

MORTGAGE INSURANCE AND HOUSING FINANCE IN EMERGING ECONOMIES

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Lending is considered to be the utilization of resources mobilized and management of associated risk. Existing literature on housing finance in the developed world identifies the high Loan-To-Value (LTV) approach for funding housing purchase as posing a significant risk to mortgage lenders. In response, developed countries have adopted mortgage insurance as the key vehicle for credit risk mitigation. In the emerging economies however, the often adopted formal housing finance mechanism is depository - based, which lacks the mortgage insurance option. This paper provides a comprehensive review of the literature on formal mortgage tools in both developed and emerging economies and concludes that it would appear to be more beneficial for emerging economies to reform their mortgage institutions and incorporate mortgage insurance as a measure to effectively manage housing credit risk. The result of this investigation will form part of an ongoing study on housing finance in emerging economies.

Keywords: emerging economies, housing finance, mortgage insurance, risk management.

INTRODUCTION

Housing is an essential need of man, which is why it is described as a *sine qua non* of human living (Yakubu 1980; Olotuah and Aiyetan 2006). Consequently, the priority accorded the issue of housing is immense; to most governments, the availability of sufficient but basic housing for all is often stated as a priority for enhancing the social status. For the individual, housing is one of the more obvious economic and social needs in the society. Apart from providing man with social values of shelter and security housing plays a major role in serving as an asset (Poole 2003; Alhashimi and Dwyer 2004).

For a typical house-owner the house is a major asset in his portfolio and for many households the purchase of a house represents the largest (and often only) life long investment and a store of wealth (Goodman 1989; Malpezzi 1999). The purchase of a house is considered as an investment and consumption decision (Alhashimi and Dwyer 2004; Tang *et al.* 2006). This decision is ultimately driven by cost and the availability of credit and government fiscal and monetary policies (Giussani and Hadjinatheou 1991). At the macroeconomic level a substantial reduction in housing activity could substantially lower aggregate economic activity such as consumption, output and employment (Poole 2003; OFHEO 2003).

In developed economies housing priorities are driven by social factors, which include the need for government to provide habitable shelter for the citizenry. This single

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factor may explain the adoption by governments of people-oriented housing policies in the form of social housing. However in an emerging economy like Nigeria, which is the focus of this study, the provision of housing (housing supply) fails to match the growth of the population in most urban centres (housing demand) which accounts for the nations monumental deficiency in urban housing (Olotuah 2000; Olotuah and Aiyetan 2006).

To this end, the objective of this paper is to review literature on formal mortgage tools in both developed and emerging economies. In order to achieve the key objective of this paper – a literature review on formal mortgage tools in both developed and emerging economies – the remainder of the paper is structured as follows: a discuss of source of funding for housing in developed and emerging economies; risk management in bank lending and mortgage insurance.

SOURCE OF FUNDING FOR HOUSING IN DEVELOPED AND EMERGING ECONOMIES

It is expensive to construct a decent housing and the savings from one's income might take a very long period to accumulate. Therefore funds have to be raised externally from sources such as:

(1) Government Sponsored Banks

These are institutions set up by government to finance housing at subsidized rate for low-income earners. In the United States, they are called Government-Sponsored Enterprises (Frame and Wall 2002). The operations of these institutions however appear to have been hijacked by the medium and high-income earners, in that, it is difficult now for any low-income earner to benefit from their funding. It is either the low-income earner is unable to meet the set conditions to be a beneficiary or he lacks the 'connection' to be a beneficiary (Nubi 2005).

(2) Equity

Equity participation might be with friends or family members coming together and making contributions towards the construction of a building. The usage of the building is shared according to the contributions made by participants. This arrangement is termed shared ownership (Focus Home Options 2004).

(3) Debt

Debt is considered to be a claim to a predetermined level of future income. It can be either ordinary/unsecured debt or secured debt. Funding in form of debt can be bank facilities or private lending initiative (Heffernan 2003). Though private lending can be short-termed with high interest rate, this form of lending has proved unsuitable for housing construction. Therefore bank borrowing in form of bank facilities is discussed in the next section.

BANK FACILITIES (LENDING / BORROWING)

Bank facilities can take various forms. The most basic form of bank facilities is the term loan- where a specified maturity date sets the time for repayment. Term loans vary from short term (bridging finance, working capital, trade finance) through the medium term (two to five years for working capital), to the long term (project finance, capital expenditure) which is appropriate for housing construction with a tenure of between 10 to 30 years. Lending can be extended for housing construction or for commercial purposes. However, lending for commercial purposes is short-tenured while lending for housing construction is for long term (in excess of 10 years).

It is worth noting that the typical tenure of mortgage loans can vary from between 10 years in some Southern European countries to as long as 30 years in Denmark (Manning 2002). Therefore the various forms of risks involved in long-term facilities must be adequately managed by reducing them to the possible minimum.

RISK MANAGEMENT IN BANK LENDING IN DEVELOPED AND EMERGING ECONOMIES

Risk can be defined as the probability of a detrimental event occurring to a project (Balois and Price 2003). Odenbach (2002), Hefferman (2003) and Mints (2006) highlighted the following four major forms of risk peculiar to both developed and emerging economies.

Default/Credit Risk

Risk that an asset or loan becomes irrecoverable in the case of outright default, or the risk of delay in the servicing of the loan resulting in the present value of the asset declining. However, Mints (2004) argued that risk of default could not be managed because banks are not capable of assessing the borrower's income.

Liquidity/ Funding Risk

Risk of insufficient liquidity for normal operating requirements, that is, the ability or inability of the bank to meet its liabilities when they fall due. Funding risk is the inability of a bank to fund its day-to-day operations.

Systemic Risk

This is a type of risk that affects a particular sector of an economy when policies are targeted to that particular sector. In a financial crisis, the transmission of information about investments and firms, the allocation of credit and the transfer of risks may be disrupted. Also, the pricing of financial assets may be distorted, the clearing and settling of payments may be impaired and business and households may be unable to obtain financing for purchases or to withdraw funds from deposits at banks. However, on the whole these inadequacies result in disruption in the functioning of the housing finance market in which the extension of credit to households is disrupted (Ludwig 1995; Bartholomew and Whalen 1995; Schwartz, 1995 and OFHEO 2003).

Interest Rate Risk

Interest rate risk arises from interest rate mismatches in both volume and maturity of interest-sensitive assets, liabilities and off-balance sheet items. Odenbach (2002) argued that interest-rate risk affects a lender when the lender has issued long-term debt at relatively high costs. On the other hand, its customers take advantage of falling interest rate by prepaying existing loans (prepayment risk) and subsequently re-mortgaging at a lower rate. Again an unexpected swing in interest rates can seriously affect the profitability of the bank and the shareholder's value added (Hefferman 2003; Toby 2006).

CANONS OF LENDING IN DEVELOPED AND EMERGING ECONOMIES

Mints (2006) highlighted three groups of factors associated with mortgage lending. These factors are described as "the three C's" of lending-collateral, capacity and credit reputation. It is presumed that by knowing the parameters of these three factors for all loans in a mortgage loan portfolio an investor can approximate the default rate for that portfolio.

Collateral Factor

This is the ratio between the loan amount and the value of the collateral. Probably the property acquired by the borrower is the only collateral for the mortgage loan. It is on this note that collateral factor analysis usually consists of evaluating the loan-to-value (LTV).

Capacity Factor

This is the borrower's financial ability to repay his loan obligation. Mortgage underwriters make an assessment by evaluating borrower's monthly housing payment as a share of total household monthly income called "front-end ratio" (payment to income ratio) (Mints 2006). Alternatively a number of households have other debts apart from the mortgage loan. The underwriter calculates the ratio between all monthly debt obligations against household income called "back-end ratio" (overall debt to income ratio).

Credit Factors

This refers to the borrower's history of fulfilling his financial obligations (repaying loans, paying telephone bills paying rents etc). In developed countries these sort of data is collected and analysed by the credit bureaus. They eventually come out with a figure (credit score), which can be used for loan underwriting assessment (Mints 2006).

WHAT IS MORTGAGE INSURANCE?

Mortgage Insurance (MI) is a form of insurance offering credit protection to mortgage lenders. It provides lenders with a reliable means of transferring credit risk to the insurance sector (Merrill and Whiteley 2003; Whittingham 2005; Klopfer 2005 and Cantor-Gable 2006). In supporting lenders to manage the risk associated with high Loan-To-Value (LTV) loans, MI can improve the lending business of the banks, improve affordability for borrowers and even increase consumer's access to high LTV mortgages. This is especially relevant in countries without this type of lending like Nigeria to achieve risk sharing for lenders, improve standardization and risk management for the mortgage finance sector (Merrill and Whiteley 2003 and Cantor-Gable 2006). These are likely to lead to improved asset quality, improved market liquidity, greater social inclusion, more robust underwriting process, improved management information and transfer of risk outside the banking sector. Coupled with the support being given for the supervisory role by government, this might translate into the mortgage lending market being strong and well controlled.

Mortgage Insurance Fundamentals

MI is fundamentally a credit risk management tool combining a process for reducing loss with an insurance product for transferring the reduced risk portion. MI is uniquely provided on high LTV loans, which refers to the ratio of borrowed funds to the property "value", whether measured on an appraised market or other supervisory definition. The LTV loan varies by market with 80% representing general situation in advanced mortgage markets and 50-60% in emerging/less advanced economies (Klopfer 2002 and 2005).

LTVs may be adjusted dynamically by the lender to reflect increase / decrease in property values. LTV has also been confirmed as an important explanatory variable in explaining default behaviour. For risk management purpose the original LTV is used to establish the probability of default and it is an indicator of relative risk, hence a need for mortgage insurance. Quercia and Stegman (1992) and Klopfer (2002)

considered LTV as a proxy for the “willingness to pay” with the assumption being that a person with a smaller equity investment in property is more likely to default on his loan obligation than a one with a larger equity investment and hope of recovering all or a portion of that investment.

MORTGAGE INSURANCE AND HOUSING FINANCE IN DEVELOPED ECONOMIES

The housing sector is a large part of the US Economy which accounts for over 11% of Gross Domestic Product (GDP) (Hu and Pennington-Cross 2000; OFHEO 2003). The percentage reflects the gross output originating from construction, real estate services, real estate finance and insurance sectors. By the end of 2001, the total volume of outstanding mortgage loans in the European Union (E.U) exceeded 3.9 trillion euros, which translates to around 40% of total bank lending in Europe and 40% of GDP in the E.U. (Manning 2001). In the United States, at the end of 2001 the three Government-Sponsored Enterprises (GSEs) namely; Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Bank System (FHLB System) hold/insure nearly \$3 trillion in primarily mortgage-related assets (Frame and Wall 2002). However, Pollock (2005) argued that the GSEs can best be described as representing a historical “paradigm shift” in American housing finance from a deposit-based to a bond-based system. The key foundation year was 1980 with the downfall of the United States Savings and Loans, and the rise of GSEs.

Duebel (2002) distinguished two forms of Mortgage industry structures namely Anglo-Saxon and Continental European Specialized Bank. Anglo-Saxon is described as mortgage banking institutions with deposits as main funding instrument and were the fore-runners of the credit risk transfer market through external insurance. One can argue the European Union as an example of Anglo-Saxon mortgage industry.

In the United Kingdom, building societies active in high LTV lending during the 1980s were required to have Mortgage Indemnity Guarantee (MIG) for these loans. In the early 1990s a combination of falling house prices, unemployment and rising defaults resulted in substantial claim levels for mortgage insurers. Banks were protected thus by insurers from catastrophic credit risk.

Mortgage Funding in the European Union

Europe’s mortgage lenders use a variety of funding instruments to fund their mortgage loans. The dominant funding mechanism remains deposits which consumers place with banks as savings or in current accounts. However there is a problem with this type of funding for mortgage loans in that short- term liabilities are being used to fund long-term assets. As at the end of 2006, the European Mortgage Federation estimated the total value of residential mortgage outstanding in the European Union being funded as shown in Table 1

Table 1: Sources of mortgage funding in the EU

Sources of funding	Percentage
Retail Deposits	66%
Mortgage/Covered Bonds	15-20%
Mortgage-Backed Securities (MBS)	5%
Others	9-15%

Source: European Mortgage Federation (Feb. 2007)

In Table 1 the dominance of retail deposit as a funding instrument is shown. One might not be surprised that most financial institutions in the European Union take insurance as part of their lending practice against credit risk with mortgage insurance inclusive. However a pan-European secondary mortgage market is being developed with the objective of integrating Europe's mortgage markets. Funds directly sourced from the capital markets through the issuance of covered bonds and MBS can assist in lowering funding costs and provide a wider range of funding options for lenders (EMF 2007).

Mortgage Funding in the United States

The three Government-Sponsored Enterprises (GSEs) are the primary mortgage agencies in the United States and play a central role in US housing finance markets, which grew rapidly during the 1990s. During this period, Fannie Mae and Freddie Mac especially seemed to have repositioned their business models from creating guaranteed mortgage securities held by investors to managing a portfolio of whole mortgage loans and mortgage-backed securities. Between 1990 and 2000 Fannie Mae's retained mortgage portfolio as a percentage of its mortgage-backed securities outstanding, increased from 40 to 86 percent. This new approach entails managing both credit and interest rate risk associated with mortgage (Frame and Wall 2002). Wallison and Ely (2000) offered future projections of Fannie Mae's and Freddie Mac's retained mortgage portfolios and discussed the attendant risks. It is highlighted that when they are guaranteeing by mortgage-backed securities, they take only credit risk, and when buying back their own MBS's, Fannie Mae and Freddie Mac take both credit and interest rate risk.

The success of Fannie Mae and Freddie Mac as (GSE's) has come in part from the fundamental simplicity imposed on them by their charters. They function primarily as conduits with the capital markets in that they work with market forces rather than against them. They allowed other financial institutions mainly mortgage originators, private insurers and investors to participate in risk management (Van Order 2000). To limit the credit risk, Fannie Mae and Freddie Mac have standards for all loan products they purchase (OFHEO 2003) that address the creditworthiness of the borrower, the capacity of the borrower to make the required payments and the collateral value of the property. The enterprises will buy loans that pose higher credit risk only with credit risk in the form of mortgage insurance (OFHEO 2003).

The key issues in the developed economies includes the fact that while a large portion of mortgage loans are held off-balance sheet and funded through securitization in the United States, securitization remains relatively costly and capital intensive in Europe. Mortgage/covered bonds continue to be very popular and the second most important funding instrument in Europe after retail deposits. Again there are no centralized issuing institutions similar to the United States GSEs that impose standardization of contracts and practices to allow the selling of mortgage loans to capital market investors. Mortgage Insurance came into being in most of the developed economies by legislation. In the United Kingdom, building societies with high LTV lending during the 1980's were required to have Mortgage Indemnity Guarantee and in the United States, the GSEs bought loans with high LTV with credit enhancement in the form of Mortgage Insurance.

MORTGAGE INSURANCE AND MORTGAGE FINANCE IN EMERGING ECONOMIES

The central component of any model of the modern financial system is the nature of the conduits through which the financial assets of the savers' flow through to the users of the finance (Jaffee and Renaud 1997; Walter 1997 and USDHU 2006). It is also expected that the private financial institutions are properly integrated into the overall financial system and their effectiveness closely linked to the health of the overall economic and financial sector (Tiwari and Mariizumi 2003).

In many of the emerging economies, over 50% of money supply is outside of the banking system. Therefore government monetary and fiscal policies are mostly impotent which indirectly affect the housing finance system. The fact that funding for housing is mostly depository based, suggest that the mobilization of deposit becomes a difficult task and little funding could be rationed into housing finance. Recently governments in emerging economies started reforming public finance institutions in an attempt to make them prudent. Governments started by relaxing the regulatory regimes to encourage private finance institutions to play a more active part in the market economy (Okpala 1994; Buckley 1996 and Renaud 1999). Table 2 below highlights the political and economic barriers to housing finance in emerging economies.

Table 2: Political and economic barriers to housing finance in emerging economies

Political Issues	Economic Issues
Weak regulation of rights on real estate	Liquidity Risk whereby financial institutions use short-term liability to fund long- term assets.
Inadequate Laws regulating housing financed by mortgages	Insufficient information about the market and potential mortgage recipients.
Macroeconomic/ Systemic risk – Government in these economies have little control over the growth of the macro-economy in the long run.	Low income of the majority of the residents – With the low or average income in emerging economies, an initial 30% down payment is usually too high.

Source: Trofimovas (2003)

The key issue in the emerging economies is that banks in these economies do not provide mortgage loans because of barriers created by legislation that make it impossible to manage various risks associated with mortgage loans. To achieve a balanced housing market the housing finance system in emerging economies has to overcome certain hurdles that appear to have been overcome in most of the countries with well-developed economies.

DISCUSSION

Mortgage insurance plays a crucial role in the development of modern mortgage finance systems. Decades ago major publicly sponsored mortgage insurance programs in the United States and Canada helped pave the way for long-term, self-amortizing mortgages, and the increased affordability of the insured loans gave rise to a tremendous boom in housing construction and home-ownership (Merrill and Whiteley 2003). Throughout the OECD countries on the other hand, the large international private insurers are making inroads, a testimony in part to greater interest in credit enhancement in the primary market and the emergence in Europe of a wider variety of mortgage-backed debt products (Klopper and Sacha 2002). Mortgage insurance programs are also coming into operation in emerging and transitional economies. Hong Kong and South Africa have established mortgage insurance programs through

private initiatives. Lithuania initiated a public program in 2000 while mortgage insurance is under active development in Kazakhstan, India, Latvia, Thailand and Kenya (Merrill *et al.* 2006). With more countries in the emerging economies adopting the mortgage insurance model, it is suggested that this artificial mechanism would tremendously reduced most housing finance related risks faced by mortgage providers.

CONCLUSION AND FURTHER RESEARCH

Mortgage Insurance is progressively becoming a phenomenon in the mortgage markets of the emerging economies. In a competitive mortgage-lending environment, the proper management of credit risk can be an important factor and can benefit the risk profile of the lender with its growth and profitability. For the economy, it is also important to establish a supportive and financially conservative regulatory environment, addressing mortgage risk related to LTV and loans with mortgage insurance. With effective regulatory body overseeing the banking and insurance sectors, a strong, well-controlled mortgage lending market with improved asset quality, more robust underwriting process and improved management information will come into being. In the course of this research, a risk assessment model for banks is to be developed whilst taking cognisance of various forms of risk for ameliorating the disequilibrium in the supply of housing finance in emerging economies.

REFERENCES

- Alhashimi, H. and Dwyer, W (2004) Is there such an entity as a housing market? Paper presented at the 10th Annual Pacific Rim Real Estate Conference, Bangkok-January 2004.
- Baloi, D and Price, A D F (2003) Modelling global risk factors affecting construction cost performance. *International Journal of Project Management*, 21(4), 261-269.
- Bartholomew, P F and Whalen, G W (1995) Fundamentals of Systemic Risk. In: Kaufman, G.G.(Ed.) *Research in Financial Services :Banking, Financial Markets and Systemic Risk (Vol.7)* (Greenwich, CT :JAI Press, 1995), 349-356.
- Buckle, M and J Thompson (1998) *The UK Financial System: Theory and Practice* (3rd Edition), N Y : Manchester University Press.
- Buckley, R M (1996) *Housing Finance in Developing Countries*. N.Y: Macmillan.
- Cantor-Grable, M (2006) The role of Mortgage Insurance in the European Mortgage Market. *Mortgage Finance Gazette, European Supplement Autumn 2006*, 19-20.
- Duebel, H J (2002) Mortgage Credit Risk, Regulatory Standards and the Basel II Banking Supervision Reforms. *Housing Finance International*, 17(1), 3-12.
- European Mortgage Federation (2001) *Mortgage Banks and the Mortgage Bond in Europe*. (3rd Edition).
- European Mortgage Federation (2007) *Quarterly Review of European Mortgage Markets*, February 2007.
- Focus Home Options (2004) *Share Ownership and Staircasing*, Focus Futures Publication.
- Frame, S and Wall, L D (2002) Financing Housing through Government-Sponsored Enterprises. *Federal Reserve Bank of Atlanta, Economic Review, First Quarter 2002*, 29-43.
- Giussani, B and Hadjimatheou, G (1991) Modelling Regional House Prices in the United Kingdom. *Regional Science*, 70(2) 201-219.

- Goodman, A(1989) Topics in Empirical Urban Housing Research. In: Muth, R. and Goodman, A. (eds) *The Economics of Housing Markets*, Harwood Academic: Chur-Switzerland 140-146.
- Heffernan, S. (2003) *Modern Banking in Theory and Practice*, March 2003, Chichester-West Sussex: John Wiley and Sons.
- Hu, D. and Pennington-Cross, A. (2000) *The Evolution of Real Estate and The Economy*. Washington DC: Research Institute for Housing America, June 2000, (4).
- Jaffee, D.M. and Renaud, B. (1997) Strategies to develop mortgage markets in transition economies. In: J. Doukas, V. Murinde and C. Wihlborg (eds) *Financial Sector Reform and Privatization in Transition Economies*. Ch.4, Amsterdam: Elsevier Science Publishers.
- Klopper, E and Polverini-Sacha (2002) *GE Mortgage Insurance: Benefits of Mortgage Insurance System in Transition Economies*. Presented at the OECD Workshop on Housing Finance in Transition Economies, Warsaw-Poland. December 5-6, 2002.
- Klopper, E (2002) A Mortgage Insurer's Look at Basel II and Residential Mortgage Credit Risk. *Housing Finance International*, 17(1), 22-32.
- Klopper, E (2005) A Glass Half Full / Half Empty: The "Internationalization" of Mortgage Insurance. *Housing Finance International*, 19(4), 9-19.
- Ludwig, E A (1995) Rethinking Systemic Risk. In: Kaufman, G. G. (ed) *Research in Financial Services: Banking, Financial Markets and Systemic Risk*, Vol. 7, Greenwich, CT: JAI Press 1995, 349-356.
- Malpezzi, S (1999) Economic Analysis of housing markets in developing and transition economies. In: Cheshire, P. and Mills, E.D. (eds) *Handbook of Regional and Urban Economics Applied Urban Economics*, 3, 1791-1864.
- Manning, D (2002) Mortgage Lenders and the New Basel Capital Accord. *Housing Finance International*, 17(1), 13-21.
- Merrill, S. and Whiteley, D. (2003) *Establishing Mortgage Guarantee Insurance in Transition and Emerging Markets: A Case Study of Kazakhstan*. *Housing Finance International*, 18(1), 10-19.
- Merrill, S Blood, R Rabehorst, C and D Whiteley (2006) *Development of Mortgage Insurance in Kenya: Assessment Report, Executive Summary*, Urban Institute for Overseas Private Investment Corporation (OPIC).
- Mints, V (2004) Strategies of Transitional Countries to Establish a Housing Finance System: the Russian Experience. *Housing Finance International*, 19(2), 25-37.
- Mints, V (2006) Specifics of Credit Risk Assessment in Mortgage Lending *Housing Finance International*, 21(2), 14-21.
- Nubi, T O (2005) *Housing Finance in Nigeria-Need for Re-Engineering* .(Unpublished Report) www.housingfinance.org/pdfstorage/Africa-EFFECTIVE%20MOBILIZATION%20HOUSING%20-%20Nigeria.pdf (accessed May 2007).
- Odenbach, M (2002) Mortgage Securitization: What are the Drivers and Constraints from an Originator's Perspective (Basel I/ Basel II)? *Housing Finance International*, 17(1), 52-62.
- OFHEO (2003) *Systemic Risk: Fannie Mae, Freddie Mac and the Role of OFHEO*. Washington DC: Office of Federal Housing Enterprises Oversight (February 2003).
- Okpala, D (1994) Financing housing in developing countries: A review of the pitfalls and potentials in the development of formal finance housing systems *Urban Studies* 31(9), 1571-1586.

- Olutuah, A O (2000) The challenge of Housing in Nigeria Effective Housing in 21st Century Nigeria. In: Akinbamijo, O.B. *et al.* (eds) Environmental Forum, Federal University of Technology, Akure-Nigeria, 16-21.
- Olutuah, A O and Aiyetan, A.O.(2006) Sustainable low-cost housing provision in Nigeria: a bottom-up participatory approach. In: Boyd, D. (ed) Proceeds of 22nd Annual ARCOM Conference, 4-6 September 2006, Birmingham, UK, Association of Researchers in Construction Management, 633-639.
- Pollock A J (2005) American “Housing GSEs”: Past Triumphs, Present Tensions, Possible Futures. *Housing Finance International*, 19(3), 41-46.
- Poole, W (2003) Housing in the Macroeconomy. Federal Reserve Bank of St Louis, *Economic Review* May/June 2003, 1-8.
- Quercia R G and Stegman (1992) Residential Mortgage Default: A Review of the Literature *Journal of Housing Research*, 3(2), 341-379.
- Renaud, B (1999) The financing of social housing in integrating financial markets: A view from developing countries. *Urban Studies* 36(4), 755-773.
- Schwartz, A J (1995) Systemic Risk and the macroeconomy. In: Kaufman, G.G.(ed) *Research in Financial Services: Banking, Financial Markets and Systemic Risk*, 19-30.
- Tang, B, Liu, S C and Wong, S (2006) Housing Mortgage and Housing Transaction in China: Bridging the Missing Link. *Housing Finance International*, 20(3) 20-39.
- Tiwari, P and Moriizumi, O (2003) Efficiency of Housing Finance: A comparative Study of Mortgage instruments in Japan. *European Journal of Housing Policy*, 3(3), 267-288.
- Toby, A J (2006) Empirical study of the Liquidity Management Practices of Nigerian Banks *Journal of Financial Management and Analysis*, 19(1), 57-70.
- Trofimovas, A (2002) Mortgage Insurance in Housing Finance: The Way to Go for Countries in Transition. *Housing Finance International*, 16(3), 14-18.
- USDHU (2006) Evolution of the US Housing Finance System: A Historical Survey and Lessons for Emerging Mortgage Markets. Office of Policy Development and Research, US Department of Housing and Urban Development, April 2006.
- Van Order, R (2000) The Structure and Evolution of American Secondary Mortgage Markets, with some implications for Developing Countries. In: OECD (ed) *Proceeds of OECD Workshop on Housing Finance in Transition Economies*, June 2000, 183-193.
- Wallison, PJ and Ely, B. (2000) *Nationalizing Mortgage Risk: The growth of Fannie Mae and Freddie Mac*. Washington, D.C: AEI Press.
- Walter, I (1997) Design of Financial Systems and Economic Transformation In: J. Doukas, V. Murinde and C. Wihlborg (eds)- *Financial Sector Reform and Privatization in Transition Economies- Ch 6*. Amsterdam: Elsevier Science Publishers.
- Whittingham, A (2005) The Role of Mortgage Insurance under the New Global Regulatory Frameworks *Mortgage Finance International*, 19(4), 20-24.
- Yakubu, M O (1980) Low-Cost Housing and Housing for Low-Income Groups. *Proceedings of the 3rd International Conference on Housing*, Kaduna, Nigeria, 218-223.