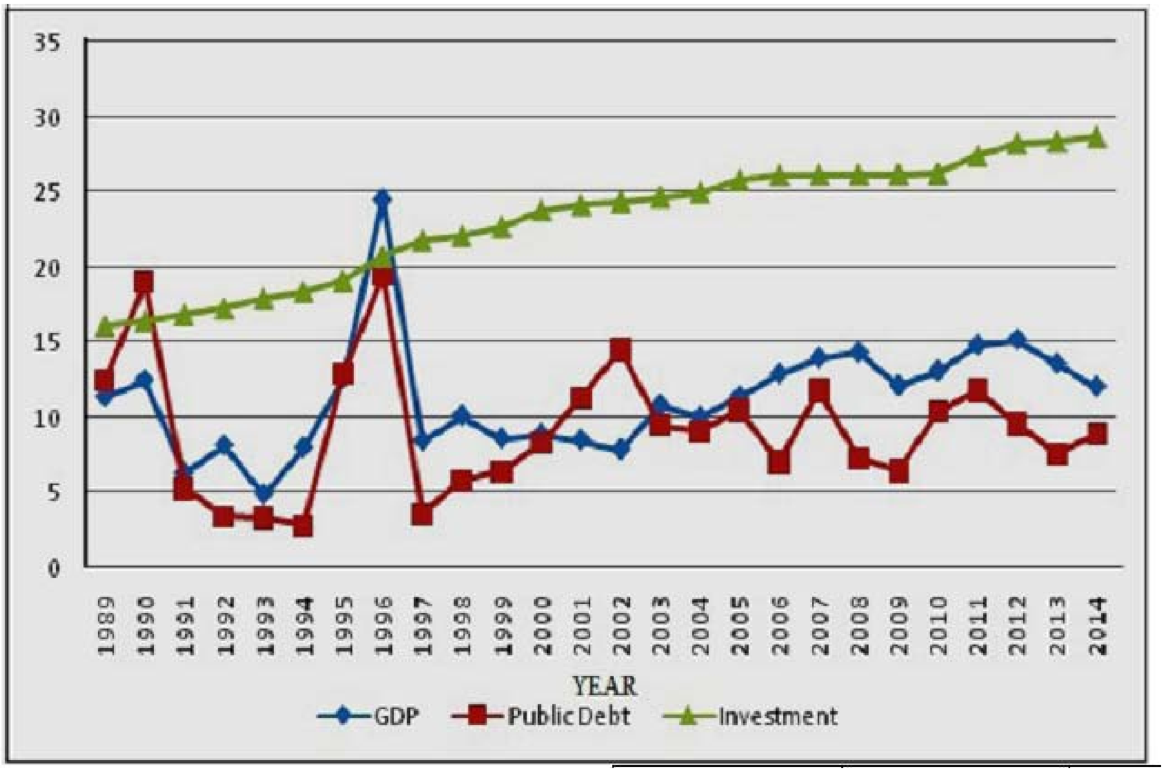

Figure 1 : Total Public Debt, Investment and GDP: Annual Growth 1989-2014

It can be inferred from the Figure 1 that the overall public debt position has somehow impacted the growth rate of the economy of Bangladesh. As a percent of GDP, investment rate stood 28.7 percent in 2014 whereas it was, on average, 10 percent during the entire period of 1974-1980. In the long run there would be a limit to growth of investment as debt amount rises. The relative growths of public debt and GDP during the years 1989 to 2014 were about 9 and 12 percent per annum respectively.

Correlation and R^2 comparison

The value of R^2 or coefficient of determination determines the explanatory power of the level of public debt which is used as independent variables in the regression models. The closer the value is to 1, the higher is the explanatory power of the specific measure for the variable on the Y-axis. The following table demonstrates R^2 and correlation between each combination of the variables.

Table 2 : Strength of Association: Public Debt, Total Investment and Growth

Variable	Public Debt	
	Correlation	*R*-square
GDP	0.99	0.73
Investment	0.98	0.51

Source: Author's calculation using EViews 7

Table 2 displays that the variables considered in this study are positively and highly correlated with each other. This consistency to this statement is due to the fact that the correlation between DEBT and GDP and between DEBT and Investment is 0.99 and 0.98 respectively. And regarding the R^2 the regression models are well fit in the sense that explanatory variables in the models explain 72 and 51 percent variability of the dependent variable GDP, investment respectively.

IV. Research Objective and Sample

The objective of this research is triple. Firstly, analyze the trend and patterns in public debt, and its relationship with investment and growth in Bangladesh. Secondly, observe the direct relationship between public debt and economic growth. Thirdly, observe the potential influence of public debt on investment; and therefore examine the indirect influence of public debt on economic growth through its impact on investment. For these purposes time series econometric tools have been employed. Ten variables (defined in the next part) have been considered in growth and investment models. The sample period of the study is 41 years, from 1974 to 2014 for two models. Annual data employed in this study have been collected from secondary source.

V. The Data, Model and the Empirical Findings

a) The Data

Data employed in the research are secondary in nature. The annual data for the period 1974-2014 have been used in the research and collected from various sources as follows.

- World Development Indicators (WDI) database;
- Economic Relation Division (Ministry of Finance);
- Economic Trend (Bangladesh Bank);
- Bangladesh Economic Review;
- Various articles published on related issues.

Public debt is an amount of money owed by the government to institutions, government agencies and other bodies either resident in or outside a country (Hassan & Akhter, 2012). Main sources of data on public debt (PD) are from Bangladesh Bank (BB) and Economic Relation Division (Ministry of Finance). Gross capital formation (formerly gross domestic investment) used as proxy of investment (INV), Export and import used as proxy of openness (OP) to international trade, and Gross secondary school enrolment rate used as human capital (HC) data are derived from World Development Indicators (WDI) of World Bank. Remittance inflow (REM) refers to transfer of money to the home county by its citizens working abroad. Data for remittance inflow has been collected from Bangladesh Bank (BB). Real interest rate (RI) is the lending interest rate adjusted for inflation as measured by GDP deflator. Data on population growth rate (PG) and M (Board money) were drawn from Bangladesh Economic Review. Total debt service (TDS) is the sum of principal repayments and interest paid on external loan. Data for GDP at market price and real interest rate were drawn from World Bank. Since the paper uses time series data, unit root tests have been performed in order to cheek the stationarity of the variables.

b) Model Specification

In order to perform an in-depth analysis of the debt-investment-growth relationship, the researcher tries to disentangle the debt-growth nexus in a two-step relationship. In the first step direct link between public debt and investment is examined and in the second step usual growth equation is estimated.

1) Model of public debt and Investment

Following Cohen (1993) and Clements et al. (2003), the standard investment model is augmented with debt variable to assess the impact of public debt on investment.

Investment Model:
INV= F (PD, Y, OP, RI, M, REM)
Where instrument list: PD(-1), Y, M, RI, REM, TDS, OP

Econometric Expression:

$$INV = \alpha_0 + \alpha_1 PD + \alpha_2 Y + \alpha_3 OP + \alpha_4 RI + \alpha_5 REM + \alpha_6 M + U_t \quad (1)$$

Where,
INV = Total investment (as proxied by gross capital formation)
PD = Total public debt
PD(-1) = One year lagged value of PD
Y = Gross domestic product
OP = Openness to international trade (as proxied by export and import)
RI = Real interest rate (%)
REM = Remittance inflow
M = Money supply
TDS = Total debt service

The variables I, PD, Y, OP, REM, M, TDS are measured in crore taka and expressed in natural logs. The rationale of this specification lies in the expected positive effect that the level of public debt, openness to international trade, remittance inflow, money supply and the level of GDP have on investment decisions. The interest rate is expected to have a negative impact [Barro & Sala-i-Martin (2003); Cohen (1993)].

2) Model of Public debt, Investment and Growth

Following Mankiw, Romer, and Weil (1992), a paper on "A contribution to the Empirics of Economic Growth", the standard growth model is augmented with variables like public debt, remittance inflow to assess the impact of public debt on growth.

Growth Model:

Y = F (PD, INV, OP HC, PG, REM)

Where investment list: PD(-1), INV(-1), PD, OP, HC, PG, REM, TDS, M, RI

Econometric expression:

$$Y = \alpha_0 + \alpha_1 PD + \alpha_2 INV + \alpha_3 OP + \alpha_4 HC + \alpha_5 PG + \alpha_6 REM + U_t \quad (2)$$

Where,
HC = Human capital [as proxied by gross secondary school enrolment rate]
PG = Population growth rate (%)
INV(-1) = One year lagged value of investment

Y, PD, INV, OP, RI, REM, M, TDS and PD(-1) are as defined earlier. The variables Y, PD, INV, OP, REM, M, TDS are measured in crore taka and expressed in natural logs. It is expected that GDP is positively related to all the control variables included in the growth model.

The data used in the paper are annual time series available for 41 years (1974-2014) to estimate the models. The structure of the models indicates that there is a possibility of endogeneity where some of the right-hand side variables may be correlated with disturbances. If this is so, the OLS estimation provides biased and inconsistent result. The standard approach in such cases is to estimate the models using instrumental variable regression. So, the two-stage least square (TSLS) method has been used to estimate the instrument variable estimators. In this context, statistical software EViews 7 has been used for estimation purposes.

c) *ADF Unit Root Test*

Regression analysis based on time series data implicitly assumes that the underlying time series are stationary (Gujarati, 1995). So, test for stationarity of data is very important because of the possibility of spurious regression. A random time series Yt is said to be stationary if its mean and variance are constant over time and the value of covariance between two time periods depends only on the distance between the two time periods and not on the actual time at which the variance is computed (Gujarati, 1995). Augmented Dickey–Fuller (ADF) unit root test has been used to check whether the variables are non-stationary by taking null hypothesis as 'there is unit root' against the alternative hypothesis 'there is no unit root'.

Table 3 : ADF test results for a unit root on the level and first difference of the original series

Variable	ADF test statistic	*p*-value	5% critical value	10% critical value	Decision
Log(Y)	-1.34	0.60	-2.94	2.61	Non-Stationary
Δ log(Y)	-11.52	0.000	-2.94	2.61	Stationary
log(INV)	-1.44	0.55	-2.94	-2.61	Non-Stationary
Δlog(INV)	-3.96	0.004	-2.94	-2.61	Stationary
log(PD)	-2.60	0.067	-2.94	-2.61	Non-Stationary
Δlog(PD)	-5.68	0.000	-2.94	-2.61	Stationary
log(OP)	-1.05	0.72	2.94	-2.61	Non-Stationary
Δlog(OP)	-7.96	0.00	-2.94	-2.61	Stationary
HC	0.63	0.98	-2.99	-2.64	Non-Stationary
ΔHC	-3.06	0.040	-2.99	-2.64	Stationary
PG	-0.15	0.93	-2.94	-2.61	Non-Stationary
ΔPG	-16.38	0.000	-2.94	-2.61	Stationary
RI	-3.18	0.055	-3.52	3.20	Non-Stationary
ΔRI	-6.22	0.000	-3.52	-3.20	Stationary
log(M)	-0.36	0.90	-2.94	-2.61	Non-Stationary
Δlog(M)	-4.45	0.001	-2.94	-2.61	Stationary
log(REM)	-2.40	0.15	-2.94	-2.61	Non-Stationary
Δlog(REM)	-5.19	0.000	-2.94	-2.61	Stationary
log(TDS)	-1.55	0.49	-2.94	-2.61	Non-Stationary
Δlog(TDS)	-4.77	0.000	-2.94	-2.61	Stationary

Note: Δ means first difference

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The decision rule here is if the *p*-value from ADF test < 0.05 then the null hypothesis will be rejected. Otherwise, the null hypothesis will not be rejected. The results of the ADF for all the variables in their levels and first differences are reported in Table 3.

Reported ADF test indicates that none of the variables represents a stationary process in level form but they are stationary in the first differences which is statistically significant at 5% level of significance. So, the variables are integrated of order one, i. e. I(1).

d) Regression Results

Finally, the regression results of the investment model and growth model are reported in table 4 and 5 respectively.

Table 4 : Econometric Estimates: Impact of Public Debt on Investment

Dependent Variable: Log(INV)
Method: Two-Stage Least Squares
Instrument specification: C Log[PD(-1)] Log(Y) Log(M) RI Log(REM) Log(TDS) Log(OP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.022790	0.036996	0.616025	0.5424
Log(PD)	0.074628	0.250563	0.297840	0.0768
Log(Y)	1.040314	0.286623	3.629551	0.0010
Log(OP)	0.023453	0.106972	0.219246	0.8279
RI	-0.001344	0.001394	-0.963695	0.3427
Log(REM)	0.131311	0.043089	3.047396	0.0047
Log(M)	-0.205553	0.192747	-1.066440	0.2945
R-squared	0.514777	Adjusted R-squared		0.420862
F-statistic	6.282405	Durbin-Watson stat		1.682514
Prob(F-statistic)	0.000211			

Table 4 above shows the estimates of equation 1 where public debt is associated with total investment. The most important result of the econometric estimates is the positive relationship between public debt and investment, which is statistically significant at less than 8 percent level. This type of result is also supported by the previous study done by Hassan and Akhter (2012). The government of Bangladesh is historically found to run deficit budgets. A large portion of the public debt is invested in the public sector that increases the amount of total investment. So, increase in investment is positively related to public debt.

With respect to the other individual coefficients, GDP and remittance inflow have shown the expected positive significant relationship with the investment. The coefficients of openness to international trade and real interest rate are as expected, but are insignificant and thus no definite conclusion can be drawn regarding their association with public debt. However, the coefficient of money supply is negative (-0.205553) and, of course, statistically insignificant. The overall goodness of fit of the model is satisfactory, as over half of the variation in total investment is explained by the model. Durbin-Watson statistics, however, is close to 2, indicating no autocorrelation.

Table 5 : Econometric Estimates: Impact of Public Debt on Growth

Dependent Variable: Log(GDP)
Method: Two-Stage Least Squares
Instrument specification: Log[PD(-1)] Log[INV(-1)] Log(PD) Log(OP) HC PG Log(REM) Log(TDS) Log(M) RI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.039591	0.016318	2.426270	0.0239
Log(PD)	0.199720	0.061749	3.234351	0.0038
Log(INV)	0.356328	0.110076	3.237098	0.0038
Log(OP)	0.158300	0.055346	2.860183	0.0091
HC	0.001404	0.002992	0.469170	0.6436
PG	0.090172	0.120031	0.751240	0.4605
Log(REM)	0.041241	0.028340	1.455256	0.1597
R-squared	0.726995	Adjusted R-squared		0.640130
F-statistic	7.615929	Durbin-Watson stat		1.899421
Prob(F-statistic)	0.000106			

Table 5 displays the estimates of equation 2 where public debt is associated with economic growth. The most important result of the econometric estimates is the positive relationship between public debt and economic growth, which is statistically significant at less than 1 percent level. A significant amount of public debt in Bangladesh is invested in public sector to develop the infrastructure like roads and highways; electricity, gas and water supply etc. Bangladesh has been facing infrastructural bottlenecks since its independence. Investment in the development of infrastructure promotes private entrepreneurs to invest more in the country. This may cause positive relationship between public debt and economic growth in Bangladesh.

With respect to the other individual coefficients, the total investment and openness to international trade indicators are positive and highly significant, as in Barro (1991), Pattillo et al. (2002) and Abbas (2007). The other controlling variables such as remittance inflow, gross enrolment rate and population growth rate supported the expected outcomes while the coefficients remain insignificant. The overall goodness of fit of the model is satisfactory, as 73 percent of the variation in economic growth is explained by the model. Durbin-Watson statistics, however, is close to 2, indicating no autocorrelation.

In the table 4 it is evident that, public debt appears to enhance the level of investment, and the econometric estimates in this section (Table 5) verify that a positive relationship exists between investment and economic growth. Thus, an increase in the level of public debt, ceteris paribus, would appear to induce the level of investment over time and this, in turn, is likely to enhance economic growth indirectly. So, the empirical estimates indicate that public debt enhances economic growth through its beneficial impact on investment.

VI. Conclusion

Public debt is one of the major sources of financing for development projects in Bangladesh. As a result of persistent fiscal deficit along with widening trade deficit and savings-investment gap, total public debt in Bangladesh has accumulated over time. In this study the objective was to examine the relationship between public debt and economic growth in Bangladesh. The empirical findings of the study indicate that public debt has made a significant contribution to economic growth, as measured by GDP, not only directly but also indirectly via its effect on investment because the public debt, ceteris paribus, would appear to induce investment over time and this, in turn, indirectly enhance economic growth. The calculations from the regression results reveal that public debt positively affects growth, provided other determinants of growth remain unchanged. On average, 1 percent increase in public debt is associated with an increase in GDP of around 0.2 percent per annum. From the study, it appears that the resources generated through public ebt are basically used for productive investment in Bangladesh.

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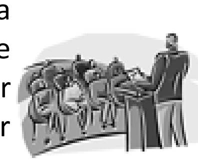

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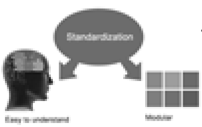

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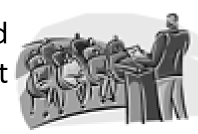

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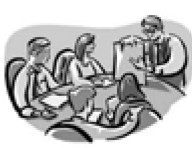

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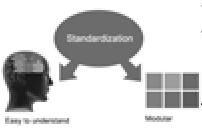

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The recommended size of original research paper is less than seven thousand words, review papers fewer than seven thousands words also.Preparation of research paper or how to write research paper, are major hurdle, while writing manuscript. The research articles and research letters should be fewer than three thousand words, the structure original research paper; sometime review paper should be as follows:

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(b) A brief Summary, "Abstract" (less than 150 words) containing the major results and conclusions.

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27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

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Key points to remember:

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A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

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- Separating a table/chart or figure - impound each figure/table to a single page
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· Present your points in sound order

· Use present tense to report well accepted

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- Fundamental goal
- To the point depiction of the research
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- Significant conclusions or questions that track from the research(es)

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- If use of a definite type of tools.
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- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
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- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

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- Leave out information that is immaterial to a third party.

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The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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	A-B	**C-D**	**E-F**
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Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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ISSN 9755853