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The Tight Grip of a Debt Based Global Economy:

A Study on Banking Regulation and the Implementation of the Basel II Accord in Portugal

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Executive Summary / Abstract

In our current state of events, namely in the aftermath of the crisis of 2008, we are witnesses of how quickly and widely the consequences of risky banking activities spread and contaminate the remaining sectors of the economy.

Therefore it is necessary to analyze how the banking industry is currently regulated and what changes are needed in order to make it more stable and reliable, thus avoiding similar crisis in the future.

This Work Project contributes to the literature on this subject but most importantly its purpose is to spark critical thinking and action on these subjects leading, hopefully, to improvements to the underlying economic system.¹

Keywords:

Banking; Basel II; Regulation; Crisis

¹ The views and findings expressed in this Work Projects are those of the author and not necessarily those of Nova University of Lisbon.

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Introduction

When Capitalism was first implemented in Western cultures, it was a symbol of personal liberty and freedom of enterprise based on economic individualism. Adam Smith (1776) called it “the obvious and simple system of natural liberty” and defined it as the economic system that most allowed individuals to give expression to their true desires according to human nature. Its basic premise is that the pursuit of self-interest would automatically organize the economy according to the interests of the majority².

This economic system allowed the market to freely decide in which direction it would progress towards. And given that human Nature is flawed, this system is not without flaws too. Therefore, since capitalism was implemented, the global economy grew exponentially as the result of market pressure which reflected human ambition.³

In what refers to the Banking Industry, banks needed to provide the liquidity the market required for this economic growth. So, the fractional reserve banking practice was created, which allowed banks to increase the money supply in the economy thus enabling all new ventures to take place, based on debt they issued. However, it was foreseen by several authors, such as Marx (1867) and Minsky (1986) that this system would be more prejudicial than benefic for the economy as a whole in the long term because the high rates of economic growth were unsustainable in a world with finite resources, thus it would lead unavoidably to a financial, economical, social and eventually an ideological crisis.

² The concept of the Invisible Hand describes the self-regulating nature of the marketplace. It was first employed by Adam Smith in the book IV, chapter II of *The Wealth of Nations*, and it is a result of action of forces present in the free trade market, such as self-interest, competition and supply and demand, which he noted as being capable of allocating resources in society. It is therefore, the basis of the laissez-faire economic philosophy.

³ For an extensive discussion of financial system design, see Thakor (1996) and Allen and Gale (1998).

The existence of Banks⁴

According to the economic model of Arrow–Debreu (1954) where markets are complete and frictionless, there would be no need for financial intermediaries such as banks, because investors and borrowers would be able to achieve efficient risk allocation on their own. This model, also researched by Modigliani and Miller (1958), only exists in theory due to the existence of financial market imperfections (deviations and frictions such as taxes, costs of financial distress, imperfections in the product markets, transaction costs and asymmetries of information). Therefore financial intermediaries are not only necessary but also valuable to our economic system in the perspective that they provide divisibility, risk transformation, capital liquidity and monitoring services (Bryant, 1980 and Diamond and Dybvig, 1983).⁵

In classic theories of financial intermediation, such as Gurley and Shaw's (1960), the main activity of intermediaries would be the transformation of deposits into diverse investments with lower risk than if the deposits were directly invested in the market. For example, a coalition of investors is able to build a more diversified portfolio, that is, one with lower risk than the portfolio each member would be able to build on its own. Contemporary theories of financial intermediation state that financial intermediaries emerge endogenously to solve the financial market imperfections mentioned earlier.⁶ These institutions arise to exploit such market imperfections for economic gain. In other words, financial institutions begin where the conditions for the application of the Modigliani-Miller theorem end because they are able to profit from an imperfect market.

⁴ Adapted from Santos, J. (2000), *A Review of Literature*.

⁵ See also Gorton and Pennacchi (1990) who derive a theory of financial intermediation based on the provision of liquidity services. Ramakrishnan and Thakor (1984) and Millon and Thakor (1985) provide explanations for the existence of financial intermediaries whose role is to produce information for resale.

⁶ For a review of earlier banking literature, see Santomero (1984). For a review of modern banking theory, see Bhattacharya and Thakor (1993) and Freixas and Rochet (1997).

To Merton (1995), banks profit through the process of resource allocation, more specifically, capital allocation. The fact that banks are able to decide which investments should be financed and which should be dismissed raises some criticism regarding the power resulting from banks being able to interfere with the direction which the economy progresses to.⁷ Capital allocated by banks has been increasing more in the last 30 years than any other time in history, this derives directly from the fractional reserve banking practice, where banks are able to increase the money supply (create money) by issuing debt but not necessarily creating the same amount of real economic value. Critics, such as Fisher (1906), Knight (1999) and Friedman (2002), find it problematic that banks are able to “create money out of nothing”⁸, or without adding an equal amount of real value to the economy. In fact, banks do not really “create money out of nothing” because they create it against an asset. But that asset could be only a promise to pay back a debt. This may lead to financial bubbles in case the debts are not repaid. For example, the recent sub-prime crisis in the housing market was created mainly from financial institutions miss-assessing the value and risk of properties, bundling them together and re-selling them as securities not accurately graded thus creating a bubble which burst when borrowers were unable to repay their home mortgages (Morgenson, 2007).

The practice of fractional reserve banking, currently applied by banks' require banks to only keep a fraction of their deposits in reserve and are allowed to lend out the rest, while maintaining the simultaneous obligation to redeem all their deposits upon demand (Golin, 2001). This practice is universal in our banking system, it completely replaced the full-reserve banking practice previously in use and it has proven to have

⁷ See Berger, Herring and Szegö (1995) for a discussion of the various roles of capital in banking firms.

⁸ “The modern banking system manufactures money out of nothing. The process is perhaps the most astounding piece of sleight of hand that was ever invented. Bankers own the Earth. Take it away from them but leave them the power to create money, and, with the flick of a pen, they will create enough money to buy it back again. (...) If you wish to remain slaves of Bankers and pay the cost of your own slavery, let them continue.” Sir Josiah Stamp, president of the Bank of England, 1928.

several benefits for the modern economy, the most important one was providing higher liquidity to the market which is the main element that allowed our economy to grow so quickly since the use of this practice. But there are also several negative effects, the most evident and already mentioned effect is that the increase in money supply does not reflect an equal increase in real value but only an increase in debt.

The following figure I (detailed in annex 1) show the increase of global debt from 1980 to 2008 and the increase of global money supply from 1970 to 2008.

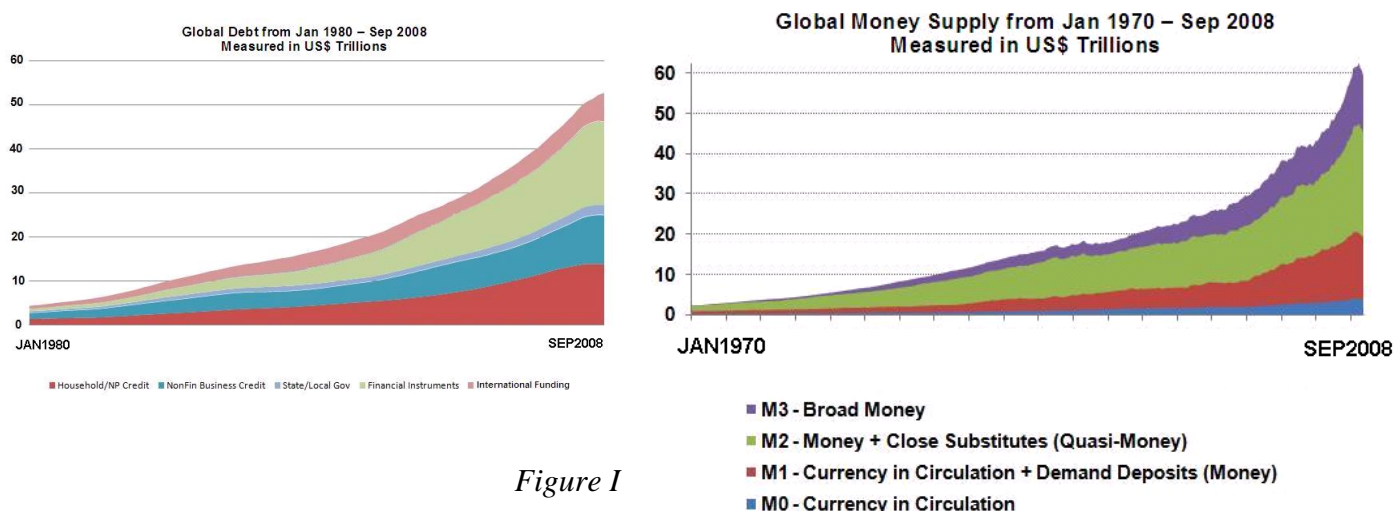


Figure I

From figure I we can clearly verify the reason that led many researchers to denominate our monetary system as a **debt based monetary system**, there is a direct relationship between global debt and global money supply. Critics of fractional reserve banking claim that the system is inherently destructive and inevitably generates debasement of currency, extreme inequality due to enlargement of the gap between classes, increase countries fragility to financial speculation and periodic economical crisis, which will continuously escalate in size and impact (Marx, 1867). The virtually unlimited growth in the money supply leads to unsustainable financial bubbles in capital markets, because the market reacts to speculation by adjusting financial value to reflect real value created in the economy.

To Douthwaite (1999), as the money supply grows, the economy becomes increasingly indebted due to the fact that debt grows in parallel with money supply, and increasing interest payments are needed to repay the debt, requiring future generations to continue to pay debts contracted from the previous ones. To some, this implies that debt must grow exponentially in order for the monetary system to remain solvent thus being virtually impossible to be repaid.⁹ According to Rowbotham (1998), this system creates other severe externalities. He argues that inflationary exponential growth in the economy discourages savings because money is continuously decreasing in value, therefore individuals have an incentive to spend more before their money is affected by inflation thus consuming more and keeping our economy running, which leads to environmentally damaging and unsustainable over-consumption hence depleting natural resources of our planet in the long term. “The world used debt to accelerate its consumption. Spending that would have taken place normally over a period of many years was squeezed into a relatively short period because of the availability of cheap borrowings.” (Satyajit Das, 2009) Rowbotham argues that the indebted are forced to induce new consumers to spend their way into debt, in order for existing loans to be repaid with new debt-created money, therefore creating a never ending debt cycle.

To some economists, such as Minsky (1986), this system continuously fosters new debt consumers, which brings more liquidity to the market provided by the money supply continuously created but also leads to inflated financial products that do not reflect real economic value causing financial bubbles to occur. Once these bubbles burst, banks are able to harvest a large number of assets through widespread foreclosure or bankruptcy. Some critics argue that in the long term banks will be able to hold debt on

⁹ “We are completely dependent on the commercial banks. Someone has to borrow every dollar we have in circulation. If the banks create ample synthetic money we are prosperous; if not, we starve. (...) When one gets a complete grasp of the picture, the tragic absurdity of our hopeless situation is almost incredible. It is the most important subject intelligent persons can investigate and reflect upon.” Robert H. Hemphill, Credit Manager of the Federal Reserve of Atlanta during the Great Depression, 1934.

all existing assets due to the exponential nature of fractional reserve banking. Under our current debt-based monetary system, banking institutions are able to hold a tight grip on the economy through financial dependence, for example, the case of Greece in 2009 / 2010 shows how governments are affected by the decrease of credit availability. In this case Greece got under severe social pressure and life conditions deteriorated considerably due to the fact that the government did not have access to international funding to be able to maintain its public services functioning properly. This example is evidence to the level of dependency our economy has on money supply originated by debt.

But this practice is so widespread that our current economy grew based on this easily accessible money supply that financial intermediaries became the financiers of all other productive activities, and it would be impossible to change the fractional reserve banking without dramatically changing the way our economy functions.

As a result of fractional reserve banking, risk in the system is bound to rise causing the system to be increasingly unstable due to the increase of money supply without an equal increase in real economic value. Regarding banks, the main risk banks incur is credit risk¹⁰ when they issue loans, if it is not properly assessed and a large amount of borrowers are not able to repay their loans then deposits could not be assured and the entire system would suffer on a large scale. This is why correct credit risk assessment is of vital importance for our economic system to continue to function properly

¹⁰ “Credit risk arises because banks’ customers or counterparties may not be willing or able to fulfil their contractual obligations.” Barclays bank, annual report, 2000

Trust: the key element

The fact that in fractional reserve banking a bank is required to keep a reserve of its deposits is going to constrain the amount of money creation that occurs in the banking system, and guarantees that banks have enough available capital to meet normal demand withdrawals. Problems may arise when the demand depositors would attempt to withdraw more money than the bank has in reserves, leading to a bank run or when problems are extreme and widespread a systemic crisis may occur. The event of a bank run may cause the bank to suffer a liquidity crisis and to perhaps default. To mitigate these problems, central banks generally regulate and oversee commercial banks; they insure the deposits of commercial banks' customers and also act as lenders of last resort.

An analysis of a bank run indicates that depositors will only cause a bank run when they have a genuine fear of loss of capital.¹¹ For this reason trust by the public is of the utmost importance for the banking system, and it is ensured by the two following main premises:

- 1. Depositors assets protection**
- 2. Security, efficiency and widespread acceptance of the payment system**

The **first point** is ensured by central banks regulation which ensures that banks do not engage in activities with a level of risk that jeopardizes depositors assets. Banks must not make too risky investments, given that the stability of the entire system relies on trust. The recent crisis of 2008 shows the scale of consequences that arise from investment decisions with a high level of risk. To Peter Mottek (2009), CEO of Barclays Bank, Banking needs to go back to basics, it should only make investments which it understands and it should have a more conservative position regarding the market. Banks should, in this perspective, have an accurate method to measure the risk they

¹¹ See Calomiris and Gorton (1991) for a review of the literature on bank panics.

incur when they issue a loan (credit risk) thus assuring that the loan will be repaid and the debt based system may be able to continue to function properly.

The **second point** refers to the payment system, in modern society all currency is fiat currency meaning that money is no longer backed by a real asset, such as gold or silver. Money does not represent any real value except debt of another party. The only tangible aspect of the monetary system is the borrower's promise to pay back the loan plus an interest. Debt and the ability of borrowers to service that debt becomes currency itself, which is represented by the bills and coins we use and are widely accepted as legal tender. The payment system is therefore also very dependent on trust.

For these reasons, a collapse in confidence in the solvency of the banking system is the most feared issue the banking system faces.

Defining the Problem

“Where do banks get the money to lend? They get it [mostly] from people who open accounts. Banks act as go-betweens for people who save and people who want to borrow. If savers didn't put their money in banks, the banks would have little or no money to lend. The money doesn't belong to the bank's president, board of directors, or stockholders. It belongs to you and the other depositors. **That's why bankers have a special obligation not to take big risks when they make loans.**”¹²

As presented in the citation above, a problem arises when banks do not manage credit risk effectively. When a bank issues a relatively high amount of loans and does not hold a necessary reserve to guarantee its solvency it immediately decreases the confidence consumers have in it.

¹² Quote from the *Banking Basics* booklet, published by Federal Reserve Bank of Boston, 2007.

Therefore banks need to be regulated in order to prevent the externalities derived from banking failures. This is the problem, to ensure that banks do not engage in increasingly riskier activities and that they act in the best interest of all its stakeholders (John and Saunders, 1994) in order to maintain trust in the banking system thus preventing its collapse.

According to Boyd, Chank and Smith (1998) the stability of the banking system must be assured through regulation.

Banking Regulation

To Santos (2000), the need for banking regulation results from the existence of market failures, he presents two main arguments to justify the need for banking regulation, systemic crisis and the impossibility of depositors to monitor bank operations. To Freixas and Rochet (1997), the main argument resides in the need to assure a safety net that allows the protection of depositors' assets from a risk or failure on the banks side.¹³

In economic terms, there is a consensus regarding the fact that the failure of a bank may trigger contagious externalities to the remaining economy¹⁴ but there is no consensus regarding the real reason why banks need to be regulated and, as such, there are doubts and several proposals referring the optimal way they should be regulated.

Some authors, such as Briones and Rockoff (2005), favor the absence of regulation as the optimal scenario, the so called free-banking¹⁵, stating that the invisible hand would allow the banking industry to regulate itself, reaching efficiency. The main

¹³ See Goodhart et al (1998), Chapter 1, for other rationales on banking regulation.

¹⁴ Aghion, Bolton and Dewatripont (1999) show how the failure of one bank may trigger a contagious run on other banks in a model with multiple competing banks and an interbank market.

¹⁵ See Dowd (1996) and Benston and Kaufman (1996), who dispute of the arguments often presented in defense of bank regulation.

criticism to this approach is that given the vital role of banking institutions in our economy, severe externalities would arise in case they were to fail.

Other authors, such as La Porta, 2002 and Dougherty, 2008, favor the very opposite, a state owned banking system, considering banking a public service such as health or education. But the majority of authors defend the in between solution, privately owned banks and state owned banks competing in a free market but both subjected to heavy regulations.

Section Transition Remarks

In the first section of the Work Project, a bibliographical review of the main positions and theories regarding the banking system was made, presenting the concept of bank and the main practices used by banks in modern economy. This section also presented the main arguments regarding the need for banking regulations such as, market failures and asymmetries of information. The miss-management of the credit risk a bank incurs as a result of its operations may result in extreme externalities for not only to the economy but also to society as a whole which is the main reason for the need of its accurate regulation.

The most up-to-date regulations regarding credit risk are specified in the Basel II Accord, which will be the focus of the next section of this paper.

Global Historical Evolution towards Basel II Accord

Basel I

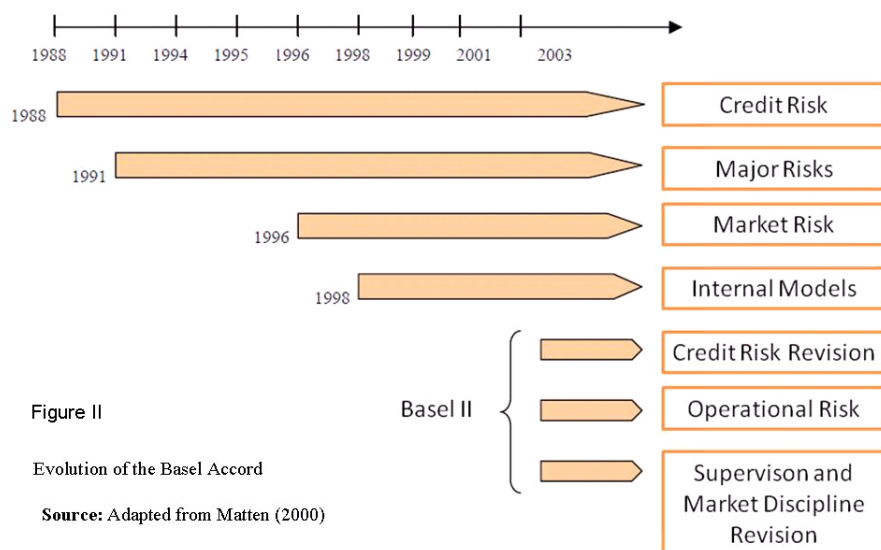
With the end of the Great Depression of the 1930's, concerns about the supervision and regulation of the banking system became increasingly present. According to Kapstein (1994), several banks established measures to guarantee their performance even in times of systemic shocks. Despite this, the **globalization of markets** translated into the fact that institutions of one country would have impact in institutions of another country. In this way, internal regulators (national) would see their power restricted. This, associated with the **bankruptcies in the banking industry** occurred in the 70's (Herstatt Bank, Germany; British-Israel Bank of London, UK and Ambrosiano Bank in 1982), caused the concept of globalization to be associated with liquidity and solvency problems of banks which operated in more than one country.

The **creation of new financial instruments**, namely asset securitization which is the tool by which traditional banking assets and credits which have a collateral associated (such as a mortgage) are transformed into transactionable bonds allowing a bank to transfer the risk associated with the underlying credit, increasing the number of counterparts in banking operations which ultimately made it more complex and difficult to accurately assess the risk of banking operations.

According to Goodhart, Hofman and Segoviano (2004), these three factors, the **globalization of markets**, the **economic crisis occurred in some countries in the 70's and 80's** and the **increased complexity of the banking industry** reinforced the necessity of intervention and supervision measures at an international level. In this

sense, the Basel Committee¹⁶ was created, and it gathered for the first time in 1975 in the Bank of International Settlements (BIS) in Basel. Its main goal was to mitigate the differences between national supervision systems and to improve their quality by developing new supervision approaches, and also revising the economic capital requirements¹⁷ that would ensure the solvency of the banking system.

The Basel Committee published in July 1988 its first document that attempted to standardize capital requirements for banks in G10 countries, the **Basel I accord: International Convergence Measurement and Capital Standards** (BIS I). This accord introduced minimum capital requirements of 8%, weighted by the credit risk a bank incurred (Risk Weighted Assets, RWA). The credit risk was measured using a standard method indifferent for all banks and external to them. During the implementation of BIS I and due to market changes and adaptations, the accord suffered continuous amendments leading ultimately to the creation of a Basel II accord, which are summarized in the figure II (for a more detailed timeline see annex 2):

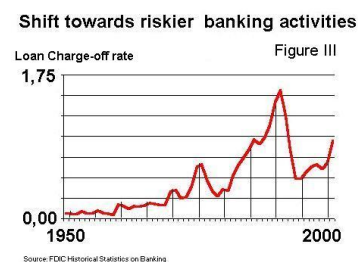


¹⁶ Basel Committee on Banking Supervision (BCBS), created in 1974 inside the Bank for International Settlements (BIS), and established by the central-bank Governors of ten countries (Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Spain, Sweden, Switzerland, United Kingdom and United States), provides a forum for regular cooperation on banking supervisory matters. (BIS).

¹⁷ “Economic Capital is the capital banks set aside as buffer against potential losses inherent in a particular business activity, [considering] how much risk an individual transaction contributes to the bank’s portfolio of risks.” (KPMG, 2004).

Unexpected events resulting from Basel I accord

Financial institutions increased their risk appetite.¹⁸ BIS I implemented risk weighted capital requirements therefore financial institutions pursued alternatives investment options with higher risk but which enabled them to maximize their return without increasing the need for higher capital reserves (see figure III and annex 3 for the detailed graph).



Credit Crunch. The introduction of BIS I capital requirements led to a credit contraction due to decrease of liquidity by financial institutions which resulted from the immediate increase in capital reserves held by banks.

Asset securitization on a mass scale.¹⁹ Under BIS I banks automatically reduced their revenue, this resulted from the fact that they had less liquidity available to issue loans and make investments, therefore banks created increasingly complex products which grouped several loans into bundles and separated them into bonds, rated by recognized rating agencies, thereafter they were placed in the market to be purchased (Berger, 1995). These bonds allowed banks to receive additional revenue from their loans. In 2008, the credibility of these recognized rating agencies suffered a blow when the sub-prime bubble burst.

Artificial decrease of risk and risk avoidance strategies. Matten (2000) defends that, under BIS I regulations, banks had an incentive to reduce their risk in order to be able to provide more competitive credit conditions to customers. Banks achieved this

¹⁸ Blum (1999) shows that capital regulation may lead to an increase in bank's riskiness but in a dynamic framework. This allows for the consideration of capital standards' intertemporal effects. If it is too costly for the bank to raise equity to meet higher capital standards tomorrow, an alternative is to increase risk today. As Dewatripont and Tirole (1993) also show, it is possible theoretically that risk-based capital reserves will induce greater risk-taking. Once the capital requirement, bankers may respond by taking greater risk in an attempt to earn their 'required' return.

¹⁹ "Basel I is not about risk, it is about costs, in fact, a particular class of cost, the one associated to compliance to regulations. What matters is that regulatory costs should be roughly similar among banks operating in the same (international) markets. Competitive success should be a matter of private virtues, not of regulatory advantages. In fact, ironically, Basel I itself stimulated banks to shift their activities towards securities markets to reduce the burden of compliance with regulation." Carvalho, 2005.

through securitizations and the use of derivatives which artificially decreased their overall risk by offering financial collaterals and by passing the risk on to investors but it did not represent a real reduction of risks in the overall financial system, on the contrary, the existence of more counterparts increased the uncertainty and the probability of one of them defaulting.

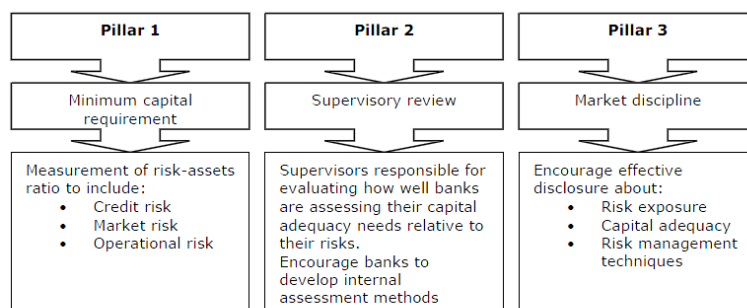
The New Basel Accord

Even though BIS I was widely implemented (over 100 countries by 2006) it did not achieve its main goal of making the whole financial system stable and solvent. Following the distortions created by the Basel I Accord in 1988, as well as the financial market transformations which made the risk profile of financial institutions increasingly complex. The Committee became continuously concerned with the negative effects that a potential failure of one bank would have in the economy as a whole, due to counterparty contagion. So in June 1999 the Basel Committee made a full scale revision of the accord, which was improved in January 2001 and again in April 2003. The Basel Committee published a final version of the accord which was officially titled **“International Convergence of Capital Measurement and Capital Standards: A Revised Framework”**, this accord had two approaches for capital requirements, a revised standard approach which banks had to implement until the end of 2006 and an Internal Rating Based (IRB) approach which banks were allowed to implement starting in January 2007²⁰.

²⁰ The table in annex 4 shows the main differences between Basel I and Basel II accord.

Basel II

The Basel II Accord has the following overall structure (detailed in annex 5):



Source: Casu et al. (2006) p. 187

Figure IV

The core pillar, Pillar 1, refers to capital adequacy requirements, the topic covered by BIS I. BIS I obligated banks to hold 8% of capital in reserve, this reserve was mandatory for all banks in order for them to be compliant with BIS I and it was decided externally to banks, not analyzing the specific risk each bank incurred.

In Basel II, “three methods are proposed to calculate capital requirements according to the credit risk effectively accepted by a bank. The standard method is an improvement over the 1988 table of credit risk. Instead of pre-assigning arbitrary risk weights to classes of assets, they shall be set according to evaluations of risk made by rating companies or other institutions empowered to do this kind of assessment. The other two methods involve risk evaluations prepared at least in part by the bank itself, and are called Internal Risk Based (IRB). The foundation IRB method allows banks to use as inputs to the calculation of capital requirements their own estimates of the probabilities of default for each class of assets. The other necessary inputs in the case of the foundation approach are to be supplied by the supervisor. The advanced IRB

approach, in contrast, allows the bank also to use its estimates of losses and exposure given default as inputs in the calculation of capital coefficients.”²¹

The IRB approach requires a bank to possess in house risk assessment expertise and overall financial sophistication. Under the IRB approach, banks with lower risk portfolios (e.g. AAA credit risk rating) will be able to hold less reserves and free more capital, which is their incentive to implement it (a practical example of how the capital reserves for a 100€ deposit vary under the different approaches is available in the table in annex 6).

Besides the credit risk and the market risk²², the Basel II Accord recognizes the importance of operational risk²³. However the degree of guidance in measurement of this risk is far below the level of complexity for the calculation of the credit risk.²⁴ Nevertheless, the inclusion of operational risk is a fundamental improvement over BIS I, given that operational risk events are not frequent but when they occur they are often of considerable proportions. Although contemplating more risks in the calculation of capital reserves held by banks, Basel II still does not reflect the full scale of risk incurred by banks. Hence, some critics argue that under Basel II, the financial system will never be stable and moreover it will bring a false perspective of safety because banks will have reserves, but these will not guarantee their solvency.

²¹ For a more extensive description see the full working paper by Carvalho, 2005.

²² “Market risk is defined as the risk of losses in on and off-balance-sheet positions arising from movements in market prices. The risks subject to this requirement are: i) The risks pertaining to interest rate related instruments and equities in the trading book; and ii) Foreign exchange risk and commodities risk throughout the bank” (BCBS, 2006, pp. 157).

²³ “Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputation risk” (BCBS, pp. 144).

²⁴ The level of complexity of the calculation of credit risk reflects the weight it has on banks’ capital requirements. For example, in Portugal credit risk capital requirement represented 90,2% of total capital requirement by 2008. As can be seen in the table in annex 7.

The Pillar 2 of the accord refers to Supervisory Review which “is intended to ensure that banks have adequate capital to support all the risks in their business. (...) Supervisors are expected to evaluate how well banks are assessing their capital needs relative to their risks and intervene, where appropriate.” (Basel II, 2006). Even though Basel II contemplates a supervisory review, supervisors will not be able to accurately evaluate if the models reflect the risk banks incur and that the resulting capital amounts are adequate because the models used by banks are generated internally and likely to be too complex and opaque for external supervisors to monitor.

Nevertheless, Pillar 2 envisions that banks will pursue more stable positions and assure their solvability by reducing the overall risk they incur. By doing this, banks will be able to lower their risk rating thus being able to hold smaller capital reserves and therefore offering credit products at more competitive prices. If banks start to deviate from stable positions and do not ensure their solvency there are sanctions in place, but the purpose of these sanctions is not to punish the banks, but to provide incentives for bankers to turn the bank around and return to stronger and more stable capital positions.

The final pillar, Pillar 3, is intended “to complement the minimum capital requirements (Pillar 1) and the supervisory review process (Pillar 2) [and] to encourage market discipline by developing a set of disclosure requirements which will allow market participants to assess the capital adequacy of the institution” (Basel II, 2006). Given that the determination of capital requirements involve internal models and, as such, are less transparent it became necessary to allow the market to have access to more information regarding banks operations. Market participants can be key allies of the regulators by penalizing institutions that take excessive risks. For market discipline to be effective, however, market participants must be adequately informed about the risks banks are taking. Therefore banks must make available information regarding risk

management methodologies, capital reserve levels and portfolio risk analysis. Although what is promoted by this pillar, the goal of transparency is not achieved because Basel II does not contemplate accurately all risk incurred by banks so the information provided by banks will never reflect all risk they incur.²⁵

The Portuguese Case

The Portuguese financial system is significantly exposed to the risks of global financial instability. Firstly, the Portuguese economy financed, since 1974, a considerable portion of its expansion by resourcing to international credit markets. Which increased the liquidity available in the Portuguese market, and people started changing their habits by resourcing more to debt for the purchase of goods and services.²⁶ Due to this fact, the Portuguese population has suffered a decrease in private financing capacity, which has direct consequences on the standard of living of the population given that they are continuously indebted making it difficult to break free from the debt cycle.²⁷ Secondly, the Portuguese financial system develops its activity integrated in an open economy, with strong exposition to external factors. In this way, disturbances in the international financial system and a global debt contraction affect severely the functioning of the Portuguese economy.

Given the tendency of resourcing to credit for investments and purchases, the Portuguese economy became increasingly indebted. Consequently, as in any system based in debt, the market adjusts periodically to reflect real economic value created in

²⁵ Llewellyn (2001) suggests in the Theory of the Second Best that accurate risk assessment is achievable only in theory. Therefore capital requirements will never be able to make banking fully stable due to the ever present uncertainty in the market. Hence, he proposes a solution which focuses on the strengthening instead of Pillars 2 and 3.

²⁶ The graph in annex 8 shows an increase in private debt as a percentage of income from approximately 80% to 140% during the period 2000 – 2008.

²⁷ The graph in annex 9 shows the decrease in Portuguese private financing capacity, savings and investments during 1995 – 2008.

the economy. These adjustments, lead unavoidably to credit contractions which cause the default rate on credits to increase. During the period ranging from 1999 to 2009, credit default rate in the Portuguese private sector increased roughly from 1,9% to 5%.²⁸

Having this scenario of increased credit risk, the Bank of Portugal enforced the implementation of Basel II regulations in order to make banks'²⁹ capital requirements reflect accurately the risk they incurred, thus reducing the credit risk and consequently the credit default rate. This would allow the debt based monetary system to continue to function properly, but several questions arise from this solution:

- Can a consequence of this mean that banks will own an increasingly higher number of assets resulting from periodical market adjustments and credit contractions?
- Is this not just a temporary solution given the fact that the foundation of the system is prone to further crisis?
- Will this solution increase the gap between economic classes due to the fact that banks will only have incentives to give credit to good rating borrowers?

Nevertheless, capital requirements are extremely important for immediate financial stability, given that they reduce the possibility of a failure in the banking system. In effect, the cases of banking insolvency registered in the past translated in high costs for tax payers and accentuated economic instability, with reflexes such as increase of unemployment rates. In this context, the Basel II accord started to be implemented in Portugal.

All banks operating in Portugal were compliant with Basel II's capital requirements standard approach by 2006.³⁰ But this, approach did not represent a

²⁸ See annex 10 for evidence of the credit default rate increase.

²⁹ For a definition of Bank used in Portugal see annex 11.

³⁰ Annex 7 shows that by December 2008, still 100% of capital requirements for Portuguese banks were calculated using the standard approach.

significant improvement over BIS I approach given that credit risk was still assessed externally from banks. However, the IRB approach represented a considerable improvement regarding risk assessment because it allowed banks to assess risk internally. Nevertheless, some critics argue that the IRB approach requires an extremely high level of sophistication of the internal systems used by banks and that it is too complex to be monitored. (Carvalho, 2005)

The Espírito Santo Financial Group (ESFG) was the first banking group in Portugal to be authorized by the Bank of Portugal to start applying the IRB approach for risk assessment. Bank of Portugal considered the group fully compliant with the IRB approach on March, 2009, this includes, on an individual level, Banco do Espírito Santo, Banco do Espírito Santo Investimento, Banco BEST and Banco do Espírito Santo dos Açores. Banco Comercial Português was authorized to apply the IRB approach shortly after, and currently Barclays Bank Portugal and Caixa Geral de Depósitos are undergoing the IRB approach implementation process.

Banks have an incentive to implement the IRB approach because this means that they are able to hold smaller capital reserves, thus freeing up more capital and therefore being able to offer better pricing conditions on their products and be more competitive regarding other banks. This is their main objective, but for the Bank of Portugal the main sought after effect of the implementation of the IRB approach is that banks will have more conservative positions regarding risk thus making the Portuguese banking system more stable as a whole.

Final Conclusions

Following the Basel II Accord publication and implementation, the main direct impacts it had in the banking industry were:

From Pillar 1, Basel II gave the stimulus for banks to create sophisticated internal risk assessment models thus not relying on external rating agencies (Gouveia, 2010). This increased the sensitivity of risk assessment. Nevertheless, given the crisis that begun in 2008, some banks state the models are already obsolete and therefore the high cost of implementing them does not make economic sense. Another argument against Pillar 1, is the fact that it is procyclical.³¹

From Pillar 2, banking institutions (i) mobilized more resources to analyze the risks they incur; (ii) measured more accurately the impact of potential losses arising from those risks; and (iii) resorted to risk mitigation instruments.

From Pillar 3, a higher level of banks' information was made available to the markets, thus making banking more market responsive due to market pressures. But the goal of increasing trust and credibility in the banking system was not fully achieved.

Basel II implementation and all banking regulations, for this effect, have ramifications that reach far beyond the community of large banks, it affects the way banks finance all other productive activities and private individuals. Given the scale of implications that banking regulations have, in my opinion there are three key objectives to be addressed: (i) improve the role of strong independent supervisors³²; (ii) create simpler, broader and up-to date regulations; and (iii) create crisis management systems

³¹ Procyclicality refers to the exaggeration of upturns and downturns caused by the changes in capital reserves as a result of considering that there is less risk in the market in growth phases thus decreasing the capital reserves held by banks and fuelling the growth. And the opposite happens in a downturn, when banks hold higher reserves thus accelerating the effects of the crunch. (Gordy, 2004).

³² In my opinion, regulators and supervisors should be independent and operate having benefits for the community as a whole in mind, and not subjected to pressures from the banking industry.

that define ex-ante the procedures and role of all intervening elements during a crisis thus avoiding costly emergency bailouts.

Moreover, debates and most importantly action, should take place to shape a new economy with a structure provides more benefits than externalities to the society as a whole. Political bodies must be imbued with economic knowledge and comprehension that enables them to create policies which control money and credit in a sustainable way.

“We have to inform people that (...) money can be their master, or money can be their servant. People can be sovereign, or they can be slaves. Right now we are slaves to a debt based money system”³³

Recommendations

When I first started to learn how our economy worked, I was quite puzzled, astonished and skeptical. I realized that something was deeply wrong with the core foundation of our economic system. Perhaps in a way similar, to when Galileo started to compare the geocentric model, widely accepted in his period, against his telescope observations, which proved him that the model was wrong and Earth was not at the center of the Universe. We may be alluding ourselves in believing that our economic system and the standard of living it accustomed us to, will prevail forever.

Sigmund Freud once said that “illusions commend themselves to us because they save us pain and allow us to enjoy pleasure instead. We must therefore accept it without complaint when they sometimes collide with a bit of reality against which they are dashed to pieces.” The global crisis was the reality on which the fake pleasures of a debt

³³ Speech given by Connie Fogal at the Bromsgrove Group conference on monetary reform, 2004, United Kingdom.

based economy were smashed (Das, 2009). This crisis is an economic and financial process that cannot be easily undone. It is an about face resulting from the pyramiding of debt over decades and continuous economic unsustainable expansion. It may be the climax of capitalism that Marx (1867) theorized about, after which will come times of extreme economic and social duress. But can there be a solution, or must the system we currently operate in be deeply changed?

A solution for this crisis may encompass some similar measures applied during the Great Depression of the 1930's. This solution derives directly from the law of the *Survival of the Fittest* (Darwin, 1864) applied to economics, "where in an economic downturn the declining business simply fail and economic resources are reallocated to successful businesses so that the winners get the economy going again."³⁴ This basic principle provides enough incentive for a capitalistic economy to function. However, the problem is that, under this system, banks inevitably will focus in remaining competitive due to the existing profit incentive. La Porta, 2002 and Dougherty, 2008 suggest that banks should, therefore, not be part of the free market given the importance of the traditional services they provide have in our economy³⁵. They should, therefore, be a state provided service similar to health or education. Their function should be to satisfy public needs regarding banking services, and not be a burden to our existence. This may be an extreme approach, but given the proportions of the crisis, it is worth analyzing more thoroughly.

³⁴ Reizner, John in U.S. Economic Future: May We Lose Complete Control over our Destiny, 2009

³⁵ A very simple explanation of the role of banks in our economy is provided by : "The core job of our financial system is to convert your savings into investments. When it works well, you deposit money in the bank and the bank lends that money to a factory, which builds a new line that employs your cousin, who then has money to put in a bank, which then funds some high-tech start-up that comes up with some new innovation. This process is amazing [when] it works very well.

As Mottek (2009) suggests, banking needs to go *back to basics*. Basic banking services should be ensured by the state and other riskier banking activities, (such as hedge funds, financial products market investments) which only create financial value and not real economic value, should be separated from traditional banking. Traditional banking should be limited to their initial activities (such as holding deposits, and issuing loans). They should not be permitted to invest in the financial products markets. By employing this measure, if an investment bank were to fail, it would not contaminate the traditional banking system thus not requiring a public bailout to ensure depositors assets. On the other side, free market would make investment banks efficient, penalizing whoever would be responsible for gross negligence because their positions would no longer be ensured by public bailouts for *too big to fail* institutions.

Nevertheless, it does not matter how many measures we implement, we will not regain control over the global economic system if we first do not regain control over our personal finances. If we reduced our personal need for debt, banks would never have gained the weight they possess in our economy. Ever since credit has been made easily available through fractional reserve banking, consumption has experienced an unmatched increase. But since the money supply growth was purely of a financial nature the market was bound to adjust to real economic value.³⁶ The vision of Capitalism was freedom of enterprise for all and a self-regulating market that would satisfy all the needs of society, but it led to an undesired result, a debt based global economy which holds a tight grip on human life.

I believe that the only true solution is not to focus on constant economic growth, and implement policies towards a more slow paced, reasoned economy. We need a

³⁶ Under our current economic system, it is believed that strong employment, low inflation and increasing consumer spending will keep the economy growing. But this growth is merely monetary and it does not encompass quality of life, more time with our loved ones or healthier lifestyles. In my opinion, the more we consume, more natural resources are needed to meet our demand which translates into deforestation, higher concentration of CO2 in the air we breathe and in general, a planet in worst condition.

monetary system that does not rely on debt. This means of course, reducing consumption rate, because there will not be the same levels of liquidity in the market as before. Therefore this solution must begin with a change of lifestyles.

Perhaps, the foundation of capitalism, the profit incentive and growth driven mindset should be put into question and a possible replacement could be a **sustainability driven mindset**. But any change that is to take place must start with each one of us, if we change our World, the World will change.

Are you part of the solution, or are you part of the problem?

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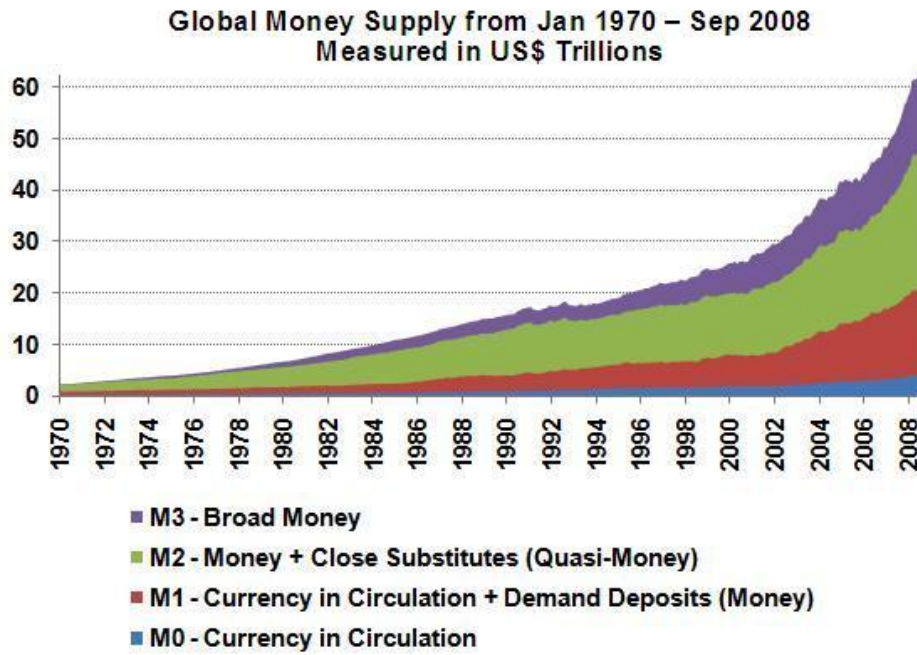
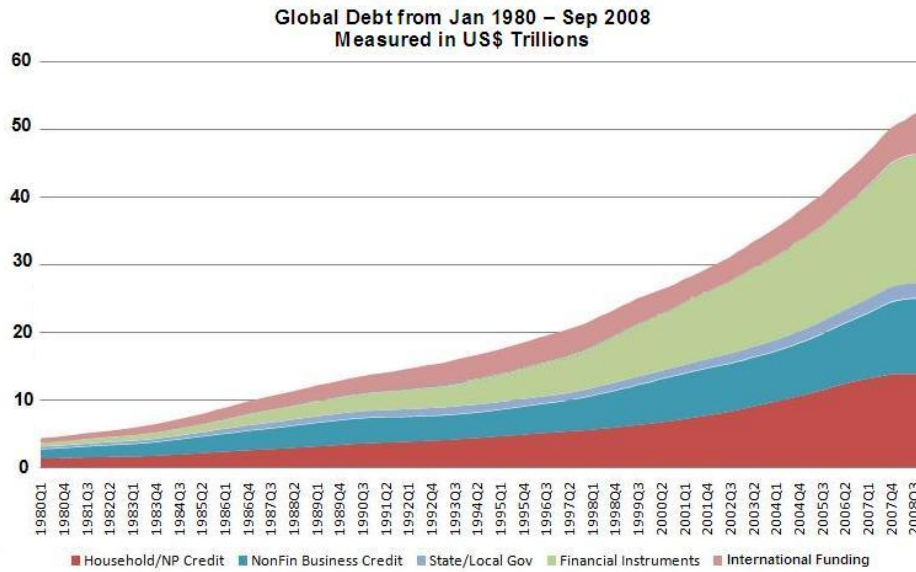
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Annexes

The annexes are not essential for the comprehension of this Work Project. They serve the purpose of presenting additional information to specific points in the Work Project.

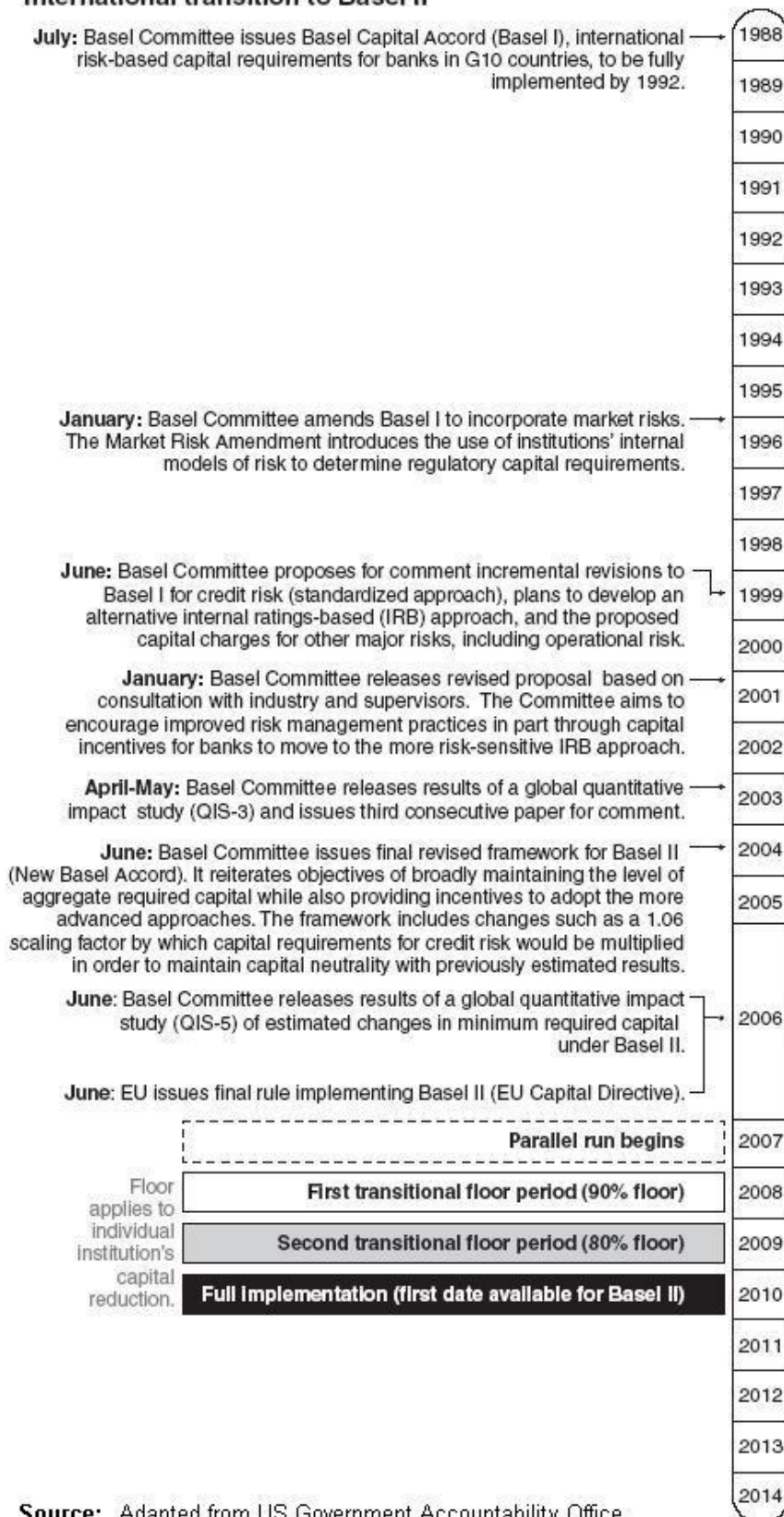
Annex 1: Global Debt and Money Supply relationship

Source: Adapted from Federal Reserve of the US, Data Series Quarterly



Annex 2: Basel II Timeline

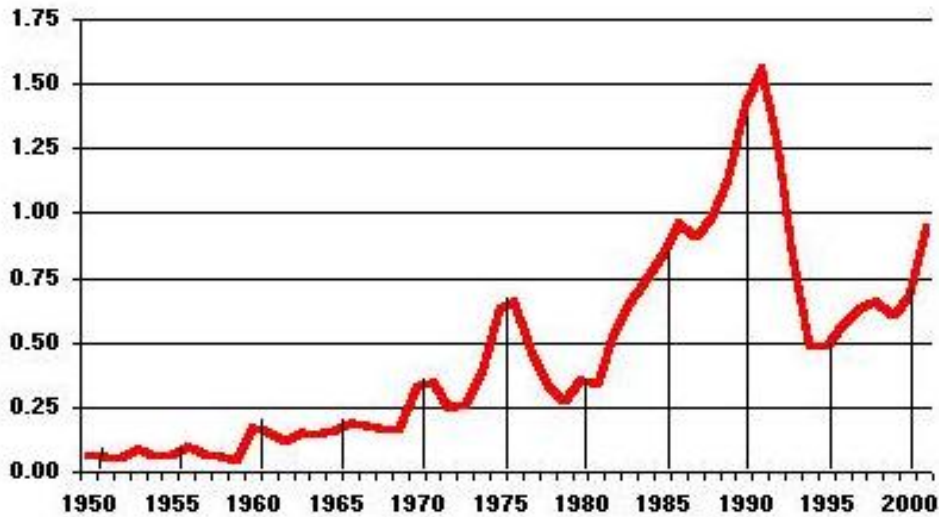
International transition to Basel II



Annex 3: Tendency towards riskier banking activities

Rising Loan Losses Reflect a Gradual Shift to Higher Credit Risk in Banking (FDIC-Insured Commercial Banks)

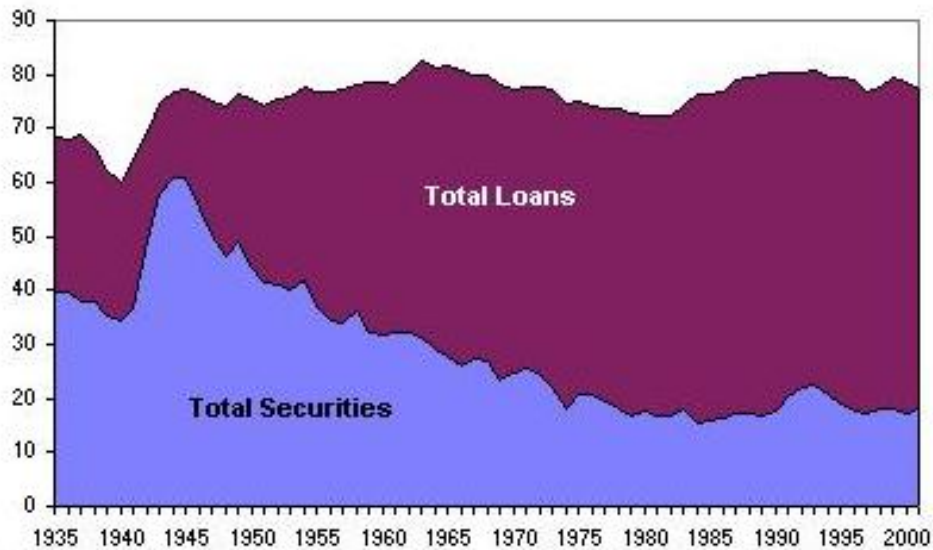
Annual Net Charge-offs as a Percent of Average Loans



Source: FDIC Historical Statistics on Banking

Bank Asset Mix Has Trended Toward Loans and Away From Low-risk Securities (FDIC-Insured Commercial Banks)

Total Loans and Securities as a
Percent of Total Assets at Year-End



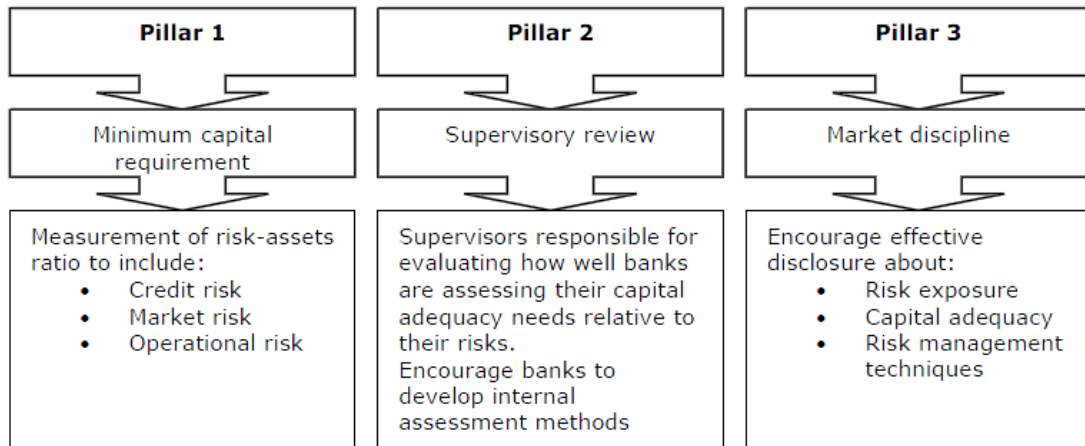
Source: FDIC Historical Statistics on Banking

Annex 4: Main differences between Basel I and Basel II accords

Source: Adapted from Pereira (2003)

Basel I Accord	Basel II Accord
Single external model for capital requirement computation applied to all financial institutions, weighting credit risk	Flexible external and/or internal model leading to three different approaches weighting three different risk variables
To define capital requirements, the supervisor establishes a percentage over the asset value	Banks may use internal information systems to define an assets risk, being required to report to the supervisor regarding the methodology used
Based on a single measure weighting credit risk	Uses internally developed methods, validated by a Central Bank, making information available to the market
Reduced risk sensitivity. Considered first only credit risk, and market risk with the 1996 amendment	Increased risk sensitivity. Considers credit, market and operational risk

Annex 5: Basel II Accord structure



Source: Casu et al. (2006) p. 187

Annex 6: Capital Requirement variations for a €100 Loan

Under Basel II, Capital Requirements Will Vary Much More With the Risk of the Borrower

Minimum Capital Required for a €100 Commercial Loan of Quality:^a

Capital Standards in Place 1981 - Present

	AAA Credit Risk	BBB- Credit Risk	B Credit Risk
Prior to 1981	Judgmental	Judgmental	Judgmental
1981 - 1988 (Prior to risk-based framework)	€ 5.00	€ 5.00	€ 5.00
1988 - Present (Risk-based standards of Basel Accord)	€ 8.00	€ 8.00	€ 8.00

Proposed Basel II Standards

	AAA Credit Risk	BBB- Credit Risk	B Credit Risk
Proposed Basel II Standardized ^b	€ 1.81	€ 8.21	€12.21
Proposed Basel II Foundation IRB ^c	€1.41	€ 5.01	€18.53
Proposed Basel II Advanced IRB ^d	0.37 to € 4.45	1.01 to € 14.13	3.97 to € 41.65

Notes:

^a Quality refers to one-year default probabilities corresponding to the historical average for the given credit rating.

^b All Basel II capital calculations (Standardized and IRB) include an operational risk charge. For this table, the operational risk charge is determined by using the Basic Indicator Approach where the capital charge is equal to 15% of the institution's average gross income over the previous three years. As a proxy for average gross income, this table uses the current industry average return-on-assets (1.41%) multiplied by the amount of the loan (\$100) for an estimated operational risk charge of €0.21 (15% of €1.41).

^c Figures are for an unsecured credit with an assumed loss given default (LGD) of 45%. The one year probability of default (PD) for each credit is as follows: AAA (.03%), BBB- (.35%), B (8.38%). All calculations performed using the QIS-3 Spreadsheets with maturity of 2.5 years.

^d Calculations reflect representative lower and upper bounds for capital to be held in support of the €100 loan. Lower bound reflects an LGD of 10% (high recovery) with a one-year maturity loan. Upper bound reflects an LGD of 90% and a five-year maturity loan.

Source: FDIC staff calculations based upon "Quantitative Impact Study 3 Technical Guidance"; Basel Committee on Banking Supervision (October 2002), available at www.bis.org.

Annex 7: Portuguese Banking System Data

Portuguese Banking System Data

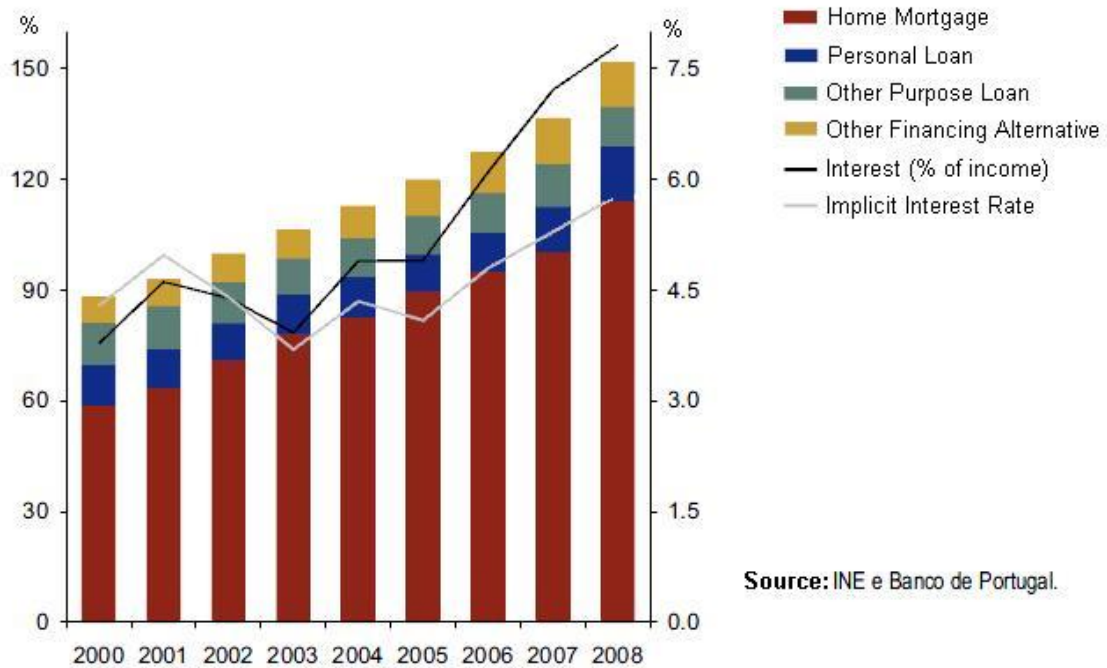


Credit risk data (Pillar 1)		31 December 2008
	Credit risk capital requirements as % of total capital requirements	90.2%
Credit institutions: distribution by approach used	Standard approach	100.0%
	Internal Ratings Approach Foundation	0.0%
	Internal Ratings Approach Advanced	0.0%
Market risk data (Pillar 1)		31 December 2008
	Market risk capital requirements as % of total capital requirements	2.6%
Credit institutions: distribution by approach used	Standard approach	100.0%
	Value at Risk (VaR) approach	0.0%
Operational risk data (Pillar 1)		31 December 2008
	Operational risk capital requirements as % of total capital requirements	7.2%
Credit institutions: distribution by approach used	Basic Indicator Method	94.8%
	Standard Method	0.0%
	Advanced Measurement Method	0.0%

Source: Banco de Portugal

Annex 8: Private Debt and Interest paid

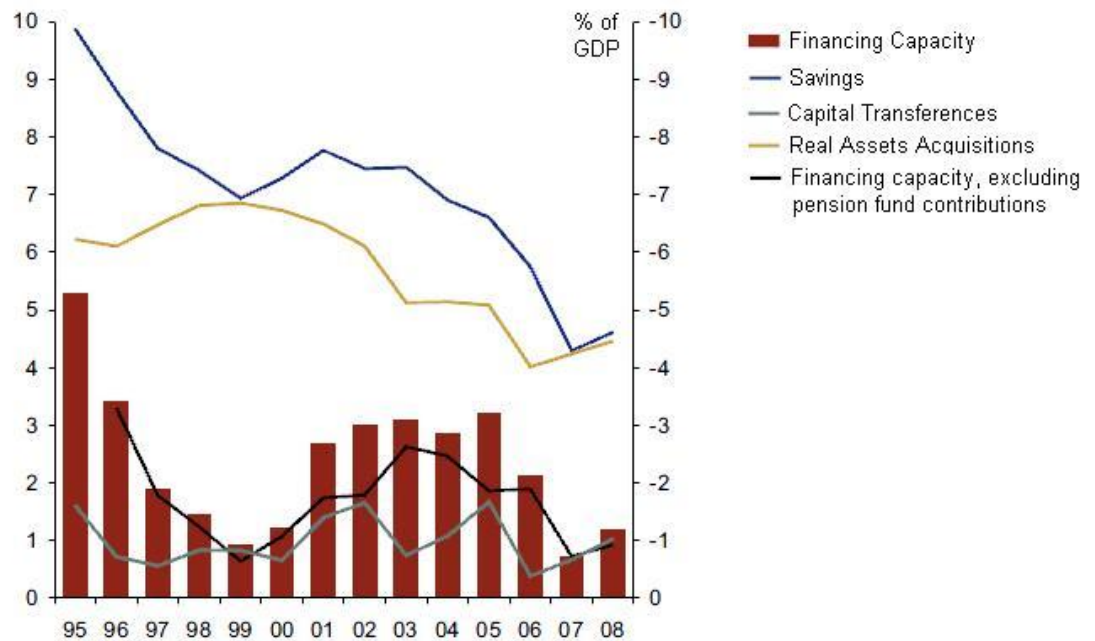
Private Debt and Interest Paid As a percentage of income



Source: INE e Banco de Portugal.

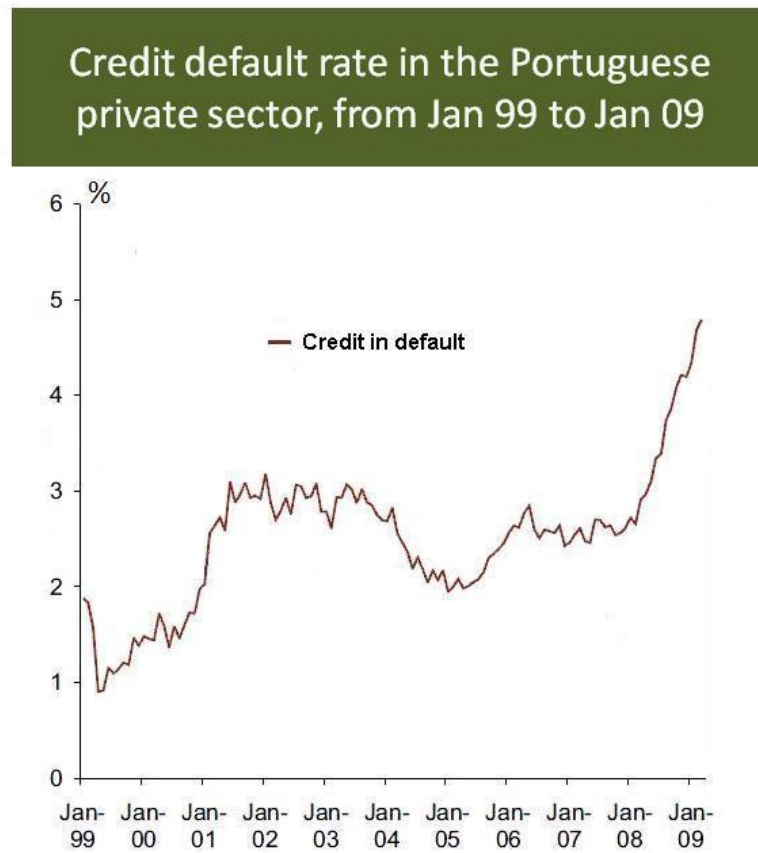
Annex 9: Private Financing Capacity, Savings and Investments

Private Financing Capacity, Savings and Investments



Source: INE e Banco de Portugal.

Annex 10: Credit default rate in Portuguese private sector



Source: Banco de Portugal.

Annex 11: The definition of Bank used in Portugal

Source: Ministério Público (1992, 1996, 2002)

The law “Decreto-Lei nº 298/92, de 31 de Dezembro, do Regime Geral das Instituições de Crédito e Sociedades Financeiras (RGICSF)”, refers the five pillars of the financial integration of the European Community (EC):

- Freedom of financial enterprises establishment
- Freedom to provide services by the previously mentioned enterprises
- Harmonization and mutual recognition of National regulations
- Freedom of capital circulation
- Monetary economic union

This “Decreto-Lei”, which was afterwards modified by the “Decreto-Lei nº 232/96, de 5 de Dezembro” and more recently by the “Decreto-Lei nº 201/2002, de 26 de Setembro”, defines in its article no. 2, credit institutions as enterprises which activity consists in receiving deposits or other reimbursable funds from the public, to be applied through credit issuance or other regulated and allowed operations. Credit institutions also include enterprises which issue payments in electronic currency. The activities allowed by credit institutions are regulated in the article no. 4 of the RGICSF.

Article no. 9 details which operations do not constitute reimbursable funds received from the public. Article no. 3 from the RGICSF establishes the entities which are to be considered credit institutions in Portugal:

- a) Banks
- b) Economic Intermediaries (Caixas Económicas)
- c) Mutual Agriculture Credit Institutions (A Caixa Central de Crédito Agrícola Mútuo e as caixas de crédito agrícola mútuo)
- d) Credit Financial Institutions
- e) Investment Societies
- f) Financial Allocation Societies
- g) Factoring Societies
- h) Financial Societies for Credit Acquisition
- i) Mutual Guarantee Institutions
- j) Electronic Currency Institutions
- k) Other enterprises which qualify as such according to the article no.2