**INNOVATION IN THE FINANCIAL MARKETS**

1. ***INTRODUCTION***

A major feature of innovation in financial markets has been the introduction of a variety of new products that trade in new market settings (Levich, 1987). The implication is that there is reduced reliance on banks for traditional credit instruments and credit evaluations. The innovation that began in the 1960s has picked pace in the past five decades. Before the onset of financial innovation financial intermediaries were the only way to channel funds from national capital markets to smaller local ones. Securitization (a major element of financial innovation), for example allows borrowers to enter capital markets directly (Bodie, 2001). The global financial crisis that started in 2007, however, has prompted a critical evaluation of the value added by financial innovation.

Three distinct features of the economic system have played a big role in driving innovation in financial markets in the last five decades: liberalization, globalization, and competition.

* + 1. Liberalization

Liberalization refers to the breakdown of traditional financial market practices through deregulation/ re-regulation[[1]](#footnote-1) or a breaking down of conventions. This has seen a major relaxation of government restrictions in financial markets. The effect has been increased cross border capital flows due to reduced tariff and non-tariff barriers that led to increased cross border trade and investment and abolishment of explicit controls in the pricing and allocation of credit. The financial markets, since the 1960s have seen an increase in liberalization, driven largely by the belief that markets are best at allocating resources (free markets are welfare enhancing). Commercial banks, for example have been allowed to venture into investment banking- a departure from the narrow banking model of the past. There is however, evidence that such liberalization only serves to increase consumption volatility and increase the risk of a financial crisis (Stiglitz, 2004). This liberalization has allowed for much of the innovation in the financial markets today.

* + 1. Globalization

As national barriers erode and the nature of financial markets grows more integrated all stock markets have come under increasing pressure in recent years to make international alliances or mergers. Much of this pressure is due to the impact of electronic trading. Increasingly, traders view the stock market as a computer network that links them to other traders, and there are increasingly fewer limits on the securities around the world in which they can trade, allowing for geographical diversification. Against this background, it becomes more important for exchanges to provide the cheapest mechanism by which trades can be executed and cleared globally. This argues for global alliances that can facilitate cross-border trading, and can benefit from economies of scale. Moreover, in the face of competition from electronic networks, established exchanges feel that they eventually need to offer 24-hour global markets. Competition is covered in more detail in section 2.0.4 below.

Finally, companies want to be able to go beyond national borders when they wish to raise capital. Merger talks and strategic alliances have blossomed in the 2000s; although it is still too early to predict with confidence where these will lead, it seems possible that at least two global networks of exchanges are emerging. One might be led by the NYSE in conjunction with Tokyo and Euronext (which itself is the result of a merger between the Paris, Amsterdam, and Brussels exchanges), while the other would be centered on NASDAQ and some European partners. Moreover, many markets are increasing their international focus. For example, the NYSE now lists about 400 non-U.S. firms on the exchange.

Globalization has however caused fears of competitive laxity among national regulatory authorities. A national authority may feel that regulation which is too strict would leave its own country’s firms at a competitive disadvantage in comparison with firms based in countries with less stringent rules. Since much of the financial services industry is footloose, strict regulation in one country may cause firms to move their operations to other countries, possibly resulting in a considerable loss of income and employment to the country attempting to operate a responsible regulatory regime. To the extent that regulations are loosened everywhere and/or that firms do move to more poorly regulated areas, the level of systemic risk through contagious financial disorders may be increased.

* + 1. Increased competition amongst among financial markets.

Exchanges are moving from an era of monopolies to that of competition. Exchange architecture seems to be a competitive advantage, and has definitely been influenced by advances in communications and technology such as electronic trading systems. As a result of increased competition, home equity bias reduction is anticipated. Investors face fewer constraints and are expected to invest more in foreign markets, thus increasing cross-border trade. This gives an edge to exchanges, while endangering local monopolies, since exchanges lose their natural base of investors because the latter are free to seek more attractive markets (Ramos, 2003). Exchanges are now moving to attract investors from around the globe by having trading terminals in other countries. This means that investors have more opportunities than the domestic market.

Another dimension for competition is that of attracting companies to list in particular exchanges (competition for listing). In East Africa, companies across the EAC have the choice to list in 5 stock exchanges. Whereas the NSE has a competitive advantage in terms of having a superior trading platform, other markets are also catching up. The competition here is to attract companies to list in an exchange, effectively creating a financial centre.

Increasing competition means that stock exchanges have to reduce their costs (cutting down transaction commissions), improve operational efficiency (by introducing continuous electronic trading systems) and liberalizing access to their membership (demutualization). The main motives of and expected benefit from demutualization include tapping new sources of capital through initial public offering (IPO) needed to modernize exchange trading systems, achieve better operational cost control, and to increase flexibility, efficiency and competitiveness through reviewing their commercial strategy (Onyuma, 2006).

1. **FINANCIAL INNOVATION**

Financial innovation cuts across both financial markets and financial institutions. More specifically, financial innovation involves;

* Innovation in product development.
* Innovation in infrastructure- Stock trading system, depository system.
* Innovation in supervision- what brokers are doing in back office- Broker back office system, risk based supervision.
* Innovation in payment system.
  + 1. Innovation in product development- Securitization.

Securitization is the process of converting cash flows arising from underlying assets or debts (receivables) due to the originator (the entity which created the receivables) into a smoothed repayment stream, thus enabling the originator to raise asset-backed finance through a loan or an issue of debt securities – generically known as asset-backed securities or ABS – which is limited recourse in nature to the credit of the receivables rather than that of the originator as a whole, and with the finance being self-liquidating in nature (Deacon, 2004). Usually, the receivables/ debts are usually transferred from the originator to a new company known as a special purpose vehicle (SPV) in order to separate the receivables from the insolvency risk of the originator, referred to as a *true sale*. The SPV then issues ABS and transfers the proceeds to the originator by way of purchase price for the receivables. The purchase proceeds are normally less than the face value of the receivables, with some residual risk on the receivables being retained by the originator as a form of ‘‘credit enhancement’’ for the ABS issue (e.g. by way of a holding of subordinated notes issued by the SPV). The originator will also retain rights to receive from the SPV any profit realized on the receivables after repayment of the ABS issue. Consequently, most ABS’s are off balance sheet instruments backed by a pool of assets segregated into an SPV. The main classes in the pure securitization markets today are:

* Commercial ABS.

These are securitizations relating to big ticket transportation assets such as ships, aircraft and trains and also small ticket businesses such as equipment leases of computers, plant e.t.c. they typically involve the securitization of ;

* Loans secured over assets.
* Leases of assets.

For securitizations involving leases, distinction is made between operating vs. finance/ capital leases, residual value and the capital allowances of the originator and the SPV. For big ticket assets, key considerations in securitization will be the nature of the assets and the marketability of the asset- factors heavily influenced by macroeconomic factors and external events. For small ticket assets, the analysis will lean more towards the local business environment.

* Consumer ABS (including credit cards and consumer loans).

These are securitizations that mostly include;

* Auto loans, leases and hire purchase agreements.
* Consumer loans.
* Credit cards.
* Home equity loans (loans secured over private residences taken for reasons other than buy a house e.g. to pay for medical bills, college tuition or home improvements)
* Commercial mortgage backed securities, CMBS.

The categorization of CMBS (commercial mortgage-backed securities) can cover a multitude of different transaction types, including:

* Commercial mortgage transactions (where the originator is a lender rather than an owner of real estate);
* Residential real estate (where the originator is an owner of property – typically ‘‘multi-family property’’ – leased to residential tenants);
* Commercial real estate (where the originator is an owner of property leased to commercial tenants);
* Sale and lease-back transactions.

Commercial and residential real estate deals are typically structured to use lease cash flow to service interest payments on the securities issued, with the principal serviced by a balloon or bullet payment made from property disposal or refinancing.

* Residential Mortgage asset backed securities, RMBS.

Mortgage transactions generally divide into:

* Prime issuance
* Sub-prime or non-conforming issuance
* Master trust issuance
* Reverse mortgages.

The sub-prime market comprises credits where there are some negative credit characteristics such as arrears, while the non-conforming market comprises credits with unusual characteristics such as self-certification of income (e.g. self-employed individuals). In practice, the two pieces of terminology are often used interchangeably. The master trust structure provides for the transfer of a large pool of collateral into a trust to back multiple series of issuance. Reverse mortgages (also known as equity release mortgages) are products designed for older or retired borrowers as a means of extracting value from their houses.

* Non-performing loans, NPLs.

Structures for the securitization of non-performing loans vary significantly with the specific asset type of the loan. Common asset classes which have been securitized in this way are non-performing mortgages (e.g. in Italy) and non-performing loans backed by real estate (e.g. in Japan). Both these types of loan benefit from the security backing them, with the consequence that much of the structure and rating analysis for these deals focuses on procedures and timing for the enforcement of the loan or mortgage security, and consequent sale of the secured residential or commercial real estate.

* Trade receivables

Trade receivables relate to payments by businesses for goods or services on trade credit. Contractual documentation is therefore less formal than for other mortgages or leases, and typically consists of standard terms of business which are incorporated by reference in each shipment or supply. They are typically financed through the use of commercial paper conduits rather than in the long term markets.

Other types of products overlap with securitization to a greater extent, blurring the distinction between the pure securitization markets and asset backed bond markets. These offshoots of securitization include:

* Collaterized Debt Obligations, CDOs.

This is a bond issued against a pool of bond assets, or loan assets. The terms collaterized bond obligation or collaterized loan obligation are also used to specify the underlying security. CDOs can take the form of cash flow CDO, Synthetic CDO, or Market value CDO. In cash flow CDOs, credit analysis is made in reference to periodic cash flows received from time to time on the underlying instruments. When credit analysis is made by reference to market value from time to time of the underlying instruments, such is a market value CDO. A synthetic CDO is backed by a credit default swap[[2]](#footnote-2), other than a pool of assets (loans/ bonds).

* Covered bonds.

A bond issued by a restricted activity institution and backed by a pool of mortgages or public sector assets under legislation which separates the pool from insolvency proceedings connected with the issuing institution. Consequently, holders of covered bonds have preferential rights to the relevant pool of assets, which are liquidated separately for the benefit of the holders of the covered bonds on insolvency of the issuer.

* Future flows.

A Securitization transaction that is partially asset-backed (i.e. where the aggregate value of currently existing receivables is a multiple of the required interest and scheduled principal Amortization payments for a single period, but is less than the total outstanding funding), and is therefore dependent on continued future receivables generation in order to fully repay funding.

* Real Estate Investment Trusts, REITS.
* Repackagings/ Synthetics.

A synthetic is a security composed of an underlying security and a derivative, often an asset swap or a credit default swap. An example is a synthetic CDO discussed earlier.

* Whole business.

These are structures that securitize the whole business, or general operating cash flows, of a corporate entity. As a form of secured corporate debt, they form a cross-over between the corporate bond markets and the asset-backed bond markets.

* + 1. Innovation in infrastructure.

Today, using automated trading platforms has become a requirement for successful trading in financial markets. The major factor driving financial market automation is the internet. As mentioned earlier, automation is an increasingly important aspect of competition in financial markets. In 2006 the NSE introduced automated trading system where orders are processed electronically on first come first serve basis. Before this investors used to shout their orders on the floor during trading. With wide area networks, trades are executed directly from the desks of stock brokerage firms, with customers placing orders online, paying for the orders online (using e-money accounts like paypal) and sell their securities at the touch of a button. Immobilization of shares through CDS accounts was yet the other aspects of automation that enabled for online trading. The automation has gone as far as use of mobile phones to access CDS accounts online.

* + 1. Innovation in supervision.

Broker back office software for regulations.

Risk based supervision. (Refer to classroom discussion)

* + 1. Innovation in the payments system.

Use of e-money, mobile cash transfers, SMS. (Refer to class discussion)

1. **HAS FINANCIAL INNOVATION HELPED? A CASE FOR FINANCIAL INNOVATION.**

Proponents of securitization cite the following reasons for undertaking securitization;

* Return on capital

For regulated entities subject to minimum capital requirements, capital can be raised that is outside of the regulatory balance sheet, for example by replacing receivables with cash. This releases capital that would have otherwise been held against the risk of default on the capital.

* Balance sheet management

Securitization can be used to monetize assets in the balance sheet of the originator without the originator having to sell them off. This way a company is able to create more liquid instruments that can help the organization survive short term liquidity crisis.

* Off-balance sheet funding

Securitization can be used to extend the balance sheet of the originator, as the finance raised will not appear, in whole or in part, as an additional item on the balance sheet of the originator in its statutory accounts or consolidated accounts, and the assets securitized will be removed in whole or in part from the balance sheet. This is fresh additional finance for the business, or if all or part of the proceeds is used to pay down existing debt, this will enable it to reduce its gearing. Also, it may rely on any reduction in its gearing in order to raise future bank finance on better terms.

* Funding diversification

The ABS markets have their own investor base, some or all of which may not be current investors in the business of the originator, whether due to unfamiliarity with the originator, or credit concerns on the originator. Issuing in the ABS markets enables the originator to access this new base of investors and expand their current funding sources.

* Bank liquidity

A significant new use has been to increase the liquidity of assets on the balance sheet of a financial institution originator (enabling compliance with bank liquidity ratios), due to the acceptance of certain instruments as repo collateral (for example, the June 1998 announcement from the Bank of Spain that mortgage-backed securities and asset-backed securities would be eligible for repo with the European Central Bank, and the activities in Hong Kong of the HKMC which guarantees mortgage-backed securities re-acquired by the originator of the mortgages, offering beneficial capital treatment and the ability to re-discount the securities with the HKMA for liquidity purposes).

* Cost of funds

The segregation of receivables from the insolvency risk of the originator will enable funds to be raised which are not linked to credit risk on the originator. For an originator that is perceived as a bad credit risk, or has a low credit rating, this should serve to improve the all-in cost of funds to the originator, or the amount of finance that can be raised.

* Strategic profile

If the originator has not previously issued in the capital markets, it may be an unknown name to capital market investors, and a securitization process attracting a high credit rating may enable the originator to launch itself in the capital markets successfully through ABS issuance and achieve a good reputation, enabling further issuance on a full recourse non-asset-backed basis.

* Matched funding

The use of capital markets instruments enables matched funding to be raised, with the tenor of the ABS issue matching the tenor of the receivables (although due to prepayments on the receivables, the weighted average life of the instruments is likely to be significantly less than their tenor, unless substitution or replenishment of receivables is permitted).

* Tenor

The use of matched funding in turn means that the ABS issued can (for example, in the case of mortgage assets) be 20- or 25-year committed finance, exceeding the maximum term funding usually available from bank lenders.

* Transfer of risk

The transfer of the receivables also has the effect of transferring the risk of losses on the receivables due to defaults or delinquencies, leaving the originator with the risk of loss only on that portion of the risk that is retained by the originator (e.g. as credit enhancement for the ABS issued).

* Systems

It has also been perceived that the analysis of the originator’s systems, underwriting procedures and day-to-day administration that is required for the transaction may actually prove beneficial for the originator subsequently in terms of ongoing business efficiency.

1. **FINANCIAL INNOVATION AND THE GLOBAL FINANCIAL CRISIS: A CASE AGAINST FINANCIAL INNOVATION.**

One of the causal factors of the global financial crisis was the buildup of unregulated shadow banking system, especially the SPVs used to implement all manner of structured financial transactions, including structured investment vehicles (SIVs), collaterized debt obligations (CDOs), and asset backed commercial paper vehicles (ABCPs) among other products (Choudhry, 2010). There have been concerns that once banks give loans, and then later tranche them and sell them off, they will be less concerned about loan quality. This moral hazard has been a major issue.

1. **CONCLUSION: THE FUTURE OF FINANCIAL INNOVATION.**

After the global financial crisis, financial innovation has taken on a derogatory meaning. Is there a way to use these products more responsibly? This has been a major issue for debate in recent years. With increasing calls for a tighter regulation of the financial institutions, we can only wait and see which direction financial innovation will take.

1. After the global financial crisis, there have been increased calls for stricter regulation (re-regulation) of the financial system. [↑](#footnote-ref-1)
2. The protection for which the buyer pays a periodic premium in return for a payout determined by the occurrence of a particular credit event, e.g. default. It is a credit derivative whose payout is determined by the credit risk. [↑](#footnote-ref-2)