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FINANCIAL MARKETS AND MONETARY POLICY: A REVIEW OF ISSUES, THEORIES, METHODOLOGY AND THE WAY FORWARD

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Abstract

The monetary policy-financial market nexus has received renewed interest following the recent global financial crises. The study surveys monetary policy and financial market research in developing countries and emerging economies over an eight year period. To do this, the Journal of Economic Literature (JEL) Classification System is reconfigured to produce a relevant frame of themes for the review. The review is based on 130 peer reviewed articles. The paper highlights the areas of greatest interest and those that have received relatively little attention to date. The suggested areas for future research include: Issues; macro-prudential policy tools and their application, non-bank financial institutions and monetary policy, and the corporate finance-corporate governance-monetary policy nexus; Method; incorporating mixed and qualitative methods; Theory; theory of informal credit channel, and adapting dynamic stochastic equilibrium models to developing country context.

Key Words: Monetary Policy, Financial Markets, Transmission Mechanism, Developing Countries, Emerging Markets

'True scholarship consists in knowing not what things exist, but what they mean; it is not memory but judgement.'

~ James Russell Lowell

1. Background and Rational for the Review

Over the past two decades the radar of global research has been focused on Developing Countries (DCs) and more so the Emerging Markets (EMs). The reasons for this sustained concentration of research in these areas are varied and have been provided by Kearny (2012). Not only do DCs and EMs house a vast proportion of the global population and land mass, they also have a more rapid population and gross domestic product (GDP) growth rate compared to advanced countries. DCs and EMs have disparate institutional, cultural, economic, financial, legal, social and political environments. They have become fertile grounds for testing the applicability of existing theories, re-examining and renewing received views about the workings of the financial and business world, gaining new insights into puzzles in economics and finance and developing new theories and models that fit the context. The resurgence of research in DCs and EMs has provoked a number of reviews on DCs and EMs research (eg. Fifield *et al.*, 1999; Khilji, 2003; Fan *et al.* 2011; Kearny, 2012).

Fifield *et al.* (1999) look at the factors which define EMs with a focus on equity markets. Khilji (2003) reviews economic crises; Phylaktis (2006) examines asset management, spill-over effects, corporate finance and market interdependence. Fan *et al.* (2011) reviews how key institutional forces in EMs such as government quality, state ownership, and

financial development affect the structures and behaviours of firms including their investments, financing, governance and growth. Quite recently, Kearny (2012) conducted a comprehensive review of EMs research with emphasis on international business, finance, and economics.

Notwithstanding the plethora of reviews of DC and EM research the crucial issue of the nexus between financial markets and monetary policy seems to have been ignored altogether. This is despite the importance of the established link between monetary policy and financial markets. Economists and financial experts have advised that, the central bank in discharging its monetary policy obligations must observe financial markets very closely. Very clearly therefore, the monetary policy decisions of the central bank cannot work in isolation. Monetary policy by necessity requires a channel(s) of transmission for it to realise its ultimate objective of price stability and welfare gains. No doubt, financial markets provide indispensable channels for the effective transmission of monetary policy (Bangura, 2011). With the increasing importance of EMs and DCs in the global financial architecture, a lack of systematic review of the link between financial markets and monetary policy constitutes a critical lacuna in research that begs for attention.

More so, developing country macroeconomics has become a discipline on its own (Frankel, 2010). Some of the features that make developing countries different from the advanced ones include:

‘greater exposure to supply shocks in general and trade volatility in particular (especially for commodity exporters), procyclicality of international finance (contrary to orthodox theory), lower credibility with respect to both price stability and default risk (due in part to a past history of financing deficits by seignorage and default), procyclicality of fiscal policy (due in part to the imposition of austerity in crises), and other imperfect institutions’ (Frankel, 2011, p.56).

These unique characteristics imply that models required for assessing DCs and EMs must be uniquely different from those applied to industrialised nations. But how shall we develop or improve upon such unique models without a thorough assessment of the received wisdom to provide a guide for the future? Finding answers to this question forms the motivation of the study.

Based on this background, this paper seeks to review the contemporary issues and prevailing understanding on monetary policy and financial markets in EMs and DCs. The specific objectives to be addressed include:

1. Provide a literature review and analysis of research related to monetary policy and financial markets in DCs and EMs
2. Classify financial market and monetary policy research and identify its dissemination
3. Classify, assess, and evaluate methodologies used to conduct research in financial markets and monetary policy
4. Identify and describe key research trends, and gaps pertaining to: a) conceptual approaches; b) methodological approaches; c) issues addressed and burning issues; d) evidence presented and e) pointers for future research.

2. Framing Financial Markets (FM) and Monetary Policy (MP) Research

2.1 Financial Markets and Monetary Policy Defined

The term *financial market* describes a market where financial securities or assets are bought and sold (Madura, 2010). Financial markets play a crucial economic role by transferring funds from households, businesses, and governments with saved excess resources (Lender-Savers) to decision making units that have inadequate funds but wish to invest (Borrower-Spenders) (Mishkin and Eakins, 2009).

Monetary policy on the other hand refers to the management of money supply and interest rate within an economy. In recent times, the central bank has been charged with the responsibility of managing monetary policy. The conduct of monetary policy affects interest rates, inflation, business cycles, all of which impact greatly on financial markets (Mishkin and Eakins, 2009).

On the basis of these definitions, financial market and monetary policy research encompasses all research work that examines the dynamic link between monetary policy and financial market operations. The link could be one-directional (from monetary to financial markets or vice versa) or bi-directional (running from monetary to financial markets and vice versa). It could also be multi-faceted -looking at the link between different aspects of monetary policy and different types of financial markets and spilling over to impact on say wages and employment.

2.2 Description of Concepts

Some concepts are key to the study of the link between monetary policy and financial markets in DCs and EMs. They include, monetary economics, and financial system.

Monetary Economics: The study of the nexus between financial markets and monetary policy lies within the broad domain of monetary economics. This study adopts the definition of the broad field of monetary economics by Chadha (2011, p.3). ‘Monetary economics is the study of aggregate production and consumption in which central bank liabilities, the government’s present value budget constraint and the operation of financial intermediaries, at home and overseas, play a fundamental role in the determination and resultant welfare of any particular equilibrium’. Monetary economics has further been categorised by Arestis and Mihailov (2011) into three fields comprising (1) Monetary theory, (2) Monetary policy and (3) Public finance. In the view of Chadha (2011), this classification does not capture the role of empirical research on money demand, money markets, interest rates, portfolio analysis, monetary transmission mechanism and bank lending. The author suggests a fourth sub-field that will focus on the empirics of money and exchange markets. In agreeing with Chadha, this study recommends the inclusion of empirical studies covering equity markets, derivative markets, bond markets, and mortgage markets. The present study therefore suggest a reclassification of monetary economics into four sub-fields consisting of (1) Monetary theory, (2) Monetary policy (3) Public finance (4) Empirics of monetary policy, financial markets and the transmission mechanism. The present review focuses mainly on the fourth sub-field.

Financial Services and Systems: it is described as ‘a set of complex and closely interconnected financial institutions, markets, instruments, services, practices, and transactions. Financial systems play the key economic function of allocating resources in the economy’ (Gurusamy, 2008, p.3).

Emerging Markets (EMs): A World Bank Economist, Antoine van Agtmael was the first to use the terminology emerging markets in the 1980s. The term is not theoretically grounded and therefore its use is somewhat arbitrary. Owing to this arbitrariness, a number of institutions and rating agencies have produced what they consider the list of EMs. Some of these include Financial Times Stock Exchange (FTSE) list (comprising 22 EMs), Bloomberg's Morgan Stanley Capital International (MSCI) EM index (comprising 21 EMs as at 2013), the International Monetary Fund (IMF) list of emerging economies (containing 25 countries as at 2012), the Columbia University Emerging Market Global Players (EMGP) list (16 countries as at 2013), Standard and Poor's list (comprising 20 countries as at 2010), the Dow Jones list (with 20 countries as at 2011), the Russell list (with 22 countries as at 2013), the Frontier Strategy Group (F10) list of top 10 EMs, and the BBVA Research list (with 44 countries as at 2010). Though these lists overlap, some countries appear in only one list while few appear in all the list.

Combining the various classifications above and eliminating countries that appear in only one list produces 37 EMs. These include: Argentina, Bangladesh, Brazil, Chile, Hungary, China, Columbia, the Czech Republic, Egypt, Greece, India, Indonesia, Jordan, Kuwait, Latvia, Lithuania, Malaysia, Mauritius, Mexico, Oman, Pakistan, the Philippines, Poland, Qatar, Romania, Russia, Bulgaria, Slovakia, Slovenia, South Africa, Nigeria, Taiwan, Thailand, Peru, Turkey, and Vietnam. These EMs are said to possess some features of developed markets, are expected to be developed markets in the near future or were developed markets in the past. Apart from the Czech Republic, Greece, Latvia, Slovakia, Slovenia, and Taiwan, all the EMs listed above are also included in the IMF and World Bank's list of DCs.

Developing Countries (DCs): the term DC has no universal definition. Generally, DCs are countries who relative to 'advanced countries' have relatively lower living standards, underdeveloped industrial base, a lower Human Development Index (HDI), and a weaker institutional framework. This study adopts the 154 list of DCs provided by the IMF and the World Bank, but excludes countries named above as EMs from the list.

2.3 Classification of Financial Markets and Monetary Policy Research

In framing financial market and monetary policy research, there is the need to establish and describe the classification of research in the field. What we have in the extant literature and in economics and finance text books is the classification of either monetary economics alone (Arestis and Mihailov, 2011 -as discussed earlier) or a classification of financial markets alone (Mishkin and Eakins, 2009; Madura, 2010). Putting these ideas together, we can attempt to categorise monetary policy and financial markets research.

2.3.1 Classification Based on Journal of Economic Literature (JEL) Classification System

The most authoritative and widely accepted classification system used in categorizing research issues in economics and its sub-disciplines is the JEL Classification System produced by the Journal of Economic Literature. It is used by EconList and other databases to categorise articles, dissertations, books, book reviews, and working papers based on this list. The list contains 20 main categories arranged alphabetically from A to Z. Since neither monetary policy nor financial markets appears in the 20 category list, the study narrowed the above list further to three categories: H – macroeconomics and monetary economics, F-international economics, and G- finance. The descriptions provided for each category is as follows.

Macroeconomics and monetary economics consists of theoretical and empirical work on the aggregate performance of an economy: output, economic development, employment, prices, and interest rates and the determinants of same. The sub-categories under this group include: E00 - General, E1- General Aggregative Models, E2 - Consumption, Saving, Production, Employment, and Investment; E3 - Prices, Business Fluctuations, and Cycles; E4 – Money and Interest Rates; E5 - Monetary Policy, Central Banking, and the Supply of Money and Credit ; and E6 - Macroeconomic - Aspects of Public Finance, Macroeconomic Policy.

International Economics comprises policy and other issues bordering on international trade, factor movements, international finance, and open-economy macroeconomics. It also covers studies pertaining to member countries of a geographic entity, for example Sub-Saharan Africa (SSA), or political and/or economic unions that are treated as regions. The seven (7) sub-categories here include: F00 – General; F1 – Trade; F2 - International Factor Movements and International Business; F3 - International Finance; F4 - Macroeconomic Aspects of International Trade and Finance; F5 – International Relations and Political Economy; and F6 – Globalisation.

Financial Economics encompasses studies about issues related to various sub-fields in financial economics: general financial markets (both domestic and international) dealing with securities (stocks, bonds, and commodity and other futures); financial institutions and services; and corporate finance and governance. The sub-classes include: G00 – General, G1 – General Financial Markets, G2 – Financial Institutions and Services, and G3 – Corporate Finance and Governance.

The sub-groups in the three selected categories are further classified into sub-groups. Having the topic at hand in mind, the study collapsed and restructured the sub-sub-categories to produce the following unique classification system of issues surrounding monetary policy (MP) and financial market (FM) research:

MP and FM: employment, consumption, saving, production, and investment – entails studies that relate financial markets to monetary policy and covers issues such as consumption, saving, investment, production, unemployment and wages, aggregate factor income distribution, forecasting and simulation.

Central banking, supply of money and credit: financial markets – covers studies that relate financial markets, institutions and systems to the following issues: money supply; credit; money multipliers; monetary policy (targets, instruments, and effects); deposit insurance; and Central Banks and their policies.

MP and general financial markets – it entails studies that link monetary policy and financial markets with the following focus areas: portfolio choice; asset pricing; contingent pricing; futures pricing; information and market efficiency; event studies; international financial markets; and government policy and regulation. Other issues include banks; other depository institutions; mortgages; insurance; insurance companies; pension funds; other private financial institutions; investment banking; venture capital; and brokerage.

Corporate finance, corporate governance and MP : this comprises studies that link monetary policy with issues such as capital budgeting; investment policy; financing policy; capital and ownership structure, bankruptcy; liquidation; mergers; acquisitions; corporate restructuring; corporate governance mechanisms; and pay-out policy.

International finance/economic crises and MP: it covers studies with an international dimension that relate MP to current account adjustment; short-term capital movements; international monetary arrangements and institutions; international lending and debt problems; foreign aid; remittances; financial aspects of economic integration; economic and financial crises; and international contagion.

3. Methodology for the Literature Review

Being an interesting research area, boundaries had to be defined for the search to ensure that only materials that were directly related to the area and thorough got included in the analysis. The following principles drove the review:

Timeframe: the review covers the period January 2007 to May 2014. This timeframe is chosen to ensure that the review captures the burning issues and currently unanswered questions in the research area. Also, it is to ensure that we track the research trajectory on the sub-discipline during and after the recent global financial crises. Prior to the global economic meltdown, the consensus on the discharge of monetary policy was that the monetary authorities should not pay heed to financial variables beyond their impact on inflation and that a strict application of inflation targeting will be enough to ensure a stable macroeconomy (Gambacorta and Signoretti, 2014). But Cúrdia and Woodford (2009) argue that the crises has challenged this view.

Database: The search was limited to the following databases: Science Direct, Emerald Full Text, JSTORE, DOAJ, Wiley, AJOL, Google Scholar, EBSCOhost, and Taylor and Francis.

Relevance: The full text of each paper was screened to ensure that only papers that related to monetary policy strategies, instruments, goals and their links with various financial markets (equity, bond, money, derivative, real estate, commodity, foreign exchange and international capital flows), institutions and systems were included.

Geographical boundary: search words were limited in terms of geographic boundary to include only articles that centred on EMs, or DCs, or, or both, or covering both developing and developed countries.

Type of material: in order to limit materials for the review and to ensure that materials covered are of high standards, the review has been limited to only referee and peer reviewed journals. Working papers, books, reports, commentaries, non-peer reviewed journals, book reviews, conference proceedings, masters and doctoral dissertations have accordingly been excluded. In addition, I went through the table of contents of six top journals in economics and finance issue by issue from January 2007 to May 2014 to ensure that the review included leading light in the discipline and to lend further gravitas to the high quality of the review process.

Language: only articles written in the English Language have been included since this is the means of instruction the author have control over.

Search Descriptors: the keywords used for the search include ‘monetary policy and financial markets’ combined with either ‘developing countries’ or ‘emerging markets’. Each article produced from the search was scanned to ensure that only those directly related to the topic were included in the review.

Using these principles, 130 research articles were identified and used for the review.

4. Presentation of Findings

One hundred and thirty (130) articles from 54 journals in economics and finance were reviewed and analysed. The articles were classified: based on global geographic regions, research themes as in Kaerny (2012) and Mishra and Montiel (2013); based on concepts, conceptual, theoretical and methodological approach only slightly similar to but largely different from Li, Zhang and Willet (2012); based on the year of publication and the top journals in finance and economics not akin to any of the above but similar to an approach used by Boateng (2009) in Information Systems research.

4.1 Distribution of Articles in Top Journals in Economics and Finance

One of the best guides to the comparative quality of the journals in business and management research is the Association of Business Schools (ABS) Journal Quality Guide (JQG), hereafter referred to as ABS JQG. Being a hybrid-based journal quality indicator, the ABS JQG ranks journals based on a combination of factors such as peer review, citation impact factor, and detailed editorial judgements and evaluation of research articles over a long period of time. The ABS JQG ranks journals from 4* to 1 with the following descriptions: 4* - world elite journal, 4 - top journal, 3 – a highly regarded journal, 2 – a well-regarded journal, and 1 – a recognised journal.

Journals were classified according to ABS JQG but due to the strict standards in the selection of journals for the list, some journals of some appreciable quality are not included in the ABS JQG. All the journals in the ABS JQG list are in the Thomson Reuters/ISI Web of Knowledge list but not all Thomson Reuters/ISI Web of Knowledge journals are in the ABS JQG list. The paper classifies ISI journals not in ABS JQG as Non-ABS ISI journals. The details of the breakdown of articles by top journals in economics is found in Table 1.

The *Journal of International Money and Finance*, and *Economic Modelling* are top journals with the highest number of articles published on the subject, each with 14(10.8%) articles over the period. Launched in 1982, the *Journal of International Money and Finance* is renowned for its publication of theoretical and empirical cutting edge research with focus on international monetary economics and international finance. Owing to its global coverage, it publishes standard research from any part of the world whether developing or developed. Specific areas covered include: exchange rate performance, foreign exchange options, international markets, capital markets, international monetary and fiscal policy, international transmission and other relevant areas. *Economic Modelling* is becoming a major outlet for the publication of large scale economic and planning models. For instance, it published the Bank of England Model and the US Federal Reserve Board Model. The major areas the journal focuses on includes: national macroeconomic models for both developed and developing countries, economic growth models, optimization models,

planning models, international trade and finance models, interdependence between national and regional economies, general equilibrium modelling of national economies, structural adjustments modelling, and the responsiveness of econometric models to macroeconomic policies. It has been in operation since 1984.

The *Journal of Banking and Finance* has the second largest number of articles, 4(3.1%) articles. It specialises in publishing both theoretical and applied research in all areas of finance and banking. Its goal is to reduce the communication gap between and within academics and researchers on one hand, and policy makers and practitioners on the other. The journal has been in operation since 1977 and has become a household name among financial economist. Four journals constitute the third largest number of articles each publishing 3(2.3%) articles. They are *Journal of Macroeconomics*, *Journal of International Financial Markets, Institutions and Money*, *Journal of Economic Studies*, *Journal of Monetary Economics*, and *World Development*. Apart from *World Development* which covers the broad area of social science, these journals mainly focus on macroeconomic models and policy, international finance, money and banking, central banking, financial institutions, markets and systems in both advanced and developing economies. The *Journal of Monetary Economics* and *Journal of International Financial Markets, Institutions and Money*, are more directly related to the present study. Some of the areas covered by the *Journal of Monetary Economics* include: asset pricing; banking, credit and financial markets; behavioural macroeconomics; business cycle analysis; consumption, labour supply, and saving; dynamic equilibria; economic growth and development; expectation formation, information and aggregate economic activity; information and aggregate economic activity; international trade, exchange rates, and open economy macroeconomics; labour markets ; fiscal policy; monetary policy; monetary theory; and money demand and money supply behaviour. The journal has been in operation since 1973. Inaugurated in 1997, the *Journal of International Financial Markets, Institutions and Money* publishes research in areas such as international financial markets, international securities markets, foreign exchange markets, term structures of Eurocurrency rates, exchange rate determination, information, speculation and parity, swaps and forward rates, cross-border payment systems, trans-national commercial banking, international investment banking, Central Bank operations, international monetary systems, and balance of payments.

The journals with the fourth largest number of articles are *Applied Financial Economics* and *Quarterly Journal of Economics*, each publishing 2(1.5%) articles. The remaining ABS JQG journals with rank above 1 each published only 1 article over the period. Among these are two elite journals: *The Journal of Finance* and *The Review of Financial Studies*. In addition to these elite finance journals, the researcher went through the table of contents of other celebrated journals in economics, each with a rank of 4. These are *Journal of Monetary Economics*, the *Quarterly Journal of Economics*, and the *Journal of Economic Literature*. Generally, the highly regarded journals (with ranks 4* and 4) seemed to have published very few papers on MP and FM in EMs and DCs.

The other ABS JQG journals ranked 1 altogether published 10(7.7%) articles. ISI Journals not listed in ABS JQG published 24(18.5%) articles. Thus, the journals included in either ABS JQG or ISI list published 93(71.5%) articles, a testimony of the high standards observed in this study. Other peer reviewed journals not included in ABS JQG or ISI list published 37(28.5%) articles. The ABS JQG journals which have a strong focus on MP and FM constitute 37(28.5%) articles. These are *Journal of International Money and Finance*; *Economic Modelling*; *Journal of International Financial Markets, Institutions and money*; *Journal of Economic Studies*; and the *Journal of Monetary Economics*.

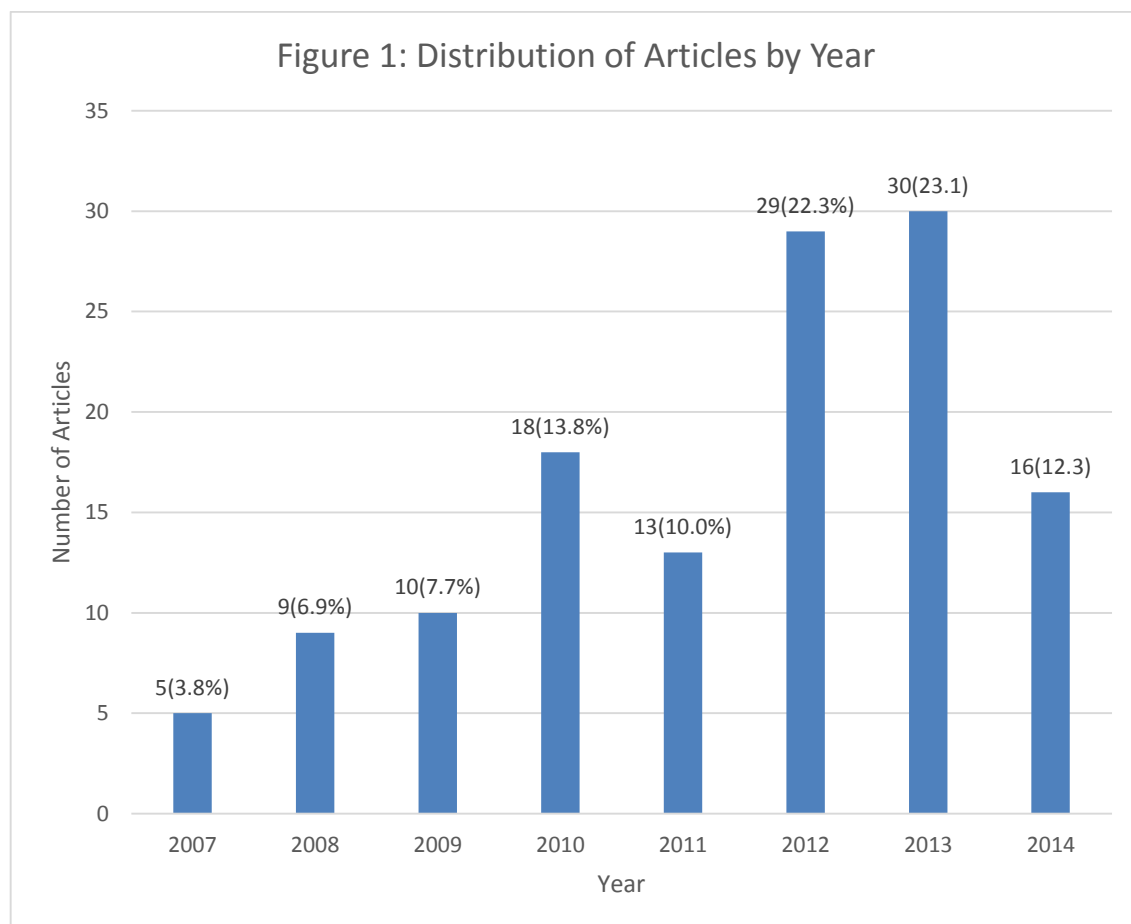
Table 1: Number of Total Articles by Selected Journals

Top Finance/Economics Journals	Number of Articles	ABS JQG Grade	ABS JQG Journals Focused on Monetary Policy and Financial Markets	Number of Articles
Journal of International Money and Finance	14 (10.8%)	3	Journal of International Money and Finance	14 (10.8%)
Economic Modelling	14 (10.8%)	2	Economic Modelling	14 (10.8%)
Journal of Banking and Finance	4 (3.1%)	3	Journal of International Financial Markets, Institutions and money	3 (2.3%)
Journal of Macroeconomics	3 (2.3%)	2	Journal of Economic Studies	3 (2.3%)
Journal of International Financial Markets, Institutions and money	3 (2.3%)	3	Journal of Monetary Economics	3 (2.3%)
Journal of Economic Studies	3 (2.3%)	2		
Journal of Monetary Economics	3 (2.3%)	4		
World Development	3 (2.3%)	3		
Applied Financial Economics	2 (1.5%)	2		
Quarterly Journal of Economics	2 (2.5%)	4		
Economic Inquiry	1 (0.8%)	3		
Economic Letters	1 (0.8%)	3		
Pacific Basin Finance Journal	1 (0.8%)	2		
Journal of Multinational Financial Management	1 (0.8%)	2		
The Journal of Finance	1 (0.8%)	4*		
Journal of Economic Literature	1 (0.8%)	4		
Review of International Economics	1 (0.8%)	3		
The Review of Financial studies	1 (0.8%)	4*		
Other ABS Journals	10 (7.7%)	1		
Non-ABS ISI Journals	24 (18.5%)			
Total	93 (71.5%)		Total	37 (28.5%)
Other Peer reviewed Journals	37 (28.5%)		Others	93 (71.5%)
Total of All Journals	130 (100%)		Total of All Journals	130 (100%)

4.2 Distribution of Articles by Year

Figure 1 depicts the number of articles published per year. The increase in the number of articles was consistent between 2007 and 2010. The number of articles however fell by 3.8% in 2011 over the 2010 figure. Therefrom, the number of articles rose steeply to 29(22.3%) in 2012 and then rose again slightly to 30(23.1%) in 2013. Since not all articles in 2014 have been included, it will not be authoritative to conclude that the number of articles fell in 2014 over the 2013 figure. But we can conclude that over half of the sample (57.7% of articles) includes articles published within the three most recent years -2012,

2013, 2014. This implies that the study benefits largely from the most current knowledge in MP and FM research.



Though several special issues (54 special issues) were published over the period, their link to MP and or financial markets is at best tangential. Tangential because either they have a relative bearing on FMs alone, or MP alone, but hardly the two simultaneously. They hardly focus specifically on EMs least of all DCs. Four (4) journals published special issues which have a weak link to MP and FM. These are *Journal of International Money and Finance*, *Economic Modelling*, *Journal of Banking and Finance*, the *Journal of Macroeconomics*, and the *Journal of Monetary Economics*. The details of special issues are shown in Table 2. Interestingly, 2012 which experienced a steep increase in the number of articles had the most (12 special issues) special issues. The year 2013 which also experienced the most number of articles published had quite a sizable number of special issues. The year 2009 had the second highest number of special issues (9 special issues) and also had an increase in the number of articles over the previous two years. However, these swings are strictly speaking not the result of special issues. Only 3 articles published in these journals come from special issues: 2 from the *Journal of International Money and Finance* and 1 from the *Journal of Monetary Economics*.

Two journals must be singled out for praise for devoting special issues solely for EMs finance even though there is more room for improvement. They are the *Journal of International Money and Finance*, and the *Journal of Banking and Finance*. The *Journal of International Money and Finance* (which together with *Economic Modelling* contributed the highest number of articles to the study), produced 4 issues on EMs. These are:

- i. 'Emerging Markets Finance', Volume 28, Issue 4 (2009)
- ii. 'Emerging Global Financial Architecture: What's New and What's Old?', Volume 29 Issue 4 (2010)
- iii. 'Emerging Markets Finance', Volume 31, Issue 4 (2012)
- iv. 'Macroeconomic and Financial Challenges in China and India', Volume 39 (December 2013)

The *Journal of Banking and Finance* also published 3 issues on EM finance. These are:

'Special Section: Globalization and Financial Services in Emerging Economics', Volume 31, Issue 6 (2007)

- i. 'The Financial Market in China: Issues Related to Asia and Pacific Region', Volume 33, Issue 1 (2009)

Only the *Journal of International Money and Finance* published a special issue related to monetary policy: 'Money and Monetary Policy', Volume 28, Issue 7 (2009). None of the special issues focused entirely on DC or even had it appearing in the issue title.

One implication of the above is that, some top journals in economics and finance by publishing special issues that have some relevance to EMs serve as a vent for producing, promoting, and disseminating ground breaking research on these less endowed economies. In addition, there is a clear neglect in promoting special issues on DCs and Africa in particular by top journals in economics and finance. Thus, opportunities exist for journals to enact special issues to cater for these underserved segments of the world. If only special issues could be made much more relevant and directly focus on DCs and EMs, they would promote the work of practitioners, make policy decisions more informed, generate the interest of academics, and promote knowledge in general in these far less researched areas of the world. The clear conclusion therefore is that, the increasing trend in research on

monetary policy and financial markets in DCs and EMs is in large part not due to special issues, but largely due to the various factors that stimulate regular issues.

Table 2: Journals with Special Issues Related to MP and FM

Journal	Year								Total
	2007	2008	2009	2010	2011	2012	2013	2014	
Journal of International Money and Finance	2	0	3	1	0	4	3	1	14
Economic Modelling	0	0	0	0	0	1	1	0	2
Journal of Banking and Finance	4	5	3	3	2	4	0	0	21
Journal of Macroeconomics	0	0	0	0	1	0	1	1	3
Journal of Monetary Economics	1	1	3	2	2	3	1	1	14
Total	7	6	9	6	5	12	6	3	54

4.3 Research Focus

From Table 3, the bulk of the articles is focused on *MPⁱ and General Financial Markets* (45 articles, 34.6%), *Central Banking, the Supply of Money and Credit: FMsⁱⁱ* (37 articles, 28.5%), and *International Finance and Economic Crises: MP* (31 articles 23.8%). Issues that have received far less attention are *FM and MP: Production, Employment, Consumption, Saving, and Investment* (9 articles, 6.9%), and *Corporate Finance and Corporate Governance: MP* (8 articles, 6.2%). Most of the articles on *MP and General Financial Markets* are focused on the long-term capital market (30 articles, 23.1%). The knowledge gap lies in how multiple financial markets, 10(7.7%); and short-term capital markets 5 (3.8%) affect, and are affected by monetary policy.

Table 3: Distribution of Articles by Focus on MP and FM

Research Focus	Sub-Issue	Number of Articles
FM and MP: Production, Employment, Consumption, Saving, and Investment		9 (6.9%)
	Production	6 (4.6%)
	Consumption	1 (0.8%)
	Employment	1 (0.8%)
	Savings and Investment	1 (0.8%)
Central Banking, Supply of Money and Credit: FMs		37 (28.5%)
	Policy Issues	22 (16.9%)
	Regulatory framework	3 (2.3%)
	Expectations and Communication	6 (4.6%)
	Money and Credit	6 (4.6%)
MP and General Financial Markets		45 (34.6%)
	Long-term Capital Market	30 (23.1%)
	Short-term Capital Market	5 (3.8%)

	Multiple Financial Markets	10 (7.7%)	
Corporate Finance and Corporate Governance: MP			8 (6.2%)
	Corporate Finance	7 (5.4%)	
	Corporate Governance	1 (0.8%)	
International Finance and Economic Crises: MP			31 (23.8%)
	Global conditions	15 (11.5%)	
	Financial Crises	7 (5.4%)	
	International Capital	6 (4.6%)	
	Monetary Union	3 (2.3%)	
Total			130 (100)

Within *Central Banking*, the *Supply of Money and Credit: FMs*, the knowledge is concentrated on policy issues (22 articles, 16.9%) especially inflation targeting. The gap is in issues such as how expectations and communications, money and credit and the regulatory framework (macro prudential policies) impact financial markets and *vice versa*. One of the lessons of the recent financial crises is that financial regulation and supervision should go beyond the micro approach. In developed countries, research has begun to focus on how macro-prudential policies work and their impact on monetary policy (Galati and Moessner, 2013). There is a knowledge gap in DCs and EMs regarding macro-prudential policy tools and their application, their association with monetary policy, and how effective they are. Specific macro-prudential tools whose application and impact can be examined include those centred on avoiding procyclical financial system on the asset and liability sides; and those designed to avoid the accumulation of excessive short-term debt.

With regards *International Finance and Economic Crises: MP*, articles on global conditions (15 articles, 11.5%) dominate the research agenda. Existing studies linking foreign monetary policy to domestic markets have used a fixed co-efficient approach and are mostly based on the stock market. The new direction is to use the time-varying approach and to broaden the scope to include other financial markets. Less studied issues include financial crises (7 articles, 5.4%), international capital flows (6 articles 4.6%) and monetary unions (3 articles, 2.3%). With the emergence of monetary unions and plans to establish new ones, there is the need for more studies to examine the potential impact financial markets and institutions could have on monetary policy effectiveness in such unions.

Within the under-researched issue of *FM and MP: Production, Employment, Consumption, Saving, and Investment*, studies that link monetary policy and the financial system to production are relatively prevalent (6 articles, 4.6%). The knowledge gap resides in assessing how the association between monetary policy and the financial system stimulates consumption (1 article, 0.8%), employment (1 article, 0.8%), and savings and investment (1 article, 0.8%). To really know the impact of monetary policy and financial markets on welfare, we must go beyond just examining the link at the macro level. Consumption, income, saving, investment and employment are good measures of how well policy and markets are performing. The sparseness of research in this area therefore is an anomaly that must be corrected, and urgently too.

Within the less researched issue of *Corporate Finance and Corporate Governance: MP*, relatively more attention is given to corporate finance (7 articles, 5.4%) than corporate governance (1 article, 0.8%). The specific corporate finance issues examined include market structure, financial composition, bank performance, and their link with monetary

policy. Even with these few studies on corporate finance the evidence is mixed. For instance, while Zulkhibri (2012) find evidence of the existence of the responsiveness of firms to monetary policy based on their corporate financial characteristics, Gosh (2010) in contrast could not find strong support for the credit view. Other corporate finance issues whose association with economic policy that can be explored include liquidity risk, financial distress, credit spread, and pricing rules. Much is yet to be understood about how the governance structure of a corporation can determine its reaction to monetary policy. Specific corporate governance issues that may be explored include mergers and acquisitions, board characteristics, compensation policies, the structure of ownership, and payout policy.

5. Conceptual Approaches and Methodological Issues in Monetary Policy and Financial Market Research

A wide range of conceptual and methodological approaches have been applied to study monetary policy and financial markets in DCs and EMs. These approaches are critically explored in this section to set the tone for revealing gaps in research conceptualisation and methodology. The major conceptual approaches employed by previous studies are classified in Table 6.

Table 5: Mapping of Articles Based on Conceptual and Methodological Approach

	Inspiration of Approach				Total
	Social theories	Socio-technical theories	Technical theories	No defined theoretical approach evident	
Quantitative	20, 21, 48, 58, 66, 67, 98	52, 54, 79, 90, 107, 124	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 49, 50, 51, 53, 56, 57, 59, 60, 61, 62, 63, 64, 69, 70, 71, 72, 74, 75, 76, 78, 80, 81, 82, 84, 85, 86, 87, 88, 89, 91, 92, 93, 94, 96, 97, 99, 100, 102, 103, 104, 105, 106, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 121, 122, 123, 125, 126, 127, 128, 129, 130, 101	8, 13, 55, 65, 68, 73	125
Mixed				77	1
Descriptive	33	95, 83		120	4
Total	8(6%)	8(6%)	106(82%)	8(6%)	130(100.0%)

NB: apart figures on the total column and row, all figures refer to article number (see 'Research articles included in the review' under references for details)

5.1 Conceptual Approaches

In Table 5, articles are classified into those that are inspired by social theories, socio-technical theories, technical theories and those whose theoretical underpinnings are not clearly discernible. Clearly, the majority of the articles are grounded in technical theories with strong economic underpinnings. Only few articles are inspired by social theories and socio-technical theories. Thus, research in the area is based on one theory or the other with different degrees of theorization. The details of the degree of conceptualisation are shown in Table 6. This study adopts the hierarchical representation of conceptual approaches by Heeks and Bailur (2006). Conceptual approaches are classified from 'shallower' conceptualisation to 'deeper' conceptualisation as follows:

- Theoretically-based approaches*: these approaches employ a strong use of a recognisable theory that can be applied to a situation or lends itself to empirical testing. Examples are studies that test the 'trilemma' and the 'Taylor principle' in DCs and EMs contexts.
- Framework-based approaches*: they develop, adopt, or adapt a framework that is traceable to a theory or derived from a body of theoretical work.
- Model-based approaches*: they employ models that are applied, most often but not always, without reference to a deeper body of knowledge.
- Concept-based approaches*: they employ a defined concept such as 'financial openness', but which is not well grounded in theory.

Category based approaches: they employ a prescribed set of factors or equations to perform analysis.

Research works that employ deeper theories are usually drawn from international trade, transmission mechanism, and rules versus discretion (monetary policy rules). The trilemma is one of the international trade theories used. The trilemma hypothesis dictates that a nation can achieve only two (and not all) of the following three policy objectives simultaneously: monetary independence, exchange rate stability, and financial integration. Aizenman and Ito (2012) for instance, examine the trilemma within the context of policy convergence and output volatility in emerging Asian markets. Their findings suggest that EMs seem to converge towards what they call 'middle ground' in terms of the trilemma and a fourth factor –accumulation of international reserves. The so called 'middle ground' hovers around managed exchange rate flexibility, characterised by comfortable holdings of international reserves, and midway levels of monetary independence and financial integration. Based on their findings, they argue that EMs face what they call a 'quadrilemma' instead of a trilemma. The empirical evidence on the trilemma so far fails to indicate which two trilemma policy combinations give best results. The introduction of a quadrilemma even makes things complex. Hadiwibowo and Komatsu (2011) ask future research to develop integrated frameworks for analysing the efficiency and effectiveness of fiscal and monetary policy within a trilemma policy configuration.

Widely applied theories pertain to monetary policy rules, especially the Taylor –type rules. Some of the relatively less investigated deep theories include the Lucas paradox, overlapping generations' growth theory, and the back-ward Philips curve. Theories relating to the credit view of monetary transmission mechanism have been widely applied except that they largely fail to apply theories to more appealing macroeconomic models, especially the DSGE framework.

In the case of framework-based approaches, there are relatively few frameworks, but with a diversity of application across different research themes. Some of them include DSGE frameworks, LSE (London School of Economics) dynamic model specification methodology, and the short-run monetary policy analysis framework. Among these frameworks, the DSGE has received wide application across different issues due to its flexibility. The other frameworks have received little attention with each having just one study applying them. The DSGE framework has been receiving increasing application in both advanced and low income countries and continues to develop to overcome criticisms against it. The DSGE framework is used to develop models that explain aggregate economic phenomena, including but not limited to economic growth, business cycles, and the impact of monetary and fiscal policy, based on macroeconomic models that are developed from microeconomic principles.

Table 6: Mapping Conceptual Approaches to Monetary Policy and Financial Market Research

Research Issue	Conceptual Approaches Identified	Classification of Conceptual Approach	Antecedents Cited	Article
MP and FM: employment, consumption, saving, production, and investment	DSGE framework: built on general equilibrium theory. It describes the behaviour of the economy as a whole	Framework	Dib (2008), Galí and Monacelli (2005)	70, 117
	Back-ward Philips Curve	Theory	Gerlach and Peng (2006)	72
	Menu-Cost Model with Stochastic Idiosyncratic Risk	Model	None	97
	Overlapping Generations	Theory	Diamond (1965)	102
	The Trilemma	Theory	Mundell (1963)	121
	Control Theoretic Model	Model	Svensson and Woodford (2004) and Faust and Svensson (2001)	116
Central banking, supply of money and credit	Bank-dominated Dynamic Macroeconomic Model	Model	Agénor and Montiel (2008a, 2008b)	5
	Credit View of Monetary Transmission	Theory	Bernanke and Blinder (1988) and Ferreira (2010)	6
	CBK Macroeconomic Model	Model	None	15
	The Bernanke et al. (1999) Financial Accelerator Model (BGG)	Model	Bernanke, Gertler, and Gilchrist (1999)	16
	Short-run Monetary Policy Analysis Framework	Framework	Agénor and Montiel (2008a).	17
	Frontier Analysis	Framework	Farrell (1957)	13
	Taylor type Monetary Policy Rate (MPR)	Theory	Taylor (1993)	18, 34, 69, 76, 110, 112, 114, 118
	Cook-Hahn model	Model	Cook and Hahn (1989) and Kuttner (2001)	29
	Zone-like Asymmetric Monetary Policy Reaction Functions	Framework	Woodford (2001)	61
	New Keynesian Phillips Curve	Theory	Roberts (1995)	95
	A Four-equation New Keynesian Model	Category	Berg, Karam, and Laxton (2006)	118
	McCallum Rule	Theory	McCallum rule (2000)	22
MP and general financial markets	Interest Rate Transmission	Theory	None	2,25
	Expectations Hypothesis	Theory	Kandil and Mirzaie (2002)	28, 45
	EMH-Exchange Rate Puzzle	Theory	Zetelmeyer (2004)	38
	Taylor Type MPR	Theory	Taylor (1993)	39
	Asset Price Transmission	Theory	Nyamongo and Misati (2010)	49, 51, 53, 55
	Genetic Cellular Automation (GCA) Model	Model	Ying and Fan (2013)	52
	DSGE Framework	Framework	Bernanke and Kuttner (2005)	59, 62, 88,96
	Overlapping Generations	Theory	Gupta and Ziramba (2010)	63

	Informal Lending Channel LSE (London School of Economics) Dynamic Model Specification Methodology	Framework	Hendry (1995)	67
	Convergence	Theory	Narayan et al. (2011)	81
	Bank Lending Channel	Theory	Arena et al. (2006)	86, 108, 122, 123
	Trilemma	Theory	Mundell (1962)	89
	Exchange Rate Transmission	Theory		90, 91
Corporate finance, corporate governance and MP	Bank Lending Channel	Theory	Holod and Peek (2007)	1, 3, 4, 7, 12, 74, 130
International finance/economic crises and MP	Modified Monetarist Theory Of Inflation	Theory	Martinz periz (2002)	10
	Cost Of Monetary Cooperation	Model	None	14
	Financial Globalization	Concept	None	33
	Currency Substitution Model	Model	None	34
	DSGE	Framework	None	42
	Trilemma	Theory	Fleming (1962), Mundell (1963)	60, 99, 119
	Taylor Type MPR with DSGE	Theory	Monacelli (2004)	105
	The Lucas Paradox	Theory	(Lucas, 1990)	124

All figures in the last column refer to article number (see 'Research articles included in the review' under references for details)

Senbeta (2011) has cautioned that because the DSGE framework was first developed based on assumptions tenable in developed countries, serious modifications are required when applying the model in a DC context. Some of the proposed modifications include foreign exchange constraint, duality in labour markets, imperfect or no access for the countries to international financial markets, the non-Taylor type of monetary reaction function. Though some adjustments have been made, a lot of these considerations are yet to be captured by recent applications of the model. For instance, Benkhodja (2014), while incorporating the fact that households do not smooth consumption and that there is no international risk sharing, still applies a Taylor-type monetary policy rule and is unable to adequately capture labour market segmentation. Similarly, though among other things, Goyal (2011) captures duality in the labour market, the paper still maintains the untenable assumptions of complete financial markets and perfect capital mobility.

Some of the models that have been applied and are at various stages of development include the Bank-dominated dynamic macroeconomic model (Agénor and Montiel, 2008a, 2008b; Agénor and Pereira da Silva 2012a), the Genetic Cellular Automation (GCA) model (Ying and Fan, 2013), the Cook-Hahn model (Cook and Hahn, 1989; Kuttner, 2001), and the financial accelerator model (BGG). All these models have not received wide application in the literature and therefore require more application to develop and integrate them properly into conventional microeconomic and macroeconomic theory. The Genetic Cellular Automation (GCA) model has been borrowed from theoretical biology and applied for instance, by, Ying and Fan (2014) to model the relationship between the Chinese stock market and Chinese monetary policy. Agénor and Pereira da Silva (2014) developed the Bank-dominated dynamic macroeconomic model (based on a model initially developed by Agénor and Montiel (2008a, 2008b) and with further improvements by Agénor and Pereira da Silva (2012a) and used it to calibrate the effect of macro-prudential policies on the monetary transmission mechanism. The model requires further application to the bank lending channel in particular as it addresses problems of market imperfections that are all too common in EMs and DCs.

Shallower theory-concept and category based approaches are not common in monetary policy and financial market research. 'Financial Globalisation' is the only concept based approach identified. Clark *et al.* (2012), try to review the concepts and measurements of financial globalisation. The concepts and measurements they identify include financial openness, financial integration, monetary interdependence, and the mobility and movement of capital. The only category based approach identified is the 'four-equation New Keynesian model' built on the 'three-equation New Keynesian model' by Berg, Karam, and Laxton (2006). The model has been used by Liu and Zhang (2010) to assess the appropriateness of monetary policy in China and to show that a hybrid policy rule, which employs both interest rate and quantity of money as instruments performs better than rules that use only one instrument.

5.2 Methodological Issues

It is not surprising to realise from Table 5 that an overwhelming majority (123 articles, 94.6%) of studies used the quantitative methodological approach. This is because economics and finance

have been dominated by positivists and related paradigms which emphasize the use of mathematics, statistics and econometrics in research. Most of these quantitative studies (72 articles, 55.4%) used time series data and a relatively less but a sizable number (43 articles, 33.1%) also employed panel data (refer to Table 7 for details). Despite the emergence of behavioural finance which fancies the inclusion of the psychological aspect of human action into finance research methodology, it is yet to receive application in studying the underlying relationship between monetary policy and the financial sector.

There is no single truly qualitative research among the articles reviewed. There is only one study (Prorokowski, 2011) that truly applied mixed methods. The author collected primary data obtained from practitioners in the Polish stock market. The results of this qualitative survey are then used to complement the results of a model built from stock data. The author uses the mixed methodology to assess the association between the domestic stock market and international macroeconomic factors. This helped in bridging the gap between theory and practice. The paper, though, not without limitations, sets the tone for the application of more mixed methods to study monetary policy and financial markets.

Only a few studies do not employ a well-defined methodology. There are 6 (4.6%) articles among the reviewed studies that are descriptive in nature and do not employ a clearly discernible methodology. These descriptive studies usually review concepts and measurements relating to ‘financial globalisation’ (Cark *et al.*, 2012), and ‘macroeconomic and financial market interdependence’ (Li, Zhang, and Willett, 2012). Much as these studies are methodologically thin, they provide a clearer understanding of key concepts and measurements that are employed in theory and empirical work. They also expose key deficiencies that exist in measuring some concepts and propose the way forward. Since economists constantly deal with measurements, and given the inconsistencies and disagreement about the best way to measure a particular variable or sets of variables, more of such reviews are required to foster standardization and improvement of concept measurement.

Quite a lot is lost due to the lack of truly qualitative studies. Qualitative research is valuable ‘for describing the nature of a problem, issue, situation or phenomena’ (Boateng, 2014, p.133) and could be mainstreamed into finance research methodology to lend deeper insight into research issues such as contagion, financial crises, economic events, and issues relating to ‘animal spirits’ that characterise the behaviour of economic agents.

Some economists blamed the quantitatively grounded mainstream finance theory not only for being unable to predict the crises, but also as being a possible contributory cause to the crises (Colander *et al.*, 2009). In the view of the critics, how could mainstream economics offer a solution to a crises it could not predict (Hadt, 2010)? In the midst of these challenges, distinguished economists traded accusations and counteraccusations, with each proffering a different way forward for economic and finance research.

In what appeared to be the apparent failure of mainstream economic methodology, some experts have advocated an alternative methodology which places premium on falsification, allows for non-quantified relationships, is based on a ‘thicker’ model of human agency, and accommodates

‘emergent possibilities’. It is hoped that these proposed modifications to economic and finance research methodology will lend greater explanatory and predictive accuracy to models (Hadt, 2010).

6. Research Gaps and Future Research Directions

This section identifies critical research trends and gaps based on the issues and evidence, conceptual and methodological approaches adduced from the reviewed articles. The section concludes by providing directions for future research for exploring the link between monetary policy and financial markets.

6.1 Gaps in Issues and Evidence

The bulk of the articles is focused on MP and General Financial Markets; Central Banking, the Supply of Money and Credit: FMs, and International Finance and Economic Crises: MP. The neglected research issues are FM and MP: Production, Employment, Consumption, Saving, and Investment; and Corporate Finance and Corporate Governance: MP. Studies on central banking are skewed towards assessing the consequences of inflation targeting while macro-prudential policies, and expectations and communications are under-investigated. With the procyclical nature of the economies of EMs and DCs the need to assess the impact of macro-prudential policies that are designed to contain procyclicality is quite apparent. The specific research gaps in this direction entail assessing the effectiveness of macro-prudential policies and how they affect economic business cycles especially monetary cycles.

The existing studies linking monetary policy to corporate finance and corporate governance have tended to focus on corporate finance issues relating to market structure and profitability. However, not much is known about the mediating role corporate governance can play in transmitting monetary signals especially via the bank lending channel. Since the governance mechanisms of the firm and arising agency issues affect the outlook of the firm, it would not be naïve to envisage a possible effect of corporate governance issues on monetary policy. As at now, it is not clear what the impact of mergers and acquisitions, board characteristics, compensation policies, structure of ownership, and payout policy, will have on the transmission of monetary signals. While again, there is no lack of studies on monetary policy and the global environment, the existing studies linking advance country economic conditions to those of the developing world are largely based on a fixed coefficient approach rendering the findings suspicious. This is consistent with the findings of Kishor and Marfatia (2013). With the upsurge in the volume of remittances in developing countries and EMs, the potential role of this inflow in impeding monetary policy effectiveness is yet to receive adequate attention. Other important issue gaps include:

1. Thin studies on the role of NBFIs in the transmission of monetary policy signals
2. The role of derivative and commodity markets in monetary policy effectiveness

6.2 Gaps in Conceptual Approach

The review points to the fact that research on monetary policy and financial markets is largely well grounded in theories of economics, international trade, and monetary economics. The trilemma has been the most widely applied theory. The gap in this theory is that, there is a lack of studies regarding what the optimum trilemma policy combination is. It is not enough to know that a country can simultaneously achieve only two of the trilemma variables: exchange rate stability, monetary independence, and financial stability. The question is, which trilemma pair is optimum for a particular country: exchange rate stability and monetary independence vs exchange rate stability and financial stability vs monetary independence vs financial stability? Finding a resolution to this puzzle will be a great boost to policy formulation by monetary authorities and policy makers. There are suggestions that EMs and DCs may even face a quadrilemma instead of a trilemma with the fourth factor being reserve accumulation. Further research is required to shed light on the new quadrilemma. Some of the relatively less researched deep theories relate to the Lucas paradox, overlapping generations' growth theory, and the back-ward Philips curve. Theories relating to the credit view of monetary transmission mechanism have received wide application except that they largely fail to apply such theories to large scale macro-econometric models and to the DSGE framework. This concern has been buttressed by Msikin *et al.* (2010). There is no deep theory that addresses the relationship between corporate governance and monetary policy. Another theory gap pertains to the informal credit channel. Informal credit institutions outside the usual banking system also transmit monetary policy signals, but to date no formal theory has been developed for this channel.

Framework based approaches which are grounded in theory have relatively received some application in monetary policy and financial market research. The most widely applied framework across various research issues is the DSGE framework. There is however, a gap in the application of this framework in DCs and EM context. The existing studies reviewed are still battling with adapting the DSGE framework to DCs and EMs relating to foreign exchange constraint, duality in labour markets, imperfect or no access for the countries to international financial markets, and non-Taylor type monetary reaction function. The other framework based approaches such as the LSE dynamic model specification methodology, and the short-run monetary policy analysis frameworks are yet to receive a wide application in monetary policy and financial market research.

Regarding shallow theory, there appears to be an arbitrary selection and application of the model based conceptual approaches to address various issues in monetary policy and financial sector research. Some of these models are yet to be tried and tested. The models are largely based on representative agent modelling where agents differ, but are assumed to act in such a way that the sum of their choices is mathematically equivalent to the decision of one individual or many identical individuals. Kirman (1992, p.119) opines that the reduction of a group of heterogeneous agents to a representative agent is not just an analytical convenience, but it is 'both unjustified and leads to conclusions which are usually misleading and often wrong.' In his view, the representative agent 'deserves a decent burial, as an approach to economic analysis that is not only primitive, but fundamentally erroneous.' Firms and countries differ in several respects and these differences must be acknowledged and incorporated into theories and models. Differences in behaviour and culture can significantly impact on the choices of economic agents. As at now no behavioural theories, frameworks and models have been built to address the link between monetary policy and financial

markets. In line with Kearny (2012), some of the behavioural theories that could be incorporated into theories and models of monetary policy and financial market research include ‘cultural traits such as assertiveness, competitiveness, decisiveness, emotional expression, family cohesion, tolerance of inequality, group loyalty, inclusiveness, respect for tradition and social responsibility’ (pp.177-178). These factors together can be crucial determinants of decision making together with the usual factors that explain return, risk and time allocation (Kearny, 2012).

6.3 Gaps in Methodological Approach

The most obvious methodological gap is the lack of qualitative studies that rely on primary data to explain the monetary policy-financial market nexus. In-depth qualitative studies that elicit ‘thick’ data by way of unstructured interviews provide a deeper explanation for the actions of economic agents beyond what the data says. Since not all decision making determinant variables are measurable, but all variables can to some extent be described, methods that can enhance our understanding of the essence of a phenomenon should be employed. Qualitative methodology such as phenomenology can be incorporated into event studies to explain financial crises, market crashes, and other phenomena in economic and finance.

The studies reviewed are almost entirely quantitatively biased, relying on the typical positivists’ philosophical assumptions. The typical quantitative study would generally rely on the vector autoregressive approach. The good side about applying VAR is that, it is capable of analysing the impact of innovations, making room for interactions among variables and produce dynamic solutions which are usually not attainable via OLS and other standard procedure (Li *et al.*, 2012). A major problem with the use of VAR is that it is a-theoretical since it uses little theoretical information concerning the interactions between the variables to guide the specification of the model (Brooks, 2008). Also, it is not clear how the coefficients from the VAR model should be interpreted. These weaknesses of the VAR imply that policy recommendations from such studies could be misleading. This calls for more application of structural methodological approaches that are deeply rooted in theory.

Another gap lies in the lack of mixed methods. Only one study (Prorokowski, 2011) among the reviewed papers truly applied a mixed method. Mixed methods allow researchers to combine the strengths of both qualitative and quantitative approaches (Boateng, 2014) thereby minimising the weaknesses of both approaches. In particular, the application of mixed methods will lend more authority and credibility to research findings. Therefore, a new breed of research on monetary policy and financial market research that emphasises the use of qualitative data alongside qualitative data obtained from interviews, documents, observation and other in-depth approaches is called for.

Triangulation to enhance the validity of research has not been appropriately applied in the methods used. What is mostly employed is the so called ‘robustness checks’ where alternative descriptions of variables are used to test for the consistency of results, or where a different estimation procedure is used to verify results. Hardly do the studies apply method triangulation where a combination of research methods is used or where different methods of data collection are employed in a single study. This calls to question the internal validity of these studies.

There are more time series data based studies than there are panel data based studies. Panel data ensures that both time and cross-sectional dimensions are considered at the same time. This provides very rich results and therefore making policy and practical recommendations from panel data studies more genuine and credible.

7. Conclusions and Pointers for Future Research

This review focused on research work done on the relationship between monetary policy and financial markets in developing and emerging economy contexts. It has shown a growing body of research on the topic over the years. To the best of the knowledge of the author there is so far no organised attempt to in a single study document the trends, issues, and conceptual and methodological approaches that underlie the monetary policy-financial market nexus. This study therefore blazes the trail in this direction and therefore serves as a foundation on the basis of which future reviews may proceed. Efforts are made as much as possible to ensure that the study is representative of the research work done on the topic.

The following conclusions can generally be made from the studies reviewed.

- There is a large amount of research in the international sector, and the financial sector, especially the banking sector. The interest in research in the international sector may be due to the recent financial crises which has highlighted the interrelatedness of countries. Interest in banking sector research may be due to the increasing role of the banking sector in the economy of DCs and EMs. The research work on the banking sector is largely based on the transmission mechanism.
- Research on monetary policy and financial system is well grounded in theory and further efforts are being made to develop models to suit DC and EM context. There are, however, still some problems in adapting developed country based macroeconomic models to suite the peculiarities of DCs and EMs.
- The informal financial sector and NBFIs have not received focus in the research efforts. Insurance companies, mutual funds, finance companies, rating agencies, credit unions which are increasingly becoming important players in the financial system of DCs and EMs could frustrate economic policy and monetary policy in particular.
- There is a lack of studies that employ qualitative research methodology.
- The geographical distribution of research across regions and countries is unbalanced.

The following research considerations can be factored into future research endeavours.

The informal financial sector and NBFIs are increasingly becoming important in the financial system of EMs and DCs. This means that these institutions and their actions have the potential to ruin the implementation of monetary policy in particular, and economic policy in general. Future research must seek to assess the contribution of this sector to economic development and the extent to which it transmits monetary policy signals. Specific financial institutions on which future research should gravitate towards include finance companies, credit unions, savings and loans companies, mutual funds, and micro-finance institutions. There is the need for research that is

based on finely granulated data, especially at the firm level, to unearth how monetary policy affects and is affected by the informal and quasi-formal financial sector.

Good corporate governance is required for the smooth running of the contemporary corporation. This means that the corporate governance mechanisms of firms can interfere with the way they respond to economic policy signals. On the other hand, the conditions created by economic policy can also influence the nature, maturity, and efficiency of firms' corporate governance policies. This potential role of corporate governance has been overlooked by prevailing studies. Future research can throw more light on these intricacies. Such research work should be all encompassing covering corporate transparency, mergers and acquisitions, internal and external corporate governance mechanisms in all financial market segments and applied to their interrelationship with fiscal policy, monetary policy and other economic policies.

Given the complexities surrounding the interaction between financial systems, a diversity of research approaches are required. The current overemphasis on quantitative methodology to almost a complete neglect of qualitative and mixed approaches has the potential to deprive economists, policy makers and researchers some useful insights. Future research should look to employ rich primary data, combining several research methods to achieve triangulation. This will enhance the credibility and applicability of findings.

Another important pointer to future research is the incorporation of cultural and behavioural factors in finance and economic models. Since there is now clear evidence to show that sometimes economic agents' decisions are influenced by factors such as belief, trust, family bonds, emotional swings, and respect for the elderly; there is the need for models that address the heterogeneous nature of economic decision making units. The current much relied upon representative agent models ignore issues of judgemental heuristics, bounded rationality, mental frames, and other cultural and behavioural factors. For finance and economic research to be more 'realistic' and more relevant, future research models not just in EMs and DCs, but in advanced countries as well, should incorporate cultural and behavioural factors unique to specific groups and individuals.

As the money, bond, derivative, real estate and commodities markets in DCs and EMs develop and mature future research will be useful in throwing more light on how efficient they are and how they affect and are affected by economic policy changes. In particular, with the recent fluctuations in the prices of agricultural commodities such as cocoa and coffee, and precious metals especially gold, economic policy in EMs and in DCs in particular must be fine-tuned to contain the repercussions of these undesirable occurrences. But how shall economic policy be appropriately adjusted when the exact impact of these happenings is not known? This is a challenge that future research must address.

With increasing donor fatigue, DCs and EMs are devising ways by which they can attract remittances, and foreign direct investment to complement limited domestic revenue for the prosecution of development. However, as these inflows increase they have the potential to frustrate or facilitate the implementation of economic policy and the operation of financial markets. Current research has not provided enough insight into the potentially complex role of increased inflows in the conduct of fiscal and monetary policy, and financial market development. Related to this, is

the lack of a theory explaining the flow of remittances. Developing theories to explain in particular the determinants of remittance inflows and outflows, and the interaction of remittances with economic policy and financial institutions is quite urgent. This is because remittances have become a huge proportion of the GDP of many DCs and EMs. In countries such as Tajikistan, Kyrgyz Republic, Lesotho, Nepal, Moldova, Haiti, Samoa, and Liberia, remittances comprise over 20% of the GDP; and in a number of countries, remittances far exceed foreign reserves (World Bank, 2013).

Given the complexity and diversity in the economic structure, institutional quality, market structure and other unique prevailing circumstances in DCs and EMs, models initially developed with advance country conditions in mind need serious modifications if they are to produce meaningful results in DCs and EMs. In particular, the popular DSGE models need careful application in DC context. Assumptions of optimal risk sharing, consumption smoothing, homogenous labour market, full employment, complete markets, and rationality which underlie the original DSGE models are largely untenable in EMs and especially DCs. More future research work must be devoted to adjusting the DSGE framework and other conventional macroeconomic models to cater for duality in labour markets, foreign exchange constraints, involuntary unemployment, incomplete markets, agent heterogeneity, and non-Taylor type monetary policy rules which are all too common in DCs.

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ⁱ Monetary policy

ⁱⁱ Financial markets