

**STRUCTURED FINANCE CAPITAL
WEALTH CREATOR OR DESTROYER?**

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ABSTRACT

Transnational capital has become instrumental in defining every aspect of the present environment, from the climate for interest and exchange rates to the topography of global redistribution of labor and unemployed masses of poor. We are living a 'globalizing' capitalism impelled by a powerful financial system that has worked and is working. This financial system arose after the break in capital accumulation patterns (as part of the crisis of capitalism in general) that supposedly occurred in the early 1970s. The link between 'fictitious capital' formation and the circulation of credit is more apparent than ever before. This ever-increasing transformative strength of financial system is situated into the shift from Keynesianism to neoliberalism in the 1970s.

Finance used the crisis of the 1970s on an ideological and political level to launch a kind of society reflecting its image and in accordance with its interests. Crises have no existence outside the matrix of spatio-temporalities that capitalism itself creates. Crises are as much about reconfiguring the spatio-temporal form of class relations as about the internal class contradictions of capitalism specified in some absolute and immutable space and time. Thus, the domination of finance in neoliberalism is an event of a political nature, a direct expression of the class struggle.

Accordingly, capital as mobile, muscular, and speculative, moving in a self-created and self-creating terrain is lying beyond the perimeter and thus the regulatory power of the state. Specifically, the structured finance capital backed by self-fulfilled legal mechanisms accepted internationally by market participants (finance capitalists) shapes the global regime of financial regulation. However, East Asian crisis of 1997-98 triggered a new financial architecture for the effective functioning of the global financial system. The system-wide effects of this crisis led to the corporate and transnational capitalist powers recognizing the need for regulatory and institutional supports to keep capital accumulation going.

A new capital adequacy framework for banks, namely International Convergence Measurement and Capital Standards, termed Basel II was released with the endorsement of G10 central banks and the banking supervisory institutions. Basel II, as a part of the new financial architecture, was initially engineered by internationally active banks in order to minimize and then control the systemic risk emerged from both specifically the fragility of the banking system and generally the global macroeconomy.

These crisis-ridden attempts ignore a figure that escapes from the vision of the architects: the poor. Despite the reassertion of the power of capitalist class, history, nevertheless, is still on the move. The poor accumulate life-powers and recreate the life with ever more powerful desires.

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STRUCTURED FINANCE CAPITAL: WEALTH CREATOR OR DESTROYER?

The disciplinary societies have two poles: the signature that designates the *individual*, and the number or administrative numeration that indicates his or her position within a *mass*. ...In the societies of control, on the other hand, what is important is no longer either a signature or a number, but a code: the code is a *password*, while on the other hand disciplinary societies are regulated by *watchwords* (as much from the point of view of integration as from that of resistance). The numerical language of control is made of codes that mark access to information, or reject it. We no longer find ourselves dealing with the mass/individual pair. Individuals have become "*dividuals*," and masses, samples, data, markets, or "*banks*." Perhaps it is money that expresses the distinction between the two societies best, since discipline always referred back to minted money that locks gold as numerical standard, while control relates to floating rates of exchange, modulated according to a rate established by a set of standard currencies. The old monetary mole is the animal of the space of enclosure, but the serpent is that of the societies of control. We have passed from one animal to the other, from the mole to the serpent, in the system under which we live, but also in our manner of living and in our relations with others. The disciplinary man was a discontinuous producer of energy, but the man of control is undulatory, in orbit, in a continuous network. Everywhere *surfing* has already replaced the older *sports*.

Gilles Deleuze

INTRODUCTION

As we know by commonsense, for any single transaction in real goods, many thousands of financial transactions are registered in today's economic life. With the popularity of 'hot money' in everyday life, most of the world populations gradually learned that speculative currency transactions and trade in equities are determining much of the registered value of currencies and firms, much more than the 'real' economic fundamentals.

By the middle of the 1970s, with the end of the Bretton Woods agreement and the oil crisis, inflation and currency fluctuations caused an accelerated development of the financial markets. Decades of financial innovation as well as the integration and growth of financial markets have permanently changed both the world of finance and international economic and political relations. This process still continues today.

The changes in the monetary and financial order are not just as important in themselves. They are integral to the transnationalization of production, presaging an increased role for global firms and other non-state actors in international political economy. The rise of global markets and non-state actors is intimately associated with the consequent erosion of state power in the global system.

These structural changes in the global financial and monetary order have led to a wider pattern of changes in the global economic system, particularly market integration in the domain of production and trade. States and state policy (or lack thereof) have been integral to these developments, developments which have conferred increasing power on non-state actors, particularly firms and other market players, but also on private networks and systems of governance related to the growth of international markets.

From 1970s onwards, there appeared a market-based transformation of the global system of credit creation and allocation, pushed by the activities of non-state actors in the form of international banks, caused to changes in the financial structure of world economy that are likely to have a direct impact on the pattern of production and trade in the global economy by altering the options of firms in raising capital. It is true that financial activities have been a part of the global economic framework for centuries. Lending, borrowing, speculating, investing, and hedging, for instance, have been employed for years by a broad range of institutions in order to achieve specific financial goals. Meanwhile, it is now common for institutions, which once relied on basic capital-raising and investment instruments, to turn to a range of highly customized, though eminently practical, assets and liabilities in order to achieve desired goals. The umbrella concept for these new financing instruments is structured finance capital. The emergence of structured instruments and markets is an irresistible phenomenon, through which capital is getting more mobilized and globalized. The mainstream economist and scholars argues that this mobile and global nature of structured finance capital provides unprecedented capital productivity.

As capital has become more mobile, firms and markets have become more transnational, enhancing their power in relation to governments, which remain territorially based. The increase in capital mobility and the corresponding transnationalization of financial institutions, combined with technological changes which facilitated this process, was intimately related to changes in the global structure of production. States now competed to attract capital and economic activity to further their economic development goals in international competition. The transnationalization of markets had placed ever-stronger cards in the hands of global firms. States had more and more difficulty smoothing out the economic cycle, affecting exchange rate determination, raising tax revenues from the corporate sector or satisfying the welfare demands of citizens.

Moreover, in the last few decades, successive financial crises in Europe, Asia, and Latin America have raised significant questions about the stability of the contemporary financial regime. Scholars and policy makers have responded by identifying the problem as a failure of information, and by defining the solution as greater transparency – more accurate, timely, and comprehensive information about economic activity.

The regulation system has responded to above mentioned changes as turbulent episodes were occurring. After a series of world-wide crisis, and eventually as a response to 1987 Crash, the Basel Committee, formed under the aegis of the Banks for International

Settlements (BIS) had, in 1988, suggested a requirement of 8 percent capital for the total risk-weighted assets of a bank, which promoted globalization of risk-based capital standards – known as Basel I or Basel (Capital) Accord. Following the crisis of 1997-98 there was a general enhancement of regulation and supervision of the financial sector. New International Codes and Standards were developed by the BIS, the IMF, IOSCO and IAIS. The preparation of a new Capital Accord was initiated and its recent approval will change the standard for capital requirements in a direction more sensitive to risk than the previous Basel I framework. In Europe, the mandatory implementation of new International Accounting Standards introduced changes in the reporting of financial institutions with consequences for prudential aspects. Another important development has been the improved sophistication of a macro-prudential function developed by central banks, supervisors and international institutions to analyse and monitor all the major risks at the level of the system as a whole. The use of models of the financial sector allows the simulation of various shocks to conduct stress tests at that level.

What is the role of the structured finance capital within the transformation of global financial and monetary order? Does this ‘structuration revolution’ in finance occupy a specific importance within the once deregulated and the then reregulated global financial regulation regime? The structured finance capital is the common concern that generates these new regulations and increased monitoring. The concerns for structured finance are mainly reflected in Basel II, the new regulatory framework that will apply to banks worldwide from 2007. Basel I was instrumental in the development of securitizations and more generally of structured finance. Under Basel I, securitizations had become a classic technique that allowed banks to decrease the amount of regulatory capital for some assets on their balance sheets, while not reducing the economic capital (designed to capture the true economic risks associated with those assets) to the same extent. As a more refined framework, Basel II deals with the introduction of new approaches to determining regulatory capital charges, which relates better regulatory capital with economic capital.

Do the increased capital productivity and better capital allocation reinforced by the mentioned regulations produce common ‘wealth’? Do the structured instruments and markets instead open new opportunities for finance capitalist? In this study, I will investigate on these questions in the context of structured finance capital.

I. STRUCTURED FINANCE DEFINED

Structured finance, which involves the pooling of assets and the subsequent sale to investors of tranching claims on the cash flows backed by these pools, has become an important part of the financial system. Issuance volumes have grown steadily over recent years and the dynamics of market development, together with the benefits afforded to issuers and investors, suggest that growth is likely to continue.

There are key factors such as derivative valuation methods, technology, legal structuring, market liquidity, cross-border capital flows, and financial creativity that have led to the development of increasingly customized and sophisticated assets. These factors gave an unseen impetus to the formation of new structured markets and products. Erik Banks asserts that “By reacting to forces that simply did not exist during earlier times, intermediaries have

been able to expand their ability to meet the needs of end-users, including issuers and investors.” (Banks, 2006, p.1).

Structured finance is thus the use of nontraditional financing methods to raise funds in a way that also alters the firm’s risk profile in the process. It is the process by which firms raise funds in a manner that is independent of their fundamental creditworthiness, thus enabling them to obtain funding at a cost independent of their overall risk profile. “It is now common for institutions, which once relied on basic capital-raising and investment instruments, to turn to a range of highly customized, though eminently practical, assets and liabilities in order to achieve desired goals. Many of these customized instruments can be classified in a two broad forms: structured assets and synthetic assets.” (Banks, 2006, p.1)

The class of structured assets can be defined as the instruments that are created, decomposed, or restructured in some fashion in order to redirect or alter underlying cash flows. “This may be accomplished by altering the properties of physical assets, such as bonds and equities, through the use of special purpose entities/trusts and/or through the inclusion of one or more derivative contracts, which are off-balance sheet contracts that derive their value from some underlying reference.” (Banks, 2006, p.1)

The class of synthetic assets can be defined as the instruments that are created exclusively out of one or more derivatives. The specificity of using synthetic assets is that the package of derivative contracts generates cash flows that correspond with specific end-user requirements.

As it is seen, the differences of these two categories come from both their designs and the cash flow patterns of them. Banks states that “There are instances when both classes of assets can be used to achieve the same end results. Consider, for instance, that a pool of secondary mortgages can be combined through a trust or special purpose entity (SPE) to create a mortgage-backed security (i.e. a structured asset) while a mortgage swap or total return swap can be created to mimic the flows of the same pool of mortgage backed securities (i.e. a synthetic asset).” (Banks, 2006, p.1).

Although, in this study, I focused on structured finance, it should also be remembered that the structured insurance is the necessary complement of the structuration process of financial world. Thus, Christopher L. Culp states that (Culp, 2006, p.XV) “Structured insurance – a.k.a. alternative risk transfer (ART) - is the use of nontraditional risk finance and risk transfer techniques to manage risk in a way that also affects the firm’s capital structure and/or weighted average cost of capital.” [In other words]... structured finance and structured insurance can help corporations achieve their corporate financing and risk management objectives in an integrated and comprehensive fashion.... They are two sides of the same coin.”

Correspondingly, we noticed that there has been a convergence between insurance and capital markets in the last two decades. Especially in the last decade, the worlds of insurance, derivatives, and securities do become progressively more integrated. Culp insists that (Culp, 2006, p.XV) “The trend toward convergence in insurance and capital markets is much more fundamental, however, than just increasing product or institutional similarities. The *real*

convergence is between *corporation finance* and *risk management*. It is convergence in a way of thinking.”

Accordingly, in the last two decades, finance communities noticed that a new component has been being emerged into the industry: financial engineering. Financial engineering may be called as the organized form of this convergence. Erik Banks summarizes the phenomenon as this (Banks, 2006. p.43):

Financial engineering relates to the creation of new products that are useful to intermediaries and end-users. It involves identifying a particular need, determining how best to address the need, assembling the necessary building blocks, and delivering the finished product to the user. To be sure, the process is often very complicated; some end-user requirements can only be resolved by using complex instruments and cash flows. However, it is important to remember that any asset, liability, or off-balance-sheet contract can be divided ultimately into a discrete set of risk drivers and associated cash flows – these will always form the foundation of any new synthetic or structured asset. We know, for instance, that a bond is a package consisting of interest rate risk, default risk, liquidity risk, and possibly also convexity risk and currency risk. Knowing this, and the amount of the cash flows involved in the payment of interest and principal, we can construct, reshape, or deconstruct any type of asset around this bond. The same is true for all other assets. Financial engineering simply formalizes the process.

What is the end result of structured products for all participants? Is there a common aim for using the structured products to all participants? Corporations deal with them in order to manage their risks and budget their financing and investment needs. So, they exploit both economical and organizational/strategic benefits from them. The common expression of real and potential benefits of the structured products is reflected in an accounting term: value of a firm.

II. RISK TRANSFER and VALUE of a FIRM

We said above that structured finance contributes to a firm by changing the risk profile of the firm. To change risk profile is provided by transferring risk(s) to external parties. Firms would benefit added value by means of risk transferring. Culp gives an integrated conceptualization of risk transfer. His explanation shows the wide-ranging character of risk transfer: “Risk transfer is the explicit process by which the adverse impacts of a risk are shifted from the shareholders of one firm either to one or more individuals or to the shareholders of one or more other firms. The risk to be transferred can be systematic or idiosyncratic, financial or non-financial, and either core or incidental to the primary business of the firm dealing with the original risk. About the only limitation on what risk or bundle of risks can be transferred is the ability to define the risk in a contract to which both the original party and at least one counterparty can agree on terms of trade.” (Culp, 2006, pp. 34-5)

The motivations for counterparties are explained by Culp in these sentences (Culp, 2006, p. 35):

Risk transfer by necessity requires at least one willing counterparty to assume the risk(s) that the original firm is attempting to reduce. The motivations for counterparties to enter into risk transfer arrangements are essentially threefold. First, firms with opposite risk exposures may seek risk transfer with one another – for example, a farmer wishing to protect a forward crop sale against price declines and a miller wishing to guard against price rises on a similar forward purchase. Second, in liquid markets for traded assets, speculators may agree to risk transfer as part of their efforts to exploit a perceived informational advantage or trading opportunity. Finally and most commonly, firms can engage in risk transfer with a risk transfer specialist.

Furthermore, Culp relates risk transfer with equity capital in terms of its potential of adding value to a firm. “At a fundamental level, risk transfer and equity capital are essentially similar. All else being equal, more equity capital makes it less likely that a firm will encounter financial distress and thus accomplishes much the same thing as transferring those risks that expose a firm to possible ruin. But what about risks to which a firm may be exposed that are *not* catastrophic? And what if the firm’s goal in managing risk is not merely the protection of capitalized net asset values, but rather the protection of its per-period earnings or cash flows? In the worst case, new equity may not actually work to help the firm accomplish its risk management objectives. Even in the best case, an additional equity cushion may work, but it may be overkill.” (Culp, 2006, p.108)

The essential difference between risk transfer and equity is shortly expressed by the metaphor of surgery by Culp: “Risk transfer is much more “surgical” in nature than issuing new equity. True, additional equity will absorb losses the firm may take, but it will absorb *any* losses incurred by the firm no matter what the size or the source of the risk (i.e., core or non-core). Risk transfer, by contrast, can be much more specifically tailored by a firm to specific loss levels, risk types, and the like. Transferring risk using derivatives or insurance thus can be accomplished *selectively*, whereas transferring risk to new equity holders cannot. (Culp, 2006, p.109)

After describing the nature of risk transfer, it may be concluded that for risk transfer in order to add value to a firm, it must either reduce the firm’s cost of capital or increase its expected future net cash flows. So, what kinds of gains do a firm gain from engaging in risk transfer? Here, I adapted a shortened version of a list of the gains provided in Culp’s book, “*Structured Finance and Insurance*.” For further information see Chapter 7, *Risk Transfer*, pp. 110-16.

I would like to remind that that the appropriate risk management strategies for exploiting these gains will depend on whether the firm is seeking capital, earnings, or cash flow protection.

a) Reducing Expected Taxes

A firm facing a given change in earnings and a convex tax schedule, in which a firm's average tax rate rises as pretax income rises, will have a greater tax increase when earnings rise than the tax liability reduction that will occur if earnings decline by the same amount. Some firms would prefer to stabilize their earnings in order to avoid these disproportionate and unexpected large tax increases. Transferring risk is the obvious way to engage in such earnings volatility reduction.

b) Reducing Expected Financial Distress Costs

Firms that use risk transfer to mitigate the risk of run may seek to manage both their core and non-core risk exposures. The objective of risk transfer undertaken for this reason generally is capital preservation, or, more concretely, the protection of a firm's net asset values.

c) Mitigating Underinvestment

If a positive net present value (NPV) project is rejected by the firm in the absence of a risk management program but accepted otherwise, this is called as underinvestment, and this problem can be mitigated if hedging or insurance is used to increase the firm's debt capacity and decrease its effective leverage. Underinvestment may also occur if a firm's cash flows are depleted and the costs of issuing new securities to finance the new project are prohibitive. In this case, a firm may hedge its cash flows to try to ensure that enough internal funds are always available to exploit all positive NPV investment opportunities.

d) Reducing Asset Substitution Monitoring Costs

If managers of the firm respond to shareholders more than to creditors and if costly monitoring mechanisms like bond covenants are not used, managers may choose excessively risky projects to the benefit of equity and at the expense of debt. If the firm can selectively hedge the volatility of net cash flows on projects with positive NPV's but with high risks, managers may be discouraged from taking on excessively risky projects when they result in the expropriation of bondholders to the benefit of stockholders.

e) Mitigating Excessive Managerial Risk Aversion

In an effort to keep the firm solvent and preserve his primary source of income, a manager might reject high-risk but high-NPV investment projects – again, underinvestment. Selective hedging or insurance of catastrophic risks can help assuage manager's concerns in this regard and thus mitigate underinvestment.

f) Reducing Adverse Selection Costs

It is a fact that new issues of debt and equity to public investors often occur at a discount owing to asymmetric information and adverse selection. Firms with high adverse selection costs can utilize risk transfer to lower their costs of capital. One way that risk transfer can lower a firm's adverse selection costs and its cost of capital is to reduce the need for public securities issues.

Risk transfer also reduces adverse selection costs if the adverse selection costs are themselves related to concerns about the performance of projects arising from non-core risks that can be insured or hedged.

Finally, hedging and buying insurance reduce the amount of equity that the firm needs to hold in order to minimize its expected costs of financial distress. This equity capital may be subject to adverse selection costs (e.g., if it is obtained through a seasoned equity offering). By insulating the firm from shocks and reducing the equity the firm needs to hold to maintain a given risk level, risk transfer thus enables firms to escape the adverse selection costs that may have been incurred through the issuance of additional equity required in the absence of the risk transfer program.

g) Synthetic Diversification

At a closed corporation whose owners cannot fully diversify their idiosyncratic risks - unsystematic or diversifiable risks-, shareholders may be incapable of holding diversified portfolios because so much of their wealth is tied up in their own firm. In this case, hedging can reduce the cost of capital by lessening the impact of idiosyncratic risks on the firm's manager/owners.

h) Enhancing the Quality of Earnings

The accounting treatment afforded to different risk transfer strategies is relevant to a very large number of corporate risk managers. If a firm successfully uses insurance and/or derivatives to reduce its risks but cannot show that in its financial statements, the hedging program may be of limited use. In other words, many firms have hedging objectives that are defined in terms of how their hedging strategies impact certain accounting aggregates, such as earnings.

Therefore, as it may be expected that there are several different ways that a firm can benefit from adapting risk transfer strategies that help improve the quality of earnings releases, such as reducing expected distress costs, solving adverse selection problems, and increasing the quality of information contained in an earnings release.

As these different financial needs reflect, the value of the firm was affected by the design and the content of structured contracts. In this section, I presented internal drives, that is, the firm-specific opportunities that would contribute to the value of the firm. Meanwhile, the proper management of structured products would also add external value to the firm, that is, markets-provided opportunities for the firms.

III. DRIVERS of MARKET ACTIVITY

The economic, financial and accountancy benefits of structured markets and products depend on a series of market drivers that have fuelled market development and growth. These market drivers, which will be defined below, trace their foundation to a core series of goals that intermediaries and end-users attempt to meet.

Correspondingly, Erik Banks states that (Banks, 2006, p.3), "Financial instruments develop and evolve in the marketplace in order to serve a specific function. If that function is performed successfully, the instrument gains a following and succeeds; evolutionary iterations may then follow, permitting further expansion. If the function is not performed successfully, the instrument will eventually fade from use...Institutions are active in the capital markets in order to achieve one or more core goals to some aspects of financial management; the synthetic and structured assets ...can help achieve any, or all, of these goals." Here, I took vis-

à-vis the market driver's list provided by Banks. For further information see Banks, 2006, pp. 3-5.

It should be mentioned that the first four of below mentioned goals are core goals and the last six forces supplement the core ones, and serve as additional drivers.

a) Funding

An institution that needs to finance its operation in the external capital markets (rather than via internally generated funds) attempts to do so in an optimal fashion. This generally means arranging the lowest cost of funding while maintaining a balanced portfolio of liabilities across markets and maturities. Synthetic or structured liabilities are used routinely to both lower funding costs and provide new or incremental investor/market access.

b) Hedging

An institution with exposures that can impact inputs or outputs typically tries to protect against potential downside risks in order to minimize the chance of losses. This is often accomplished through a formal or informal hedging program that makes use of appropriate hedges. Once again, synthetic and structured contracts can be used to create the best possible hedge for an exposure.

c) Investing / yield enhancing

An institution (or department within an institution) that exists solely or primarily to invest cash or capital on behalf of internal operations or external parties again attempts to achieve its investment goals in a rational and cost-effective manner by optimizing its risk/return profile. Specific synthetic or structured assets are often an effective mechanism for increasing returns while preserving a desired risk profile.

d) Speculating

An institution that is responsible for generating asset returns by taking a greater amount of risk will again seek to achieve its goals by implementing its speculation program in a manner that is structured appropriately with regard to concentration, volatility, leverage, and liquidity.

e) Regulation and market access

An institution may want to participate in a specific market – from an asset or liability perspective – but may be unable to do so as a result of regulatory restrictions or barriers to entry. When this occurs, synthetic/structured contracts can often open up the marketplace to relatively free participation.

f) Asset creation

An institution may seek a very specific asset or liability profile in order to fulfill risk, funding, or investment mandates. If this is not available in the conventional financial sector, structured and synthetic instruments can surface as potential alternatives by allowing the creation of instruments with relevant yield, maturity, currency, return, and/or risk characteristics.

g) Liquidity creation

An institution may be impacted by lack of market liquidity in select assets or liabilities that form part of its activities; this may be a temporary or permanent condition that can prevent a firm from arranging transactions in the most economic manner possible (i.e. the illiquidity of market is reflected directly in the size of the bid-offer spread). Structured and synthetic instruments can be used to inject a level of liquidity into the market, returning an institution to a more cost-efficient position.

h) Balance sheet optimization

An institution that actively manages its assets and funding and capital levels may find it beneficial to use assets or liabilities that help optimize its goals; in some cases, this may involve transferring exposures off balance sheet via synthetic and structured assets.

i) Pooling and diversification

An institution that is attempting to create a balanced portfolio of risk exposures may find it can do so most effectively by using vehicles that can pool and diversify risks through a single transaction. A variety of synthetic and structured assets can help accomplish this goal.

j) Tax benefits

An institution seeking to exploit tax differences between marketplaces legally in order to reduce friction costs can do so using certain classes of synthetic/structured contracts.

To sum up, these primary and secondary drivers have led to progressively greater expansion and innovation in the financial markets.

In a nutshell, both different organizational/strategic priorities and different production and distribution patterns of firms determined even geographically dictate what kind of strategies should be incorporated to several various classes of structured products. The proper design and the proper content of structured instruments would provide the specifically aimed benefit to the beneficiaries. In other words, the structured contracts are designed by tailor-made patterns, which arrange fine-tuning details of the relationships of related parties.

IV. KEY CHARACTERISTICS of STRUCTURED FINANCE

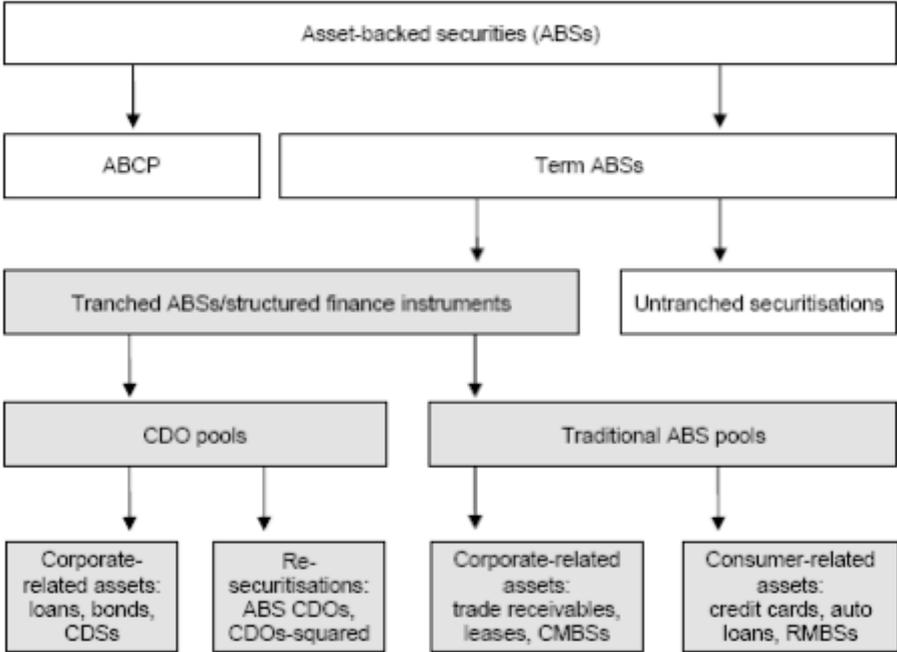
In May 2003, the Committee on the Global Financial System, under the auspices of Bank for International Settlements, decided to establish a working group on ratings in structured finance to explore the role of rating agencies in the rapidly evolving markets for structured finance instruments. The Working Group published a Report titled as *The role of ratings in structured finance: issues and implications*, in January 2005. Below, I adapted vis-à-vis the same named subsection (i.e., Key Characteristics of Structured Finance) of the Report (CGFS, 2005, pp. 4-5).

Structured finance can be defined as a form of financial intermediation, based upon securitization technology. It involves the pooling of assets and the subsequent sale to investors of claims on the cash flows backed by these pools. Typically, several classes (or “tranches”) of securities are issued, each with distinct risk-return profiles. In addition, the underlying collateral asset pool is usually legally separated from the balance sheet of the transaction’s originator. Assets in the collateral pool can range from cash instruments (e.g., residential mortgages, credit card receivables, loans and bonds) to synthetic exposures, such as credit

default swaps (CDSs). Depending on the nature of these assets, pools may contain large numbers of relatively homogeneous individual holdings (e.g., several tens of thousands of consumer loans) or may be made up of rather heterogeneous exposures to a limited number of obligors (i.e., some 50-150 in the case of collateralized debt obligations (CDOs)). (See Figure 1 for an overview of how structured finance fits into the asset backed securities (ABSs) universe of instruments.)

A key goal of the tranching process is to create at least one class of securities whose rating is higher than the average rating of the underlying collateral pool or to create rated securities from a pool of unrated assets. This is accomplished through the use of credit support (enhancement), such as prioritization of payments to the different tranches. The equity/first-loss tranche absorbs initial losses, followed by a mezzanine tranche which absorbs some additional losses, again followed by more senior tranches. Thus, the most senior claims are insulated from default risk of the underlying asset pool to the extent that the more junior tranches absorb credit losses.

Figure 1
Structured finance products: an overview
 Stylised overview of the range of structured finance products as part of the ABS universe



Source: Working Group.

Following this description, structured finance can be defined through three key characteristics:

- a) *pooling* of assets (either cash-based or synthetically);
- b) *tranching* of liabilities that are backed by these collateral assets (this sets structured finance apart from traditional “pass-through” securitizations);

c) *de-linking* of the credit risk of the collateral pool from the credit risk of the originator, usually through use of a finite-lived, standalone financing vehicle (commonly referred to as a special purpose vehicle or SPV).

These three key characteristics determine both the market participants' different positions in the construction of structuration processes and their different roles played in the whole cycle. Their respective positions in this complex array of network-typed relations reflect their contribution to the valuation emerged from the whole cycle and their assumptions of the risks inherent to the designation of relative relationships of the parties.

V. MARKET PARTICIPANTS and THEIR ROLE

Structured finance markets comprise different types of market participants than the other financial markets. Because of the complexity of the structured finance instruments, the structured finance markets entail several participants whose interests are multiple as well. Same as the former section, here, I used CGFS's Working Group's Report (2005). For further information see pp. 5-7.

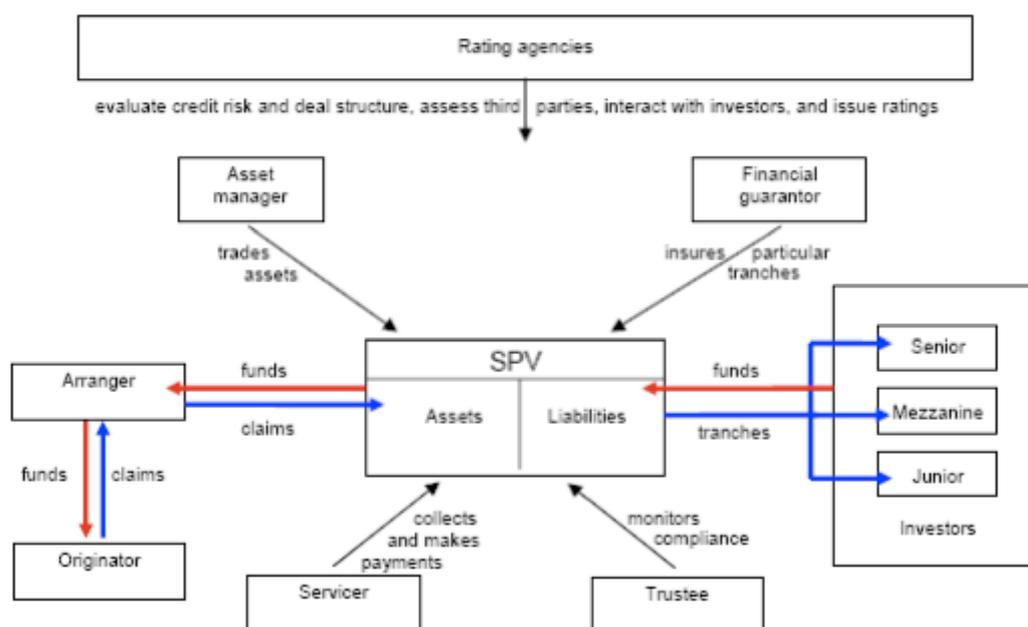
A number of different participants are involved in structured finance markets – see Figure 2. These include: the *arranger*, who sets up the structure, tranches the liabilities and markets the tranches; one or more *originators*, who either originate the underlying assets in the course of their regular business activities or source them in the open market; the *servicer*, who collects payments and may track pool performance; the *asset manager*, who – in managed transactions – may assemble the initial pool and subsequently trades in and out of collateral assets; the *trustee*, who oversees cash distributions to investors and monitors compliance with deal documentation; and, in certain deals, financial guarantors (e.g., the so-called monolines), who provide guarantees on principal and interest payments to, or sell credit default swaps on, particular tranches as part of their business model of underwriting high-grade credit risk.

In addition, given their tranching nature, structured finance transactions will also involve one or more *investors* (either institutions or individuals), who buy different tranches issued against the asset pool. Also, as most of these tranches will be rated, one or more *rating agencies* tend to be involved.... The provision of a structured finance rating by a rating agency can help to mitigate asymmetric information problems arising in the creation of a structured finance instrument, for example in assessing the rules governing the prioritization of cash flows to the tranches. The rating agencies also collect and assess information on the performance of the servicer and of other third parties involved in the transaction.

Figure 2

Structured finance: key market participants

Stylised overview of the "players" involved in (funded) structured finance transactions and of their roles



Source: Working Group.

When structured finance instruments are made up of non-traded loans or similar claims, the originators tend to be banks or finance companies. When the collateral pool is made up of traded assets, the arranger is typically also the originator and is often an investment bank or the asset management arm of a financial conglomerate. The servicer, whose role is particularly important for instruments based on large, traditional ABS pools, is often the originating bank or a specialized institution. Asset managers are typically dedicated units within banks and other financial institutions or standalone asset management firms with prior experience managing fixed income assets. The role of trustee is usually assumed either by specialist legal firms or units within major financial institutions.

Investors differ across products and with regard to the seniority level of the tranches they invest in. Initially, demand for structured finance products was dominated by banks and dedicated ABS investors seeking exposure to new sectors, regions, or asset classes. Subsequently, insurance companies entered the market, initially at the more senior level. Later, owing in part to tightening spreads, they started to invest also at the mezzanine level of the larger, more granular asset pools and, to a lesser extent, CDOs.

What is the main implication of the multiple participants' presence in the process according to this piece of information of the Report? I think that the inclusion of several various classes of financial institutions and individual investors shows the direction of the irresistible march of world capitalism. These different interest groups are interconnected in the same lane, since they exposed to the same conditions, which threatens all these groups. Today's financial environment is full of risks that they were not seen before post-war compromise between capital and labour, that is, Keynesian compromise between the classes. Thus, today, for internationally active financial institutions to avoid these risks and for

internationally networked production firms to product considering country risk conditions additional to other financial risks are vital. This is especially true for conglomerates, which united financial services with production. They need specific financial solutions that service to both current and future organizational functions and needs. Under the circumstances, the solutions they deserved should reflect their financial conditions in a continuous manner. So, they have to reorganize themselves to the changing needs of the financial and economic environment. Accordingly, the financial statements should be tailored to adapt the internal (firm specific) and external (market induced) drives of today's risky environments.

VI. TYPES of STRUCTURED FINANCIAL SOLUTIONS

What kind of benefits could structured and synthetic products specifically provide to the market participants? Since structuration depends on the existing financial conditions of the institutions, the financial statements of the institutions determine the structuration process in advance. As I touched on above, the structuration is rested on and derived by the financial strength and the financial needs of the firm. Culp presents a multi-dimensional analysis of the types of structured financial solutions in terms of financial statement logic. Here, I adapted a shortened version of Culp's presentation on the issue. For further information see Culp, 2006, pp. 269-80.

Structured finance involves the financial engineering of a firm's liabilities to achieve specific financing and/or risk management objectives. In some cases, the deliberate design or redesign of financial capital claims is not enough – the firm's assets must also be repackaged. The exact nature of any structured deal depends on the precise objectives of the firm undertaking the structuring.

a) Asset Structuring

i) Securing Specific Liabilities with Specific Assets

The simplest form of structured finance is the issuance of secured instead of unsecured debt. A firm can issue secured claims by setting aside specific assets as collateral to back the cash flows on the specific secured claims. This collateral is pledged to the bond or note holders to secure performance on the debt instrument, and note holders have a perfected security interest in the collateral assets. This means that in the event the firm becomes insolvent, the collateral pledged to these secured claimants is not available to the firm's unsecured creditors and stockholders. That collateral is available exclusively to satisfy the firm's obligations on its secured claims.

One reason that firms engage in asset repackaging of this form is credit enhancement. By pledging specific assets as collateral to guarantee the performance of specific liabilities, the firm has removed investors in the new secured liabilities from the seniority queue in the firm's traditional capital structure.

ii) Asset Securitization

Asset securitization is a form of structured finance in which certain real assets of a firm are sold. The payment for the acquisition of those assets by the purchasing firm is funded by the issuance of new securities whose principal and interest obligations are backed by the newly acquired assets as collateral.

The cash proceeds received by the original firm from the sale of part of its assets are used to retire a corresponding amount of debt, thus shrinking the firm's balance sheet.

Setting aside assets as collateral for securities to be issued directly by the firm is pretty similar to selling those same assets for cash and then having the asset purchaser issue new securities collateralized by those assets. Accordingly, the economic motivations for securitization are very similar to those discussed in the simple secured asset case. But there also are some extremely important differences, some of which are:

- The original asset owner may wish to achieve "true sale" of the assets for tax and accounting purposes or to ensure the bankruptcy remoteness of the assets from the rest of the firm. Merely pledging the assets as collateral on a secured liability offering will not remove the collateral assets from the firm's balance sheet (economic or accounting) and thus will not achieve true sale for tax, accounting, or insolvency purposes.

- It may not be possible to separate the liabilities backed by a specific pool of assets from the general credit risk and credit rating of the firm unless the assets are sold first.

- Asset securitization can be used as a method of shrinking the firm's economic balance sheet, decreasing leverage, increasing debt capacity, and, if applicable, decreasing regulatory capital requirements. Merely pledging assets as collateral against a specific security issue does not necessarily accomplish any of these objectives.

- If the motivation for asset repackaging is to improve the transparency and verifiability of a given pool of assets, that will almost always be easier to accomplish when the assets are sold to a new entity and taken off the economic balance sheet of the original asset owner.

- If the issuer is attempting to reclassify a set of assets into a new business, a new entity as host for those assets will make success far more likely.

iii) Ring-Fencing Assets

A third type of asset repackaging involves the segregation of selected assets (possibly even a whole business inside the firm) into a separate legal entity. The entity may be a wholly owned subsidiary of the parent corporation or may be financed in whole or in part by outside investors. Either way, the objective in this kind of asset repackaging is to *ring-fence* the assets (i.e., to separate them from the rest of the firm).

The subsidiary is presumed to remain consolidated on the parent company's economic balance sheet because the parent retains the (presumably substantial) equity interest. We have also allowed for the possibility, however, that the new subsidiary may issue debt backed now by the ring-fenced assets.

Ring-fencing can be beneficial in many situations. Some of the more common examples are:

- A company owns assets that pose a particular risk to the firm. Although not necessarily wishing to divest itself of the assets, the parent company wishes to house them in a bankruptcy-remote enterprise and thus ring-fences them.

- A particular business line of the firm warrants a higher degree of creditworthiness than the firm as a whole can achieve. The firm thus ring-fences the business line in a new subsidiary, overcapitalizes that subsidiary, and facilitates the subsidiary obtaining a higher credit rating than the parent. Derivative product companies or unregulated subsidiaries of investment banks are examples of this structure.

- A company decides to exit a business line or portfolio and wishes to manage the *runoff solution* separately, so it sets up a ring-fenced subsidiary to house the runoff line.

- A company is seeking financing for a large-scale capital-intensive project. The company prefers to raise financing using the assets of the project as collateral rather than to issue new unsecured debt. The project is ring-fenced in a bankruptcy-remote subsidiary and separately financed.

- A company suffers from severe adverse selection costs arising from an inability of outsiders to monitor certain assets the firm owns. The company ring-fences those assets to increase the transparency and ease of monitoring, thus hopefully reducing the adverse selection discount on its unsecured claims and lowering its weighted average cost of capital (WACC).

- Regulation, accounting, disclosure, or tax considerations force a firm to house certain assets in a distinct legal entity.

- A firm wishes to signal that it has engaged in pre-loss risk finance and cannot do so through the use of balance sheet reserves.

b) Liability Structuring

i) Funded Risk Transfer or Risk Finance

Firms may deliberately structure their liabilities to help manage the market, liquidity, credit, and other risks to which they are subject. In these situations, liability structuring is virtually always a substitute for external risk transfer.

Firms may prefer to issue structured securities as a preferred form of risk finance or risk transfer for a variety of reasons. Consider, for example, a cookware manufacturer whose profits are exposed to the risk of rising copper prices. Investors in the firm's debt and equity securities want the firm to hedge, but all face prohibitively high monitoring costs. Instead of issuing *unsecured* debt and buying call options on copper, the firm could issue *structured* debt in which coupons and/or principal paid to investors in the structured products is indexed to copper prices – the higher the copper price, the more the firm's funding cost falls. The second solution, however, is much easier for investors to monitor and thus may enable the firm to escape some of the agency costs of unsecured debt.

Structured securities that are motivated mainly by risk transfer are *funded* risk management products. Credit risk or performance concerns about the counterparty could also

explain the issuance of such products.

ii) Reducing Agency Costs Among Security Holders

Structuring on the liability side can also be beneficial for firms experiencing high agency costs among and between different classes of security holders and between managers and security holders. Call, put, and conversion provisions in corporate securities, for example, often are included to mitigate such agency costs without dramatically increasing outside security holder's monitoring costs.

iii) Meeting Specific Investor Demands

By designing securities better to meet investor demand, some companies can realize a slightly lower cost of capital or all-in funding cost. Structured securities that are designed to meet demand may also be motivated by one or more of the aforementioned economic considerations, or may be designed specifically to meet demand. In either situation, specific demands for securities can arise for several reasons:

- The combination of risk and return that a firm can offer through structuring is simply not available elsewhere in the market.
- Investors do not want to take on all the risks of the firm. They are the firm either to hedge or insure the other risks or to retain those other risks. Investors in firms with multinational business, for example, may prefer not to bear the exchange rate risk that they would indeed bear if the firm did not hedge. But they may also not want the firm to hedge those risks. As a compromise, investors would seek a security that is insulated from the parts of the firm subject to exchange rate risk.
- Corporate structure and form may be dictated by legal, tax, and regulatory considerations and may not reflect the optimal risk tranching that investors seek. In this case, the firm can repackage its assets and liabilities so that its securities better reflect investor preferences than the firm's corporate structure allows.
- Some investors face external constraints on investing in certain types of securities, and structuring can be a way for those investors to access otherwise unreachable investment opportunities. Pension plans, for example, cannot invest in assets without principal protection, which may preclude participation in certain types of private equity or hedge funds. The funds can issue principal-protected indexed return notes to satisfy these investor demands.
- In some cases and depending very much on applicable laws and regulations, firms may find certain tax or regulatory advantages to issuing structured liabilities. Trust preferred stock (TruPS), for example, is attractive to many bank holding companies because the dividends paid on TruPS are treated as interest paid on debt for tax purposes (i.e., they are deductible). At the same time, rating agencies give issuers partial equity credit for issuing TruPS. Together, these two variables lead to a sort of tax/ratings arbitrage for which TruPS are especially well qualified.

We have seen through Culp's presentation that how the complexity of the structured products depends on a multi-dimensional analysis of the financial statements. To specify the

components of a structured product necessitates considering all the participants needs simultaneously and reflecting their financial conditions with a perspective of organizational integrity of any participant. This is the most complex feature of structuration process that may explain why the financial engineering has developed in the world of finance: designing the market-making stage. In that stage, markets initially test that that the specified functions of the products work or not.

VII. STRUCTURING PROCESS

After explaining the *raison d'état* and different aspects of functionalities of structuring, we are now in the position to present what the structuring process is. In this section, I adapted Culp's analysis of the structuring process with some elimination. Further information could be found in pp. 280-7.

The structuring process involves different components that vary in complexity and importance based on the nature of the motivation of structuring. From the economic considerations through the institutional features to the execution step, structuring entails an integrated approach to financing and risk management issues of any firm. Culp gives a list of necessary ingredients of structuring:

a) Identification of Economic Motivation

One of the most critical aspects of the structuring process is to answer the following question: *Why structure instead of using traditional financing and/or risk transfer?* The answers to this question will vary firm by firm and situation by situation, but it is critical to ask the question and answer it *somehow*. The reasons to get the answer to this question early are twofold.

i) Ensure Costs Are Justified and Structuring Method Is Appropriate

Different types of structured finance programs subject firms to varying types and amounts of cost. Embedding a call in an unsecured bond issued straight off the originator's balance sheet, for example, is far less costly than, say, securitizing the firm's receivables. Knowing *why* the firm will benefit from structuring is important to help that firm understand *how* it should structure. Also, if a firm pursues a structured solution on the grounds that it will somehow reduce the firm's weighted average cost of capital (WACC) or increase the firm's expected cash flows, the firm should be sure that the expected increase in value exceeds any costs of structuring.

The issuer or originator in a structured financing deal may know the answer to this question already, but in many cases it is often through dialogue with another party that the idea behind a structured financing is born. This third party is sometimes an advisory agent (e.g., a structuring agent or the sponsor of the structured program). Most often, the decision to structure is the result of an ongoing dialogue between the firm and one or more financial capital providers and/or one or more risk transfer counterparties.

ii) Structuring Must Be Motivated by Commercial Considerations

Any good structured deal should be motivated primarily by economic and commercial fundamentals. If a deal can be put together legally in a way that also generates desirable tax,

accounting, regulatory, and legal treatment, so much the better. But structured financing deals should never be defined solely to back into a desired accounting or tax result. Consequently, early identification of the primary economic or commercial motivation(s) for the structured solution is crucial.

b) Preliminary Cash Flow Model

Given the economic motivations of the sponsor or issuer, the structuring agent and sponsor will want to spend some time preparing an initial set of models of the *cash flow waterfalls* in the contemplated structure. The interest and principal waterfalls represent models of income on the target assets in the structure and how that income is to be applied to various expense items and to the liabilities that are planned as a part of the structured program.

At this early stage of the structuring process, the waterfalls will consist mainly of revenues on the asset side and certain expenses. For a basic portfolio of assets to be securitized, this is often a fairly trivial step that consists primarily of setting up a model of income on the asset portfolio. But for more complex project finance, whole business securitizations, future flow securitizations, and the like, modeling the waterfall even initially is by no means trivial.

The expenses in a structuring program fall into two categories: senior and subordinated. Senior expenses are expenses associated with the structuring itself – fees paid to asset trustees, custodians, project managers, and the like. Senior expenses are generally fixed and do *not* depend in any way on the performance of the structured deal. Subordinated expenses, by contrast, are often performance-related – for example, success or management fees paid to a program adviser. At early modeling stages, it is appropriate to focus on the senior expenses alone. Subordinated expenses will be allocated from the cash flow waterfall *based on what is left over later*.

The model at this stage should be set up, moreover, with at least two design features in mind. First, the model should clearly define the per-period cash flows of the structure. Otherwise, it will be of limited use later in modeling the waterfalls of the entire program and in designing the program to meet target rating agency criteria. Second, the model should also conform to the appropriate project evaluation principle of the [yield] possibilities. A primarily financial asset securitization being marketed to investors as a yield enhancement opportunity, for example, will probably need to be modeled in terms of the return on investment (ROI), whereas a real capital development project, by contrast, will be more suited to a net present value (NPV) analysis.

c) Appointment of a Structuring Agent

A structured financing must be structured by someone or some firm, and the earlier that structuring agent is involved in the design process the better. The structuring agent should be a capable modeling organization with a complete understanding of the issuer's financing and risk management needs and a thorough understanding of the latest developments in credit markets, securities design principles, risk finance, and risk transfer. Structuring agents often specialize by the type of structure being contemplated (e.g., a firm that would make a wonderful structured credit product adviser might make a lousy structured runoff solution adviser).

In many situations, the structuring agent will be synonymous with the sponsor of the program or the entity that approached the issuer with the idea for the structured product offering in the first place – for example, a bank sponsor of an asset-backed commercial paper conduit or a collateral manager in an arbitrage collateralized debt obligation.

In other situations, the structuring agent may be the institution that will ultimately market and distribute the structured product—namely, the investment bank or securities underwriter.

And in still other situations, the structuring agent may be some other party, such as an advisory institution or a law firm. Providers of risk transfer and risk finance to the program may also sometimes serve as effective structuring agents. An insurance or reinsurance company, for example, may be the best-suited party to provide structuring advice on a large-scale project financing initiative for which the insurer is providing multiple types of risk protection.

d) Identification of Investor Interest

The structuring agent and issuer in a structured financing must try its best to ensure that there will be appetite and demand for the securities it plans to issue. This almost always necessitates the early involvement of an investment bank underwriter with access to a good marketing and distribution network for placing new securities. (Most structured products are privately placed.)

The structuring process [also] involves a lot of flexibility in terms of how the structured products are designed to allocate risk and return across prospective investors. Because structured financial programs are generally designed with one or more groups of investors in mind, knowing the needs and desires of these investors will help facilitate the process by which the new securities in the program are designed. Identification of interest from investors should occur as early as possible, and yet approaching investors too early before the economics of the deal are known will not be constructive and could expend valuable goodwill capital.

e) Design of the Institutional Features of the Structure

The next step in the process is the design of the institutional structure, which broadly includes all the contractual relations between the various participants who may be involved in bringing the structured product to market. Here is where some radical differences in the design of structured products can occur. Specifically, some structured financings require the creation of a new company for the specific purpose of facilitating the structured deal, called a special purpose entity (SPE) or special purpose vehicle (SPV). Not all structured deals require an SPE, whereas some deals require more than one. Sound economic, legal, tax, accounting, and regulatory counsel are essential for determining the optimal institutional structure of a deal.

- Special Purpose Entities

An SPE is usually organized as either a corporation or a trust. The exact form taken depends on a wide variety of commercial, legal, tax, accounting, and regulatory considerations. Some of the most popular forms of SPEs include:

Special purpose corporation (SPC) – usually a special purpose finance subsidiary of a corporation or a licensed (re) insurance company that plans to issue new securities.

Master trust – can issue multiple series of securities backed by a common asset pool—very useful if the sponsor or originator wishes to “recharge” the collateral pool with new assets later.

Owner trusts –formed to hold pooled nonrevolving assets.

Grantor trust – passive tax vehicle that can issue a single class of securities or senior and subordinated classes of pass-through securities backed by a common asset pool, but tranching of cash flows by maturity or time is not allowed.

Regulated investment company –separate company that issues securities for investment management purposes.

Investment trust (including real estate investment trust) –assets may include cash, mortgage loans, debt securities (other than those issued by the owner of the trust), pass-through certificates, and certain real estate mortgage investment conduit (REMIC) and financial assets securitization investment trust (FASIT) interests.

In some structured financing deals, you see more than one SPE in a single structure. This usually means that the tax, accounting, regulatory, and disclosure rules and requirements cannot all be satisfied using a single structure. Issues that often affect the structure of the SPE- and how many are necessary to achieve the goals of the securitization- include the need to have a bankruptcy-remote entity, the need to achieve a true sale of the assets for accounting and legal purposes, the need to ring-fence specific assets or liabilities from the rest of a business, and so on.

f) Design of Securities

With the core revenue model and institutional framework in proposed preliminary form, the structuring agent and/or originator now hits the hard part: designing the liabilities of the structured financing initiative in a way that satisfies the economic motivations of the originator and that meets investor demand and interest.

The design of securities in a structured program is the result of extensive modeling efforts combined with regular surveys of interest in the market. There are several essential features of the securities to be issued in which the reconciliation of supply-side (i.e., issuer) and demand-side (i.e., investor) concerns is of paramount importance.

i) Maturity Structure

The maturities of different classes of securities to be issued are often dictated by the nature of the structure itself and the assets underlying that structure. The securitization of short-term receivables may involve a commercial paper or short-term note issue, for example, whereas a structured project finance loan or asset-backed security issue could well involve 25 to 30 years to maturity.

Securities with different maturities may also need to be issued. Some structures are essentially static wind-downs and thus do not require regular infusions of new funds. In this case, an original set of securities with one or perhaps two maturities generally will suffice.

But other structures may be designed to service a dynamic asset portfolio that is being constantly replenished or recharged. In these situations, multiple maturities of liabilities are often required to service cash flows over different phases of the underlying structure.

ii) Tranching and Subordination

One of the most important features in a structured finance offering is the design of the capital structure of the issuer. In a *single-class structure*, a single type of liability is issued in which all holders of the new security have a proportional *pari passu* claim on the assets that back the structured financing program. A *multiclass structure*, by contrast, requires the structuring agent to define two or more layers of subordination and the different cash flow tranches that relate the underlying assets to those multiple layers of subordination.

For a given capital structure, much of the structuring will involve various models of the cash flow waterfalls. Liabilities are assigned priority in the cash flow waterfall corresponding to their seniority in the issuer's capital structure, and the availability of funding to service the obligations chosen will in turn dictate the nature of interest and principal payable on the new securities.

Tranching cash flows into multiple layers of subordination is also a key consideration in how the structure transfers risk from the originator to investors.

g) Target Ratings and Enhancements

An absolutely critical component of the structuring process involves the target ratings assigned to different tranches of the structure. Rating agencies have very specific guidance about minimum requirements for a tranche in a structured program to meet a specific minimum rating, and the structuring agent will need to incorporate these constraints into the model of the cash flows and the cash flow waterfalls (assuming the issue is to be rated).

With the target capital structure, target ratings, and preliminary cash flow model in hand, the structuring agent may discover that certain enhancements must be procured for the structure to satisfy the issuers, investors, and rating agencies alike. Such enhancements may include both *credit* and *liquidity* enhancements.

h) Execution and Ramp-Up

The execution of deal documents in a structure usually occurs after all the various parts of the structure have been designed and set up. All participants will generally have had a chance to review draft deal documents, and all that remains is for the participants to execute those documents.

At the time of closing, the structure may not be entirely ramped up. The ramp-up period for any given structure is the period of time during which any asset repackaging, sales, transfers, and the like actually occur. In some structures, the ramp-up period is short and requires little more than the transfer of title of ownership from one firm to another. But in other situations ... funds must be obtained from investors in the new securities before assets can be purchased. And even then, asset acquisition or repackaging itself may be time-consuming. In such cases, ramping up can be a more gradual process.

Although the design of structure may cover a whole series of financial and economic benefits, it should be added that a well-designed structure for a financial contract is not enough to establish its effective functioning and marketing. Financial intermediaries must

supply liquidity support for it and should gain some compensatory benefits for this support. Erik Banks asserts that “In many instances, financial intermediaries must continue to support the asset by providing ongoing liquidity (market-making) or by assuming a certain amount of credit, market, or liquidity risk. Thus, even after a product has been launched successfully, its ongoing viability may depend in large part on continued participation by the community of intermediaries. This means, of course, that banks, securities firms, and other product creators must be compensated for risks taken in supporting the product. Unfortunately, profit margins on new products can compress quickly as a result of competitive pressures, suggesting that a misbalancing of risk/return may arise (Banks, 2006, p.7).”

In the world of structured products, banks-based structured instruments maintain a pivotal place and a huge size. Accordingly, banks are exposed several risks emerged from structured finance transactions that I will present it in a later section. Although the structured products provide a well-designed risk-protective environment, i.e., supported by tailored-securities, they simultaneously expose the archetypal structured finance risks. The archetype has been and is being determined by market forces, as the structuration processes of the structured finance instruments has been being evolved by again these and other financial markets. So, the matter of how structuration has been evolved is placing into surface. This evolution may reflect the markets’ responses that how the structuration transformed the underlying security for any given structured financial contract.

VIII. CENTRAL ISSUE OF STRUCTURED PRODUCTS: SECURITIZATION

As it is seen, synthetic and structured products are mainly engineered by a transformation of an underlying security or natural security. Thus, it should be reminded that securitization is one the most important innovations to emerge in financial markets since the 1930s. For instance, in United States, after the collapse of 1929, the main change in the laws that regulate U.S. financial system was to differ commercial banking from investment banking. Banks made loans, investment banks made security-based transactions up to mid-1970s. From the late 1970s onwards the transformation of securitization has been being necessitated by the market participants’ changed financing and investment needs that we touched on earlier. Today, securitization is changing the face of American and world finance. Because it was originated and developed in U.S., let us now look at the transformation patterns of securitization in U.S. markets, following Leon T. Kendall’s explanations:

The development of securitization in financial markets in the United States has passed through three stages. The first stage was the conversion of traditional portfolio debt instruments into pass-through securities. Interest and principal with appropriate enhancements are purchased by third party investors, and a secondary market develops. Risks of prepayment, interest rate changes, and residual credit exposure also pass through to the investor. The number of investors willing to buy the risk asset is limited by the nature of the original loan contracts and the nature of the security. A need to match the security with the funding requirements of investors becomes apparent. (Kendall, 2000, p.15)

Bifurcation of cash flows or credit risk into investor-friendly tranches marks the second stage of securitization. Establishing the predictability of cash flows and ordering them

with serial priorities permits the creation of securities with terms closer to what investors, especially major institutional investors, seek. The restructuring of one home loan pool into three-year, five-year, and ten-year notes based on prepayment experience, as well as interest-only and principal-only tranches and even more exotic instruments increased the size and interest of the investor group and the efficiency of pricing. The synthetic securities or derivatives developed through this process have created both value and notoriety. (Kendall, 2000, p.15)

The third stage of securitization is likely to involve the recycling of securitized issues, recombining outstanding issues into new securities. The exercise will be investor driven and designed by investment bankers to provide investors with cash flows from seasoned pools of debt instruments in new forms that meet their funding needs. The commercial real estate property field is one area where such processes are underway. Private placements can be a logical outgrowth of these developments. Greater sophistication in reengineering cash flows and a quest for values in lesser quality tranches can be expected. As is the case in the larger, more public markets, the credit-rating agencies will play the vital role of guardian of credit quality in securitized markets. (Kendall, 2000, p.15)

Kendall's statements highlight the very content of the structured products depend on: markets determine the evolution of structured products and in turn, determined by this evolution. When the need of risk capital arises from markets, the response of markets is to place more risk capital to these fields. Kendall explains how the market determinants are interrelated. "The development of securitization was a market-driven process. It grew most vigorously in areas of need, where there was a shortfall in the supply of capital. So long as society encourages competition among financial institutions, securitization is likely to grow. A second building block has been the growing public access to information on borrowers, collateral, and other elements of risk. Such information, once the province of traditional portfolio lenders, is now widely available. Furthermore, the ability of credit-rating agencies to convert this knowledge into ratings viewed as reliable by the market accelerated trading and liquidity. The rating agencies, rather than the local portfolio lenders, have become the gatekeepers overseeing access to capital markets by borrowers. Market tests can be met by quality of collateral rather than by the credit standing of the originator/issuer (Kendall, 2000, pp.15-6)."

IX. BASIC STRUCTURED FINANCE ECONOMICS

After demonstrating the building blocks of the structured finance, it can be described that how structured finance instruments appropriate profit. In order to explain a more detailed and product-specific features of structured finance, I provide a product-based typology of structured finance in the Appendix 1. It clarifies the empirical contents of the economic relations of the market participants as well. Because of the complexity of the constituencies of the structured markets and the products design, having a comprehensive idea of the appendix may be helpful. Committee of the Global Financial System's 2005 Report comprises a framework on basic structured finance economics. It presents an in-depth perspective of structured finance economics (CGFS, 2005, pp. 8-11):

Among the [key] characteristics of structured finance, tranching is the feature that most distinguishes structured finance products from traditional securitizations (pass-through instruments), as de-linking and pooling are common to both types of instruments. Yet, recognizing the benefits associated with each of the three features of structured finance products helps to understand the situations in which structured finance markets are most likely arise (i.e., in which structured finance instruments capture profit) and the role that ratings play in these markets.

a) De-linking

The process of de-linking generates at least two benefits for originators as well as investors. One is the use of collateral (i.e., the underlying asset pool), which turns structured finance into a form of secured borrowing. However, despite the provision of collateral, structured finance differs from traditional forms of secured borrowing in that payments to the secured creditors (i.e., the tranche holders) are affected only by the performance of the de-linked asset pool and not by the performance of the originating firm. While defaults in the underlying asset pool will lower the payments to the tranche holders, other factors, such as the performance of the originator's management, should have no impact if the assets have been successfully de-linked. (Only in the case where the originator remains as the servicer of de-linked loans could poor managerial performance affect the payouts of the loans.) A second benefit is that fully de-linked assets will not come under court jurisdiction should the originator file for bankruptcy. One of the key roles served by rating agencies in structured finance markets is to make judgments about the soundness of the legal structure of a transaction, including the degree to which de-linking has been legally effective.

The benefits of de-linking, taken together, allow for the issuance of claims secured by portfolios of assets with well defined characteristics and with returns that may be more predictable than the total returns of the originator. Part of the predictability may be due to the particular characteristics of the securitized assets (e.g., cash flows with stable distributions). Another part can be attributed to the more circumscribed character of governance issues arising with a structured finance product as opposed to those associated with firms as going concerns. Consequently, the credit risk of the de-linked assets is often lower than the credit risk of the originator, which facilitates access by the originator to cheaper sources of funding.

b) Pooling and tranching: structured finance versus pass-through instruments

An SPV issuing tranching claims against a pool of assets can be compared to a firm issuing debt and equity backed by the firm's assets, which include physical and human capital. Likewise, the intuition of the Modigliani-Miller theorem can be applied to SPVs: in a world of perfect financial markets, with no information asymmetries and with all assets readily tradable (i.e., without liquidity premia), tranching would not add value relative to a share in the pool, since the structure of liabilities would be irrelevant. Market imperfections are thus needed for structured finance to add value. Two such imperfections, which may play a role individually or in combination, are asymmetric information and market segmentation.

i) Asymmetric information

An originator may have private information about the quality of certain assets and/or a comparative advantage in valuing these assets relative to other market participants. If the originator wishes to sell some of its assets, an adverse selection problem will arise: because

investors do not know the true quality of the assets, they will demand a premium in order to purchase them or a market will fail to arise in the first place. Originators, or arrangers, can overcome this problem by creating structured finance instruments. Pooling creates diversification benefits, whereas tranching allows risk-averse investors and those with less information about asset values to purchase senior tranches and be protected from default. In the process, the originator or arranger may retain subordinated exposure (i.e., to the first losses in the pool) to alleviate investors' concerns with incentive compatibility. Banks, for example, typically retain the equity tranches of the collateralised loan obligations that they issue. Alternatively, reputation - established through a proven track record - may help to align incentives. In such an environment, a tranche rating can lower issuance costs by offering an independent assessment of the quality of the underlying assets and of the degree of protection afforded to senior tranche holders.

ii) Market segmentation

Different risk preferences among investors or publicly and privately imposed investment constraints can influence transaction costs and create markets that are segmented between investor groups. This leads to arbitrage opportunities that can be exploited through the creation of structured finance instruments. For example, when an arranger possesses private information concerning particular investors' preferences that is not easily attainable by other intermediaries, the arranger can profit from pooling and tranching, ie by creating securities with characteristics that are tailored to the investors' specific demands. Investors, who benefit from the additional diversification of their own portfolios achieved by the tailored product, will then be willing to pay a premium for it. For instance, the AAA tranche of a portfolio of automobile loans may have a performance across differing stages of the business cycle that suits the demands of particular investors, but is not available through combinations of existing securities.

A second form of arbitrage opportunity may appear when market segmentation leads to pricing differentials across certain classes of assets that can be included in the underlying pools of structured finance instruments. One example is given by arbitrage CDOs, where the underlying asset pools are comprised of bonds or credit default swaps (CDSs). Originators of these instruments seek to take advantage of the fact that the market spreads of certain rating categories of bonds tend to be higher than what would be expected solely on the basis of the default risk, and that this difference has been greater for certain rating categories (e.g., BB) than for others. If the spread differentials across rating categories are large enough, it can be profitable for an arranger to assemble pools of bonds in the "cheaper" rating category, issue tranching securities against them, pay the holders of tranches in other rating categories a spread consistent with the market spread for bonds with similar credit risk, and compensate equity tranche holders with the "excess spread".

c) Governance issues

As noted above, finance theory suggests that, when asymmetric information exists, under certain conditions less informed investors will be more likely to purchase the senior tranches and more informed investors the subordinated tranches of a structured transaction. Yet, whereas asymmetric information can give rise to tranching, it is also potentially at the heart of a basic trade-off in designing structured finance instruments. To the extent that the holder of the most subordinated tranche is indeed better informed about the value of the

collateral assets than are senior investors, it might seem natural to designate the subordinated note holder as the party in charge of workouts or portfolio restructuring should defaults occur among the obligors. This, however, leads to a conflict of interest between the subordinated note holder, who is often also the originator, and the more senior investors. Particularly when losses have erased most of the value of their stake in the asset pool, subordinated investors may have an incentive to take actions that avoid or defer liquidation of non-performing assets, as this might increase the chances of recouping a significant proportion of their investment. Alternatively, when the underlying assets are tradable securities, the subordinated note holder may have an incentive to replace non-performing assets with substitute securities of low credit quality but high yields. Senior investors, on the other hand, have an interest in avoiding such substitutions.

These potential conflicts of interest between subordinated and senior investors can be addressed in at least three ways. First, the subordinated tranche holder may be designated to manage the assets in the portfolio, but the possible actions that this investor may take are restricted ex ante. Second, a third party may be designated to manage the portfolio. However, if this manager must hold one or more of the tranches in order to signal a commitment to properly managing the portfolio, the conflict of interest may reappear at the asset manager level. The third possibility is to have an unmanaged, or static, instrument in which no modifications of the original portfolio are allowed. This alternative, however, also involves potential drawbacks for investors, since the lack of asset substitutability would limit their ability to benefit from early identification of non-performing assets. In addition, unanticipated prepayments might leave the structure with inefficient excess cash holdings that could not be redeployed.

In line with these observations, the provisions of managed structured finance instruments generally impose strict limitations on the actions that note holders and/or third-party managers can take. These provisions amount to an attempt to write a “complete contract” that fully specifies the rights of all the transaction’s participants and the rules for determining payments to note holders under alternative scenarios of asset pool performance. Tranche ratings embody assessments of these structural features, including the degree to which conflicts of interest among note holders and between third-party managers and investors are managed.

This analysis provides both theoretical and practical considerations on structuration. It shows us not only what the difference of structuration from traditional secured borrowing is but also how and why the difference of structured finance from pass-through instruments appropriate profit. The discussion also highlights the importance of governance in terms of solving conflicts of interest between subordinated and senior investors. Governance is obviously important for all participants. But, it is extremely important for banks, since the banks are both the main originator and customer of these structured markets: they carry both the eventual credit risk and most of the market risk emanates from market-making activity.

X. THE EFFECT of SECURITIZATION on COMMERCIAL BANKS

As it is seen, securitization transformed the world of finance generally and banking industry specifically. After the Great Depression, it was necessary to separate commercial banking, investment banking and insurance sectors. As the proper conditions appeared in mid-1970s, the barriers between the sectors of finance industry had blurred. Thus, it is illuminating to see the transformations in the banking industry, which was the main provider of credit. In this section, I mainly benefited from Susan M. Phillips' article: *The Place of Securitization in the Financial System: Implications for Banking and Monetary Policy*. Her analysis demonstrates not only the transformed financial role of banks but also implies that the ever-changing character of traditional relationship banking performed by individual credit analysis.

Securitization represents an especially important development for banks. Since more assets can now be regularly traded in convenient forms, the role of financial intermediaries has changed. In short, the line between loans and securities has blurred as more loans can be readily transformed into securities. Banks have been key participants in this ongoing process, both as suppliers of assets to be securitized and as holders of mortgage-backed and asset-backed securities and derivatives on those securities. (Phillips, 2000, p. 129)

In some sense, it might seem odd that banks would be large investors in securitized products. Banks specialize in credit analysis and are the natural investor in assets that require individual credit analysis. This is not the case with mortgage-backed or asset-backed securities, where the credit rating has been done by the rating agencies. There are two major reasons why banks do invest in these securities. The first reason is, to the extent that a bank's customers are not interested in taking out new loans, banks will seek out capital market investments. The second reason involves bank's capital requirements. Banks have much higher capital requirements on loans than on securities. So if a bank is under pressure to improve its capital ratio, then there is an incentive to invest in securities. Now that many banks have shored up their balance sheets, they will have less incentive in securities and a greater incentive to originate new loans. (Phillips, 2000, pp. 130-1)

Accordingly, securitization expands the sources of loanable funds, putting downward pressure on yields. This lower borrowing cost is an obvious advantage for borrowers. At the same time, the lower yields make these assets less attractive for banks and other intermediaries. There is another, offsetting, effect though. The negative impact of the lower yields is offset to some degree by the fact that these assets are tradable in liquid markets. In addition, the advent of securitization and derivatives has spawned a variety of new financial instruments that fill out various market niches. To the extent that banks find some of these new assets attractive on the basis of various combinations of their liquidity and risk characteristics, then even if yields are lower than before, securitization may actually serve to boost the size of banks' balance sheets. (Phillips, 2000, p.130)

The growth of securitization and the advent of derivatives have many positive implications for banking. By facilitating unbundling and specialization, securitization allows banks to operate more efficiently and more profitably. Banks can originate more loans than would have otherwise been the case. This is particularly true for mortgages and consumer credit... It is probably safe to say that many of the loans that banks securitize would not have

been originated had the banks been required to keep them on their balance sheets. (Phillips, 2000, p.131)

That banks can originate and securitize loans enables them to more fully exploit their special expertise of analyzing the credit worthiness of borrowers. Credit analysis, the intermediation function that banks have traditionally performed so well, can sometimes be difficult for capital markets. By eliminating the need to provide the financing for all of its loans, securitization enables banks to apply their credit analysis expertise on many more loans. This can boost earnings and lower the cost of accumulating capital. Further, this can enable banks to seek out other assets to hold, particularly assets that are not easily securitizable. (Phillips, 2000, p.131)

By giving banks more ways to adjust their balance sheets, securitization has made their assets more liquid. This has proved helpful to banks in particular circumstances and in particular periods of time. For example, in the late 1980s and the early 1990s, [US] banks were under considerable pressure – both from the financial market and from regulators – to strengthen their capital ratios. For many banks, the cheapest way to do this was to shrink their assets through securitization. In fact, these capital ratio pressures likely served as an impetus to the development of techniques to securitize credit card receivables. (Phillips, 2000, p.132)

A relatively recent innovation has been the use of securitization in the commercial mortgage market. This new market has facilitated the removal of subpar loans from banks' balance sheets. Further, we have seen a dramatic improvement in the delinquency rates for commercial real estate loans as a result of the ability to securitize these loans. (Phillips, 2000, p.132)

Coupled with the developments in asset-backed securities markets have been developments in the derivatives markets. Banks have been able to exploit the derivatives markets in ways that benefit both themselves and their customers. Banks use derivatives to reduce risk by hedging their own exposures.... Banks also use derivatives to offer new products to their customers. For example, on the lending side, customers can be offered floating-rate loans with ceilings. Banks also are offering new types of deposits, for instance, deposits with returns linked to the performance of equity markets. (Phillips, 2000, p.132)

After presenting Phillips' comprehensive ideas on the issue, it may be helpful to notice how the credit risk transfer affects banking system – since the credit risk transfer is the most important incentive for using securitization or structured products. Committee of the Global Financial System published a Report titled as *Credit Risk Transfer* at 2003. The impact of credit risk transfer on banking system is systematically analyzed in the Report. Let us see the findings of the Report:

The enhanced transferability of credit risk has encouraged some banks to manage their credit book on a portfolio basis or to move in this direction, although ... this process is generally still at an early stage. First, in some CRT markets, such as CDSs and CDOs, the number of institutions involved is relatively small. Second, CRT is currently limited to certain names and asset classes, with the implication that the greater flexibility in the management of credit risk is also confined to these assets. Finally, even in those institutions where credit risk is managed at portfolio level, lending decisions still tend to be based on an assessment of single exposures on a standalone basis. IT system problems in aggregating exposures across different products and legal entities appear to be a frequent hindrance (CGFS, 2003, p.24).

Integration of credit risk management seems to be most developed in banks which trade credit risk actively. In some European universal banks, involvement in CRT started with credit risk trading and arbitrage between bonds and CDSs. Some of these institutions, with important activities in both trading and intermediation, have combined their different credit-related operations (bonds, loans, derivatives) to exploit arbitrage opportunities. Portfolio structuring (ABSs, CDOs, ABCP) seems to be usually, but not always, separated from credit risk trading (CGFS, 2003, p.24).

Although some institutions indicated that they might shift from their traditional “originating and holding” approach to an “originating and distributing” approach, there are few signs yet that this is a general pattern. Most banks involved in CRT business are still in the process of evaluating the strategic implications of CRT for their lending business and risk profiles (CGFS, 2003, p.24).

Currently, CRT activity is mostly confined to larger institutions (although in some countries ABSs are used by smaller institutions as well), but the potential diversification benefits arising from CRT may be greater for smaller institutions. The business of smaller banks is more often confined to a certain region with little “natural” diversification. At the same time, smaller institutions often have a greater proportion of their exposures to small and medium-sized enterprises (SMEs), for which liquid single name protection markets have not yet developed. Although the revision of the Basel Capital Accord might encourage the market entry of more rating agencies and an increasing use of ratings in this area, the modest size of outstanding credit per name will probably continue to limit instruments’ liquidity. Risk transfer in these particular exposures therefore seems more likely in the form of portfolio transactions... [And], projects to securitize assets typically held by smaller banks are being developed, including in countries where securitizations has not played a major role so far. The viability of such transactions clearly depends on the arrangement and monitoring costs, which could be high. The limited ability of third parties to monitor credit events involving numerous small borrowers may also be a limiting factor. The extent to which CRT might affect the role of banks in the financial system will clearly depend on the number and size of institutions involved and the nature of the exposures transferred. An important question is how far CRT will be used to reallocate credit risk within the banking system and how far to transfer risk to non-banks. Currently, the first seems to be dominant, despite the growth of risk transfer to the non-bank sector, in particular to insurance companies (CGFS, 2003, pp.24-5).

Although the credit risk is the prominent one, there are various classes of risks that should be controlled and managed by issuers and investors, and thus banking firms as well. I provide a list of risks that should be monitored by all corporations in Appendix 2. It gives an idea of that structured products are Janus-faced entities: they simultaneously provide risk transfer as well as they expose several risks to corporations. Because of the risky nature, the size, and the complexity of the structured products markets, both the central banks and other financial regulators (i.e. either national or supranational) have been deeply dealing with them. The structured product markets added more controversy to the regulation of financial system. Consequently, there appeared regulatory gaps that emerged from these markets. Thus, Bank for International Settlements (BIS) suggested a new regulatory capital, supervision and market discipline regime of banking regulation to international banking community, widely known as Basel II. In the next section, I will present some central bank concerns on the securitization phenomenon. And then, following two sections, I will touch on the regulatory

gaps in the field and the reaction of BIS to this phenomenon, namely the securitization aspect of Basel II.

XI. CENTRAL BANK INTEREST

Because of the systemic implications of structured markets, central banks must regulate, surveillance, and monitor them. The specificity of them for central banks is analyzed by Jane D'Arista in the light of increasing importance of securities markets in the last three decades. Before passing to D'Arista's analysis, let us see the data on structured finance.

In the Committee of the Global Financial System's 2005 Report, it is stated that although the structured finance market has grown rapidly in recent years, estimates of market size differ, depending on the data source, and consistent information across market segments has remained scarce, with reliable data on outstandings basically unavailable. "No comprehensive and uniform source of data on the market for structured finance, either net flows or outstanding stocks, is currently available. However, there are several sources on new issuance, major investment banks and the rating agencies being the most important ones. Stock data are relatively sparse, although there are quarterly data on stocks of US collateralized mortgage obligations and three surveys of global credit derivatives outstanding, which also include some detail on (synthetic) structured products.... The latest British Bankers Association survey puts the notional value of the global market (including asset swaps) at end-2003 at \$3.6 trillion, with an expectation that the market would exceed \$5 trillion by end-2004." (CGFS, 2005, p.7) Although they are sub-sections of structured finance, the derivatives markets are not included in this figure. In the BIS Quarterly Review, it is reported that "...the pace of trading on the international derivatives exchanges quickened in the first quarter of 2006. Combined turnover measured in notional amounts of interest rate, equity index and currency contracts increased by one quarter to \$429 trillion between January and March." (BIS, 2006) This figure represents approximately a factor of thirteen for yearly world production. The total gross market values relative to these notional amounts of total contracts, \$9.139 billion for December 2005, are very huge as well: even this figure is about one third of world GDP.

D'Arista underlines both the historical and the systemic reasons behind this self-increasing power of structured finance. "In the 1980s, international credit flows shifted away from loans through large international banks to securities markets, there were larger flows between national markets, markets became "far more closely integrated worldwide," and capital "much more mobile" (BIS 1986). By the end of the decade, these developments had intensified as a result of the removal of capital controls by many developed and developing countries, a wave of privatizations of state enterprises initiated by the Thatcher government in the United Kingdom in the early 1980s (culminating in the restructuring of Third World economies and formerly centrally planned economies in the 1990s), and the dramatic increase in foreign portfolio investment that these developments facilitated." (D'Arista, 2002, p.79)

The increased dominance of foreign portfolio investment that became apparent in the mid-1980s reflected significant changes in saving and investment patterns in the national markets of the major industrialized countries. These changes were largely due to the growth of private pension plans. Because pooled funds held by such plans are invested primarily in

securities, institutional investors -e.g., pension funds, life insurance companies, mutual funds, and investment trusts- became more important in channeling savings than banks and other depository institutions in some of the major industrial countries (D'Arista, 2002, p.79).

Increased capital mobility, the liberalization of domestic financial markets and shifts in credit flows to securities markets outside the direct influence of monetary policy have made implementing monetary policy more difficult in all countries. They have eroded central banks' ability to control the supply of credit, forcing them to rely more on their ability to change interest rates through open market operations to influence the demand for credit. However, as early as, the 1969 U.S. credit crunch, it became apparent that efforts to control aggregate demand through open market operations would require that "...interest rates generally have to become higher and more variable..." (BIS, 1995). In the process, these three factors become powerful inducements for procyclical surges of foreign portfolio investment that undermine the policy objectives sought by the change in interest rates. Thus, the most damaging effect of the liberalization of global financial markets may be the loss of central banks' power to implement counter cyclical policies (D'Arista, 2002, p.80).

D'Arista evaluated the effects of the transformation of world finance on both macroeconomic and global levels. Parallel to this analysis, Committee of The Global Financial System's 2005 Report takes the structured finance markets in the context of macro economy and relates it central bank regulatory and surveillance functions as well. It is argued that "[t]he central bank community has every reason to make sure that it fully grasps the functioning of structured finance markets and any financial stability implications that may arise from the use of these instruments. However, central bankers may also be interested in structured finance markets for other reasons. One of these is that, while advances in portfolio credit risk analysis have been important for the creation of structured finance markets, risk measurement methodologies are still evolving. (CGFS, 2005, p.2)"

Three issues are underlined in the Report, namely, Originator's real risk amount, undue concentrations of risk(s), and inaccurate pricing, which all three have systemic risk implications, (CGFS, 2005, p.30):

- The scale of risk transfer that is actually occurring through structured finance can be overstated, particularly if originating institutions hold on to the equity tranches of the instruments they issue.

- In addition, structured finance instruments transform risk, with the potential of magnifying the exposures of certain market participants who acquire these instruments. This raises the possibility that, instead of spreading risk more efficiently, the risk transfer that does occur could lead to undue concentrations, in that investors may wind up with positions that are riskier than they realize.

- Overall, if risk is inaccurately priced and exposures are concentrated in ways that are not fully appreciated by market participants the occurrence of worst case scenarios could have systemic implications. Although the current scale of the more sophisticated structured finance activities is still quite small relative to other parts of the credit

market, central banks may nevertheless want to be vigilant as markets continue to grow.

In the Report, it is stated that in terms of financial stability concern, there are some implications for central banks, regulators and market participants. Two issues are highlighted, namely central banks' market monitoring and disclosure and transparency (CGFS, 2005 p.31):

i) Central banks' market monitoring

Structured finance markets raise issues for central banks that are familiar, but that are becoming more challenging. At the core of these developments is the contribution of structured finance in the move towards more market-based intermediation of financial services rather than the traditional provision of these services through banks' on-balance sheet activities. This, in turn, will tend to increase the financial system's reliance on markets.

Non-bank intermediaries: In the past, central banks' attention in the area of financial stability has largely been focused on banks and other depository institutions. Increasing importance of liquidity risk and its interaction with other risk factors, however, means that systemic problems could be increasingly likely to originate outside the banking sector, e.g. from the non-bank intermediaries that have arisen as major players in some structured finance sectors (such as securities firms, insurance companies or financial guarantors). Disturbances, when they develop, may thus be harder to detect and to resolve. Nevertheless, structured finance also entails legal separation between pools of assets and the assets' originators, which will tend to make the financial system less vulnerable to institutional spillovers.

Market functioning: With market liquidity now requiring greater attention, central banks may have to refocus their traditional approaches towards safeguarding financial stability, with more emphasis being placed on helping to preserve the smooth functioning of markets.

ii) Disclosure and transparency

Non-bank market participants are now more closely involved in the management of market and credit risks than in the past, possibly leading to changing information needs. Risk transfer, for example, is known to make it more difficult for policymakers and market participants to monitor market development and to track the "circulation" of market and credit risks through the system and over time. This applies in particular once unregulated institutions are involved in the risk transfer process, should the scale of their activities be sufficient to potentially cause or exacerbate market disruptions.

Market data: Data on structured finance activities, despite recent improvements in this regard, are much less developed than those available for other markets. This applies to statistical data on market structure (i.e. issuance, outstandings) as well as pricing/valuation relevant information (i.e. changes in pool holdings, default performance).

From a central bank perspective, given that the scale of activity in various sectors can be an issue in case of any disturbances, more data may be useful - on an appropriate level of aggregation - to monitor the development of the market over time. In addition, as transparency has long been identified as an important factor supporting market discipline, improved disclosures by and to market participants (i.e. in the form of enhanced pre- and

post-issuance information for investors and disclosures of structured finance activities for use by market participants' counterparties) are clearly desirable. However, as low transparency also hampers market development, incentives exist for market participants to find adequate solutions. Secondary markets for CDOs, for example, have recently become more liquid, partially due to better and more comprehensive information jointly being made available by major underwriters. Nevertheless, central banks and other authorities may want to consider more active measures to improve transparency in the future, should the relative opaqueness of structured finance markets continue.

A related point is that a common shorthand for the importance of a position - that is, notional size - is inappropriate to judge riskiness, as tranching will distribute expected and unexpected losses across tranches in ways that are not well reflected by notional amounts. Therefore, it may be valuable for market participants to separate information on the rating level and size of structured holdings from other disclosed positions.

Methodological disclosures: The rating agencies should continue to disclose details on their methodological approaches, together with additional information on ratings changes, to allow investors to better understand the analytics behind their structured finance ratings. Given the intrinsic conflicts of interest of their issuer fee-based business model, the agencies should also consider how to communicate more clearly the ways these conflicts are managed. In addition, as the riskiness of tranching investments cannot be sufficiently differentiated on the basis of ratings alone, the agencies may also want to further enhance their ongoing efforts to communicate the limitations of their ratings.

Proper accounting and presenting structured products transactions is another important dimension of market monitoring. Hennie Van Greuning stresses the importance of the transparency in disclosures of derivatives in terms of fair value accounting and reporting. "A key purpose of derivatives is to modify future cash flows by minimizing the entity's exposure to risks, by increasing risk exposure, or by deriving benefits from these instruments. An entity can readily adjust its position in financial instruments to align its financing activities with operating activities and, thereby, improve its allocation of capital to accommodate changes in the business environment. All such activities or their possible occurrence should be transparent to financial statements' users. For example, not reporting significant interest rate or foreign currency swap transactions would be as inappropriate as not consolidating a significant subsidiary (Greuning, 2005, p.206)."

Greuning carries the discussion to the relation between transparency and sensitivity analysis. "Sensitivity analysis is an essential element needed for estimating an entity's future expected cash flows; these estimates are needed in calculating the entity's valuation. Therefore, sensitivity analysis is an integral and essential component of fair value accounting and reporting. For example, many derivative instruments have significant statistical deviation from the expected norm, which affect future cash flows. Unless, those potential effects are transparent in disclosures and analyses (for example, in sensitivity analyses or stress tests), the balance sheet representation of fair values for financial instruments is incomplete and cannot be used properly to assess risk-return relationships and to analyze management's performance (Greuning, 2005, p.206)."

Totally speaking, CGFS's Report reproduced the mainstream economists' belief on the dialectic between central banks' policy imperatives and structured markets i.e., the financial

system's reliance on markets. Additionally, although both fair value accounting-and-reporting and sensitivity analysis may add some degree of accuracy to transparency in disclosures, both the counterparty risk and the volume-and-speed of the transactions of the structured instruments or derivatives would make difficult to monitor aggregate market data.

I argue, therefore, to say that central banks must now seek their objectives through the market rather than through the banks masks the essential change. Securitization, derivatives, worldwide markets, and the vastly increased liquidity of once non-marketable assets (represented in the household world by home equity loans and easy access to margin values of stock market investments) have made the idea of the "quantity" of money as obsolete. On the other hand, credit may be amorphous; but credit risk is specific, and leverage - the fraction of the money at risk that the lender or investor or speculator must repay to his creditors - continues to rise. As the Asian crisis of 1997 demonstrated, much of this risk remains with the banks. The finance ministries and the central banks can probably protect them and their creditors. But in a market-dominated age, most of the burden inevitably lies on investors who no longer use banks as their intermediaries, and who need unprecedented access to information and even more unprecedented capacity to analyze and use it.

Before closing this section, I would like to add Timothy F. Geithner's observations. He also notices the transformation of the nature of the leverage in the financial system (Geithner, 2006). "The proliferation of new forms of derivatives and structured financial products has changed the nature of leverage in the financial system. The addition of leverage imbedded in financial instruments to balance sheet leverage has made this source of potential risk harder to assess. New players, new products and more dynamic ways of intermediating and managing credit may increase the sensitivity of balance sheets and income-to-market volatility and potentially amplify the impact of a sharp change in perceptions about macroeconomic risk or credit on asset prices and liquidity."

XII. THE GAPS in FINANCIAL REGULATION

As I stressed earlier, the structured product markets caused a controversial financial structure for the regulation of global financial system. The structured instruments and markets produced continuously increasing system-wide effects. The regulatory institutions could not have timely reacted to this structural transformation. Consequently, there appeared regulatory gaps. It is understandable that there must have emerged some regulatory inefficiencies and ineffectiveness after these markets were created. But, there was another triggering factor that anticipates the financial regulatory transformation, namely deregulation. Deregulation was initiated by economic and political elites, especially in US and Britain, who supported neoliberal globalization. They reacted to the turbulent end of Keynesian Golden Age of modern capitalism. James Crotty demonstrates the passage between the Keynesian and neoliberal periods. He points out that, after World War II, market economies needed strong social regulation to function effectively and asserts that the Keynesian revolution formulated the essential ingredients for an effective social regulatory framework (Crotty, 2004).

In the aftermath of the Great Depression and World War II, national economies, even those in which markets played a very powerful role, were placed under the ultimate control of governments, while international

economic relations were consciously managed by the International Monetary Fund (IMF) and World Bank. Western governments, with varying degrees of enthusiasm, lent support to unions, regulated business, tightly controlled financial markets, and built social welfare systems. They also began to regulate aggregate demand in pursuit of high employment and fast growth, a phenomenon known as the 'Keynesian revolution.' Business and financial interest [groups] accepted these changes in part because strong capital controls and low levels of trade and investment flows after the war left them without a credible 'run-away' threat to undercut government economic policies they disliked. The global prosperity that characterized the quarter century following the war – the so-called 'Golden Age' of modern capitalism – reinforced the belief that market economies need strong social regulation to function effectively.

Crotty argues that the contradictions inherent in Golden Age capitalism led a new model of capitalism: neoliberalism. He stresses that the choice of this new model was a selection of ruling elites. In other words, he points out that there was alternative to the selected path (Crotty, 2004).

Contradictions inherent in Golden Age capitalism led in time to the end of prosperity. Economic instability began in the late 1960s and erupted full force in the 1970s with two OPEC oil price shocks, the collapse of the Bretton Woods fixed exchange rate system, and the buildup of excessive debt in the Third World. Falling profit rates and a moribund stock market in the US triggered a powerful movement, led by business and, especially, financial interests, to roll back the economic regulatory power of national governments. This political and economic project is usually referred to as neoliberal globalization. The shift to this particular new model of capitalism was not inevitable; at any point of time there are many variants of capitalism that are viable. Rather, neoliberal globalization was *chosen* by economic and political elites, especially in the US and Britain, because they believed it would best serve their interests in turbulent economic times.

Jane D'Arista evaluates the financial regulatory environment under the neoliberal globalization context in her comprehensive essay, *Financial regulation in a globalized environment*. She discusses the regulatory gaps in the global financial system and develops some alternatives. This essay provides a well-grounded narrative of how global financial regulatory regime was just before and after the 1997 Asian Crisis and what kind of inherent problems it had. To clarify the nature of Basel II it may be helpful to present the regulatory background of the global financial system. Let us follow D'Arista's analysis.

The shift to portfolio investment as the primary channel for savings has also further undermined regulatory strategies, including capital adequacy standards. Regulatory authorities still give primary attention to traditional banking activities, and banks remain the focus for capital adequacy and other prudential requirements. But the shift of savings to pension funds, mutual funds, unit trusts, annuities, etc. has left the average saver without

adequate protection or a safety net comparable to that provided by deposit insurance programs. And the corollary role for deposit insurance in protecting the payments system is also inadequate because the limits on insured balances are based on assumptions about the balances of small savers rather than those of, say, the local hospital with daily payments on a much larger scale (D'Arista, 2002, p.80).

Effective oversight of payments systems and traditional banking activities is and will remain an important focus for regulation. Nevertheless, money management and trading are now the primary activities in the global system in terms of the volume of instruments and transactions. The extraordinary increase in banks' trading activities since the 1970s reflects this shift. The largest, most active and globally integrated markets are not national equity and bond markets but the over-the-counter (OTC) markets for foreign exchange and financial derivatives dominated by banks. Bank dominance of these markets poses particularly difficult questions in terms of regulatory standards because they have imposed their institutional culture on these markets, adapting market practices to the style of portfolio lenders. Thus, as dealers in these markets, they "hold" instruments even if the "portfolio" in which they are held is "off balance sheet." (D'Arista, 2002, pp.80-1).

As the style of trading in which banks engage becomes more pervasive across a wider spectrum of assets and institutions, the market system is being pushed backward, recreating conditions like those that prevailed in the United States before enactment of the securities laws. OTC markets are opaque, not transparent; they do not conform to the concepts or requirements for the disclosure necessary if investors are to make informed decisions. They are not public markets. There is no surveillance of trading practices and no system for making information on prices and the volume of transactions routinely and continuously available to the public. Above all, many of the instruments themselves are not readily tradable - a critical factor that undermines liquidity and contributes to concentrations of contracts within a relatively small circle of dealers. Concentrations necessarily occur when exposures must be hedged with new contracts because existing positions cannot be sold. Despite efforts to mitigate the potential repercussions of disruptions through netting agreements in derivatives contracts, these particular characteristics of the OTC markets increase the potential that disruptions resulting from inaccurate assessments of credit or market risk will escalate into systemic crises. However, can inaccuracy be avoided without transparency? (D'Arista, 2002, p.81).

The proliferation of non-public markets prompted regulators to privatize monitoring and surveillance at the level of the individual firm. Beginning in the United States in the 1970s, with the requirement that banks devise effective checks in systems for recording foreign exchange transactions and positions (D'Arista 1976), these requirements are now a major component of the Basel Committee's core principles of regulation and apply to all OTC trading markets in which banks participate. The weakness in the strategy is its emphasis on the individual firm. It reinforces the lack of market transparency and increases the likelihood that, in the absence of effective external checks through clearing houses, systems for routing transactions that permit ongoing surveillance, or other forms of systemic oversight, gaps in a firm's recording and monitoring system may go unnoticed, resulting in large losses (Daiwa) or failure (Barings) and increasing the potential for systemic repercussions (D'Arista, 2002, p. 81).

The increase in the trading activity of banks is an outgrowth of the rising importance of money management and its requirements for ancillary services. Derivatives, standby letters of credit, and commercial paper guarantees are all innovative instruments devised by financial institutions to provide a privatized system of financial insurance to their customers. Banks are the major players in providing guaranties because they have the power to create deposits by making loans when the guaranty is activated. It would appear that the credibility of these guaranties is supported by the application of risk-based capital requirements to off-balance-sheet positions of banks. However, support would only be effective in situations involving one or a few customers. In a wider liquidity crisis, banks' ability to raise new capital to support an expansion of assets and liabilities on their balance sheets would be limited or, possibly, nonexistent. Central banks would still be required to provide the backup needed to contain a downward spiral in asset prices (D'Arista, 2002, pp.81-2).

The limited ability of capital adequacy requirements to support the vast system of private financial guaranties created by banks and other financial institutions points up one of the weaknesses of relying on capital adequacy as the new cornerstone for prudential regulation: like internal controls, they are a rational tool for regulating individual institutions but irrational in a systemic context. Capital requirements are not likely to prove useless in a liquidity crisis but are also a dangerously procyclical instrument of macroprudential policy. The market will supply capital to the banking system in a boom and withhold it in a downturn. Thus, capital requirements will tend to act as a barrier to the effective implementation of countercyclical monetary policies. Efforts either to dampen economic activity by raising interest rates or to jump-start the economy in a downturn by lowering rates will not succeed if this asymmetry between banks' ability to raise capital and policy objectives persists (D'Arista, 2002, p.82).

Capital adequacy standards apply to banks' traditional business and to some off-balance-sheet activities, but they do not apply to the money management activities that are now a primary function of almost all segments of financial systems in developed market countries – banks, securities firms, insurance companies, mutual funds, and unit trusts. All these institutional segments are competing for opportunities to manage a larger share of pooled savings but there are differences in the products they offer and much larger differences in the ways they are regulated both within and between national markets. While those differences have important consequences for investors in the various national markets, the common thread is the absence of any effort to apply an across-the-board emphasis on soundness regulation to the regulatory structure for money management. Disclosure and the prevention of fraud are the primary objectives of regulation in developed securities markets; prudence, diversification, and suitability are the guidelines applicable to individuals and institutions that manage securities investments. But with so large a share of global savings invested rather than deposited – including those of the most vulnerable: the small or lower-income saver whose principal financial assets tend to be held in pension funds- the impact of a loss of confidence on market liquidity will affect larger and more diverse shares of the populations of many countries and cause greater economic dislocation (D'Arista, 2002, p.82).

In the meantime, the most dangerous threat to the global financial system – its vulnerability to contagion- is not being addressed. In the past, the primary strategy to deal with contagion was compartmentalization. In countries with developed securities markets such as the United States, the United Kingdom, and Japan, restrictions on functions and

products helped insulate different markets from spillover effects. Thus, as late as the 1987 market decline, funds withdrawn from equity and derivatives markets in the United States could be recycled through banks and loaned back to dealers and institutional investors (with the support of the Fed) to halt price declines. The effectiveness of this strategy in containing the crisis depended on the fact that banks were not significantly involved in trading or holding equities and not subject to the contagion that spreads as confidence is lost (D'Arista, 2002, pp. 83-4).

Compartmentalization also characterized the structure of so-called universal banking systems up through the late 1980s in the sense that these institutions operated in countries with relatively small or underdeveloped securities markets where traditional banking operations were the dominant financial activity. However, as discussed above, securities markets have become more important components of financial systems in almost all developed and many developing countries over the last decade. Thus, the activities of universal banks have taken on some of the characteristics of the U.S. financial conglomerates owned by commercial enterprises such as General Electric and the three major automobile manufacturers. While an informal group of banking, securities, and insurance supervisors has made recommendations for the improvement of supervisory practices in the area of information sharing among the various authorities and consolidated reporting by firms, the emphasis, again, is on capital adequacy and the adequacy of internal controls within components of the conglomerate. Thus, as in the case of banking, the initial focus of the regulatory framework for conglomerates is structured to address problems at the level of the individual financial function (D'Arista, 2002, p.84).

The interconnection risks that arise because of the melding of multiple functions within individual firms have already been made explicit by complex derivative contracts that link performance across several markets. It is a new source of risk and one that poses a uniquely powerful threat to systemic stability. The absence of strategies to deal with the risk of contagion that is inherent in tighter linkages between markets and products constitutes the major gap in regulation in the liberalized global environment (D'Arista, 2002, p.84).

D'Arista's analysis shows that the shift of funds from loans to security portfolios and then the structured markets' unprecedented emergence that changed the micro and macro foundations of national and global financial systems. The most important change is the role of banks. Although the banks' relative size has been diminishing in financial system, they still occupy the central place in the traditional money creation and have a pivotal role in structured finance. This double inclusion, traditional and 'modern' roles, gives a special importance to the banks in the international financial regulatory regime. The banking regulators have to consider the changing nature of the banks in the light of both 1987 Crash and 1997-98 East Asian Crisis. The 1987 Crash caused a banking regulatory regime called as Basel I. The second crisis gave birth to Basel II.

XIII. BASEL II and STRUCTURED FINANCE

On 26 June 2004, the banking supervisors and central bankers forming the Basel Committee on Banking Supervision released Basel II, a new capital adequacy framework for banks, (that is, *International Convergence Measurement and Capital*

Standards: a Revised Framework, termed Basel II), with the endorsement of G10 central bank governors and heads of supervision. Whereas the 1988 Basel Capital Accord, Basel II's predecessor, focused on the amount of capital a bank has, Basel II emphasizes the measurement and management of key banking risks: credit risk, market risk, and operational risk among others. Basel II compares the maximum losses a bank might suffer over the year with the available buffer for the losses. It provides a methodology for a bank to prepare a statement comparing risk and buffer.

Ryozo Himino explains the transformation with an allegory. "Since the introduction of modern accounting methods in the 15th century, we have used these methods mostly to describe the current state of affairs as an accumulation of past occurrences. However, in the 1990s, we developed a new technology to better assess the implications of possible developments in the future, in addition to things that actually happened in the past. Basel II has transformed this technology – quantitative risk measurement techniques – into a standard by which financial institutions can prepare verifiable and comparable statements. This transformation will allow banks, supervisors and markets to communicate about risks with a common language. It represents a major innovation in banking supervision, but may have an even wider potential (Himino, 2004)."

Himino highlights that the main benefit of a common language for banks and supervisors is to provide early warning signals. Himino gives a picture of changed pattern of capital adequacy ratio under the new Basel II (Himino, 2004):

Under Basel I, a deterioration in the credit quality of a bank's portfolio during a cyclical downturn is reflected in its capital adequacy ratio only at the last moment, i.e. at the time of the accounting recognition of the impairment. At that stage, banks often have no effective measures available to improve their capital ratios other than to stop extending new credit, which can in turn aggravate the downturn. In contrast, under Basel II, the deterioration of a portfolio should begin to be reflected in the bank's capital adequacy ratio at a much earlier stage, and no further deterioration should occur in the capital adequacy ratio at the moment it is recognized as an accounting loss. In addition, even when minimum capital requirements become binding constraints, the incentives to reduce exposures to good borrowers are much smaller than under Basel I, as this would not improve the capital ratio by much. The most effective way to reduce the total capital requirements under Basel II is timely restructuring, selling or foreclosing of exposures to borrowers already in trouble, behaviour which can pave the way for the recovery of the economy.

Himino adds that the benefits are provided to market participants as well (Himino, 2004):

The benefits of the new common language, however, will not be limited to providing early warning signals for banks and supervisors. It will be equally useful for investors, counterparties and other market participants. For instance, while investors need to know that a bank has, say, \$100 billion worth of assets and \$80 billion of liabilities, it is equally important for them to know whether

the assets are \$100 billion of risk-free cash or \$ 100 billion worth of high-risk securities. Basel II techniques can quantify such differences and convey summary information about risk exposures. Basel II will thus complement accounting standards to meet the needs of investors and markets that have become increasingly attentive to risk. A common language to assist effective communication and to standardize disclosure on risks will materially aid the exercise of market discipline, which is a key ingredient for economic efficiency.

Beyond the issue of the measurement and management of key banking risks, in the heart of Basel II lies the most controversial aspect of finance, namely structured finance. It may be argued that the structured finance is the most specific reason of Basel II. The architecture of this new regulatory framework mainly depends on the security design of asset securitization transactions, which determines the patterns of varying levels of capital charges to banks.

In other words, given the rapid growth of securitizations markets around the world, the Basle Committee acknowledged the importance of asset securitization in regard as a coming structured finance funding tool for financial intermediaries by adopting a comprehensive regulatory policy for asset securitization, which was to be deemed critical to be viable implementation of a revised Basle Accord. As an integral part of the Basel II, the Basle Committee established the so-called Securitization Framework based on earlier provisions in the *(Third) Consultative Paper to the New Basle Accord* (April 2003) and subsequent *Changes to the Securitization Framework* (January 2004) in response to new developments in bank-based structured finance and growing sophistication in synthetic forms of asset securitization.

Andreas Jobst gives a comprehensive summary of the background of financial and economic motivations of asset securitizations emerged after 1988 Basel Accord. Before presenting what the Basel II do specifically bring about securitization, let us follow Jobst's insightful analysis. "Prior to the recent agreement on new capital standards for credit risk, securitization techniques remedied the glaring incompatibility between the regulatory capital charge and the actual economic cost of credit risk across the spectrum of varying rating grades (i.e. regulatory "mispricing" of credit risk). In absence of risk-sensitive capital adequacy requirements for credit exposures and little regulatory guidance as to how banks should compute their capital charge for securitized exposures, asset securitization has been labeled a sensible market reaction to inefficient regulatory governance of credit risk in the banking system. So from a regulatory perspective, securitization is essentially a child of its own making due to anomalies in the regulatory system giving rise to regulatory arbitrage. Needless to say, this use of securitization aroused concern among regulators about the troubling prospect of (i) an insufficient provision of minimum capital requirements to absorb actual default loss due to and (ii) an inadequate treatment of unexpected risk. As regards the latter aspect, regulators specifically worried about the absorption of unexpected losses by more senior tranches held by capital market investors in the event of financial shocks, while originators hold merely some concentrated risk exposure of expected losses in the form of a junior claim as first loss position (Jobst, 2004)."

Paramdeep Singh presents a portrait of Basel II in terms of its incorporation of fundamental models of credit risk in securitization tranches. According to Singh, Basel II will

reshape the structured finance market, as influencing factors such as the diversification of funding sources and, increasingly, the cost of funding that are likely to become key structured finance drivers. Singh outlines the steps of securitization framework of Basel II (Singh, 2005):

- There are basically two frameworks for securitization – the Standardized approach and the Internal Ratings Based (IRB) approach. The Standardized approach will measure credit risk in a standardized manner, supported by external credit assessment. Banks that apply the Standardized approach to credit risk, for the type of underlying exposures securitized, must also use the Standardized approach under the securitization framework.

- For institutions that will use the Standardized approach, Basel II Accord proposes a change to the risk weights of the different tranches. Earlier, for the investing banks, the risk weight of any security was 100 percent, even if it was very safe. Under the new Accord the tranche will have ratings and the risk weight will be lower for high-grade tranches. It will be as low as 20 percent for issues rated AAA to AA- and 50 percent for those rated A+ to A-. Lower grade securities will attract higher risk weight, BB+ to BB-, weighted at 150 percent and issues rated at or below B+ deducted from capital. This will make the high-grade papers more attractive to investors. Spreads on lower grade securities, therefore, will have to increase to compensate for the additional capital cost of holding investments of this kind.

- The alternative available to banks that use the IRB approach for underlying exposure is to apply the IRB approach for securitization also. The IRB approach includes two potential approaches:

1. An approach based on ratings assigned by an external credit rating agency (RBA).

2. An approach based on the application of a supervisory formula (SFA).

- To be eligible for the IRB, a bank will be required to meet certain minimum disclosure and get explicit approval from the banking supervisors. The variables, which the bank would have to measure to get the regulatory capital, are: probability of default (PD), loss given default (LGD) and the exposure at default (EAD). All IRB banks will have to estimate the PD using their own models.

- The securitization charges for IRB banks depend on whether the position held has a credit rating from a recognized credit rating agency. If the securitization tranches have an external credit rating, IRB banks must use RBA. For unrated securitization exposures, IRB banks must use the SFA approach. In the SFA approach, the formula for calculating the capital charge is provided by the Basel II committee and is based on structure and risk associated with the underlying assets. The formulation is very complex and is dependent on various attributes, such as the IRB charges on the underlying pool of assets (also known as KIRB under the Basel II securitization rules), the level of enhancement supporting the tranche, the thickness or relative size of the tranche, and the granularity or number of exposures in the pool.

- The regulator gives an incentive for implementing IRB. Capital charges for senior tranches are generally set higher in the standardized approach as compared to IRB. For example, an AA rated tranche will require more capital if held by a standardized bank than by an IRB bank. But to implement the IRB approach, banks would have to employ very sophisticated models for risk measurement.

Totally speaking, to find out the specificity of structured finance aspect of Basel II is thus important not only in terms of this study's configuration but also reaching an idea of the whole picture of Basel II. Because of her clear-cut explanation for both the story behind Basel II process and the realization of the related expectations, I now provide Susan Schmidt Bies' perspective on the issue. Bies, member of the Board of Governors of the US Federal Reserve System, made a speech at the Banking Institute and evaluated the reasons pursuing Basel II. Her approach gives the essential aims of the participants of Basel II consultative processes which lasted about six years. Let us follow her major points (Bies, 2006):

The current Basel I capital framework, adopted nearly twenty years ago, has served us well, but has become increasingly inadequate for large, internationally active banks that are offering ever-more complex and sophisticated products and services. We need a revised capital framework for these large, internationally active banks, and we believe that Basel II is such a framework.

One of the major improvements in Basel II is the closer linking of capital requirements and risk. The current Basel I measures are not very risk-sensitive and do not provide bankers, supervisors, or the marketplace with meaningful measures of risk at large, complex organizations. Under Basel I, it is possible for two banks with dramatically different risk profiles in their commercial loan portfolio to have the same regulatory capital requirement, and a bank's capital requirement does not reflect deterioration in asset quality. In addition, the balance-sheet focus of Basel I does not adequately capture risks of certain off-balance-sheet transactions and fee-based activity –for example, the operational risk embedded in many of the services from which many large U.S. institutions generate a good portion of their revenues.

In addition to enhancing the meaningfulness of regulatory capital measures, Basel II should make the financial system safer by substantially improving risk management at banks. Basel II builds on the risk-management approaches of well-managed banks and creates incentives for banks to move toward leading risk-measurement and risk-management practices. By providing a consistent framework for all banks to use, supervisors will more readily be able to identify portfolios and banks whose risk management and risk levels are significantly different from the range seen in other banks. By communicating these differences to banks, management will be able to benchmark their risk assessments, models, and processes in a more detailed and regular manner. We have already seen some progress in risk management at many institutions in

the United States and around the globe as a result of preparations for Basel II. The new framework is also much more consistent with the internal capital measures that institutions use to manage their business.

Basel II can also provide supervisors with a more conceptually consistent and more transparent framework for assessing the link between risk and capital over time at our most complex institutions; identifying which institutions have deficiencies; and evaluating systemic risk in the banking system through credit cycles. Therefore, Basel II establishes a more coherent relationship between how supervisors assess regulatory capital and how they supervise the banks, enabling examiners to better evaluate whether banks are holding prudent capital levels, given their risk profiles, and to better understand differences among institutions.

As it is reflected throughout the whole study, although the structured finance designed to protect its beneficiaries from the financial risks, it also adds new kind of risks to the financial system as well as the credit risk (because it does not dissolve into the air). Specially, the systemic risk in the banking system is currently embedded into the financial system via the structured finance. Not surprisingly, most of the risks are forwarded by derivatives markets.

XIV. THE ACHILLES' HEELS FOR FINANCIAL STABILITY: FINANCIAL DERIVATIVES MARKETS

As a principle, the regulation of financial system should positively contribute to the financial stability. Actually, the main motive behind Basel II was to isolate and control the systemic risk factors inherent in international banking system. As a matter of fact, for financial regulators, it is an imperative to identify or measure the system-wide effects of risk factors. Indeed, there are some structural factors that threat financial stability in addition to short term reasons. The short term reasons are the so-called global imbalances and the risks associated with a possible reversal of asset price developments in various markets that may create turbulence detrimental to real economy. Most of the time, short term reasons are the results of structural ones. Thus, it should be asked that whether the structured markets' system-wide effects have added idiosyncratic systemic risk factors into the global financial system.

Vitor Constâncio, Governor of the Bank of Portugal, points out four structural reasons for the preoccupation of supervisors and monetary authorities with financial stability. He argues that these four aspects are mutually reinforcing and "...related with the new developments and structural changes in the financial sector that generate new causes and possibly justify new regulation or increased monitoring" (Constâncio, 2006). This argument means that Basel II should be radically revised and the current market surveillance methodologies should be improved. Let us see his point of view (Constâncio, 2006):

There has been a significant expansion of the financial sector in the past decades well above the growth rate of the real economy. The financial sector became more important and more complex and ensuring its stability became consequently more essential.

The sector changed in the direction of being more market-based with a reduced role for traditional relationship banking. Technological developments in ITC, the greater availability of information, the standardization of financial contracts, all contributed to a sort of a 'commodification' of financial transactions. This has implied that monetary institutions and monetary aggregates have lost weight in the total of financial assets, meaning that leverage over the monetary base has increased continuously. Also, it is important to underline that this expansion was accompanied by a greater share of a non-regulated segment including hedge funds, private equity institutions etc.

Financial innovation produced new products and tailored new securities to particular needs in terms of maturity, risk and liquidity. The complexity of derivatives and structured products grows all the time as well as the size of derivatives markets. The more recent example is of course phenomenal growth of the market for credit derivatives. Credit Default Swaps (CDS), Collateralized Debt Obligations (CDO), Credit-linked notes, credit spread options and other products developed into a market that represents now more than 16 trillion euros and is bigger than the total stock of existing corporate bonds and loans. These instruments fulfill useful functions by allowing the transfer of risk, isolating and pricing pure credit risk, providing liquidity to individual credits in times of stress and improving the management of risk for various institutions etc. They create at the same time new sources of risk due to their complexity, the uncertainty of mark-to-model valuations not tested in times of trouble especially when secondary markets are not very liquid in general.

The fourth aspect deserving mentioning refers to the growing interdependence of markets across types of products, across institutions and across borders. The market-based financial system [further] continues to depend from monetary institutions for the provision of liquidity and credit lines. Markets for different types of assets tend to depend from common factors and show co-movement of returns. This greater interconnectedness is an element that creates the so-called 'endogenous' component of risk, i.e. system-wide risk that is created by the financial sector itself as the result of market participants' collective behaviour and its effects on the main sources of risk. The increased concentration of institutions in various markets also adds to the effects of this 'endogenous' risk.

Constâncio gives a compact perspective of the structural transformation of the global financial system. The thread of his argumentation is the newly emerged world of structured finance. Though Benjamin Lee and Edward LiPuma's language and perspective are highly different, their analysis complements Constâncio's observations. Lee and LiPuma provide a totally different lexicon into the financial derivatives (Lee & LiPuma, 2004). They develop a

critical narrative of circulatory capitalism that gains momentum after the emergence of derivatives market. Like Constâncio, they underline the endogenous character of risk. They also assert that the fragility of the global financial system increased as a consequence of the disastrous effects of the financial derivatives.

Although Lee and LiPuma aware that the financial derivative products are member of structured instruments, they bring to focus only financial derivatives markets. The drives for their analysis are, on the one hand, that financial derivatives markets have grown exponentially in the last three decades, and on the other hand, they represent the main cause of recent financial frauds and crisis. “Derivatives have episodically captured the world’s attention because of a number of spectacular failures and crises that threaten entire economies and regions. These examples of catastrophe matter in themselves and because they identify the fault lines along which key transformations are taking place. Catastrophes also open an unexpected window into the inner clockwork of financial transactions that would otherwise be closed to public scrutiny. On this accounting, the Asian currency crisis of 1997, the collapse of firms such as Long Term Capital Management and local governments such as Orange County (California), the introduction of financial risks so systemic that they threaten a global imposition of the banking system, and the accelerated and economically disabling devaluation of currencies such as the Turkish lira and Argentine peso all confirm that electronically amplified flows of capital have become instrumental in compromising the sovereignty of national economies, and thus the extent to which politics, democratic or otherwise, can regulate circulatory capitalism. There is a growing concern that the international order is disintegrating because the global economy is on the edge of crises whose shape and symptoms are different from past and more familiar ups and downs (Lee & LiPuma, 2004, pp. 3-4).”

Lee and LiPuma are right to focus on financial derivative markets. The financial derivative markets have the lion’s share in the structured finance markets as well as whole financial markets. BIS’s report on the derivatives markets (BIS, 2006) presents the amounts of over-the-counter derivatives by risk category and instruments. It gives the pattern of how derivative instruments were allocated to different classes of investment opportunities by December 2005. The notional amount of total contracts is \$284.819 billion whose gross market value is \$9.139 billion. The three largest categories are interest rate contracts (whose notional amount is \$215.237 billion and gross market value \$5.463 billion), foreign exchange contracts (whose notional amount is \$31.609 billion and gross market value \$998 billion) and equity-linked contracts (whose notional amount is \$5.057 billion and gross market value \$560 billion) successively. On the other hand, the commodity contracts (whose notional amount is \$3.608 billion and gross market value \$523 billion) represent only about 0.6% of the total notional amounts of contracts and about 6 % of the total gross market values of contracts.

Lee and LiPuma demonstrate the relationship between the giant size of financial derivatives contracts and its effect on national monetary policy. “In 1970 the yearly valuation of financial derivatives –principally those devoted to interest rates and foreign exchange- was probably only a few million dollars. The sum swelled to about \$100 million by 1980, to nearly \$100 billion by 1990, and to nearly \$100 trillion by 2000, when about 1,500 million derivatives contracts were traded. By 1999 bulk commodities, for centuries the mainstay of the futures market, accounted for no more than 0.6 percent of total contracts, whereas financial derivatives had risen to approximately 90 percent of all contracts.... [So] that

deposits and transfers of that magnitude must be electronic, notional, and virtual because the amounts being circulated exceed the total quantity of the world's physical currencies. A determining feature of derivatives and their circulation is that they do not involve property, either in physical or fetishized form (such as a stock certificate). The purchase of a derivative grants the buyer an electronically registered future claim in trade for the seller's "right" to electronically transfer and register a notional credit equal to the quantity extinguished in the buyer's account. The trade is mediated by money in a newly created self-mediating form, engendering, as it were, a currency not directly tethered to any national economy or regulatory structures. In contrast to manufactured commodities, human labor and materials are inconsequential in the creation and valuation of derivatives. The gargantuan size of the derivatives market, especially for derivatives devoted to interest rates and currencies, creates a culture of circulation in which no nation-state, not even the United States, can regulate the exchange value of its currency, the character of its reserve assets, or the transnational movements of capital (Lee & LiPuma, 2004, pp. 47-8)."

As it is seen, the above-mentioned BIS statistical figures reflect the opportunity areas which the derivative financing towards. Derivatives are used to appropriate the opportunities emerged from potential changes in international markets such as a sudden shift in currency, equity, or interest rate values. Jacqueline Best reminds that "...although derivatives may reduce the risks taken by an individual investor, they cannot reduce the overall level of risk in the financial system but can only transform and re-allocate risk. Moreover, these new instruments have greatly increased the number of opportunities for speculation, allowing investors to profit from small changes in the relative prices of certain securities or to make large bets on the likely direction of macroeconomic conditions. While derivatives thus feed into the general increase in speculative trading, they also pose their own particular challenges to international financial stability. Derivatives create complex linkages between market segments and can precipitate spillover effects from one market to another. The complexity of derivatives trading strategies and the tendency of investors to engage in off-exchange or "over-the-counter" trades makes it particularly difficult for market participants to determine a financial institution's level of risk. At the same time, derivatives can increase overall market volatility by exaggerating the changes in the underlying securities on which derivative contracts are based. Given the enormous size of some hedge funds, they are particularly capable of self-fulfilling behaviors, as they sell short on a currency, thus precipitating the decline that they have betted on (Best, 2005, pp.131-2)."

What is the secret of the so-called over-the-counter market? This question comes to the mind because not only the technical complexity it has but also the identity of beneficiaries it hides. Lee and LiPuma excellently unveils the mystical character of OTC market, explaining the *raison d'état* of it (Lee & LiPuma, 2004, pp. 94-5):

In the financial world-space, the over-the-counter derivative markets have been the fastest-growing markets in history. They represent an aspect of the practical triumph of a neoliberal economic ideology in the sense that when considered solely in terms of their internal dynamics, these markets appear to exist only at the level of praxis. In their basic design or configuration, they create a trading platform that has little to do with exchange-based markets, including those that have historically defined and housed futures trading. The OTC market is structurally not a market at all, at least not in the conventional

sense, but an ensemble of self-replicating, overlapping, and interpenetrating computerized trading networks. The overarching structure of these connective networks is not visible from any point in the system, each agent necessarily acting upon only a core set of generative schemes made of trading strategies and statistical models. Accordingly, these OTC markets have no location and hence no address, contractual parties can be anywhere in the universe, and more specifically, the address of the computer site from which the trade was initiated may bear no relation to the location of the institution or agent initiating the trade. Although some 25 percent of OTC transactions have their book location in London, the contractual parties may be anywhere. In contrast to established exchanges, the OTC markets have no definite or defined membership. Operationally, this means that there are no formal and enforceable rules, outside of the general law of contracts. The absence of an identity coupled with the absence of an address means that there is no basis for holding any parties accountable for the financial or socioeconomic consequences of their actions. There is also little basis on which regulate the markets or their participants because the transversal, virtual, and secretive character of the transactions makes it extremely difficult to establish either regulatory domain or jurisdiction. Practically, the derivatives markets capitalize on accounting systems originally designed to record the financing of the production of goods and services, and when these systems are imported into the sphere of circulation they permit the most heavily leveraged and therefore financially precarious parts of transactions to remain invisible because they do not appear on the balance sheet.

This conceptualization has the merit of synthesizing both the technical (financial) and socioeconomic (economic, societal, and legal) dimensions of the over-the-counter- market, which is the leading entity of all derivatives markets.

Likewise, Gérard Duménil and Dominique Lévy argue that enormous growth that financial sector went through during the last three decades is the most important factor that causes the 1980s and 1990s financial crises. In their investigation on "...the epidemic of monetary and financial crises of the 1980s and 1990s for which", they argue, "neoliberalism sowed the seeds" (Duménil & Lévy, 2000/2004). They categorize the crisis into two stages in the history of neoliberalism. "Such crises fall into several categories. Those of the 1980s, whether at the periphery or at the center, were direct effects of the rise in interest rates, combining with monetary and financial deregulation. The crises of the 1990s were linked above all to the globalization of markets, a particular aspect of neoliberalism in its international dimension. The first crises expressed the beginnings of the neoliberal economy; the monetary and financial crises that followed were characteristic of the globalization of neoliberalism. However, this frontier was not impermeable (Duménil & Lévy, 2000/2004, p. 86)."

For the latter series of crises, they assert that "It is difficult to explain these monetary and financial crises. A certain number of factors have been cited: the fragility of the banking system, along with deregulation (both in the center and on the periphery); poor management of public and private financial institutions, and the lack of supervision of banking activity

both nationally and internationally; the flexibility of exchange rates, or, conversely, the pegging of certain currencies to the dollar (according to the countries and the periods); the free international mobility of capital (which concerns the periphery more directly). To this must be added the high interest rates, which led to nonpayment (Duménil & Lévy, 2000/2004, p.93).” These factors are generally accepted by the academic community, including neoliberal economists.

Although neoliberal economists cited these factors as crisis-induced, they have taught the problem of the “impossible trinity” or the “open economy policy trilemma” as well. Gerald M. Meier presents a clear explanation of the issue. “The problem is that a country cannot simultaneously maintain an open capital account, fixed exchange rate, and independent monetary policy. Only two of the three objectives can be attained simultaneously. If the exchange rate is pegged and capital can flow in freely, the government has to give up its independent stabilizing role for domestic monetary policy as it intervenes to hold the rate. If capital mobility and monetary autonomy are wanted, then the country needs floating rates. If a fixed exchange rate with monetary autonomy is wanted, then capital flows have to be controlled. The trilemma may be solved by maintaining either a hard peg (through intervention with sufficient reserves) or a floating exchange rate regime or dollarization (Meier, 2005, pp.156-7). ” As champion proponents of open capital regime, this contradictory position of neoliberal economists explains that, under the open capital regime, the financial and economic crises are irreversible and they even accept that.

Duménil and Lévy underline another factor that determines the depth (the size effect) and the duration (the long-term structural effect) of the financial crises: the unprecedented growth of financial sector. They assert that this is an important element that absent from the picture: “...the wild growth that financial sector went through during the 1980s and 1990s ... was financed by the net flow of interest payments, which this sector levied on the remainder of the economy, and the capital inflow spurred by this profitability. Whatever the circumstances, such a boom would put the financial system at risk. This one happened to coincide, and not by accident, with a tremendous degree of deregulation. At the same time that the total amount of available funds was increasing, finance abandoned some of the safeguards it had been using; in a situation that required increased caution, everything was done to limit the rules that imposed restraint and discipline (Duménil & Lévy, 2000/2004, p. 93).” Parallel to D’Arista, Crotty and Lee and LiPuma’s perspectives, Duménil and Lévy argue that the self-determining character of finance capital shapes the ways both financing and (de)regulating the global markets.

XV. THE WEALTH-EFFECT OF STRUCTURED FINANCE?

Does finance create revenue? Value? Is it useful? The series of questions are asked by Duménil and Lévy. They use considerable amount of national accounting records in their book. They show the parallelism between national accounting records and Marxist theory when these two treat interest and dividends as revenue transfers. On the other hand, Duménil and Lévy are sensitive for differing them in terms of their conception of production. Marxist theory is different from the other, when it treats work that creates value and activities used to maximize the profit rate. Marxist theory considers financial activities are nonproductive tasks that they are not capable creating value, they just provide revenue or profit transfers. They give an explanatory framework into the very nature of finance's intermediary role (Duménil & Lévy, 2000/2004, pp.130-1):

- According to the practices of national accountants,...[A]s for an interest payment or a dividend, the income is counted as a "transfer" to the creditor or to the stockholder. There is nothing wrong with this logic of transfer. When a bank makes loan to a company, it charges interest, that is, it transfers profit. (Because of inflation, this operation is combined with another transfer, the devaluation of debt – that is, the devaluation of principal – which the borrowing firm benefits from, thereby decreasing the amount charged. Nevertheless, the overall transfer generally profits finance, provided that the real interest rate is positive.) Nothing is created in this operation. Loan capital links up with the capital of nonfinancial companies and thus appropriates part of the latter's profits. The proliferation of credit operations of this kind adds nothing to production and revenue; it redistributes (even if this loan makes increased output possible). When a financial company makes a loan to another one, the profits pass from hand to hand within the financial system.

- Lenders also go to seek their income beyond companies by giving credit to the state and to households. The levy is then made through taxes and household incomes. We therefore should not limit ourselves to the idea that financial income is the exclusive result of direct transfers of profits already made by a company. To the extent that taxes have been paid by companies, state creditors indirectly appropriate these profits; to the extent that taxes are paid by households, on wages, for example, this represents the levying of a new surplus.

- In a period of low profitability of capital, these other types of levies took on considerable importance. Taxation appeared to be quite lucrative, and household loans made it possible for holders of capital to seek out profits that the production system had not made.

- Like national accounting records, Marxist theory treats interest and dividends as revenue transfers, while production holds a very special status. It is linked to productive labor, work that produces goods or provides services to people, which alone creates value. Marxist theory notes other types of work, such as factory surveillance or all the commercial activities that do not enter into the category of productive labor. These are costs required by production or by the circulation of capital. They are far from being useless; their function is to

maximize the profit rate. They correspond to “management” tasks in a very broad sense of the term.

- In this theoretical framework, all financial activities are part of these unproductive tasks; finance does not create value; its profits result from the redistribution of surplus value created elsewhere. Unfortunately, national accounting records do not make it possible to reconstitute the separation, which is distinctive to Marxist theory, between work that creates value, on the one hand, and activities used to maximize the profit rate, on the other – a very pertinent analytical distinction.

- In the same way that nonproductive work is not useless according to Marx’s theory, finance is not, by nature, parasitic. It assumes a certain number of functions in monetary and financial transactions (what Marx called the “capital of the money trade”); it contributes to the circulation of capital between different firms and sectors; it organizes company restructuring and contributes to their financing. However, Marx often denounced, in vigorous and colorful language, the parasitic aspect of financial activities.

In the light of this perspective, the value creation via risk transfer discourse of structured finance may gain its proper meaning: the risk transfer is essentially aimed to transfer profit both between financial institutions and from the state and household to financial institutions. Naturally, financial institutions appropriate some profitable conditions that other financial institutions provided. The merger-mania wave, from 1980s onwards, gives the key to understand the mechanism of the self-increasing power of structured finance. The bigger financial institutions (or nonfinancial conglomerates that have financial segment) appropriate all opportunistic events, including smaller and inflexible financial institutions provided.

At this moment, it should be answered that whether the structured and synthetic assets have a common substance that provides monetary expansion and then transfer of profit between the agents. Lee and LiPuma give a straightforward explanation, pointing out the socioeconomic power of derivative market players on a global scale (Lee & LiPuma, 2004, pp. 134-5);

More than simply monetizing time in a specifically (post)-modern way, the character of financial derivatives gives substance to a new form or realization of money, what amounts to an extension of credit money. A new form of money comes into being because, structurally, its foundation is neither the intrinsic source of value thought to inhere in precious metals nor the authority of the state, but rather a mutual interdependence founded on the necessity to mitigate uncertainties (im)-posed by the future performance of distant monetized spaces; and because, functionally, it does not serve either as a store of value or as a medium of exchange but as an embodiment of a discrete flow of quantified simultaneous time. A derivative contract is a collateralized “promise to pay” that is constituted and held in place by historically specific institutionalized social relations. These institutional relations establish and enforce a means of contractual settlement. Given these realities, derivatives function as far more than symbolic placeholders in the exchange ratios of the

real (read: production-based) economy. Rather, they function as a platform for configuring credit, debt, and account in such a way as to facilitate circulation. This is significant because as the augmentation of the financial derivatives market amplifies willy-nilly the supply of credit money on a global scale, it undermines the chances of stable transnational capital circulation. From this standpoint, it should not be hard to see that financial derivatives constitute a real economic weapon, those who control their supply and circulation able to control others economically.

The internationally active banks lead all the structured products and especially the financial derivatives, because derivatives have the feature to be embedded to banks' off-balance sheet records. As Susan Schmidt Bies asserted, the internationally active banks that are offering ever-more complex and sophisticated products and services urged the implementation of a new capital regulatory framework, the Basel II. Likewise, Ethan B. Kapstein shows the main motivation -that is, over-accumulation of profit during 1990s-that leads these banks to change the old Capital Accord, Basel I. They accumulated enough capital to function globally and knowledge to manage risks internationally. In other words, they were equipped in terms of both over-accumulated capital and risk management technologies through 1990s. Thus, Kapstein said that "Given this changing financial environment, it was obvious that reforms to Basel I would eventually have to be made, as a tighter linkage between risks – including off-balance sheet risks- and capital had become necessary. Indeed, the main complaint from the banking community that helped launch the Basel II process was that big banks were being forced to hold an inefficient amount of economic capital, given the sophisticated risk analyses they were performing internally. While the 1988 Basel Accord represented an important first step towards recognizing the relationship between the capital that banks held and the risks they took, the risk weightings were presented in a very crude form; for example, a loan to a top-rated company carried the same risk weightings as one to a start-up enterprise. The major money center banks therefore urged members of the Basel Committee to accept their internal models as the basis for a new capital adequacy agreement (Kapstein, 2006, p.12)."

After ascribing the main drive behind the Basel II process to the internationally active banks, Kapstein demonstrates the main fallacy of Basel II: the lack of a well-developed monitoring system for off-balance sheet risks. "Basel II has undoubtedly gone much further in matching capital risk, and it has encouraged the continuing development of advanced risk management practices within banks, while making the risks that banks take more transparent to the investing community. This represents a significant advance and should be recognized as such. Still, we reiterate that these risks remain quite opaque in important respects, especially those that remain off-balance sheet. While the spring of 2005 witnessed bold efforts by the Basel Committee – in collaboration with IOSCO – to close some of the analytical gaps with respect to securitization, most analysts agree that the risks sitting out in the derivatives market cannot be calculated with any great precision, at least at the present time (Kapstein, 2006, pp. 12-3)."

The financial markets have their own functioning and logic. Finance, especially structured finance, is hypersensitive to the least sign indicating possible gains or losses. When a business seems profitable, capital streams to it; when another turns out to be not too

lucrative, capital flees from it. The same is true for the monetary markets. If capital holders sense that a currency will be devalued, they tend to convert their holdings into another currency. This volatile character of capital flows (money as capital, balance sheet item) adds ambiguity to the opaqueness of the capital stocks (contingent credit as capital, off-balance sheet item). Kenneth Surin shows the logic of sudden exit of capital from lower-income countries. "...portfolio investors can pull out of markets very quickly, and are prone to do so if short-term performance targets are not met or if other economic indicators are thought to portend weakness (such as the high levels of non-performing loans in East Asian banking systems that are said to have been instrumental in bringing about the current crisis). This is especially true of the US mutual funds, which are inclined to jettison their holdings if quarterly performance standards are not reached or if there is the expectation of a falling market.... The result can be a swift reversal of investment flows as funds are channeled elsewhere in a stock market stampede, with possibly devastating consequences for prices in the equity markets of the poorer country thus affected. The behavior of this new form of short-term portfolio capital is quite different from that of financial and industrial capital as characterized by Marx, since the virtual autonomy it enjoys in relation to actual economic activity (this being the primary source of its volatility) makes it correspond more to what he calls 'fictitious capital' in Volume 3 of *Capital*, where it is used to designate a form of capital that creates money in ways completely detached from the productive process and the exploitation of labour (Surin,1998)."

Surin presents a picture of the disastrous effects of sudden movements of capital on the less-wealthy countries. "There is ample empirical evidence of direct correlations between portfolio capital equity inflow and exchange rate instabilities; as there is of the destabilizing 'income-effects' generated by stock-exchange volatility, of the failure of portfolio inflows in developing economies to be matched by increases in aggregate saving and investment in those countries, and of the propensity of stock markets to favor the survival of large though relatively unprofitable firms at the expense of their smaller but more efficient counterparts. Other difficulties exist: the proneness of financial markets to failure (information deficits, unenforceable contracts, and so on); the inability of the developing country relying on foreign portfolio capital to use this short-term and speculative capital as part of a long-term macroeconomic strategy; and the susceptibility of such capital to exogenous pressures (shifting US interest rates, the paramountcy of the needs of advanced country investors, and so forth) (Surin, 1998)."

Surin carries his observations to the core of the issue, asking the more vital question that juxtaposes the exponential growth in transnational financial markets and the chronically low levels of investment and output in less-wealthy countries (Surin,1998):

But the most important consideration here is that the transnational financial markets have done nothing so far (and neither do they give any indication of doing so in future) to deal with what is perhaps the single most important causal factor in the economic declines experienced by many Latin American and sub-Saharan African countries in the 1980s, declines that in many cases are continuing into the 1990s (of the 44 low-income countries in the 1996 *World Development Report* for whom such information is available, 23 experienced a fall in the average annual growth of GNP per capita during 1985-94, as did 22 of the 50 middle-income countries). This is the inability of

the governments of the countries in question to maintain levels of real investment: according to the 1991 *World Development Report*, gross domestic investment grew negatively in the Latin American and sub-Saharan countries as a group in the 1980s, and both groups experienced the largest declines in growth rate at the same time. Why did real investment fall so significantly in these less-wealthy countries? And will the exponential growth in transnational financial markets do anything to alleviate the chronically low levels of investment (and output) in these nations? The answer to the latter question, in the light of the evidence available so far, is 'no'. In fact, the need of emerging countries to keep real interest rates high in the hope of attracting investor funds from abroad by ensuring higher returns for foreign capital, and to fall in line with the deflationary intent that is standard to all IMF/World Bank 'structural adjustment programmes', will, all else being equal, lead to lower wages. Given continuing high levels of unemployment, this policy will inevitably have negative effects on that country's income distribution. Given also the high existing levels of poverty, a growing population, depressed wages (for the reason just indicated), uneven economic performance, and other possible factors such as a decline in the quality of land stock (and the almost certain depletion of environmental assets), there is certainly no way that the poorer nations will be able to generate enough savings and investment endogenously to drive any kind of real growth, and this even if they try to heed the World Bank's injunction to seek their 'comparative advantage' (though many non-industrialized nations have no evident 'comparative advantage' to benefit from) and to maintain open trade and investment arrangements (as the optimal way in its eyes to ensure such growth). Moreover, significant amount of foreign portfolio capital is not likely to flow in the direction of such countries, even if they sought to implement open trade and market arrangements. The plight of such countries is dire, and given the almost complete absence of institutions and mechanisms designed at both the national and international level to promote long-term investment and financial stability, continued stagnation is virtually inevitable for most of these countries: many of them have already been consigned, in Samir Amin's words, to a 'Fourth World' that has no significant prospect of advancing even to the threshold of industrialization and of benefiting in any way from current and future expansions of international trade.

Kenneth Surin clarifies both the short-term character of portfolio capital in the lower-income countries context and the absence of transnational financial markets in the less-wealthy countries. His analysis proves that the transnational portfolio capital, including structured finance capital, does not produce wealth for these countries. Contrarily, when the short-term portfolio capital is led to these countries, the profits extracted from financial operations in these countries are channeled to the portfolio holders. At this moment, a question comes to the mind: Does structured finance capital, especially derivatives capital contribute the wealth for developed countries? In other words, what does the specificity of structured finance mean in the transformation of capital accumulation regime of developed countries seen since the late 1970s and its effects on the distribution of wealth between social classes?

Werner Bonefeld and John Holloway show that the roots of the credit-sustained accumulation were determined by the level of struggle between capital and labor in developed countries in the 1970s. First, let us look at Bonefeld's insightful observations that link the inability of productive capitals' surplus value extortion from workers and the new function of credit as a means of preserving the social relations of production on an increasingly speculative basis. Bonefeld states that "Since the early 1970s, rapid monetary accumulation has coincided with depressed rates of profit and sluggish productive accumulation. The net creditors on financial markets were productive capitals. At the same time as productive capital placed earned profits on financial markets, it financed productive investment by credit. The growing indebtedness of functioning capital manifested itself in the form of a decreasing importance of boom lending and a growing importance of what Hilferding called 'circulation credit' or Altvater refers to as 'recycling credit'. Re-cycling credit does not finance expansive accumulation but, rather, alleviates illiquidity by enabling producers to service debt without defaulting. This form of credit is purely speculative as it is supplied to debtors to enable them to meet difficulties in servicing interest on credit, so preventing insolvency. The increasing use of such credit indicated the difficulty of turning credit into effective command over labor, a command which guarantees credit growth through the surplus value extorted from the worker. For capitalists receiving this kind of credit, it exists not as means of purchase, but as means of payment or, in the face of insolvency, as a means of deferring liquidation and, hence, postponing credit default. The speculative dimension of this credit maintains solvency on an ever-more fictitious basis, calling for an ever more drastic imposition of exploitation in production so as to maintain financial solvency. However, recycling credit does not really leave the banks as it exists as interest payment. At the same time, the burden of debt increases for the debtor and the anticipated exploitation of labor produces inflationary pressure through a 'pseudo-social validation of private labor'. Against the background of an accumulation of monetary claims on not-yet existing surplus value, credit came to function largely as a means of preserving the social relations of production on an increasingly speculative basis (Bonefeld, 1995/1996, pp.43-4)."

Bonefeld and Holloway develop this perspective into the 1980s. They argue that the unproductive capital accumulated in the 1970s has transformed an apparently speculative capital channeled into the private debt in the 1980s. To privatize the debt, thanks to structured finance, was an attempt to contain labor by capital - that is, individualizing private debt (Bonefeld & Holloway, 1995/1996, pp.222-3).

During the 1980s, the speculative dimension of accumulation expressed the speculative containment of insubordinate labor. The unregulated expansion of credit and the abrasive attack on the working class are closely interconnected. The more the dependence of capital on labor was sustained by credit, the more the state had to guarantee credit through the eradication of public deficits. The more the state cut back on welfare spending, on housing, health and social security, the more people were forced into debt in order to maintain a tolerable standard of living. The more the whole existence of capital was based on credit, the more capital needed to push through changes in working practices, changes in technology and intensification of work as well as reductions in state expenditure in order to sustain the validity of credit. The more the state sought to reduce its social expenditure, the more private debt became a means either

of securing the newly-won property rights or of sustaining basic subsistence levels, such as housing. Besides, the growth of credit increased inflationary pressure and speculative attacks on currency. High interest rates helped to control inflationary pressure and to liquidate some money as personal bankruptcies and repossessions increased. The disciplinary force of the socialization of 'bad debt' is enormous. The inability of capital to control social relations through a policy of state austerity is oppressive in terms of individualizing private debt and its enforcement. However, the attempt to decompose the homogeneity of resistance to money had a contradictory result in that the fragmenting attack on social relations involved the reconstitution of class relations on the basis of debt. The republic of individualized property owners turned, by the 1990s, into a republic of debt. The inflation of credit is the most powerful expression of the fragility of capital's containment of labor.

Furthermore, Bonefeld and Holloway argue that the neoliberal project of securing the future exploitation of labor in the present via credit was collapsed at the expense of an integration of labor into the capital relation on the basis of an irredeemable expansion of credit in the 1990s. In other words, productive capitals were unable to incorporate developed countries' working class into the reproductive scheme of capital accumulation, because both they had and have enormous amount of illiquid fixed capital and 'bad debt'(Bonefeld & Holloway, 1995/1996, pp.223-4).

Over a period of two decades money has emerged as a central axis of class conflict. By the 1990s, the weakness of productive activity and the instability of the financial system present the failure of neoliberalism to secure the future exploitation of labor in the present. Debt calls into question the monetarist attempt to recompose class in terms of the categories of property owner and citizen. The individualizing monetary decomposition of class relations comes to the fore in its more violent form: the exhaustion of the illusion of prosperity and the information of prosperity into debt and bankruptcy. Far from stimulating investment, employment and output, the result of credit expansion in a tight monetary framework was the deterioration of conditions and mass unemployment. There was no breakthrough in investment. Credit expansion was used for speculation rather than for the generation of surplus value. The use of debt as an instrument of control, and the failure of this control in the form of a speculative boom, shows the strength of labor, even at the moment of defeat, to resist the recomposition between necessary and surplus labor. The result of this resistance was an integration of labor into the capital relation on the basis of an irredeemable expansion of credit.

There is still an ever-important figure absent from the picture: the poor. Mike Davis's thoughtful perspective illuminates the invisible birth and presence of poor masses. His analysis draws a factual basis of the condition of the poor. At the same time, it provides both the pattern of integration of labor into the capital relation and the living condition of the 'unincorporated' new urban proletariat in the age of structured or speculative capital. Because

of the difficulty of the task and his excellent presentation of the issue, I took a long quote from this short but clear-cut essay (Davis, 2004, pp.11-13):

But the developing world –the main arena of neo-imperial discourse about “failed nations” and postmodern “white men’s burdens”- is increasingly a universe of urban slums and shantytowns. Mao’s paradigmatic countryside no longer so much surrounds the city as implodes into it. Far more rapidly than anticipated by the famous Club of Rome report in the 1970s, humanity has passed an epochal threshold: inhabitants of some fifty thousand cities now outnumber those of two-million-plus rural villages.

Indeed, according to UN demographers, the world’s rural population has now reached a maximum plateau of three billion people and will never significantly increase. Cities, on the other hand, are growing by 60 million per year, and 90 percent of the increase in world population over the next generation will be accommodated by the urban areas of less-developed regions. By 2030, in other words, two billion more people will struggle for survival in cities, especially in the teeming metropolitan complexes of Africa and Asia.

As UN researchers pointed out earlier this year in their *Challenge of Slums: Global Report on Human Settlements 2003*, this urban population explosion will be almost completely delinked –or “disincorporated”- from industrial growth and the supply of formal jobs. Although studies of the so-called urban informal economy have shown myriad secret liaisons with outsourced multinational production systems, the larger fact is that hundreds of millions of new urbanites must further subdivide the peripheral economic niches of personal service, casual labor, street vending, rag picking, begging, and crime.

This outcast proletariat –perhaps 1.5 billion people today, 2.5 billion by 2030- is the fastest-growing and most novel social class on the planet. By and large, the urban informal working class is not a labor reserve army in the nineteenth-century sense: a backlog of strikebreakers during booms; to be expelled during busts; then reabsorbed again in the next expansion. On the contrary, this is a mass of humanity structurally and biologically redundant to global accumulation and the corporate matrix.

The ranks of the informal proletariat are ceaselessly expanded and the urban crisis deepened, the UN authors emphasize, by international economic regulation. Debt regimes strip-mine the public finances of developing countries and throttle new investment in housing and infrastructure. Externally imposed structural adjustment programs decimate public employment, destroy import-substitution industries, and displace tens of millions of rural producers unable to compete against the heavily subsidized agrocapi-talism of the rich countries. Even China’s market miracle has produced a floating urban population of 100 million disenfranchised, despised, and superexploited rural migrants.

The UN report draws somber but straightforward lessons: “The collapse of formal urban employment in the developing world and the rise of the informal sector is seen as a direct function of liberalization....Urban poverty has been

increasing in most countries subject to structural adjustment programs, most of which are deliberately anti-urban in nature.”

In the authors’ view, the state’s capacity to create formal jobs and housing has been sacrificed to the golden calf of monetary stability. Under the current neoliberal regime of globalization – indeed, under almost any foreseeable form of post-Keynesian capitalism –the new urban poor are unincorporatable: a surplus humanity.

The corollary to this urbanization of world poverty, of course, is the extraordinary proliferation of slums.

By 2030 the world will look roughly as follows:

1. Of 8 billion humans, 5 billion will live in cities.
2. 1 billion urbanites –owners, managers, technicians, and skilled information-sector workers- will provide the principal demand for branded international production.
3. 1.5 to 2 billion workers –ranging from Mexican American nurses’ aides in Los Angeles to Chinese teenagers in Guangdong sweatshops- will provide the metropolitan labor-power for the global economy.
4. 2 to 3 billion informal workers –at least 2 billion of whom live in classic slums or peripheral shantytowns- will exist outside the formal relations of production, in Dickensian conditions or worse, ravaged by emergent diseases and subject to a menu of megadisasters following in the wake of global warming and the exhaustion of urban water supplies.

CONCLUSION

The structured finance capitalists and the new urban/rural poor are the two faces of the same coin. As Lee and LiPuma show in terms of financial derivatives, the very logic of structured finance capital as a whole, under the neoliberal globalization, is to extract profit from legalized (i.e., (re)-(de)-regulated) but illegitimate ways of transforming social reality into the abstract and 'fair' risk conception of culture of finance. Let us inform Lee and LiPuma's words: "While on their surface all derivatives have similar properties (they are contracts with fixed expiration dates whose price is determined by the value of their underlying assets), the variegated character of the social phenomena that require national and global interconnectivity (currency, interest rates, stocks) makes for substantial differences in the social construction of the various types of derivatives. These differences are, however, excluded from the economic discourse on derivatives as a condition of that discourse. In order for this type discourse to objectify the derivative as an exclusively formal and quantifiable entity, one that can be analyzed using mathematical modeling techniques borrowed from physics, it is necessary to set aside the socio-historical dimensions of circulation (Lee & LiPuma, 2004, p. 64).".... "From the start, the financial community embraced the pricing model as a breakthrough, confident of having begun to unravel the keys to the physics of finance. Chief among its virtues was that the model allowed agents to unbundle and disaggregate the economic and political aspects of commerce into their component parts. It also allowed relational objects to be translated into individual concrete units, so that "risks became 'things' like commodities – tradable at any moment at the right price...this commoditization generated "a virtuous cycle" in which risk types could be isolated and "repackaged" into derivatives, leading to a capitalism in which there was the "distribution of risk at a fair price. The decomposition and concretization of risk, once achieved, gave birth to a new financial alchemy in which market makers could recombine different risk profiles into products that could be bought and sold at will in unlimited quantities (Lee & LiPuma, 2004, p. 81)."

The more the speculative capital moves abstractly, the more the poor arises. The more the speculative capital is abstract, the more it is felt as socially-neutral. The self-generating character of speculative capital is the mystique of today's integrated world capitalism's capital accumulation regime. Again, Lee and LiPuma point out the heart of the issue. "...the metropolitan financial community's globalization of risk generates relations of connectivity that affect citizens, institutions, and nation-states. The risk-bearing derivative is thus politically charged. Risk does not, however, appear in the public sphere in this highly social political capacity; rather, the abstraction, pricing, and globalization of risk appears as an objectifying activity that simply bridges the relationship between specific sets of uncertainties and the derivatives market. Accordingly, though the derivative embodies risk in both its concrete and abstract dimensions, the latter dimension becomes externalized through the relationship between the derivative and the underlying asset: a relationship expressed through the concept of notional value (the amount of capital controlled by a particular derivative at a given point in time). This externalization produces an influential duality. On the surface, a financial derivative is no more than the means of summarizing and pricing the concrete risks that materialize in a specific situation. On a deeper level, the derivative is the objectification of its abstract dimension, the notional amount. And because derivatives externalize that which engenders connectivity, namely abstract risk, they appear to be no more than the human

results of naturally occurring needs. This duality thus imparts an objective, seemingly asocial, and politically neutral character to both the concrete risk embodied in the derivative and its abstract dimension as well. In this way the character of risk – a character that apparently is objectively natural – expresses even as it conceals the social construction of risk and its political implications and functions in generating a globalizing circulatory system (Lee & LiPuma, 2004, p.154.)”

Under the triumph of speculative capital, the international financial regulatory regime functions under the shadow of financial giants, especially internationally active banks and their ‘synthetically-established off-shore’ subsidiaries. Regulatory institutions do not have the power to impose social benefits; they just try to respond to omnipresent crisis of capitalism (i.e., in the lexicon of neoliberal ideology, systemic risk). In a world defined by concealed and often disguised, embedded, off-balance sheet transactions, the use of traditional regulatory tools, especially capital requirements based on balance sheet ratios, is meaningless because the notional principal of outstanding derivative contracts frequently dwarfs balance sheet assets by a factor of hundreds.

With the advent of structured capital, the finance capital has found a leverage that made possible capital accumulation out of the factory borders, and in this case, all the globe become factory. In other words, then there is no distinction between production and reproduction of time(s) and of space(s). Capital surrounded all the humanity. But, there is still the chance of escape and construction of another life. Who will be capable of it? As Bonefeld and Holloway’s said, “Capital *did* resolve its crisis, in blood. Capital *was* restructured and the basis for a new period of accumulation created. This ‘golden age’ of post-war capitalism is now a memory and once again it would seem that we are in a situation of permanent crisis. It is possible that the crisis will be permanent, with a progressive ‘southafricanisation’ or ‘brazilianisation’ of the world, a gradual increase in inequality, violence, famine, war. It is possible too that the crisis will not be permanent, that it will in fact be resolved: what the resolution of ‘permanent crisis’ can mean stands behind us as a warning of a possibly nightmarish future (Bonefeld & Holloway, 1994/1995, p225).”

Who will be the agent of the resolution of this ‘permanent crisis’ that the contemporary capitalism or vampire capitalism produced? Michael Hardt and Antonio Negri draws an all-powerful portrait of the poor. This portrait may really have the potential of the counter-leverage of humanity. Let us finish with Hardt and Negri’s ontology of the poor (Hardt & Negri, 2000, pp.156-7):

In each and historical period a social subject that is ever-present and everywhere the same is identified, often negatively but nonetheless urgently, around a common living form. This form is not that of the powerful and the rich: they are merely partial and localized figures, *quantitate signatae*. The only non-localizable “common name” of pure difference in all eras is that of the poor. The poor is destitute, excluded, repressed, exploited -and yet living! It is the common denominator of life, the foundation of the multitude. It is strange, but also illuminating, that postmodernist authors seldom adopt this figure in their theorizing. It is strange because the poor is in a certain respect an eternal postmodern figure: the figure of a transversal, omnipresent, different, mobile subject; the testament to the irrepressible aleatory character of existence.

This common name, the poor, is also the foundation of every possibility of humanity. As Nichollò Machiavelli pointed out, in the “return to beginnings” that characterizes the revolutionary phase of the religions and ideologies of modernity, the poor is almost always seen to have a prophetic capacity: not only is the poor in the world, but the poor itself is the very possibility of the world. Only the poor lives radically the actual and present being, in destitution and suffering, and thus only the poor has the ability to renew being. The divinity of the multitude of the poor does not point to any transcendence. On the contrary, here and only here in this world, in the existence in the poor, is the field of immanence, presented, confirmed, consolidated, and opened. The poor is god on earth.

Today there is not even the illusion of a transcendent God. The poor has dissolved that image and recuperated its power. Long ago modernity was inaugurated with Rabelais’s laugh, with the realistic supremacy of the belly of the poor, with a poetics that expresses all that there is in destitute humanity “from the belt on down.” Later, through the processes of primitive accumulation, the proletariat emerged as a collective subject that could express itself in materiality and immanence, a multitude of poor that not only prophesied but produced, and that thus opened possibilities that were not virtual but concrete. Finally today, in the biopolitical regimes of production and in the processes of postmodernization, the poor is a subjugated, exploited figure, but nonetheless a figure of production. This is where the novelty lies. Everywhere today, at the basis of the concept and the common name of the poor, there is a relationship of production. Why are the postmodernists unable to read this passage? They tell us that a regime of transversal linguistic relations of production has entered into the unified and abstract universe of value. But who is the subject that produces “transversally,” who gives a creative meaning to language – who if not the poor, who are subjugated and desiring, impoverished and powerful, always more powerful? Here, within this reign of global production, the poor is distinguished no longer only by its prophetic capacity but also by its indispensable presence in the production in a common wealth, always more exploited and always more closely indexed to the wages of rule. The poor itself is power. There is World Poverty, but there is above all World Possibility, and only the poor is capable of this.

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APPENDIX 1: A PRODUCT-BASED TYPOLOGY of STRUCTURATION of FINANCIAL CONTRACTS

Although there are various ways in which a text on financial contracts can be structured (i.e., by marketplace, function, product, risk characteristics, geography, and so forth) a product-based typology of structuration of financial contracts will be helpful to understand the economic basis of the structuration process. In other words, the meanings of the underlying economic relationship that the products carried will illuminate whom the related parties and what their benefits are.

Erik Banks uses a product focus, with the aim of getting uniformity into a discussion that spans multiple asset and liability classes. Thus, a product focus shall provide a basis for us to abstract both the different financial interests and positions already reflected on these underlying economic relationships and the synthetically produced/derived financial interests and positions from them. Banks classes the products into eight groups. I use his classification.

a) Callable, Puttable, and Stripped Securities

i) Development and market drivers

The first structured assets, callable, puttable, and stripped securities, including corporate and government bonds with options and stripped coupons, are among the most established of the financial markets....Callable and puttable bonds have existed for several decades, with the first issues appearing in the early 20th century, and true issuer and investor interest commencing in the late 1960s. Rapid growth of the Eurobond market during the 1960s and into the 1970s was particularly instrumental in promoting the callable security structure. During these early days of international capital market development issuers were becoming increasingly attuned to the funding levels they could achieve in different market cycles; the ability to call outstanding bonds as rates declined proved particularly appealing, and the frequency of callable bond issuance soon increased.... Puttable structures were, and still are, rather less common than their callable counterparts. Such securities appeared several years after the first callable bonds were floated, and achieved a critical mass of interest among institutional investors seeking to manage their investment and reinvestment risks more actively; they also drew interest from issuers interested in lowering their funding costs via the embedded option. While corporates originally floated callable and puttable securities, financial institutions, sovereigns, and supranationals soon joined them.

The informal market for US strips dates back to the late 1970s, when institutions traded government securities without one or more coupons by physically stripping the bearer securities. This practice was done primarily to take advantage of generous tax advantages, which were reduced in 1982 through the passage of legislation. In fact, the same legislation required the US Treasury to begin issuing its securities in electronic book-entry form, eliminating the practice of physical stripping and ushering in the era of book-entry, or electronic, securities stripping. Shortly thereafter, financial institutions began splitting bond cash flows into separate interest and principal components through book-entry trust receipts.... The success of the US program during the 1980s led public and private institutions to sponsor similar efforts in other local government securities market (e.g. France, UK, Germany, Canada), and in other asset classes (e.g. mortgage-backed securities strips). (Banks, p. 47)

ii) Product mechanics

A callable bond is a package of a bond and a long issuer call option on bond prices (or long issuer put option on interest rates) that allows the issuer to call the security at particular price and/or time intervals....In exchange for granting the issuer the call option, the investor collects a premium in the form of an enhanced coupon. If the issuer chooses to exercise the call at the call strike price implied in the security, the investor delivers the bond and receives a principal repayment amount equal to the price-based strike, times the quantity of bonds.... In practice, the callability of a security is primarily a function of interest rates. Issuers floating callable bonds will choose to call their outstanding debt when rates are declining and opportunities to refinance in the new lower rate environment expand.... While interest rates dominate the option exercise decision, it is worth remembering that credit spreads can also play a role in the risk-free interest rate level and the relevant credit spread, it is conceivable that static rates, coupled with a significant tightening of the issuer's credit spread, may also lead to the exercise of the call. If the issuer's credit has improved dramatically in market terms, it will be able to call the security and reissue new debt at the tighter market spread, so reducing its funding costs. (Banks, pp. 47-8)

A puttable bond, which is somewhat less common than a callable bond, is a package of a bond and a long investor put option on bond prices (long investor call option on interest rates) that allows the investor to put the security back to the issuer at particular price or time intervals. In exchange for granting investors the put option, the issuer collects a premium in the form of a reduced coupon. If the investors decide to exercise the put at the strike price embedded in the security, they deliver the bonds and receive principal repayment equal to the price-based strike, times the quantity of bonds.... Note that unlike the callable bond, which involves a single exercise decision on the part of the issuer, the puttable bond represents discrete decisions by each individual investor holding an eligible security.... By exercising the option and delivering bonds back to the issuer, investors crystallize a gain and can then reinvest capital in the new, higher-rate environment. As with the callable bond, the puttable bond may be exercisable by investors if rates are static but the issuer's credit spread widens beyond the strike; under this scenario, it is advantageous for the investor base to put the securities back to the issuer. (Banks, p. 52)

A stripped security is a package comprised of a series of IOs and a PO based on cash flows payable by the issuer of the original security. The issuer's obligation to pay interest and principal on the strips does not change with the deconstruction of the security into its component parts.... Stripping securities is only half of the process. There are times when it is beneficial to reassemble or reconstitute the package of strips, as this can yield a small arbitrage profit (e.g., buying and reassembling the IO and PO components, and selling them in the market for more than the equivalent security). However, reconstituting securities can occasionally be problematic, as it may be difficult to identify all of the holders of the corpus and coupon strips and then persuade them to sell, at economically reasonable levels, into the reconstitution program. In order to circumvent this problem, some national programs attempt to synchronize coupon dates on strippable securities, or permit "like strips" to be substituted in order to complete a package. In fact, strips that have a degree of fungibility generally are more liquid than those that lack the same characteristics, precisely because they can be used for reconstitution. A bond can be stripped into some minimum denomination that varies by

national system, but generally is centered at the equivalent of \$ 10 000 to \$ 100 000. This means that retail investors are often able to participate in the market directly. (Banks, p. 54)

iii) Benefits of the products

Activity in these structured securities is driven by several key factors:

Callable/puttable bonds:

- allow issuers to take advantage of future rate declines to lower funding costs (callable securities), and permit investors to earn an incremental yield in the interim;
- permit investors to take advantage of future rate increases to boost yield (puttable securities), and allow issuers to lower all-in funding costs in the interim;
- create funding arbitrage opportunities through the monetization of optionality.

Stripped (zero coupon) securities:

- permit investors to acquire specific cash flows from a given bond; those investing in high quality government strips face minimal risk of default;
- create opportunities to match duration and convexity requirements very precisely, allowing for more effective risk and investment management;
- require a smaller initial capital investment, since all instruments are sold on a discount basis; this can be significant for those trading at a deep discount (e.g. long-dated principal only strips);
- give investors a certain and fixed redemption value if securities are held to maturity;
- generate tax advantages for investors that can place the securities in tax deferred accounts.

Investors in callable and puttable bonds include most major institutional parties, including mutual and pension funds, hedge funds, bank intermediaries, and corporations. The option-embedded benefits have become a useful risk management tool for some parties, and an effective way of increasing all-in returns for other parties.

Strip investors tend to be sophisticated institutional investors that use the products to create specific portfolio risk management profiles. The additional convexity and duration that can be obtained from certain securities is very attractive for those running diversified and/or complex portfolios. Small denomination strips are marketed regularly to a base of retail investors (though generally as “hold until maturity” products). (Banks, p. 57)

b) Mortgage- and Asset-backed Securities

i) Development and market drivers

The global mortgage-backed securities (MBS) and asset-backed securities (ABS) sectors represent two of the most significant, innovative, and liquid elements of the capital markets. MBS and ABS are complex fixed-income securities backed by diversified pools of mortgages or other assets, which pass through or redirect cash flows from asset seller/servicers to investors. Although MBS and ABS are relatively new creations, having appeared as recently as the 1980s and 1990s, they have already transformed portions of the illiquid real estate mortgage and receivable/loan markets into liquid and tradable securities, freeing the

balance sheets of sponsors/originators from capital or regulatory constraints in the process. Their development has also transformed other portions of the financial markets: structured notes, collateralized debt obligations, and insurance-linked securities, rely on many of the same financial engineering techniques to provide issuers, intermediaries, and investors with desired results. (Banks, 2006, p. 59)

ii) Product mechanics

MBS can be divided broadly into pass-through securities, collateralized mortgage obligations (CMOs), and stripped mortgage products; each can be decomposed further into a series of unique products. The basic MBS is a pass-through, or participation, certificate backed by a pool of residential or commercial mortgages.... Following the initial success of “vanilla” residential MBS, financial intermediaries applied the same technologies in other areas, including nonconforming “whole loans” (i.e. those not meeting the size or loan-to-value requirements of the mortgage agencies). This was an important evolutionary step, since many large residential loans, which were otherwise ineligible for inclusion under agency programs, became securitizable and transferable. Pooling and securitization of commercial property mortgages into commercial MBS (CMBS) appeared in the mid-1980s, but grew primarily during the late 1980s, when many US savings and loans were forced to divest their commercial loan portfolios in order to comply with new solvency regulations. Financial intermediaries next centered on securitizing pools of MBS into instruments known as collateralized mortgage obligations (CMOs). The advent of the CMO was again a vital step in the development of the secondary mortgage market, leading to the creation of new structured assets capable of addressing the customized risk/return needs of investors. Specifically, CMOs allowed investors directly and accurately to manage their exposures of prepayment risk (i.e. the most complex risk associated with mortgages (and, by extension, MBS) relates to cash flow uncertainty driven by prepayments of borrowed principal). (Banks, 2006, pp. 59-60)

A mortgage portfolio can be securitized through a bankruptcy-remote SPE or trust via a true sale mechanism or a synthetic process; the true sale tends to be more common, though this varies by country and product. The true sale mechanism involves the transfer or assignment of mortgage assets from the originator to the SPE (or trust), which then issues notes to investors; the originator, however, retains legal title to the assets. The trustee, through a power of attorney from the originator, has the ability to transfer legal title to the SPE, if necessary. The mortgage assets and the cash flows that they generate secure the notes; the cash flows, in turn, are used to service the principal and interest obligations of the note, as well as the fees/costs associated with the structure. Investors acquiring a pass-through security effectively receive an undivided ownership interest in the mortgage pool. Note that an alternative to the true sale is a subparticipation, which transfers risks and legal rights, but leaves the assets on the originator’s balance sheet. In the synthetic mechanism, the SPE (or trust) issues notes to investors with an economic return that is linked to the performance of a pool of reference mortgage assets (e.g. a type of credit linked note). The SPE uses the proceeds of the notes to purchase qualifying assets, and simultaneously provides the mortgage originator with de facto risk protection in exchange for a premium. The coupons from the qualifying assets and the premium are used to service the notes, while the qualifying assets are used to secure the investor’s interests (note that this approach is used to create the synthetic collateralized debt obligation product discussed below). The synthetic structure

avoids difficulties related to taxes and foreclosure laws; the originator retains the actual assets on its balance sheets. (Banks, 2006, p. 68)

ABSs are securities backed by cash flows from specific assets, including receivables and certain types of loans. The ABS sector generally is defined to exclude mortgage assets and traditional bond/loan credit assets, which are the domain of the MBS and collateralized debt obligations (CDO) sectors. In contrast to the MBS and CDO markets, ABS pools contain assets with relatively short maturities and some element of credit risk, but relatively modest (if any) prepayment risk. An ABS issue can be structured with fixed- and floating-rate tranches in order to appeal to the widest base of investors. Deals may also be floated in multi-currency form, via public registered or privately placed securities. (Banks, 2006, p. 90)

A proper legal structure is essential in order to limit liability and bankruptcy risk on an ABS issue. Indeed, the legal and structural issues surrounding ABS deals are similar to those characterizing MBS, including use of bankruptcy-remote entities to isolate the issuer of securities from the originator of the underlying assets. In the credit card ABS market, for instance, receivables are sold by the originator to an SPE or master trust via true sale – this isolates the assets from the originator’s balance sheet and demonstrates that the seller/servicer no longer controls the pool. Assets are sold to a bankruptcy-remote SPE-trust (which acts as trustee) on a nonrecourse basis, with a pledge of cash flows and a perfected security interest granted to investors; in some legal jurisdictions, this involves filing of a lien. Most transactions are accompanied by legal opinions reflecting true sales and security interest status; once complete, the investor is protected and the issuer is entitled to remove the assets from its balance sheet. Note that in some cases assets are originated directly into a master trust, eliminating the need for a legal transfer. (Banks, 2006, p. 90)

Though the servicing function is important in the MBS market, it is essential in the ABS market, since the originator of the asset and the servicer of the asset are virtually always two distinct parties (which may, or may not, be the case for MBS, as loan originators may sell their loans to the pool but retain servicing rights). It is vital, in any ABS structure, to evaluate the strength of the servicer, including its access to liquidity and its ability to deal with crisis situations, where more intensive collection procedures are required; this can often be done by examining treatment of past collections, delinquencies, charge-offs, and so forth. Not surprisingly, the abilities of the servicer are particularly critical when dealing with subprime assets. In addition, the trustee of any ABS deal must develop a backup servicing plan in the event that the original servicer is unable to perform the function. (Banks, 2006, p. 91)

Though early asset securitizations mechanisms focused primarily on the pass-through structure (e.g. directly passing through principal and interest flows from borrowers to investors), structural developments based on the concept of revolving, or hybrid, flows have allowed medium- and long-term securities to be created, even when the underlying assets have a short tenor (e.g. 3-12 months). This advance led to interest and growth in the ABS market, which is based largely on shorter-term assets. The US ABS market dates back to approximately 1985, when Chrysler securitized a portion of its auto loan portfolio. Credit card securitizations followed in 1987, and by the end of the decade the market had expanded to include securitizations on home equity loans, boat loans, manufactured housing, and student loans; deals on equipment leases (e.g. aircraft leases) followed in the 1990s. (Banks, 2006, p. 61)

iii) Benefits of the products

MBS and ABS have proven successful because they provide intermediaries/issuers and investors with significant benefits; in particular, either form of the security (Banks, 2006, pp. 61-2):

- gives investors access to unique assets (e.g. mortgages, receivables) in a customized manner reflecting specific preferences/requirements related to risk, return, maturity – this can be done in pure pass-through form, or in a revolving structure;
- creates an efficient mechanism by which to purchase a desired asset – administrative savings result when an investor purchases a tranche of an entire portfolio of assets through a single transaction;
- permits companies and other originators of future cash flows to monetize their stream of forward earnings for use in a current period;
- allows originators to transfer certain cash flow uncertainties (e.g. prepayments, credit defaults) and risk exposures to investors, at a price;
- transforms otherwise illiquid mortgage and receivable assets into a more marketable form, adding greatly to financial sector liquidity – this ultimately helps lower issuer funding costs and creates more attractive and secure opportunities for investors.

Since risk/return characteristics of MBS and ABS are tailored via different tranches, they are suitable for a wide spectrum of investors, primarily from the institutional markets. Accordingly, purchasers of MBS and ABS include financial institutions, insurers, pension, mutual, and investment funds, and corporates. For instance, investors preferring little prepayment risk may be attracted to planned amortization class bonds; those seeking a significant amount of exposure to interest rate movements may purchase interest-only/principal-only tranches, and so forth. (Banks, 2006, p. 62)

c) Structured Notes and Loans

i) Development and market drivers

Structured notes and loans represent a vital, and highly creative, portion of the structured asset market. The sector, which combines derivatives and fixed-income instruments, has existed for nearly three decades, and has proven to be an important element of investment, funding, and risk management strategies. The sector, in its broadest terms, encompasses a range of asset classes, including interest rates, currencies, commodities, equities, and credits. Though the volume and growth rates of different segments of the market vary, all play a role in helping intermediaries and end-users achieve specific end goals.... The market features a variety of basic structures created from combinations of securities and options, swaps, or forwards, that can be applied to create principal-protected, coupon-increased, coupon-decreased, or step-up structures. (Banks, 2006, p. 99)

Structured notes and loans have been issued regularly since the mid-1980s, just as activity and interest in rate, currency, and commodity derivatives began accelerating. Intermediaries discovered that pairing derivatives with funding instruments could provide investors with new investment opportunities, and issuers with better financing levels. Investors with aggressive return targets and significant risk-tolerance thresholds soon incorporated varying amounts of leverage in their structured notes. (Banks, 2006, p. 99)

Interest-rate-linked bonds appeared originally in the mid-1980s, several years after the introduction of basic interest rate swaps and options. Though the earliest embedded interest rate notes were introduced in the US, they were replicated immediately in the European and Japanese markets. The relative inefficiencies of the swap and option markets in the earliest days of product development helped spur growth, as arbitrage opportunities for issuers were significantly larger and more obvious than in the new millennium; even the most elemental structures allowed issuers to monetize value and lower funding costs, while simultaneously giving investors new opportunities to express views on rates and rate volatility. (Banks, 2006, p. 99)

Notes and bonds linked to individual currencies also appeared in the mid-1980s, as issuers began embedding derivatives on major currencies in their securities. The most common references during this early period centered on the “majors,” including Japanese yen, British pounds sterling, Deutschmarks, Swiss francs, Italian lira, Australian dollars, and Canadian dollars; deals related to other reference currencies appeared opportunistically. In more recent years, the market has expanded to include bonds linked to emerging market currencies and, with the advent of the European Union, the euro. (Banks, 2006, pp. 99-100)

Commodity-linked notes entered the market shortly after currency-linked bonds. Early structures were based on the world’s main commodity references, including oil, precious metals (gold, silver), and certain industrial metals (copper, aluminum.). Energy-based issues have proven particularly popular over the years with energy producers (e.g. oil companies) as well as energy consumers (e.g. transportation companies, airlines); producers have been able to use the notes to lock in revenues/receipts, while consumers/end-users have employed them to lock in the purchase prices on the inputs. Common energy references include various forms of crude oil (e.g. Brent, West Texas Intermediate), crude products (e.g. jet fuel/kerosene, heating oil, naphtha), and natural gas. After several years of successful issuance on individual commodities, the market expanded in the mid-1990s to include notes on broader commodity index references. (Banks, 2006, p. 100)

Equity-linked notes have proven in both bullish and bearish markets. As OTC equity derivatives emerged as an important asset class in the late 1980s, intermediaries began issuing notes referencing the appreciation of major market indexes, such as the S&P 500, Nikkei 225, and FTSE 100; in some instances, these notes allowed investors to participate in market sectors that were otherwise restricted. Strong bull markets in the US, Europe, and Japan throughout the latter part of the 1980s/early 1990s prompted significant issuance. When market conditions became bearish in the early 1990s (particularly in Japan), issuance remained relatively robust as issuers and investors turned to market depreciation structures. Banks also began issuing equity-linked deposits, offering investors a choice between instruments with a guaranteed return and a lower equity participation rate, or a higher equity participation rate in lieu of a guaranteed return. Thereafter, variations on the theme began appearing regularly, including sector notes, giving investors an opportunity to participate in the equity movement of individual industries (e.g. pharmaceuticals, financials, cyclicals), and country-based notes, referencing the returns of broad baskets of stocks in a specific country. While much of the equity-linked activity was created for the OTC market (this remains the largest component to the present time), some was directed toward the exchange/listed markets in order to promote retail activity. (Banks, 2006, pp. 100-1)

Credit-linked notes (CLNs), which are structured debt securities that reference the financial performance of credit-risky issuers/borrowers (i.e. a form of funded credit derivatives), have emerged as one of the most prominent parts of the structured note marketplace. Though CLNs originally were developed as investment vehicles for institutions seeking specific credit exposures, they soon came to serve as an important tool for those seeking hedging, risk control, diversification, and liquidity access. The first CLNs appeared in the early 1990s, but true growth came in subsequent phases, including the structured note cycle of the mid-1990s, and the credit derivative expansion cycle of the late 1990s. In fact, the credit markets of the late 1990s and early millennium featured forces that promoted development and activity: deteriorating credit quality due to regional and sectoral slowdowns, excessive concentrations of credit exposures within the community of intermediaries and originators (and a resulting need to find alternative mechanisms to transfer credit risks and optimize risk capital), and a desire from within the investor base to absorb, directly or synthetically, attractively priced credit risk structures. (Banks, 2006, p. 101)

ii) Product mechanics

The structured note and loan market involves different types of market reference, but basic structures/product designs are applicable across most references. Indeed, the common initial driver in many structured notes – whether commodity-, currency-, credit-, or equity-linked – is a lowering of an issuer’s funding costs by combining market structure and a view on implied future rates/prices. As notes earlier, structured notes are available in various generic forms, including (Banks, 2006, pp. 102-3):

- Principal-protected. The investor is only at risk for loss of coupons in the event a defined risk event occurs.
- Coupon-increased. The investor’s principal is at risk in unleveraged or leveraged form – generally up to the entire amount of principal. (In certain instances, principal redemption may not be floored, allowing for a negative redemption scenario, where the investor in the note is at risk of having to repay an additional amount of principal if the market reference moves against it; such a structure is quite unusual, but can be arranged or investors that are interested in highly leveraged and speculative opportunities.)
- Coupon-reduced. The investor receives full repayment of principal, and an extra payment in the event a defined risk event occurs; if no event occurs, the coupon is reduced.
- Step-up. The investor receives a larger coupon for each occurrence of a defined risk event.

The payoff profile of all notes can be modified as to degree of leverage, principal protection, and trigger event; principal-protected structures generally only work from an economic perspective on long-dated deals, since the actual risk/return parameters must be embedded in the coupon stream. (Banks, 2006, pp. 103)

Structured notes are, in general, comprised of a host bond (3-7 years in maturity) and one or more derivative contracts. (Notes with longer maturities, e.g. 7-10 years, tend to carry higher coupons and greater investor participation in appreciation/depreciation of the reference asset or index.) For instance, a combination of a bond and a forward can be used to create a

dual currency bond (FX forward), or an oil-based bond (oil forward). An FRN and a swap can be used to create an inverse floater, or a dual index note (CMT and LIBOR or Cost of Funds Index and LIBOR). A bond or FRN and an option can be used to create a capped or floored note, or a range floater (interest rate option) or an equity-linked note (equity option). In cases where international flows are involved, such as a dollar note based on the movement of a foreign index, the payouts may be protected through embedded currency options (quanto option) in order to neutralize any currency risks. (Banks, 2006, p. 103)

Though construction and valuation of structured notes can be an involved task, the individual components of any given security can be examined separately to determine proper design and pricing. For instance, a bond with an embedded option can be decomposed, and each leg can be priced separately. In an arbitrage-free market environment, the decomposition process helps ensure some degree of price equilibrium. (Banks, 2006, p. 104)

iii) Benefits of the products

Structured notes, regardless of asset class, feature certain common drivers that have been instrumental in fuelling market activity over the past few decades – either cyclically or continuously. The generic form of the structured note can provide investors, issuers, and intermediaries with various benefits; in particular, a structured note (Banks, 2006, pp. 101-2):

- gives investors access to asset exposure in unique forms, with asset references, maturities, currencies, leverage, and coupon/principal payments customized to meet individual requirements – this includes providing access to markets that might otherwise be restricted;
- allows investors that are not permitted to deal in derivatives directly to replicate the risk/return profile via securitized structure;
- creates an efficient mechanism by which to purchase a desired reference asset – this generates administrative savings when purchasing an entire portfolio of assets through a single transaction;
- allows investors to avoid the administrative burden of having to arrange separate derivative transactions to achieve the same results, thus reducing documentation expenses and avoiding use of counterparty risk limits;
- allows issuers to lower funding costs to levels that might not be achievable through normal mechanisms (e.g. a funding arbitrage opportunity) – this is done typically by taking a view on a forward curve;
- permits intermediaries to avoid counterparty risk exposure by transferring derivative-based exposures in funded form;
- makes it possible to create synthetic, tradable references where none exist - It is important to stress that an excessive amount of customization, e.g. creating an asset with an odd coupon payout profile, can drain liquidity from an issue. In addition, securities that are reissued strictly as private placements have a limited investor base (e.g. other qualified institutional buyers.);
- allows participation in certain markets by synthetically replicating existing assets that are in short supply and high demand;

- transforms otherwise illiquid assets into a more marketable form, thus adding to market liquidity – this ultimately helps lower issuer funding costs, and creates more attractive and secure opportunities for investors;
- offers tax and regulatory advantages that can benefit the investor and/or issuer;
- permits intermediaries or other users to transfer risk exposures that they wish to hedge, diversify, or reduce.

Investors in structured notes/loans include financial institutions, insurers, pension, mutual and investment funds, and corporates. Though all are active, they often select specific segments of the market in order to express their investment views. For instance, pension funds often participate in credit- and equity-linked structures, but may prefer those with a high level of principal protection; their chief aim is to enhance returns while preserving capital. Corporate treasury operations, investing excess cash on behalf of parent corporations, may favor similar “conservative” risk/return profiles. Hedge funds, in contrast, often assume a more aggressive stance, preferring to establish speculative/high risk positions; this may involve greater use of leverage and/or limited principal protection (e.g. full capital at risk). (Banks, 2006, p. 102)

d) Collateralized Debt Obligations

i) Development and market drivers

The collateralized debt obligation (CDO), a mechanism that pools, securitizes, and redistributes corporate credit obligations, is a relatively new addition to the world of structured assets, with the first transaction having been introduced in the late 1980s. Despite this relatively short history, the CDO has been instrumental in transforming intermediary and investor perceptions of credit risk investment and risk management, and growth, through the early years of the new millennium, has been rapid. Since the generic CDO functions as a form of securitization, it can be considered an extension of the general class of ABS. That said, the product features certain unique characteristics that differentiate it from its ABS peers. (Banks, 2006, p. 121)

We have seen that pooling is an essential characteristics of the ABS structure, providing scalability, flexibility, and operational/investment efficiency. By aggregating what might be a fractionalized and illiquid group of assets, the CDO is able to transform the pool into a scalable asset that can be restructured into multiple securities with specific risk/return profiles. Many of the earliest CDOs were driven by regulatory capital pressures that led banks to transfer portions of their balance sheet assets, including loans and bonds, into securitization conduits. However, the market soon expanded into opportunistic, arbitrage-based deals based on a combination of physical assets and/or derivatives. (Banks, 2006, p. 121)

There are many forms of CDO, which can be viewed along multiple axes, including: product axis – collateralized loan obligations (CLOs) and collateralized bond obligations (CBOs); motivation axis – balance-sheet CDOs (risk transfer) and arbitrage CDOs (profit); cash flow axis – cash flow CDOs and market value CDOs; and structure axis – cash CDOs (funded, asset-based) and structured/synthetic CDOs (unfunded, derivative-based). (Banks, 2006, p. 121)

CDOs are relatively new to the global capital markets. The first CLO transaction was launched to shift a portion of loan portfolio of a firm, and attendant credit risks, off balance

sheet. The market for CDOs grew steadily from that point on, accelerating as more institutions came to realize the regulatory capital benefits that could be gained by transferring credit risk exposure (and as commercial analytics for valuation became more widely available). (Banks, 2006, p. 121)

CBOs, which were introduced several years after the first CLOs had entered the market, remained relatively inactive until the mid-1990s, when intermediaries and institutional investors began designing mechanisms to optimize the capital treatment of bond portfolios. Specifically, active high-yield investors, including insurance companies and pension funds, which faced regulatory capital challenges on their bond portfolios, drove the earliest CBOs. To circumvent capital problems, they used the CBO structure to repackage their holdings: the highest-rated tranches were retained within regulated entities, while the lower-rated tranches and residuals were transferred to unregulated entities. This, of course, is similar to the driving force that caused many banks to transform their loan portfolios into CLOs. After loans and bonds were securitized successfully, intermediaries began repackaging structured financial assets using the same technologies; though the first deal entered the market in 1995, meaningful growth did not really commence until the end of the millennium. Structured finance CDOs backed by pools of MBS, CMOs, real estate investment trusts, and other asset-backed structures are now created and traded actively in the market. These instruments represent the pinnacle of structured assets, as they involve at least two tranches of separately structured cash flows. (Banks, 2006, pp. 121-2)

The market for CDOs is based primarily on US and European asset pools and investors. The most significant transactions originated through the early part of the new millennium have come via large international financial institutions, with the resulting securities placed through their global institutional investor networks. While US and UK banks were pioneers in the original balance sheet CDO structure, they were ultimately joined by Swiss, German, Dutch, and French banking and asset management institutions. CDO structures are not yet prevalent in other countries, primarily as a result of inadequate securitization laws, and/or insufficient pools of local credit risk (i.e. too small or concentrated to be used in the development of a CDO). (Banks, 2006, p. 122)

ii) Product mechanics

CDOs can be structured in various forms, each designed to achieve particular investor/intermediary goals, or take advantage of specific market opportunities. The standard CDO, which has an average life ranging from 5 to 15 years, involves a sponsoring institution (generally a large bank), portfolio manager, end-investors, and asset issuers (bonds) or borrowers (loans). The sponsor establishes an SPE or trust in a tax-friendly jurisdiction (The tax haven locale is essential in order to reduce friction costs and maximize returns; the downside may be relative lack of transparency on certain reporting/regulatory issues) that purchases the relevant credit assets through the issuance of tranches of securities, each with its own risk and return characteristics; in practice, the credit assets are warehoused by the sponsor and are sold to the SPE/trust once the liabilities have been issued and good funds are available. The SPE/trust also engages a trustee, custodian, paying/settlement agent, and portfolio manager to manage the operational and asset requirements of the deal. (Banks, 2006, p. 124)

A typical CDO pool may include from several dozen to several thousand obligors/ issuers from different industries. An experienced portfolio manager is appointed to manage the portfolio under the supervision of the trustee; the portfolio manager must adhere to the investment parameters set forth in the indenture and prospectus, as well as any additional guidelines imposed by the rating agencies. The risk of the collateral pool depends primarily on credit quality and diversification: better credit quality leads to default risk, but lower returns; greater diversification reduces the variability of losses, but again generates lower returns. Note that the portfolio manager often retains a significant portion of the residual/ equity first loss tranche (This share may rise up to a maximum of 49 % in order not to breach nonconsolidation accounting rules; any remaining balance may be sold to hedge funds and other institutional investors.), and thus has incentives that are aligned properly with a goal of maximizing earnings while taking prudent risks. (Banks, 2006, p. 124)

The sponsor and portfolio manager work together to construct the portfolio. The process passes through various distinct stages: in the ramp-up phase, or the accumulation period prior to deal-closing date, the sponsor and portfolio manager assemble or purchase a portfolio of assets; in the reinvestment phase, principal from maturing or amortizing assets is used to acquire new credit assets (note, however, that not all CDOs feature a reinvestment phase); in the wind-down phase, principal from maturing assets is returned to investors, creating a note redemption effect. (Banks, 2006, p. 124)

A typical CDO, which is often created in private placement form, may feature one or more senior tranches (AAA/AA rated), one or more subordinated tranches (BBB- to B-rated), and a residual or equity tranche (unrated) (The market value of the equity tranche can be viewed as the mark-to-market value of the asset portfolio less all outstanding liabilities/ obligations, including senior/subordinated notes issued, other borrowings, and service fees.), all backed by the pool of credit assets.... The more rated debt tranches a deal has, the less residual/equity it requires; this can lead to lower returns but a more secure structure. (Banks, 2006, pp. 124-5)

The actual tranching structure of a CDO, and the amount of subordination and equity, depends ultimately on the size of the profit spread.... The portfolio of credit assets, financed by a combination of debt tranches, must yield enough to service the debt obligations and provide some return to the equity investors. The driving factor is whether the available returns are sufficient to attract the right combination of investors. If the returns appear to match investor expectations, then the CDO's structural features can be refined and stress-tested to determine performance under a range of plausible and implausible scenarios. If the returns appear to fall short under plausible scenarios, the CDO generally must be abandoned.... When the modeling scenarios suggest that debt obligations can be serviced successfully and the equity tranche will generate a return of at least 15-20 %, then a successful transaction may be at hand. The sponsor can then adjust the details of the tranches, leverage, and asset pool to optimize risk/returns. Naturally, a CDO that appears to "work" based on overly generous assumptions, may actually fail to provide the intended returns. (Banks, 2006, pp. 125-6)

iii) Benefits of the products

CDOs are arranged for specific risk/financial management reasons, or to capitalize on market opportunities. For instance, a CDO (Banks, 2006, pp. 122-3):

- provides investors with professionally managed credit risk portfolio securities with a desired risk/return profile;
- allows credit originators to shift the physical and/or risk dimensions of their credit portfolios – the balance sheet CDO, for instance, allows the sponsoring institution to reduce its credit exposure to a series of borrowers simultaneously;
- optimizes capital and balance sheet usage – by arranging a CDO, the sponsor gains financial flexibility; the transfer of credit-risky assets to end-investors allows it to lower its credit reserves and internal/regulatory capital allocations, and decrease its balance sheet footings (Though capital treatment varies, a bank transferring credit-risky assets into a CDO may only face an 8 % capital charge on the unleveraged amount of the transaction, or 100 % on any new liability it retains –e.g. the small residual tranche- by some estimates, these can represent up to a 50 % saving in regulatory capital);
- permits new credit originations - thus, if a sponsor is comfortable with its level of reserves and capital allocations, it can generate new business to replace transferred business;
- allows access to new sources of capital (i.e. capital market investors, rather than traditional wholesale or retail depositors) and crystallization of term funding;
- gives intermediaries a chance to take advantage of market opportunities. The arbitrage CDO, for instance, is driven by a sponsor's desire to capitalize on perceived discrepancies between the fair and theoretical value of credit-risky assets, and to lock in a profit margin by acquiring the assets and funding them via the issuance of securities.

While risk management and arbitrage motivations have been key market drivers, arbitrage related opportunities have gained momentum in recent years. Indeed, as financial institutions have become adept at using credit derivatives to manage their exposure levels, some of the original risk/capital motivations have begun to subside. It is important to note that, despite these powerful drivers, CDOs cannot always be arranged at will. An environment featuring very tight credit spreads is not conducive to risk transfer or arbitrage transactions, as the spread available to investors may be insufficient (unless the collateral pools are comprised solely of very high-yielding, and thus risky, assets). (Banks, 2006, p. 123)

e) Insurance-linked Securities and Contingent Capital

i) Development and market drivers

The market for insurable risks has emerged as a new frontier in the structured asset marketplace. Though insurers and reinsurers have a long history of accepting and managing a range of insurance risks, they have been motivated to access additional risk capacity via the global capital markets. This has become increasingly important in an era when insurable risks are rising, and demand for risk transfer via the insurance mechanism is expanding. In Order for the insurance community to tap into the global capital base, it must be able to convert insurance risks into securitized form; this ultimately allows creation of assets that can be bought and sold by traditional capital market investors in a convenient form. (Banks, 2006, p. 141)

There are several classes of the most prominent insurance-based capital market instruments, including insurance-linked securities and contingent capital issues. The general class of insurance-linked securities includes catastrophe bonds (including hurricane bonds, earthquake bonds, windstorm bonds, and multiple-peril bonds) and noncatastrophe insurance bonds (weather bonds, residual value bonds, trade credit securitizations, and life insurance bonds); the class of contingent capital, in turn, can be separated into contingent debt (committed facilities, contingent surplus notes, and contingency loans) and contingent equity (loss equity puts and put-protected equity). (Banks, 2006, p. 141)

Financial intermediaries active in securitization of various types of assets and risk began applying the same techniques to the insurance market in the 1990s, creating notes and bonds based on insurance-related events. The concept behind insurance-based capital markets issues, or insurance-linked securities (ILS) is similar to the securitizations discussed above: namely, issuing securities referencing insurance risks in order to transfer exposures to investors, thus reducing/hedging risk or creating incremental risk capacity. Investors for their part, receive the benefit of attractive returns that are generally uncorrelated with traditional financial asset classes. (Banks, 2006, p. 141)

The first ILS issue did not appear until the mid-1990s, though the groundwork started in 1992. Hurricane-based catastrophe (cat) bonds were first introduced to the market in 1995, and have been proven to be enduring, with steady to increasing annual issuance since that time. Following this successful “proof of concept,” the same analytic technologies were applied to the development of earthquake bonds, windstorm bonds, and multiple-peril bonds. Other noncatastrophic insurance-related risk securitization have appeared in recent years, including those referencing temperature levels, residual value, life insurance policy acquisitions costs, auto insurance, worker’s compensation, and so forth; these sectors remain small compared to the catastrophe market. (Banks, 2006, pp. 141-2)

Contingent capital issues, which provide for post-loss financing through structures arranged in advance of any loss, were also designed in the mid-1990s, following the reinsurance capital shortages that appeared in the aftermath of two major US catastrophes (Hurricane Andrew, 1992, and the Northridge earthquake, 1994); the catastrophe equity put, for instance, was launched formally in 1996. These structures were intended originally to provide insurers and reinsurers with alternative avenues by which to raise debt or equity funding in the aftermath of a disaster, and in instances where reinsurance prices were simply too high to be cost-competitive risk pool. Though overall activity is still relatively modest, the likelihood of greater activity appears strong given the growing dollar-value of disasters. (Banks, 2006, p. 142)

One of the most appealing factors in the development of ILS and contingent capital structures has been the ability for institutions to link the insurance and capital markets – permitting the insurance sector to tap in to the tremendous supply of capital held by investors. Not surprisingly, most ILS and contingent capital issuers are insurers and reinsurers seeking alternate tools by which to manage their risk portfolios. Direct corporate issuance has been very small, with only a handful of issues appearing in recent years; in fact, most companies with catastrophic exposures find it simpler and more efficient to use standard insurance products to cover risks to hurricanes, earthquakes, and so on. (Banks, 2006, p. 142)

Securitization of insurance risks benefits various parties, including ceding companies, investors, and intermediaries. For instance, the ceding company (generally an insurer, as noted) can make use of another loss-financing mechanism to manage risk. During a hard reinsurance market, when supplies are tight and prices are high, this might be an attractive alternative. (Since ILSs are a substitute (though not permanent replacement) for insurance/reinsurance, the price differential between reinsurance and capital markets issues has an influence on overall activity. When a hard market develops, ILS issuance can accelerate - though it remains within a relatively tight boundary, i.e. there is no evidence of a large spike in issuance. Since creating the ILS structure can be relatively expensive – based on costs associated with forming SPEs, preparing documentation, engaging investment banks to underwrite the issue, and so on – it is only justifiable in the cost/benefit framework when other loss-financing alternatives are more expensive. While an insurer/reinsurer’s decision to proceed with an ILS will depend on price, it must also take account of other issues, such as the amount of overall risk it wishes to retain and reinsure, the amount of credit exposure it wants outstanding to various reinsurers, and so forth.) (Banks, 2006, p. 142)

[The ceding company] also reduces its credit exposure to individual reinsurers; since the risk is repackaged into notes and sold to investors via the SPE, the ceding insurer no longer needs to be concerned about specific performance of the reinsurer. In addition, since the marketplace is highly bespoke, the insurer can design its preferred note structure: assuming greater basis risk but eliminating moral hazard, bearing the incremental cost of moral hazard but reducing basis risk, issuing single-year or multi-year cover, protecting against single or multiple perils, and so forth. Investors also gain, by purchasing securities that are likely to have little, or no, correlation with other risk assets in their portfolios. This is very appealing for investment managers, who are eager to find opportunities to earn extra yield without compounding the risk effects of the portfolio (e.g. a hurricane or earthquake event is not correlated with the movement of bond yields or the stock market, meaning diversification possibilities exist). Investors are also able to capture good returns. Most deals of the late 1990s and early part of the new millennium featured a “novelty premium” of 50-100 basis points in excess of what could be earned on similarly rated corporate bonds; though margins have compressed as investors have grown more familiar with potential risks, they remain attractive. (Banks, 2006, pp. 142-3)

ii) Product mechanics

1. Insurance-linked securities

Since the ILS and contingent capital markets merge insurance and financial technologies, their design characteristics are somewhat different from those we have considered in the ABS, MBS, and CDO markets. (Banks, 2006, p. 143)

ILSs are tradable instruments that transfer the financial risks of an insurance event from the ceding insurer or reinsurer to end investors. Though ILS structures have been refined and customized in recent years, the basic architecture has remained relatively unchanged: an insurance or reinsurance company issues securities through a special conduit, and bases repayment of interest and/or principal on losses arising from defined insurance events. If losses exceed a predetermined threshold, the insurer/reinsurer is no longer required to pay investors interest; if structured with a nonprincipal protected tranche, all, or a portion, of the principal can be deferred or eliminated as well. Through this elemental structure, new risk

supply is created: the issuer passes a defined exposure to capital market investors, lowering its risk profile; this provides capital and reserve relief and allows new business to be written. (Banks, 2006, p. 144)

The standard ILS structure is similar to other securitized capital market structures, except that a special purpose reinsurer (SPR), rather than an SPE or trust, acts as the issuance vehicle. A pure securitization of risk does not allow an insurer to meet its statutory capital surplus requirements; thus, some amount of risk must be reinsured to the SPR. This permits first the risk to be reinsured, and then securitized, which allows for the necessary capital relief. In a standard structure, the bankruptcy-remote SPR is responsible for writing a reinsurance contract to the cedant in exchange for premium. Since the protection provided to the cedant is in the form of a reinsurance contract, rather than a derivative, the SPR must be established as a licensed reinsurance company. Naturally, in order for the insurer to receive the benefit of ceded exposure, risk must be transferred, meaning the ceding insurer cannot own the SPR directly. In fact, charitable foundations sponsor most SPRs in order to fulfill this “independence” requirement. The SPR issues notes to investors, channels proceeds of the premium to the trustee for further investment, and arranges any swaps that might be necessary to fix coupon payments to investors. Proceeds from the issuance of the notes are used to purchase low-risk securities, which are held in a collateral pool; the return on the securities and the payment of premium from the ceding company are used to pay investor coupons. The collateral in the trust account is used to repay principal at maturity, unless an insurance event triggers (ILSs feature one or more triggers that determine the conditions under which the ceding company can suspend interest and/or principal payments - either temporarily or permanently -, or receive a capital inflow. A trigger can be based on a single or multiple events (occurrences) and becomes effective after a cedant’s losses exceed a particular amount (e.g. a de facto deductible) a reduced payout; if this occurs, investors may not receive interest and/or principal on a timely basis, if at all (in some cases they will only receive recompense after all claims and contingent liabilities arising from the insurable event have been paid). By reducing, or eliminating, the payout to investors in the event an insurable event occurs, the ceding company mitigates its exposure to that event. (Banks, 2006, p. 144)

In some cases, a second reinsurer is interposed between the ceding company and the SPR, meaning that the contract becomes one of retrocession (i.e. reinsurance of reinsurance), rather than reinsurance; this structure permits the reinsurer to accept indemnity risk and hedge with index contracts, so that the ceding company does not have to bear basis risk. (Banks, 2006, p. 144)

In common with other structured assets featuring subordination, ILSs are issued in multiple tranches that allow investors to select a desired level of risk and return. For instance, hedge funds may purchase mezzanine/first loss tranches, while investment funds and bank/ insurance company investment accounts may purchase senior tranches. (Banks, 2006, p. 146)

2. Contingent capital structures

Contingent capital represents the second major class of structured insurance products. These instruments are contractually agreed financing facilities that are made available to a company in the aftermath of a loss event. As with other capital market products, the contingent capital structure helps link the insurance and financial markets by raising funds from capital market providers/investors upon the trigger of an insurance-related event. Unlike

ILSs, which contain aspects of insurance/reinsurance and securities financing, contingent capital facilities are arranged purely as funding facilities or securities transactions, with no element of insurance contracting. (Banks, 2006, pp. 153-4)

Contingent capital allows a firm to raise capital during a defined commitment period if a specific loss-making event occurs. Since such facilities are arranged in advance of any loss, their cost does not reflect the risk premium that may become apparent in the aftermath of distress (i.e. lower creditworthiness and less access to liquidity, leading to a higher cost of capital). This makes the facilities cost-efficient across a range of financial scenarios. A firm that attempts to arrange funding after a disaster has weakened its financial condition will pay a higher cost of funds; this is especially true if its credit condition has been lowered to sub-investment-grade levels. A firm that has been impacted by the same disaster, but arranged its capital access ex-ante, will be indemnified and recapitalized at the cost of capital agreed pre-loss. (Banks, 2006, p. 154)

Contingent capital products incorporate triggers (barriers) that are activated by a stated loss level. Like ILSs, the triggers can be created on a customized basis in order to match a company's exposure to a specific loss-making event, or they can be based on market indexes. The terms of the resulting securities, negotiated between the company and the capital provider can vary widely. Securities can be issued as common equity, debt or preferreds. If issued as equity, dilution issues must be considered, and if issued as debt or preferreds, specific details related to leverage, subordination, maturity, coupon (or dividend), callability and dividend treatment must be addressed. Similar issues must be addressed if debt funding occurs via bank lines rather than securities, along with specific details on drawdown features, material adverse change clauses and covenants, and so forth. (Banks, 2006, p. 155)

It is important to remember that contingent capital is not insurance, but a balance sheet and cash flow arrangement (that actually shares structural similarities with various finite risk programs), and does not therefore provide earnings protection or feature the same tax deductibility characteristics of insurance policies. Furthermore, a company arranging an issue of contingent financing relies on the provider of capital to supply funds when called on to do so. The company thus assumes the capital provider's credit risk on a contingent basis. (Banks, 2006, p. 156)

iii) Benefits of the products

Activity in ILSs and contingent capital structures is driven by several key factors. Specifically, the instruments:

- allow insurers, reinsurers, and corporations to transfer exposures to catastrophic or noncatastrophic risks in an efficient and cost-effective manner;
- provide insurers, reinsurers, and corporations with an additional risk management tool, thus reducing their reliance on traditional insurance/reinsurance arrangements (which is especially important when the insurance markets are in tight supply);
- create additional risk capacity, allowing insurers and reinsurers to continue offering cedants coverage for their core insurance risks, without having to rely solely on the reinsurance markets;
- develop a formal linkage between the insurance risk market and the capital markets, allowing a transfer of capital as needed;

- permit investors to access a new asset class (i.e. catastrophic and noncatastrophic property and casualty risk), that is uncorrelated with other financial assets and offers excess returns.

Product innovation and expansion continue to accelerate as a result of these drivers. Though the overall ILSs and contingent capital market is still very small compared to the other structured asset sectors we have discussed, its potential is extremely large – especially since insurable risks continue to escalate rapidly. (Banks, 2006, p.143)

Investors in ILSs and other contingent capital structures are institutional parties that seek primarily to diversify their portfolios. In fact, investment funds, pension funds, and hedge funds that are willing to assume insurance risks are particularly active. Many are attracted by the spread premiums that can be earned from participating in rather novel, and quite illiquid, markets. (Banks, 2006, p. 143)

f) Convertible Bonds and Equity Hybrids

i) Development and market drivers

Convertible bonds are one of the oldest, and most popular, of the financial sector's structured products. The basic convertible bond, which combines a bond and an investor-owned equity call option in a single package, has been in use since the 19th century. The combination of fixed-income returns through coupons and potential credit spread tightening, coupled with the possibility of conversion into equity, has proven to be an appealing and enduring structure. In fact, the success and popularity of convertibles over a period of many decades has led to the creation of various structured equity hybrid securities that fuse elements of the fixed-income and equity markets. (Banks, 2006, p. 163)

[There is] a variety of structured equity products, including conventional convertible bonds and convertible variations (zero coupon convertible bonds, exchangeable bonds, reverse convertible bonds, and mandatory convertible bonds), bonds with equity warrants (Bonds with other types of attached warrants, including those that are based on currency, and commodity references, are also issued in the marketplace; these, however, represent a very small share of the marketplace and tend to be floated on an opportunistic, private-placement basis as market conditions allow. Here, Eric Banks confines his discussion to bonds with equity warrants consistent with the equity focus that he chose.), buy/write (covered call) securities, and other equity hybrids (adjustable-rate preferred stock, convertible preferred stock). [If these securities are compared and contrasted with the general class of equity-linked structured notes discussed above, some similarities and differences will be noticed.] Though both sectors can provide investors with exposure to the equity markets through a fixed-income vehicle (and can simultaneously provide issuers with attractive funding opportunities), nearly all of the synthetic and structured products under the heading of convertible bonds and equity hybrids can result in the creation of new equity,... structures notes, in contrast, result only in the reallocation of equity exposure from one party to another. (Banks, 2006, p. 163)

The first US convertible bond, floated by the Erie Railroad in the 19th century, was a pioneering issue that paid investors a fixed coupon and granted them a call option to purchase Erie's common stock at a predetermined stock price (i.e. the conversion price). The instrument gave investors a minimum fixed-income return (along with potential capital gains from credit spread tightening) while the stock traded below the conversion price, along with

the potential to convert the bond into new shares once the market price exceeded the conversion price. Once converted, investors relinquished the fixed-income investment, but had the opportunity to participate in the issuer's equity dividends and any further upside equity gains. The flexible features and multiple return possibilities proved popular, and paved the way for subsequent issues in the US, Europe, Japan, and the emerging markets. By the mid-20th century, standard convertible bonds had become a mainstay of corporate financing, primarily for large companies. During the late 1980s and into the 1990s, financial intermediaries began experimenting with the basic convertible bond structure, developing a series of hybrid securities with fixed income and equity features that addressed specific funding and investment requirements. Bonds with attached equity warrants emerged in the early 20th century, but became widely utilized during the 1980s and 1990s, as issuers sought to capitalize on cheap financing opportunities through the Eurobond market. (Banks, 2006, pp. 163-4)

ii) Product mechanics

A conventional convertible bond is a debt/equity hybrid that allows the investor to convert a fixed-income instrument into a specified number of shares once a particular conversion price is reached. Assuming conversion occurs, the investor presents the bond for redemption (so forfeiting the right to future coupons, credit spread appreciation, and principal redemption) and receives shares that may pay a dividend and allow for further capital appreciation. From a building block perspective, the convertible can also be viewed as a package comprised of a share of common stock, a put to exchange the common stock for a bond, and a swap of the coupon stream for dividends until the conversion date. The issuer can generate an attractive cost of funds and minimize the impact of share dilution, while the investor may be able to earn a minimum interest rate return while preserving potential upside via capital appreciation. The investor, long a call option, must pay the issuer a premium; this can be done by establishing a below-market coupon, or setting a higher market premium over investment value. (Banks, 2006, pp. 166-7)

Since convertibles are true hybrid products, absorbing elements of the debt and equity asset classes, they expose investors to a range of risks including credit spread/default risk, interest rate risk, currency risk (for foreign currency issues), volatility risk, dividend risk, equity price risk, and call risk. Naturally, not all of these risk factors exhibit the same sensitivity at the same time; most depend on the state of the market and the value of the convertible in relation to the issuer's stock price. For instance, when an issuer's stock price is well below the conversion price, the convertible trades more like a bond than an equity, and is thus far more sensitive to interest rates and interest rate volatility than equity prices and equity volatility. The reverse is true as the stock price rises to the conversion price. (Banks, 2006, p. 167)

Convertible issuers must determine ex ante an appropriate conversion price and a strategy to manage balance sheet leverage should conversion not occur. Establishing a conversion price is a balancing process: the higher the conversion price (i.e. the farther out-of-the-money the equity option), the cheaper the funding and the lower the eventual dilution, but the lower the probability of conversion; the lower the conversion price (i.e. the closer-to-the-money the equity option), the more expensive the funding and the higher the eventual dilution, but the higher the probability of conversion. Naturally, most convertible issuers seek to have their bonds converted at some point, for at least two reasons: the act of converting

lowers leverage through the retirement of the fixed-income portion of the bond and the issuance of new equity; and a convertible that remains unconverted for along period of time (i.e. a so-called “busted” or “broken” convertible) can create uncertainty and stock price pressure for the issuer. (Banks, 2006, p. 167)

The success of convertibles has led to the development of certain convertible variations, including zero coupon convertible bonds, exchangeable bonds, reverse convertible bonds, and mandatory convertible bonds; these may be seen as substitutes and/or competitors to the standard instrument. For further information about these products, see (Banks, 2006, pp.166-79).

iii) Benefits of the products

[There are] various market drivers have influenced activity in structured equity products; some of the drivers apply to all of the instruments, some more narrowly to one or two classes (e.g. convertibles, bonds with warrants). Specifically, the instruments permit:

- lower issuer financing costs than standard fixed-income securities with equal maturity (e.g. convertibles);
- flotation of new equity capital upon conversion and subsequent balance sheet deleveraging – with less dilution than a transaction executed in the current market;
- return potential from both fixed-income and equity movements; the ability to claim a minimum fixed-income return while retaining potential equity market upside;
- access to multiple investor bases (e.g. equity investors, fixed-income investors, crossover investors), helping with primary and secondary placement, and increasing issuer name recognition.

Competitive cost of funding is a key motivating force for many issuers. Indeed, a convertible can be cheaper in the short to medium term than other debt alternatives, as the coupon on the bond is lower than the coupon on an otherwise equivalent straight bond. If conversion into equity occurs, dilution will follow, but so will a decrease in leverage; post-conversion deleveraging can lead to an improvement in the issuer’s credit rating, which can serve as a catalyst for lower funding costs on subsequent debt-related issuance. (Banks, 2006, p.167)

Convertibles, bonds with warrants, and other debt/equity hybrids generally are regarded as being marketable to a broad base of investors, as they can appeal to both equity and fixed-income buyers; this is particularly true in the new issuance phase, before a security becomes seasoned and assumes the characteristics of either of the two underlying assets (which is, of course, primarily a function of the direction of the issuer’s stock price). In practice, equity investors tend to prefer investments that are either at- or in-the-money; fixed-income investors, in turn, prefer out-of-the-money convertibles or warrant bonds, where the bond component accounts for 80-90 % of the value of the security and the option/warrant is seen only as an upside “kicker,” or where opportunities for credit spread tightening appear favorable. (Banks, 2006, p.167)

g) Investment Funds

i) Development and market drivers

Eric Banks summarizes the rationale behind the decision to include investment funds in the narrative of structured asset in these sentences:

Investment funds comprise the broad class of asset portfolios that are financed through the issuance of a fixed or variable amount of stock, or the distribution of partnership shares. We include funds in our discussion of structured assets, since they transform the equity capital of investors into pro rata interests in entire portfolio of assets or financial contracts from the equity, fixed-income, currency, and/or commodity sectors. In fact, an interest in a fund referencing an equity market (or any other asset reference) shares economic similarities with a funded total return equity swap or a zero coupon bond with redemption linked to the same equity reference. (Banks, 2006, p.181)

[There are several] popular types of investment funds, including investment companies (open-end funds, closed-end funds, and unit investment trusts), hedge funds, and exchange-traded funds. Open-end fund (known as mutual funds in some countries) comprise the largest segment of the investment fund market and are designed for the broadest group of retail and institutional investors. Hedge funds, designed primarily for sophisticated (or accredited) investors, can invest in a broad range of assets, and typically run aggressive risk profiles. Exchange-traded funds (ETFs) are registered hybrids that combine the structural features of open-end funds with the trading and liquidity features of actively traded corporate securities. (Banks, 2006, p.181)

Open- and closed-end funds, which have existed for many decades, have become an integral part of the investment management sector. The market for open-end funds dates back to the 19th century, when the earliest investment-based conduits were created. Though early efforts were sometimes managed unprofessionally and were often highly speculative, the market matured steadily throughout the 20th century; the sector has experienced significant, and accelerating, expansion over the past three decades, as global wealth has continued to build. Millions of retail and institutional investors around the world now use funds to help them achieve their investment goals. New types of funds have been introduced at regular intervals, including those specialized on individual stocks, bonds, indexes, and commodities. Funds that invest in individual stocks have been the perennial favorites over the long term; many investors are attracted to such investments as the possibility of earning returns that exceed those available in other market sectors is an appealing proposition. While stock funds have been in vogue for many years, index funds that track an entire market index are a more recent phenomenon, with significant growth commencing in the early 1980s. Since the introduction of the first index-based open-end fund by Vanguard in 1976, funds on narrow and broad market indexes have become a significant component of the marketplace. Bond funds that invest in corporate and government securities have also emerged as an important part of the market. Money market funds, which debuted in the early 1970s, have become extremely popular with investors seeking relatively low risk/predictable return assets, a liquid conduit that generates income prior to reallocation to another sector, as well as those that expect short-term interest rates to rise. (Banks, 2006, pp.181-2)

Hedge funds are a more recent creation, having been developed in the 1940s and 1950s, but gaining true popularity in the 1970s (when more than 150 funds were formed). Early hedge funds were based on commodities and equities, and fund managers preserved a fairly strict single-asset focus. However, during the early 1980s, as inflation and interest rates rose sharply, hedge fund managers began investing across asset classes in order to offset the

impact of poor equity returns. The multi-asset focus remains a key feature of many funds to the present time. Hedge funds have the ability to trade across a wide range of assets and strategies, and can freely employ derivatives, leverage, and short selling; this flexibility has attracted the attention of investors seeking larger returns than might be achieved through indexing or passive investing strategies. Naturally, the fact that hedge funds offer the possibility of generating above-market returns means that they assume more risk than their more conservative open- and closed-end counterparts. (Banks, 2006, p.182)

ETFs, like hedge funds, are a relatively recent addition to the financial markets. The earliest incarnations of ETFs, structured as index certificates/participation units, appeared on the American Stock Exchange (ASE) and Philadelphia Stock Exchange (PHLX) in the late 1980s, but drew only modest attention and activity. In fact, the original offerings by the ASE and PHLX were eventually abandoned after the Chicago futures exchanges and the Commodity Futures Trading Commission filed lawsuits claiming the instruments were equivalent to cash-settled futures (without any underlying securities). The breakthrough ETF, backed by securities and issued in the form of a trust in order to avoid any regulatory disputes, was the ASE's 1993 S&P Depository Receipt (ticker SPDR); within five years, the size of the SPDR market had grown to more than \$12 billion, proving investor appetite was real.... As the advantages and mechanics of the structure became more widely understood, various other exchange and bank sponsors began creating their own ETFs, either on broad market indexes or on narrower country/industry sectors. The ETF market is not confined to the US. Apart from the pioneering work of the Toronto Stock Exchange, other global stock exchanges, including those in Hong Kong, Singapore, Tokyo, London, Frankfurt, and Sydney, have introduced their own ETFs. (Banks, 2006, p.183)

ii) Product mechanics

Though the broad classes of investment fund outlined above transform investor capital into shares/partnership interests representing ownership in a portfolio of assets, product structure and mechanics can vary considerably. For instance, the theoretical balance sheet of an investment fund vehicle, which may be structured as an investment company, SPE, trust, or limited partnership, can be viewed as a portfolio of securities on the asset side (along with a residual cash balance reflecting funds awaiting investment/liquidity to meet redemptions), and investors' paid-in capital in the equity account. Depending on the nature of the fund, the balance sheet may also contain a certain amount of leverage in the form of short-term or long-term debt, and may also feature off-balance-sheet assets or liabilities (primarily derivatives). (Banks, 2006, p.184)

The inclusion of properly selected assets with appropriate correlation is central to creating an efficient, diversified portfolio. It is important to note that while diversification is widely recognized as a favorable trait, a fund may reach a point where excessive diversification is no longer beneficial; this tends to appear with managed funds that seek to outperform an index or benchmark, where an extreme amount of diversification may cause the portfolio manager(s) to be insufficiently "expert" truly to comprehend the individual components of the portfolio. In fact, it is hard for a portfolio manager to be expert in every country, sector, or security; some degree of specialization is ultimately necessary. Investors must be aware of the particular strengths of a portfolio manager and the underlying fund, to ensure that the philosophy and style are consistent with expertise and expectations. (Banks, 2006, p.184)

Management of a portfolio of securities also gives rise to continuity, particularly with regard to assets that otherwise feature finite maturities; this means that fund managers can create investment horizons synthetically that are not achievable through the purchase of individual securities. For instance, an investor that is interested in continuous exposure to the bond market can purchase individual bonds, but must then reinvest principal continually as individual bonds mature. Continuous investment in a portfolio of bonds, in contrast, requires no such reinvestment by the investor; the portfolio manager simply acquires new bonds to replace mature ones, all the while generating a steady stream of income for the investor. Similar techniques can be applied to other types of assets with specific final maturities (e.g. managed futures accounts/commodity pools, money market funds). (Banks, 2006, pp.185-6)

All funds, regardless of defining characteristics, contain one or more risks that can impact overall investment performance/returns. Common risks that investors must consider include default risk, sovereign risk, credit spread risk, currency risk, interest rate risk, equity price risk, dividend risk, volatility risk, liquidity risk, reinvestment risk, basis risk, and prepayment risk. For instance, a fund that invests in a portfolio of large-cap equities exposes investors to equity price, volatility, and dividend risk; one that invests in high-yield bonds exposes investors to default, credit spread, interest rate, volatility, and liquidity risk; one that invests in emerging market bonds creates default, credit spread, interest rate, volatility, liquidity, sovereign, and currency risks; and so on. Awareness of such potential risks is essential prior to committing capital. (Banks, 2006, pp. 185-6)

iii) Benefits of products

Several factors have led to strong growth in the structured investment product sector over the past few decades. In particular, investment funds, hedge funds, and ETFs (Banks, 2006, p. 183):

- provide investors with exposure to a professionally managed portfolio of securities, with risk and return characteristics synchronized to accommodate a broad range of investor styles and goals – those preferring more or less risk can identify a suitable investment vehicle easily;
- take advantage of portfolio management techniques to attempt to maximize returns for a given level of risk, in a manner consistent with financial theory;
- create transactional efficiencies by allowing execution of multiple transactions (e.g. the purchase of an index fund or basket) through a single trade – this generates portfolio management and tracking efficiencies, as well as cost savings;
- generate continuity in an investment portfolio, particularly for assets with final maturities or redemption dates – this allows investors to continue deploying their capital in a preferred strategy without being concerned about reinvestment;
- allow investors to self-direct their own asset allocations or trade their own fund shares – this has proven beneficial in an environment where investment/retirement assets are increasing and technology has become pervasive.

As we have noted, investment funds are suitable for a very broad range of investors. The lowest risk, index-tracking funds that seek to replicate, as closely as possible, market performance, are often considered to be desirable for those with a low risk-tolerance level. Highly leveraged and concentrated hedge funds exist at the other end of the spectrum, and are

suitable for investors with a high level of risk tolerance and a desire to maximize potential returns. In between lies a range of open and closed-end funds and ETFs that cater to various other risk/return tradeoffs. (Banks, 2006, p. 184)

h) Derivative Replication, Repackaging, and Structuring

i) Development and market drivers

[As it is seen above, Eric Banks discusses derivatives as] demonstrating how derivatives can be paired with capital market securities/loans to create a broad range of structured debt and equity products, such as callable and puttable bonds, synthetic CDOs, CMOs, convertible bonds, commodity- and insurance-linked securities, and so forth. [He] expands on the topic by considering how the contracts can be used to produce additional synthetic and structured contracts. This process follows one of two approaches: using multiple derivatives to create entirely new synthetic assets, or using derivatives to “repackage” or “restructure” assets already in existence. (Banks, 2006, p. 205)

He limits the discussion to several of the most common replication, repackaging, and structuring techniques (i.e. synthetic long and short option and swap positions, multiple option/swap positions, callable, puttable, and extendible swaps, and credit derivatives/synthetic credit positions, along with various subcategories within each sector.

Soon after listed option contracts were introduced via the US exchanges, intermediaries and investors began combining short and long put/call positions to create synthetic long and short positions to take advantage of yield enhancement and arbitrage opportunities. Similarly, they began packaging options in particular combinations to express views on market direction and volatility. This process deepened throughout the 1980s, and has since become an essential element of synthetic investment and risk management. (Banks, 2006, p. 205)

Interest rate and currency-based asset swap packages appeared in the mid-1980s, as institutional investors sought specific asset-related flows that were not directly available in the capital markets, or which were not accessible as a result of regulatory restrictions. Financial creativity and investor demand coincided with attractive credit arbitrage conditions that provided economic benefits for participants, and a very active market in synthetic \$ LIBOR and non-\$ LIBOR structures soon appeared. Swapping FRNs into synthetic fixed rate securities, and \$ securities into synthetic non-securities, also became popular, if rather more opportunistic.... During the early to mid-1990s, as asset swaps became firmly entrenched in the marketplace, and new variations on the theme emerged, including repackaged/structured notes with embedded derivatives, and callable and puttable asset swaps. (Banks, 2006, p. 206)

In some instances, synthetic derivative product development has only been possible once a critical mass of liquidity has been attained in the underlying derivative contract. Indeed, there is little point in creating a synthetic asset from one or more derivatives if the underlying derivatives are too illiquid; any such constraint is likely to reduce or eliminate potential economic benefits. Default swaps and total return swaps are excellent examples of this process. Though the credit derivative market began to form in the early to mid-1990s, default and total return swaps were not widely quoted or traded for several years. In fact, investors or speculators seeking exposure to a specific corporate bond or bond index were more likely to purchase or short the reference bond or index directly. As market makers began

managing their credit portfolios more actively, and quoting two-way prices on a range of credit derivatives, activity began to build, and opportunities for investors to participate in synthetic (leveraged) credit positions via default swaps and total return swaps improved. Indeed, as a robust two-way market began to form, bid-offer spreads on these synthetic credit instruments continued to compress, attracting more end-users eager to assume or transfer credits synthetically. The market is now able to support a broad range of credit references, because the underlying credit derivative market is liquid, active, and well supported. The same is true of other types of synthetic structures true activity builds once the component derivatives are well understood. (Banks, 2006, p. 206)

ii) Product mechanics

Derivatives, or financial contracts that derive their value from other market references, have evolved and expanded rapidly over the past few decades, and are now an integral part of the global capital markets. They have also become an essential building block of the financial marketplace. Though rudimentary derivative contracts have existed for centuries (primarily those on commodity references), the modern era of financial derivative contracts dates back to the early 1970s, when a number of exchanges began offering listed contracts on financial references such as interest rates, currencies, and equities. The customized over-the-counter (OTC) derivative market emerged in the early 1980s, when parallel currency loans were converted from balance sheet to off-balance-sheet status. These early currency swaps were soon followed by off-balance sheet interest rate swaps, commodity swaps, and equity swaps; by the early 1990s, various classes of swaps and forwards had become standardized and liquid. Additional structures, including credit derivatives, began appearing in the mid- to late 1990s, and innovation continues to the present time. (Banks, 2006, p. 17)

Since OTC derivatives, allow for considerable customization they are well suited to the product development requirements of the synthetic and structured sector. OTC derivatives, as the name suggests, are arranged and traded between two parties on an off-exchange basis. Each contract represents a customized negotiation of terms and conditions, with the parties agreeing to specific characteristics related to notional, term, reference market/asset, payoff profile, and so forth. Since dealing occurs off-exchange (either telephonically or via electronic communications networks), rather than through a formalized exchange, aspects of counterparty credit risk can appear. Indeed, in the absence of any specifically negotiated collateral/margin agreement between the two parties to a transaction, credit exposure arises for one or both parties (depending on the nature of the contract). Interestingly, some synthetic and structured assets have been created expressly to deal with these credit risks. For instance, an investor can enter into an asset swap package to convert a fixed rate bond into a synthetic floating-rate security, but assumes the credit risk of the swap counterparty in doing so; however, if the same package is embedded in a security issued by a repackaging vehicle, the counterparty credit risk is eliminated. (Banks, 2006, p. 17)

OTC derivatives can be used to achieve various goals. For instance, instruments such as forwards, swaps, and options, whether standalone or embedded in other instruments/vehicles, can be used to (Banks, 2006, p. 17):

- hedge or transfer market and credit risks
- reduce capital allocation charges on particular risks

- establish a leveraged/unleveraged speculative position in an asset or market;
- diversify a portfolio;
- enhance the return/yield on a portfolio;
- create a customized asset/investment portfolio;
- rebalance the asset weightings in a portfolio;
- generate additional liquidity on an existing asset or liability;
- reshape cash flows, duration, and convexity;
- access an investment or funding market that may otherwise be restricted;
- monetize a gain on an asset;
- lower all-in funding costs;
- lock in future financing costs.

iii) Benefits of products

Synthetic derivative structures have emerged in a gradual and methodical fashion since the 1970s, as a result of various key market drivers. Eric Banks lists the benefits that the derivative strategies he selected in his discussion allow (Banks, 2006, p. 207):

- development of very specific risk management and/or investment management goals – the bespoke nature of the instruments and strategies is a direct function of the needs of end-users;
- creation of synthetic assets or liabilities to provide market access, lower funding costs, and/or enhanced returns;
- participation in markets that might otherwise be restricted by regulatory barriers, allowing end-users to express a desired view efficiently and securely;
- monetization of funding and asset strategies resulting from capital mobility and arbitrage conditions;
- implementation of multi-asset hedging strategies in the most efficient way possible.

The OTC derivative market is dominated by institutional dealing, with professional intermediaries and end-users accounting for the majority of all activity. Corporate end-users may be active from either a hedging or investment perspective. Aggressive institutional investors, including hedge funds and pension funds, tend to use the markets to create relative value, yield enhancement, and speculative strategies. Intermediaries that are responsible for developing and executing many of the end-user requirements utilize many of the same instruments and strategies to risk manage their own operations. (Banks, 2006, p. 207)

APPENDIX 2

Erik Banks discusses the control-related dimensions of each product in the complex array of risk, legal, and regulatory environment. Because of the limit of this study, I offer only risk control and regulatory capital dimensions of this framework. For further information, see Chapter 7 of his *Synthetic and Structured Assets*.

RISK and FINANCIAL CONTROLS

Institutions dealing with structured and derivative products on a regular basis must build and maintain a proper internal control framework that permits prudent management of risks. Internal controls can take various forms, but tend to relate primarily to credit and market risk management, independent financial and operational processing, and internal auditing. The combination of the three, working in a synchronous fashion, can create a more secure dealing environment and reduce the likelihood that an institution will sustain unexpected losses.

Market, liquidity, and credit risk management

Internal credit and market risk managers often serve as the “front line” of controls, enforcing a series of standards that are intended to keep an institution’s risk-sensitive operations in balance. Credit and market risk managers generally are involved in establishing limits and other controls for synthetic and structured assets (as well as other risky transactions) that link directly to an institution’s risk philosophy (i.e. the nature of the risk-related business it wants to engage in) and risk tolerance levels (i.e. the dollar amount of capital it wants to place at risk). The control framework may also include formal “new product” reviews that examine the structural nuances and risks of new instruments. Though the remit of most risk departments is often quite wide, we can summarize a series of minimum risk controls that should exist for those dealing in synthetic/structured products. The market risk framework requires:

- identifying all market risks impacting structured and synthetic products, including:
 - directional risk (equity, currency, commodity, interest rate);
 - basis risk;
 - spread risk;
 - volatility risk;
 - correlation risk;
 - curve risk;
 - liquidity risk;
- quantifying all risks arising from creating or purchasing structured and synthetic assets;
- establishing meaningful risk limits for the relevant risk exposure classes, with a direct link to the institution’s stated risk-tolerance level and the potential returns that can be earned;

- monitoring exposures on a continuous basis to ensure that exposures generated remain within an institution's risk-tolerance limits, and making adjustments as necessary;
- considering new products proposed by external parties or internal originators and ensuring they meet the institution's risk criteria.

Similarly, the credit risk framework requires:

- identifying all credit risk related to synthetic and structured assets, including;
 - counterparty credit risk;
 - issuer default risk;
 - correlated credit risk;
- quantifying all risks arising from the products;
- establishing limits for the net credit exposures the institution is willing to assume, and ensuring some relationship to the stated risk tolerance and the potential returns that can be earned;
- monitoring exposures on a continuous basis to ensure that exposures remain within an institution's risk-tolerance limits.

These types of process should be reviewed for efficacy on a regular basis (e.g. every year); they must be related specifically, and explicitly, through an institution's governance process. Reporting must be frequent and sufficiently detailed to provide directors, executives, and external parties with enough information on the firm's risk profile and its risk trends.

Internal financial and operational controls

Internal financial and operational controls exist in order to track and verify transactions that impact an institution's balance sheet, income statement, and cash flow statement. The duties of financial and operational professionals cross important boundaries that affect the front-, mid-, and back-offices, as well as executive management and external regulators.

Minimum internal controls should include:

- ensuring pricing feeds for synthetic and structured assets come from an independent source that cannot be manipulated;
- establishing reserves for products that appear impaired (e.g. illiquid, close to default);
- interpreting and implementing accounting policies related to structured products;
- making certain that the technology platform/trade entry screens include the entire population of daily dealings, in order to avoid any break/fails/settlement problems or financial fraud;
- reconciling activity and positions in order to generate a link to the firm's profit and loss (P&L) account, and its official books and records;
- gathering independent pricing valuations of synthetic and structured assets in the marketplace to ensure that the valuation policy the institution follows is equitable;

- creating independent risk management reports reflecting activities; these may be applied to risk limits supplied by the market and credit risk management departments;
- preparing executive management/board level revenue and risk reporting to demonstrate trends.

Internal audit

Virtually every major institution has some form of internal audit function to ensure the integrity of its operations. The typical audit function examines business and control units on a regular cycle, testing activities against established policies and procedures to ensure proper compliance and control. Deficiencies, weaknesses, shortcomings, or other potential problems typically are highlighted and elevated for resolution.

Units that assume or transfer risk through synthetic and structured assets should form part of the regular audit cycle. In addition, risk management and credit management units that promote the use of financial products must be reviewed regularly. Auditors focusing on synthetic and structured business must ensure the market and credit risk limits indicated immediately above are in force and effective in controlling exposures. Equally, they must verify the nature, quality, and accuracy of the pricing values/marks that the independent financial control units derive for the computation of daily P&L, position tracking, and books and records reconciliation. Any discrepancies must, of course, be resolved as a matter of urgency.

It is worth stressing again that much of this discussion is applicable to both financial intermediaries creating products and end-users (investors, issuers) purchasing/using the products. Though an end-user's processes may not be as extensive (given what is likely to be a much smaller scope of business), the same rationale and end goals apply, i.e. operating in a secure fashion with only a miniscule possibility of experiencing surprises or unexpected losses.

Regulatory capital

Activity in some [structured] products is driven by attempts to reduce regulatory capital allocations (e.g. capital relief). Regulatory capital is the amount of qualifying capital that certain regulated institutions must hold in support of risky activities; the capital buffer is intended to protect against unexpected losses (much as reserves are intended to cover expected losses). Such capital typically is comprised of equity (retained earnings and paid-in capital), preferred stock, and certain types of qualifying long-term debt. Note that internal capital (or management capital), driven by an institution's own assessment of its capital needs, operates on a "parallel" track: internal capital is intended to provide a similar level of support for unexpected losses, but the approach used to quantify the requirement is often different than the regulatory approach (primarily as a result of differences in modeling techniques, use of multiple legal entities, and consolidation, and so forth).

An institution generally seeks capital relief through the use of a structured or synthetic mechanism when it transfers risk. In the most straightforward instances, favorable capital treatment can be obtained when the true sale mechanism transfers an originator's assets (e.g. mortgages, risky bonds or loans), allowing a reduction in physical assets and the risk associated with such assets; this means capital need not be allocated against the transferred instruments. In synthetic transfers (e.g. those using CDSs or TRSs), the physical assets remain

on the originator's balance sheet but the risks are transferred out; this again results in capital reduction, as long as the transfer mechanism shifts the correct portfolio of exposures. It does not obviate the need to continue funding the physical balance sheet assets, but reduced regulatory capital is clearly in order as risk is reduced.

Apart from true sale or synthetic transfer of risky assets into a conduit, SPE, or trust, some institutions use the instruments to hedge existing exposures. In such instances, regulatory capital reduction may again be in order – though this depends ultimately on the structure of the product and the nature/efficacy of the hedge. In order to consider how this process operates in practice, let us consider credit derivative instruments that are designed to transfer credit risk of a reference between two parties. In a TRS (or CDS), an institution that obtains downside protection against a reference credit has exposure to the underlying reference credit and the counterparty providing the protection. Counting both exposures is, of course, unnecessarily conservative: if the reference asset defaults, the worst that can happen is that the institution buying the protection will lose some amount associated with the default (if its counterparty fails to perform on the TRS). In practice, the relevant risk link is to the TRS counterparty that is providing the protection – indeed, that is the reason the institution has arranged the transaction. Accordingly, capital must be applied against the counterparty exposure, but not against the reference asset exposure. This is only true, however, if the reference asset in the TRS and the institution's own trading book are the same, i.e. the TRS and reference are matched. In such cases, the institution can substitute the risk of the reference asset with the risk of the counterparty (which is almost certain to be of a higher quality credit). If the transaction is an offset but not a perfect match (e.g. the maturities are slightly different, or the seniority in the capital structure is different), then some capital relief is likely to be in order – but not the full amount. For instance, if the TRS has a shorter maturity than the reference asset, a full offset cannot be permitted. The reverse position can also be considered: the institution selling the protection needs to hold capital against the reference asset, but not against the counterparty. In instances where a high degree of correlation exists between the TRS seller and the reference asset, no offset may be permitted (e.g. a Turkish bank writing default protection on another Turkish corporate reference). The reasons for this are clear; default by the counterparty may occur at the same time as default of the reference asset if both parties are subject to the same local dislocation.

We can extend the discussion to structured notes. For instance, the issuer of a CLN (e.g. the buyer of credit protection) receives de facto cash collateralization from investors purchasing the note, and thus eliminates any capital requirement associated with either the reference credit or the counterparty risk elements. However, basis and maturity mismatches may still exist, suggesting that some amount of capital allocation may be required. Sellers of protection (e.g. the note investors) have exposure to the issuer of the CLN and the underlying reference asset; however, using the logic noted above, it needs only allocate capital against the greater of the two exposures. Similar processes can be applied to other types of structured assets, e.g. CDOs, CMOs, credit card ABS, equity-linked notes, and so forth.