Credit Channel of Monetary Policy Transmission Mechanism in BRICS

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Abstract

The monetary policy is one of the most important issues in the world. After financial problems in capitalism system in the world the former communist countries had opportunities to accuse capitalism and introduce the new monetary system and monetary transmission. Brazil, Russia, India, China, and South Africa are the first with new banking system and monetary transmission. These new national fast growing economies formed on of the biggest transnational Balance Sheet Channel so called BRICS. These countries have the biggest share in the world but their influence in the world economic is less than their share. So, the new banking and monetary system changed the former World Bank system which was always criticized by the former communist countries and BRICS countries. The World Bank policies always has supported the capitalism system and capitalism countries. The former policies does not address the current and future economic developments of BRICS countries, However amount of their internationally economic involvements increased even more than 45%.The balance sheet in different countries is different base of the financial position of business and size of the market that different amount of funds gather from there and it make various funding channel among different countries. Therefore, different impacts on the countries will form the new type and size of firm in each country that are so different from each other. In fact this is mechanism of securing the investment in these countries by the description of the real economy through the clear decision making system in monetary policy transmission system. This study aims to show the effectiveness of new monetary policy in the last decades and review how credit channel transmission mechanism of monetary policies have conducted in these countries. The BRICS countries are the prime examples to show how such mechanism can be workable in these countries.

Keywords: Monetary policy, monetary transmission, balance sheet channel, BRICS

1. Introduction

The credit aspects of the monetary policy transmission mechanism (MPTM) particularly in the balance sheet channel (BSC) are critical in any monetary policy initiatives. It focuses on the role of financial intermediaries and the critical role of banks as opposed to just the use of interest rates in managing overall economic activity. This view however is disputed by economists who claim that BSCs are not part of monetary policy transmissions. The gap between these two views has stimulated a discourse involving the exploration of the data-base to establish whether imperfect information or other elements in credit markets might explain how monetary policy operates. (Boivin *et al.*, 2010)

To allow monetary policy to stabilize various economic factors requires an understanding of how it works and its impacts. The generally identified mechanisms for monetary policy transmission include interest and exchange rates, asset prices, bank lending, and balance sheet channels, and awareness of their weight and how they work allows central banks to gauge their effectiveness. In addition, the extent of their effectiveness depend the depth of a country's financial sector and its overall economic structure. The evidence points to varying degrees of effectiveness of the various channels in different countries and time. The financial sectors in BRICS countries are strongly influenced by fiscal dominance resulting in distortions that prevent the effective use of monetary policy although some claim that BSCs may work. Using the theoretical basis presented by (Bernanke and Gertler, 1995), this paper empirically investigates the balance sheet channel in BRICS countries to determine the effects of monetary policy on the behavior of firms and commercial banks. (Shabbir, 2012)

The credit channel mechanism refers to how an economy is affected by a central bank's monetary policy on the volume of credit provided to firms and consumers for their activities. Such a situation can be effected through two means, namely via the balance sheet channel and the bank lending channel.

The literature on this subject reviews the effects of information availability and other credit market operations on consumption and economic activity and how monetary policy should be conducted. The bank lending channel involves the supply side of the equation and the amount of credit or loans generated by financial institutions

while the balance sheet effect refers to how monetary policy impacts a firm's ability to borrow. In addition, the credit channel can affect financial market efficiencies in terms of matching borrowers and lenders or in the imposition of credit rationings which have a direct impact while lending interest rates remain the same (Claus and Grimes, 2003).

Banks balance sheets have assets consisting of loans and liabilities comprising deposits by households and firms plus bank equity which include stock issues and retained earnings. In typical operations, bank borrow "short" and lend "long" accepting deposits that can be withdrawn on demand or in a matter of months and providing medium- and long-term loans. As such, their assets are usually longer in terms of maturity compared to liabilities. It is this mismatch that allows monetary policy to impact their balance sheets. Without perfect interest rate hedging, a tighter monetary policy where interest rates rise results in a larger decline in the present value of assets having longer maturities compared to the shorter-maturity liabilities. The converse happens when interest rates decline during a period of loose monetary policy (Claus and Grimes, 2003).

The balance sheet channel has a direct impact on the asset channel and how expected future flows and the value of a firm as both elements can be affected by interest rates. Any monetary contraction will diminish the value of a firm as its balance sheet is used as collateral to negotiate lending terms. Such a decline in a firm's capital value will make it less risk-averse as its resource share in a project will be reduced. This moral hazard will negatively affect selection in the demand for credit by firms suffering a larger decline in as they will present the riskiest projects to banks. This can be mitigated if information is perfect to allow facilitate the banks' assessment of their viability and charge them accordingly.

Interestingly, this channel affords a better explanation of the longer lasting effects of monetary contractions than that of elasticity of consumption and investment. Firms subject to a higher risk premium or that are directly left out of the credit market will only see a worsening of their capital positions and exacerbate the issues of moral hazard and adverse selection. There is also the issue of the nonlinear and asymmetrical responses of interest rates to this channel. A small monetary contraction can marginally affect a large number of firms which, in turn, impacts economic activity levels more severely and over a longer term than that derived from consumption and investment elasticity.

The main objective of this study is:

1) To evaluate the impact of baking variables such as loans, deposits, and credit in BRICS countries.

2) To examine balance sheet changes when variables of firms such as cash on deposit, net worth, and cash flow is implemented in BRICS countries.

Economic and financial crises have affected almost all developed countries since 2007 which has significantly impacted their net worth and its composition. Most of the countries have instituted reforms to their systems such as migrating from traditional to more novel banking systems as a means to assess and forecast current and future risks to their positions. This study focuses mainly on the BRICS countries of Brazil, Russia, India, China, and South Africa. These countries are far apart in terms of geography, systems, and approaches but are yet similarly affected by developments and changes in monetary system.

Following this introduction, a section on individual countries experiences is presented together with a review of the literature on the balance sheet channel of the monetary policy transmission mechanism followed by the conclusion.

2. Literature Review of Credit Channel of Monetary Policy Transmission Mechanism in BRICS

Most literature on balance sheet channel of transmission mechanism is on the theoretical aspects although some have analyzed the effect of the balance sheet channel, often called net worth channel, using micro database. Based on US manufacturing firms' quarterly data, Bernanke *et al.* (1994) classified firms on their size based on their gross nominal assets and found that tight monetary policy resulted in an increase in short term borrowings for large firms to finance their inventories. However, they noted that such firms' level of inventories declined significantly by the second quarter during periods of recession. For small firms, tight monetary policy gave them little room to borrow in the short term although, unlike their larger counterparts, their inventory levels trended downwards over time.

Bernanke and Gertler (1995) analyzed credit channels by applying the VAR technique based on quarterly data for 1965-1994 and the role of bank lending and balance sheets on the housing market. They found that tight

monetary policy had a direct negative impact on borrowers' financial positions as they had to meet additional interest expenses that consequently reduced their net cash flows. Among others, an increase in interest rates resulted in a decline in asset prices and lowered collateral values. Tight monetary policy also impacts national aggregate demand as firms' revenues decline, and they experience a cash flow constraint and an increase in coverage ratio. During this phase, banks tend to reallocate their funds towards large firms that they considered as having less risk. Oliner and Rudebusch (1995) arrived at similar results in their study of 7000 US manufacturing, mining, and trade corporations over 1973-1991 using quarterly data. Based on a calculation of impulse response functions using VAR they concluded that monetary contraction led to more credit being chandelled to large firms.

To evaluate the effectiveness of the balance sheet channel of monetary policy on the Austrian economy, Wesche and Nationalbank (2000) utilized individual firm micro-data of almost 2000 non-financial firms from 1979 to 1998. They concluded that tight monetary policy limited the volume of funds available borrowing which affected borrowings by small firms. The study also noted that small and medium firms were more sensitive to financial variables, and that their average interest expenses were higher while their investment-to-sales ratios declined. In a study on Ukraine, Zaderey (2003) observed that monetary contraction resulted in a decline in equity prices while raising interest expenses which squeezed the net cash flows of firms and depleted the net worth of borrowers. During these times, firms that were unable to use capital markets resorted to internal funding to meet liquidity requirements, finance working capital, and for additional investments.

Guariglia and Mateut (2006) investigated the credit channel, trade credit channel, and inventory investment in the UK based on data from 609 firms over 1980-2000 to evaluate how inventory investment is adjusted to meet their financing needs. They noted that although both trade and credit channels worked together, the former was the dominant factor in the monetary policy equation. The coverage ratio had a more significant role in inventory investment with small firms seen to experience financial constraints during times in times of restricted monetary policy.

Most studies on credit channel focus on gauging the impact of financial constraints faced by firms during periods of monetary tightening. Abdul Karim (2010) attempted determine the impact of monetary policy on the fixed investment spending of firms. Following Blundell and Bond (1998) he applied the dynamic GMM estimation technique to investigate the interest rate and credit channels and concluded that small firms were more exposed to financially constraints than their larger counterparts.

Özlü and Yalçın (2010) classified non-financial firms as small, medium, and large on the basis of employment and on their export orientation to analyze the effectiveness of the trade credit channel in Turkey. Their study noted that SMEs with lower export shares had greater financial difficulties when monetary policy was constrained but that large firms had easier access to funds. They also noted that the credit channel became ineffective when firms held large trade credits.

Most literature on BRICS countries on credit channel has focused on a micro analysis of capital markets on monetary transmission, and in general adhere to the arguments provided by the research findings of Kashyap *et al.* (1993) Examining the impact of monetary policy on the composition of US firms' external finance using aggregate data from the early 1960s to the late 1980s, they noted that tight monetary policy tends to shift their external financing from bank loans to commercial paper. Unfortunately, their use of aggregate data does not allow for firm heterogeneity. On the other hand, in their empirical analysis, Bernanke *et al.* (1994) use data on small and large manufacturing firms and their individual responses to monetary policy, and noted that the BSC was of greater relevance for relatively small firms and their capacity to access the financial market. Based on this idea of firm heterogeneity, (Oliner and Rudebusch, 1995, 1996) however, find that there is no evidence of cross-sectional differences between small and large firms although that the former significantly reduce the proportion of bank loans in times of monetary policy contraction.

There is a large body of empirical literature that links firm-level investment and capital market imperfections, starting with the work of Fazzari *et al.* (1988), which gauges the existence of financing constraints at the firm level, based on investment-cash flow sensitivities. This analysis was replicated by several studies by grouping firms according to different proxies based on information costs, the firm's age and size, dividend payout, ownership structure, and business groups. This analysis also extends to other forms of investment, such as R&D expenses Rusak *et al.* (2002) (Himmelberg and Petersen (1994); inventory investments Carpenter *et al.* (1998) , Guariglia (1998) ,Guariglia (2000) ,Guariglia (2008) cash savings Almeida *et al.* (2004) and total assets Rusak *et al.* (2002). This argument over the relationship between financial constraints and investment-cash flow sensitivity also applies to the international realm. Hoshi *et al.* (1991) Schaller (1993) and Shin and Park (1999) present evidence from Japanese, Canadian, and Korean data, respectively, and show that the sensitivity is higher

for more constrained firms.

Meeks (2012) examined the impact of credit shocks on US business cycles noting that they while they have a significant effect during financial crises their influence is marginal in times of stability. Gilchrist *et al.* (2009)) and Gilchrist and Zakrajšek (2012) report that credit market spreads significantly affected US business cycles during the period 1990-2008. Using a DSGE model Perri and Quadrini (2011) note that much of the latest recession and its spread globally can be attributed to credit market shocks.

Based on the wide variety of channels for monetary policy, the analysis of data for individual countries will reveal what particular approach will be critical and relevant for them. Various studies have provided the empirical basis for monetary transmission mechanism such as those by Taylor (1995) which has revealed several applicable policy implications. Studies that look at the transmission mechanism in the US include Bernanke and Blinder (1992) and Bernanke *et al.* (1994) More broadly, Hsing (2004) studies the case of Argentina, Goh *et al.* (2007) evaluate bank lending channels in Malaysia, Morsink and Bayoumi (2001) provide an analysis of Japan's position, Disyatat and Vongsinsirikul (2003) analyze monetary policy in relation to the transmission mechanism in Thailand, Poddar *et al.* (2006) on monetary transmission in Jordan, and Chow (2004) studies the situation in Singapore.

3. Why the BRICS group is important

BRICS countries have moved forward as they seek to address the various economic issues affecting them. The five countries are key drivers of global economic growth compared to the more advanced countries which are faced with much economic and financial instability, and their greatest assets is their continued growth arising mainly to the strength of their internal purchasing demand within each of them. Another key element of BRICS countries is their strong use of their national currencies in their trading of their goods.

3.1   The continued importance of BRICS countries in 2015

Despite the economic crises in some BRIC countries like Russia, Brazil and South Africa, the grouping remains a major bloc that has marginal Western involvement in their economies. The 7th BRICS Summit in Russia in July 2015 was the most important event of the year where the grouping reported continued economic resilience and growth as well as strong collaboration with each other. In addition the establishment of the New Development Bank (NDB) shows that Western analysts were mistaken when they asserted that the five nations were too dissimilar from each other to be able to agree on anything. From the first summit held six years ago, much has been achieved by the grouping especially in intra-BRICS relationships. They have also not shied away from jointly criticizing Western nations for attempting to exclude Russia from the G20, and such a position will protect Russia from economic and political isolation. The BRICS are thus a significant factor in the international economic, financial, and trade stage.

3.2 Three reasons the BRICS' New Development Bank matters

The establishment of the NDB is important to international order for three reasons. It is a symbol of the strength of BRICS countries despite the odds faced by them. Some BRICS nations have experienced slower growth even among the strongest of them namely China, which has seen a cooling of its economy in recent years. Critics also point to the differences among the BRICS which they say will affect the NDB. Second, China has emerged as a major global player among them in line with her huge population size and rapid development. However China should emphasis on maintaining a balance between its influence on the bank and that of the other members to avoid any semblance and accusations of dominating the setup by seeming to impose its will and rules on other members and developing countries seeking NDB funding. This is particularly relevant in view of the BRICS nations diverging interests and sometimes conflicting interests (such as territorial disputes between China and India) among themselves.

Finally, the NDB is a significant factor as it poses a direct challenge to a global order long dominated by the West as well as a counterbalance to the IMF and World Bank which have by and large excluded developing countries in their decision-making processes. The BRICS bank is currently not engaged in challenging the international liberal economic order but is seeking to influence the IMF and World Bank to be more open and transparent by using the strengths of its larger member states. This competition between the NDB and the Bretton Woods institutions is aimed at enhancing efficiencies rather than be a clash of alternative economic philosophies. Both parties should complement each other in promoting an economic world order that is just and equitable to all countries.

3.2.1 Credit channel in South Africa

Pandit and Vashisht (2011) study on the monetary policy transmission mechanism for five African countries including South Africa shows a negative relationship between bank credit and the policy rate whereas credit channels and the interest rate operations are more effective. A study by Walker (2012) on bank lending channels for five African countries as a group shows that bank loan supply declines with a rise in the policy rate although urge and well capitalized banks can override the impacts of monetary tightening. Hale *et al.* (2013) indicate that banks with strong balance sheets could sustain lending during the recent global financial crisis while those with less liquidity and which depend more on market funding make lower amounts of loans.

Gumata *et al.* (2013) tested all five channels of monetary policy transmission mechanisms for South Africa, and established that interest rates are the most important, followed by the exchange rate, expectations, and credit channels. The asset price channel is rather weak. Ludi and Ground (2006) , on the other hand, cannot find support for the bank lending channel. Bank loans are demand- instead of supply-driven where they are determined by consumer demand and not by the supply of loans by banks. In a test of five African countries, Walker (2012) showed that the bank lending channel is not statistically significant. Gumata *et al.* (2013) note that balance sheets of banks and households do not contribute much in terms of transmitting monetary policy shocks to the economy.

3.2.2 Credit channel in Brazil

The credit channel is a recent phenomenon in Brazil, and empirical studies on the transmission mechanism of monetary policy through it especially in regard to inflation were conducted by Pagan *et al.* (2008) Minella and Souza-Sobrinho (2009), Coelho (2010), de Mello and Pisu (2010) and Auel and de Mendonça (2011). Among these studies, the works of Minella and Souza-Sobrinho (2009), de Mello and Pisu (2010), and Auel and de Mendonça (2011)) noted major issues that needed to be highlighted.

As highlighted by Bogdanski *et al.* (2000) ,the low credit/GDP ratio in the Brazilian economy reflects the marginal influence of credit channels on macroeconomic factors on the country Auel and de Mendonça (2011). Instead, their findings indicate that the effects of economic shocks on credit supply and on credit spread match the theories propounded on credit channels. They also note that interest rate shocks do not directly impact the economy but are transmitted through credit channels.

The study by Caldas Montes and Cabral Machado (2013) note that credit channels act as a transmission mechanism of monetary policy to the economy. This has major implications to economies especially to those targeting the containment of inflation such as Brazil. A monetary policy that is committed to ensuring price stability increases credibility and promotes macroeconomic stability and is a sound means for enhancing the volume of lending to the private sector.

A study by Ramos-Tallada (2015) shows that over the long run, the supply of lending is inversely correlated with short-term market interest rates. Whether credit supply is sensitive to monetary shocks is not dependent on bank characteristics as generally noted in the empirical literature, but a proxy of individual bank's external finance premium (EFP) better captures financial constraints than their size, liquid assets, or capitalization ratios. The author also notes that the higher degree of market risk borne by a bank's securities portfolios (as expressed by a longer duration of public debt bonds) and lower uncertainty in the money market (from the lower volatility of rates) seem to have a consistently enhanced effect on monetary policy through the BLC.

3.2.3 Credit channel in Russia

Russia is one of the largest oil producers in the world and the abundance of natural resources in the country has enabled her to earn much revenue from their exports. However, this has led to a substantial increase in upward pressure on the ruble's value. The many studies on the effect of monetary policy shocks on the Russian economy show that stock prices contribute more as a means of transmission channel for monetary policy than bank loans. Anzoátegui *et al.* (2012) note the significantly higher market power for state-owned banks in Russia while findings by Salmanov *et al.* (2015) verify the hypothesis based on the presence of a credit banking channel in the country. In Russia, money supply, the monetary base, interest rates in the interbank lending market, and the refinancing rate are major elements of the banking system.

3.2.4 Credit channel in India

Among the studies on channels of monetary policy transmission for India, Al-Mashat (2003) note that the interest and exchange rate channels enhance the transmission impact of monetary policy compared to bank lending channels due to the presence of directed lending for priority sectors. Pandit *et al.* (2006) noted that the bank lending channel of small banks were more responsive to policy shocks while Aleem (2010) found that only credit channels were critical in that regard. Pandit and Vashisht (2011) provide evidence that the policy rate

channel of transmission mechanism – combining traditional interest rate and credit channels operated in India and other EMEs. Also a study by Khundrakpam (2011) notes that credit channels were significant and robust in monetary transmission in the post-LAF period.

3.2.5 Credit channel in China

China's economy has grown significantly in the last two decades and this transformation has allowed its central bank, the People's Bank of China (PBC), to conduct monetary policy to manage fundamentals as a means to ensure economic stability. Although interest rates remain the cornerstone of doing so, credit channels to enhance the effects of monetary policy have gained increasing prominence Mishkin (2007); Schultz *et al.* (2010), . Bernanke and Blinder (1988) forecast that bank lending channels are expected to decline in tandem with the decrease in the overall decline in credit provided by banks as a response to tighter monetary policy.

There is little evidence available on the channels of China's monetary policy transmission. Wang and Xie (2004) find that money's impact on long-run economic growth is marginal while Hsing (2004) concludes that it significantly affects long-term output. Liu et al. (2009) also studied the long-term relationship between inflation and deposit rates. Liu *et al.* (2012) note that the quality of the balance sheets of firms during tight monetary policy deteriorates compared to when it is loose, and that there is an asymmetric effect on it due to changes in monetary policy. Also the balance sheet channel of monetary policy transmission is not subject to the nature of the corporation, while there is significant positive correlation with ownership concentration. Small firms are affected more in times of monetary policy contractions compared to larger entities.

4. Discussion and Conclusion

The literature on the balance sheet channel focuses on the impact of financial constraints, that is, the availability of short term borrowing to different groups of firms and the reallocation of supply of credit by the banks. This paper broadens the discourse by including how monetary contraction operates on the net worth and cash flow of firms and commercial banks. The impact of credit channel on cash flow, net worth, bank loan and bank deposit in emerging markets such as the MANA, GCC should be evaluated to provide some general research findings. Lastly, further research could benefit from cross-country comparisons of the influence of different level of accounting principles and their level of implementation on the credit channel costs.

After reviewing BRICS countries it shows the and also some other countries in the world it shows that it is not so easy for the countries in the world to have changes in monetary transmission and monetary policy. The size of the market and countries are very important to take such critical decision for their monetary system. Brazil, Russia, India, China, and South Africa control about 45% of the world economy. Beside their economy can see the population and size of the countries are important. Most of the focus in BRICS countries is based on micro economic as most of the former communist countries have experienced the down top decision making system. The huge business and money transaction in these countries based on the reviewed literature in BRICS countries have effect on the monetary policies on the banking system. In bank lending channel the looks for the bank interests and how the money will come back again though the banking system but in balance sheet they look for ability to borrow. As it mentioned the balance sheet and monetary system is so different among the BRICS countries. For Instance China and Russia have so different monetary system. It seems BRICS with the different geographical position and with the same goals and economic constructions have very similarities in banking system but we cannot see the same structure among the European countries.

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