

MARKET CONCENTRATION, GOVERNANCE AND MACRO-FINANCIAL DETERMINANTS OF BANK PROFITABILITY: COMPARATIVE ANALYSIS OF LARGE SCALE COMMERCIAL BANKS OF PAKISTAN, INDIA AND CHINA

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ABSTRACT: *The purpose of this study is to examine impact of different factors on the profitability of banking industry in three emerging economies China, India and Pakistan in the Asian region. This study also examines the managerial behavior under concentrated market structure in respective banking industries. The sample consists of 25 large commercial banks including state-owned and private banks of China, India and Pakistan. The time span addressed in this study is from 2003 to 2013. Generalized Methods of Moments (GMM) technique is applied on the data for empirical results. The findings show that only in Pakistan size is positively related with bank profitability but remain insignificant in other banking industries. Credit risk affect profitability positively in China but negatively in India and remain insignificant in Pakistan. Concentration is insignificantly relating to profitability in Pakistan and India but have negative significant relationship in China. The influence of Governance is positive on bank profitability in all the respective economies. Macroeconomic factors such as GDP significantly affect profitability in China and Pakistan but insignificant in India. Results show some support for Expense Preference Theory in Pakistan only. Edward Heggstad Mingo Hypothesis of risk avoidance is not proved in this study. Regulators should make such policies that can increase profitability of banking industry under concentrated market structure and governance should consider as important factor.*

Key Words: Market Concentration, Bank Profitability, ROA, ROE, Generalized Method of Movements (GMM).

1. INTRODUCTION

In modern economic world, banking holds one of the most significant position, as it is one of the great agencies of commerce. Bank may be defined in general terms as financial institution dealing in debts and credits. However, if we look in the history of banking, in 1397 the idea of saving money was initially presented in medieval Florence. Medici an effective dealer family made a system of shops that permitted supporters to place cash on record and withdraw the cash in an alternate city that had a Medici agent. That is why during that time many rich families kept their money in Medici banks and travel easily without any fear of being robbed by robbers [20]. Throughout the most recent two decades the keeping money area has encountered worldwide real changes in its nature. Both outer and residential variables have influenced its structure and execution [8]. Before describing the role of banks in organizing and stimulating funds and investments, it is important to know how banks actually work. Banks plays decisive role in organize funds and stimulating investments for productive schemes. They generally gathered funds in shape of savings from general public and finance these funds to those who need it for their projects and other purposes. The process of money circulation promotes the health of economy by making a link between those who have surplus and those who are in deficit. So banks have an importance like backbone in the body of economy. It is known that even nations with advanced and overall managed budgetary establishments may not be fully protected to fiscal emergencies. Since the Asian financial crisis of 1997-1999, the importance of financial liberalization with plenty of regulations has been increasingly recognized. In early 1990s the banking sector of Pakistan and India had faced liberalization and deregulation process. These reforms have changed the banking industries from more nationalized banks to more privatized banks by opening the doors for new private banks and also convert some nationalized banks into privatized banks to achieve the targeted economic growth.

Banking system in creating nations have been demonstrated to show fundamentally and diligently bigger intermediation spreads on normal than those in created nations [27].

1.1 Overview of China, India and Pakistani Banking Sector

After 1949 Year of establishment of Peoples republic of China, all the companies previously working in China were transferred from private to nationalized sector in 1950. Only one bank (People's Bank of China) controlled budgetary system in China Between 1950 to 1978 and almost all operations were handled by this bank in China. From 1978 to 1984 new government owned banks were established and separate central bank was formed. After Chinese civil war (1949-1952), People's Bank of China effectively halted the inflation and brought all the finances of nation under central Control. In this era due to some reforms in financial system real GDP of China grew by 10% and country moved from more agricultural to industrial and poverty level also declined and in the same era total bank loans value rose by 260% and deposits almost tripled. After the first reform wave in 1978 to 1984 a second wave was introduced by allowing new entries as competitors in banking industry after 1984 to 1994. The inclusion of China in WTO was one of big achievements that flourished banking industry by introducing foreign banks for general public.

In recent years China Banking Regulatory Commission (CBRC) and China Insurance Regulatory Commission (CIRC) started work together, the main aim of this collaboration was to boost up the performance of financial system. China introduced AMCs (Asset Management Company) to purchase NPLs made by the banking industry, so that NPLs could remove from balance sheets of the banks. PBCs (People's Bank of China) and Government of China were on the back of AMCs. Banking assets have increasing trend in China mainly due to reforms. In recent years this ratio has been increased from 202% to 257%.

In March 1947 there were 3496 Indian Scheduled banking offices, 487 of them were in territories of Pakistan and RBI continued functioning in new state of Pakistan until 30th September 1948. In 1972 reforms were introduced to improve banking services in Pakistan. The reforms were comprised of making the banks more receptive to the prerequisites of development financial system. The focus of these reforms were on equally and fairly disbursement of advances, enhancing the soundness and productivity of the banks, and securing more prominent social responsibility of managing an account framework overall. After privatization, some revolution changes were pushed through. Administrative forces of State Bank of Pakistan were restored by means of changes to the State Bank of Pakistan Act (1956) Ordinance of Banking companies (1962). Hence, bank supervision, corporate administration and interior controls were fortified generously. In 1974, a phase of nationalization was introduced in the history of Pakistan. Banking industry was also influenced by this process when all private sector banks were transferred to state owned banks. This phase caused many problems such as non-performing loans that caused low profitability of banking industry. Privatization phase was introduced in 1991. In 2001 government of Pakistan formed an ordinance for recovery of loans. Post reform period showed almost 85% increase in profitability of banking industry in Pakistan.

In 1935 a central bank (Reserve Bank of India) was introduced with regulatory powers to control banking industry's operations in India. In the same year previously formed presidency banks were converted into State bank of India. State bank of India were also given some powers to control banking industry. Before 1970s almost 31% Indian banking industry was comprised of state-owned banks [15]. An era of Nationalization was introduced in late 1969s in which government shift the privatized banks towards public banks and took almost 84% banking industry under its authority. Under lending and priority lending were two main causes of less profitability of Indian banking industry. But privatization process in India removes these problems up to some extent and minimized corruption as well. A committees known as Narismaham was formed for development of banking industry in 1991 that presented its findings in 1998. Its recommendations were mainly consisting of non-performing loans and capital adequacy that should be managed with respect to market and credit risk

1.2 Objectives

The basic purpose of the study is to examine the impact of several variables on profitability of the banks; if profitability of banking industries shows same trend with respect to different Macro-Financial variables or does it vary. There is a need to examine if banking industries under concentration reacts differently under different environment, along with this we also test if banking industries of different countries show same behavior under concentrated market structure. In addition, we check the role of governance in determining the profitability of banking industry. Other thing to be examined is the behavior of management towards risk and expense preference.

2. LITERATURE REVIEW

This section provides the previous studies and their results regarding to the factors affecting profitability of the banks. In Australia, banking industry concentration has negative impact on the profitability of banks. There is no Relationship between Size and profitability of banking industry, [22] found that efficiency is more accurate determinant of profitability as compared to size, and also concluded that there is positive relationship between CAR and profitability of the European banking industry. [2] Found that when concentration and market share were tested together then no one has any impact on the profitability of banking industry in GCC, but when both were tested separately then both of them have significant positive impact on the profitability. [10] Examined the market structure and its impact on the bank profitability in Pakistan by taking 20 scheduled banks of Pakistan and found a strong evidence of concentrated market structure as compared to competitive. Another main finding was that concentration has positive impact on the profitability of the banking industry in Pakistan. [1] Found that economic growth rate has positive impact on profitability of banks whereas credit risk and consumer price inflation has significant negative impact on the profitability of banks. [26] Found that there is negative relationship between size and Net interest margin. [7] Examined the factors which have impact on the profitability of the Tunisian banks and concluded that Loans, Total assets, Concentration (banking industry concentration) have positive impact on the profitability of banks whereas Liquidity, Inflation and GDP growth rate have negative impact on the profitability of the bank. [44] Evaluated the bank profitability in China from the time period 2003 to 2009 by using econometric approach. Results showed that high cost efficient and high rate of inflation have positive impact on profitability while bank size, taxation and nontraditional activity have negative impact on profitability. [26] Use bank specific, market base and macroeconomic indicators to examined the determinants of net interest margin in the banking industry of Austria. The authors used 42,000 observations from 1996 to 2012. Different panel estimation techniques were used by the authors for proper evaluation of results. They examined that loan loss provisions, leverage ratio and inflation have negative relationship with NIM but staff expenses GDP and other operating expenses affect NIM positively.

3. DATA AND METHODOLOGICAL ISSUES

3.1 The Data

For conducting the research panel data from the 2003 to 2013 large scale scheduled commercial banks from three countries (Pakistan, India and China) has been taken into consideration. The data consists of 25 large scale schedule commercial banks including state-owned and private banks.¹ The

¹ Allied Bank Limited, Askari Bank Limited, Bank Alfalah Limited, Bank Al Habib Limited, Habib Bank limited, Muslim Commercial Bank Limited, National Bank of Pakistan and United Bank Limited from Pakistan. Agriculture Bank of China, Bank of China, Bank of Communication, China Construction Bank, China Development Bank, China Merchant Bank, China Minsheng Bank, China CITIC Bank and Industrial and Commercial Bank of China from China.

complete data are collected from annual financial statements of the Commercial Banks of respective countries, Handbook of Statistics of Pakistan (SBP), Reserve Bank of India (RBI), China Banking Regulatory Commission (CBRC), WDI (World Development Indicator), Economic Survey of Pakistan, International Financial Statistics (IFS) and International Country Risk Guide (ICRG).

Table I summarizes the variables and their expected behavior.

Table I: Variables and their Description

Variable	Symbol	Measurement	Expected Effect
Dependent Variables			
Net Interest Margin	NIM	Net Interest Income/ Earning Assets	
Expense Preference Theory	EBTSE	Earning before tax + Salary expense/ Total assets	
Edward Heggstad Mingo Hypothesis	EBTSLP	Earning before tax + Salary expense + Loan loss provisions/Total assets	
Independent Variables			
Size	S	Natural Log of total assets	+
Credit Risk	CRK	Loan loss provisions/Total loans	-
Concentration	CR8	Total assets of 8 largest banks/ Total banking assets	Indeterminate
Governance	ICRG	Investment profile	Indeterminate
GDP	LY	GDP	Indeterminate

Note: Authors formulation where + indicate positive relation; - indicate negative relation; Indeterminate means no indication

3.2 Methodology

The study on banking industry contains many econometric problems such as endogeneity and unobserved heterogeneity across banks. To tackle these problems, we move beyond previous techniques such as fixed and random effect models for panel data. Generalized Method of Moments (GMM) is used in this study for empirical analysis. GMM estimator is very famous from the recent past developed by [3]. The popularity of this method is because of two simple reasons, first one is this method is very simple and easy even in the presence of some econometric diseases and the second one is weak supposition for instrumental variables. GMM technique is very useful when the sample consists of small T and large N observations. Independent variables in the model are not necessarily exogenous which means that right hand side variables are associated with previous as well as may be current residual term and heteroskedasticity as well as autocorrelation must present within individuals [35]. In GMM estimator instrumental variables are developed to cope up with the problem of endogeneity problem. [4] And [44] have used GMM technique. In this study both DGMM and SGMM techniques are used.

3.3 Estimable Model

In this study following models have been used for empirical analysis.

$$NIM_{i,t,s} = c + \beta_1LTA_{i,t,s} + \beta_2CRK_{i,t,s} + \beta_3CR8_{t,s} + \beta_4GOV_{t,s} + \beta_5LY_{t,s} + \varepsilon_{i,t,s}.....(1)$$

$$EBTSE_{i,t,s} = c + \beta_1LTA_{i,t,s} + \beta_2CRK_{i,t,s} + \beta_3CR8_{t,s} + \beta_4GOV_{t,s} + \beta_5LY_{t,s} + \varepsilon_{i,t,s}.....(2)$$

$$EBTSLP_{i,t,s} = c + \beta_1LTA_{i,t,s} + \beta_2CRK_{i,t,s} + \beta_3CR8_{t,s} + \beta_4GOV_{t,s} + \beta_5LY_{t,s} + \varepsilon_{i,t,s}.....(3)$$

On the left hand side NIM stands for net interest margin, EBTSE (earnings before tax and staff expense to total assets) and EBTSLP (earnings before tax, staff expense and loan loss provision to total assets) are used as proxy to test managerial behavior of banking industry. On the right hand side there is a mixture of independent variables consist of macro-financial, governance and industry specific Such as Size, Credit Risk, Concentration, Governance (ICRG) and GDP. Where ‘i’ stands for bank ‘t’ stands for time and ‘s’ for country. Net interest margin is being used as dependent variable and a measure of performance because it covers larger portion of the bank’s income.

Size is measured by total asset of banking industry and utilized to catch the way that bigger banks are better set than smaller banks in tackling economies of scales. Credit risk is measured by loan loss provisions to total advances.

Eight banks Concentration ratio is being used in this study. It captures most of the part of the banking industry in Pakistan, India and China. GDP is used here as a measure of Macroeconomic variable.

ICRG (International Country Risk Guide) is a proxy for Governance. Figure 1 shows how ICRG can affect banking profitability.

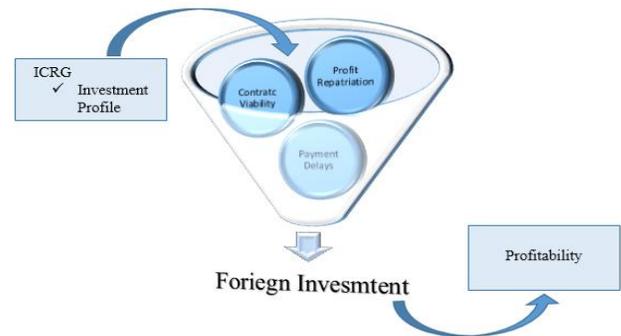


Figure 1

Source: Authors’ formulation

4. RESULTS

This section consists of Descriptive as well as Empirical results. Table II shows that Mean value of Size (in terms of total assets) of the banking industry is \$8 billion, \$13 billion and 10 billion in Pakistan, China and India respectively which shows that banking industry in Pakistan is not as large as in China and India (Table II) . It is fluctuated between \$6 to \$9 billion in Pakistan \$10 to \$14 in China and \$8 to \$11 in India. The statistics of Pakistani banking industry for credit risk is fluctuated between .015 and .075 and Mean value is .048. For China, same variable is fluctuated between .0008 and .1247 while in India it varied from 0 to .175. Results for

AXIS Bank, Bank of Baroda, Bank of India, Canara Bank, HDFC Bank, ICIC Bank, Oriental Bank of Commerce and Punjab National Bank from India.

market concentration reveals that mean value stands at .411, .452 and .211 in Pakistan, China and India respectively. Mean value of Governance 6.61, 7.24 and 8.26 respectively in Pakistan, China and India. It is fluctuated between 4 to 8 in Pakistan, 7 to 8 in China and 8 to 9 in India. The average value of GDP is 6.7 in Pakistan 8.06 in China and 6.94 in India

Profitability model explains that not only bank's related variables affects the banking industry's profitability but also some other variables too which can affect the profitability. For analysis we have used SGMM and DGMM. In the Asian region three economies with emerging banking markets have responded to these variables. Table III shows that SGMM analyzes that size of the banking industry have significant behavior with respect to bank profitability especially in case of Pakistan because Pakistan's banking industry is little bit small as compared to other economies with emerging banking markets.

In Pakistan size of the banking industry is directly related to the profitability. These results follow the economies of scale in Pakistan's banking industry [21]. According to the results size measured by total assets shows that as size of the industry keeps on growing, banks have more opportunities to invest and thus the deposit rates goes down as compared to lending rates and in this way profitability of banks increase. But as compared to Pakistan, China and India both the countries have larger banking industries and have showed no significant relationship between size and profitability. [30] Found no significant relationship between size and profitability and argued that state-owned banks prove to be comparatively inefficient. State-owned banks likely pressurized to lend to the government enterprises without any cushion in shape of provisions. So our results match with their findings in case of China and India. Our DGMM results are in line with SGMM.

Another important factor for bank profitability is credit risk which is measured by loan loss provisions to total advances used by many authors such as and [9 or 5]. In Pakistan, credit risk has insignificant negative impact on the profitability of banking industry. Both our techniques have shown similar results and these results support the findings of [36]. But in China and India, credit risk has significant impact on bank profitability. For China, credit risk has positive significant results with profitability and significant at 1% according to the both of GMM techniques and supports the findings of [36], When nonperforming loans increases, credit risk for banks also increases and banks transfer these losses to the customer by increasing rates on advances which leads to increase the profitability of banks. In china since banks have already provided for the losses therefore recovery tactics are used for NPLs which directly hit the profitability of banks. In contrast, Indian banking sector has showed negative response towards credit risk and showed it is significant at 10%. These results support the findings of [24] that increase in loan loss provisions decrease the profitability of banking sector.

Concentration has no strong impact on the profitability of banking sector in respective economies except China. In China concentration has negative significant relationship with profitability of banking sector. [19] Also found negative sign between concentration and profitability in Chinese banking sector and argued that high concentration leads to increase in NPLs and ultimately declines the profitability of banking industry.

ICRG (International Country Risk Guide) is combination of three components but here one of the components is used as a measure of Governance is investment profile. The standard of this index tells that as rating of the component is high risk will be low and vice versa [29]. According to the results ICRG has positive influence on bank profitability. Both SGMM and DGMM showed its significance for the bank profitability in all the three countries. And these results are significant at 1% significant level.

Macroeconomic conditions also affect bank profitability such as GDP. GDP has a mixture of significant impact on the respective countries except India under GMM techniques. In Pakistan GDP has negative impact on bank profitability and the results are significant at 5%. The results support the findings of [12]; [17], operating cost decreases as GDP increases so this will lead to narrow the interest margins thus negative relation exist between NIM and GDP [8]. But in China GDP has positive significant impact on profitability of banks. These results show support for the findings of [1] and [22]. Positive sign indicates that when GDP increases economy grow and projects required more financing from banks.

In Pakistani banking industry relationship between concentration and dependent variable (EBTSE) is significantly positive which shows support for the existence of expense preference theory. Both SGMM and DGMM shows similar results in Table IV and these results are in contradictory with previous studies such as [13]. In India results show no supportive evidence for this theory. In china under DGMM results show support for expense preference theory and significant at 1% but under SGMM results did not show strong relationship between concentration and EBSTE. In Pakistani banking industry, size has positive impact on the dependent variable (EBSTE) and significant at 1%. This indicates that when size of the banking industry increases it would lead to increases in staff expenses, but in China and India it has insignificant relation. Credit risk also has significant relationship in all the three countries under SGMM. In Pakistan and India credit risk has negative correspondence but in China it has positive significant relation. Governance have its impact on bank's staff expense, in Pakistan it has positive impact showing that as country enjoying better environment for investment it ultimately increases profitability of banks and staff salaries too. But opposite in India governance has negative significant impact which shows that as country facing less favorable conditions or highly risky environment for investment, bank management have to face a challenge of staff maintenance.

To retain their experienced staff with their self they increase salaries.

In our third model EBSTLP is dependent variable. The results in table V show that in Pakistan and China although concentration is being significantly affects the dependent variable under SGMM and DGMM but signs indicate that there is positive relationship. Not even in SGMM but also under DGMM technique in Pakistan. These results are not in line with the findings of [13] but in India although the results are insignificant under SGMM and DGMM but negative sign shows support for Edward Heggstad Mingo Hypothesis. It means that when concentration increases it would lead to decrease the loan losses which show that management's

behavior is purely risk averse. But in Pakistan and China results show opposite signs and indicate that there might be more dependence of managers on stockholders of the company that is why in more concentrated banking industry managers might be less risk averse. In Pakistan, Size also matters in this case and affects it positively because when Banks increase their size, it ultimately increases its number of employees and staff expense also increases but in China and India it has insignificant impact. Credit risk in China has positive impact because when Credit risk increases it would lead to increase in loan loss provisions so there is positive relation between these two.

Table VI: Hypothesis Testing

Hypothesis	Pakistan	China	India
Link between size and profitability	Supported	Rejected	Rejected
Link between Credit risk and profitability	Rejected	Supported	Supported
Link between concentration and profitability	Rejected	Rejected	Supported
Link between GDP and profitability	Supported	Supported	Supported
Link between Governance and profitability	Supported	Supported	Supported
Banking industries of different countries have shown same behavior under concentrated market.	Pakistan	Rejected	
	China		
	India		
Source: Authors' formulation			

5. CONCLUSION AND RECOMMENDATIONS

Banking industries in all over the world differ with respect to its operations and size. Banking industries have to face different macroeconomic conditions, difference in financial conditions, different market structures all around the world. This study elucidates the following findings;

Size of the banking industry in Pakistan has positive and significant relationship with profitability of banking industry but in China and India it has no impact. Pakistani banking sector did not response towards non-performing loans but in India credit risk have negative impact on the profitability as compared in China credit risk have positive significant impact on the profitability of banking industry.

Concentration has no significant impact on respective economies except China where the results show that country where banks with high market power face low profitability due to increase in loan loss provisions. Governance shows positive significant impact on profitability in all the selected countries. In all these countries banking industries react differently under macroeconomic conditions such as GDP has different types of impacts on different banking industries. Chinese banking industry show positive relationship with respect to GDP and Pakistani banking industry shows negative association but Indian banking industry did not react significantly.

In agreement with the relationship between concentration and EBTSE support has found for EPT in respected economies except in India under GMM techniques, which implies that the management of bank under concentrated market structure give value to its employees in shape of bonuses and

increments, same attitude is observed in Chinese banking industry but the relationship is not very strong. With respect to EHM we have not found supportive evidence and conclude this theory largely dependent on managerial discretion according to which if managers are not highly independent from the interests of stockholders, EHM will not be approved.

It has found that under concentrated market structure managers spend a lot on staff expenses instead of doing arrangements to control non-performing loans as well as in other profitable projects which might boost up economic growth. It is recommended that regulatory authorities should make such policies with the help of which banks can earn potential profits under concentrated market structure. Government should take steps to make arrangements with respect to investment opportunities for foreigners to attract them which also can improve economic activities and profitability of banking industry as well.

European countries are better ranked according to banking industries as compared to Asian countries. It can be examined that how European banking industries are more developed than Asian banking industries with the help of comparison of these banking industries.

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APPENDICES

Table II: Descriptive Analysis

Variable	Mean			Standard Deviation			Minimum			Maximum		
	Pakistan	India	China	Pakistan	India	China	Pakistan	India	China	Pakistan	India	China
Size	8.5811	10.417	13.063	.62761	.73766	1.0978	6.9006	8.342	10.204	9.6882	11.44	14.929
CRK	.04888	.01682	.00778	.01294	.03225	.0131	.01535	0	.0008	.07537	.175	.1247
CR8	.41120	.21136	.45247	.03705	.02059	.07832	.36054	.178	0.354	.47878	.24	0.57
ICRG	6.6181	8.644	7.2412	1.393	.3315	.49159	4	8.167	6.5	8	9.333	7.988
LY	6.7944	6.9447	8.069	.25011	.35038	.56848	6.3026	6.337	7.149	7.1708	7.371	8.8607
EBTSE	.02738	.02340	.01587	.01214	.00720	.00417	.00357	.006	.0046	.06172	.038	.02270
EBTSLP	.08306	.02606	.01686	.02234	.00653	.00795	.0241	.01602	.0054	.14021	.05765	.08242
NIM	.08386	.03704	.03054	.03088	.04727	.00932	.0342	.002	.0019	.14794	.381	.06654

Source: Authors' estimates

Table III: Regression Estimation For Profitability

Dependent Variable: Net Interest Margin						
Variable	Pakistan		India		China	
	DGMM	SGMM	DGMM	SGMM	DGMM	SGMM
NIM _{i,t-1}	0.223 (0.078)	0.826 (0.000)	0.187 (0.000)	0.126 (0.000)	0.318 (0.000)	0.475 (0.000)
S _{i,t}	-0.034 (0.000)	0.006 (0.002)	-0.009 (0.620)	-0.012 (0.309)	-0.013 (0.001)	-0.000 (0.723)
CRK _{i,t}	0.204 (0.135)	-0.091 (0.674)	-0.203 (0.003)	-0.160 (0.074)	0.526 (0.000)	0.446 (0.001)
CR8 _{i,t}	0.114 (0.066)	-0.056 (0.442)	0.463 (0.368)	0.460 (0.367)	0.018 (0.441)	-0.036 (0.035)
GOV _{i,t}	0.011 (0.000)	0.002 (0.047)	0.014 (0.006)	0.020 (0.079)	-0.000 (0.758)	0.003 (0.001)
LY _{i,t}	0.015 (0.229)	-0.032 (0.026)	0.054 (0.240)	0.070 (0.221)	0.016 (0.004)	0.010 (0.001)
AR(1)	0.892	0.028	0.160	0.112	0.021	0.014
AR(2)	0.592	0.134	0.303	0.306	0.383	0.261
Sargan test	0.693	0.004	0.000	0.000	0.862	0.202
Hansen test	0.855	0.948	1.000	1.000	1.000	1.000

Source: Authors' estimates

Table IV: Regression Estimation For Expense Preference Theory

Dependent Variable: EBTSE						
Variables	Pakistan		India		China	
	DGMM	SGMM	DGMM	SGMM	DGMM	SGMM
$EBTSE_{i,t-1}$	-0.049 (0.752)	0.592 (0.000)	-0.584 (0.205)	0.985 (0.000)	0.522 (0.001)	0.310 (0.044)
$S_{i,t}$	-0.009 (0.088)	0.005 (0.000)	-0.001 (0.624)	-0.002 (0.162)	-0.006 (0.001)	-0.000 (0.934)
$CRK_{i,t}$	-0.268 (0.000)	-0.283 (0.004)	-0.103 (0.025)	-0.038 (0.054)	0.087 (0.184)	0.063 (0.043)
$CR8_{i,t}$	0.095 (0.033)	0.075 (0.083)	-0.014 (0.436)	0.009 (0.640)	0.017 (0.001)	0.001 (0.904)
$GOV_{i,t}$	0.007 (0.000)	0.003 (0.000)	0.004 (0.509)	-0.008 (0.004)	-0.001 (0.042)	0.000 (0.799)
$LY_{i,t}$	-0.005 (0.385)	-0.088 (0.271)	0.003 (0.694)	-0.004 (0.094)	0.006 (0.029)	0.002 (0.210)
AR(1)	0.106	0.032	0.209	0.036	0.044	0.029
AR(2)	0.057	0.196	0.578	0.258	0.247	0.007
Sargan test	0.019	0.063	0.031	0.083	0.506	0.000
Hansen test	0.813	0.993	0.391	0.998	1.000	1.000

Source: Authors' estimates

Table V: Regression Estimation For Edward Heggstad Mingo Hypothesis

Dependent Variable: EBTSLP						
Variables	Pakistan		India		China	
	DGMM	SGMM	DGMM	SGMM	DGMM	SGMM
$EBTSLP_{i,t-1}$	-0.053 (0.847)	0.587 (0.012)	0.223 (0.034)	0.393 (0.001)	-0.088 (0.322)	0.113 (0.049)
$S_{i,t}$	-0.023 (0.005)	0.008 (0.043)	0.006 (0.257)	0.001 (0.504)	-0.001 (0.192)	-0.000 (0.517)
$CRK_{i,t}$	-0.158 (0.235)	-0.434 (0.002)	0.091 (0.366)	0.026 (0.438)	0.526 (0.000)	0.428 (0.000)
$CR8_{i,t}$	0.366 (0.000)	0.267 (0.000)	-0.032 (0.308)	-0.040 (0.273)	0.025 (0.005)	0.009 (0.308)
$ICRG_{i,t}$	0.015 (0.000)	0.007 (0.006)	-0.000 (0.943)	-0.001 (0.498)	-0.000 (0.260)	0.000 (0.688)
$LY_{i,t}$	0.010 (0.431)	-0.005 (0.667)	-0.012 (0.210)	-0.004 (0.256)	0.001 (0.505)	0.003 (0.152)
AR(1)	0.304	0.031	0.121	0.166	0.041	0.048
AR(2)	0.655	0.101	0.406	0.359	0.881	0.419
Sargan test	0.003	0.000	0.068	0.324	0.232	0.132
Hansen test	0.737	0.990	1.000	1.000	0.894	1.000

Source: Authors' estimates