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Alexandre Lamfalussy and the origins of the BIS macro-prudential approach to financial stability

IVO MAES*

1. Introduction

While the financial crisis has left many reputations in tatters, the Bank for International Settlements (BIS) is receiving more and more attention for its analysis of financial stability issues.[1] The BIS is renowned for taking a broad approach to financial stability, "marrying" the micro and macro-prudential dimensions of financial stability (Crockett, 2000, Knight, 2006).

The BIS approach, with its emphasis on the macro-prudential dimension, first came to the fore in the Cross Report on innovations in international banking. It is commonly accepted that this was the first published official document that used the term "macro-prudential" (Bini-Smaghi, 2009). The Cross Report defined the macro-prudential domain as "the safety and soundness of the broad financial system and payments mechanism" (BIS, 1986, p. 2). In later research, it was argued that the approach has two distinguishing features (Borio, 2009). Firstly, it focuses on the financial system as a whole, paying attention to the macroeconomic dimension of financial crises. Secondly, it treats aggregate risk in the financial system as dependent on the collective

* National Bank of Belgium, Robert Triffin Chair, Université catholique de Louvain, HUBrussel and ICHEC Brussels Management School. E-mail: ivo.maes@nbb.be. The author would like to thank all those who contributed to this project, especially J. Abraham, G. Baer, L. Bernard, S. Bertholomé, C. Borio, P. Clement, H. Famerée, R. Gomez, M.-H. Lambert, A. Lamfalussy, W. McClam, V. Périlleux, J. Smets, T. Timmermans, J. Toporowski, P. Turner and participants of the Storep (Firenze), HES (Denver), ESHET (Amsterdam), SEEMHN (Istanbul), Charles Gide (Paris) conferences, a seminar at the BIS as well as two anonymous referees. The usual caveats apply.

[1] The *Financial Times* observed that, "The central bankers' bank had previously given the most accurate warnings about the impending financial crisis" (Gilles, 2009).

behaviour of the financial institutions (which contrasts with the micro-prudential view, where financial institutions are regarded as having no influence on the global situation).

The causes of the financial crisis are still the topic of many debates in the economists' community. Broadly speaking, one might say that three main elements contributed to the crisis: (1) a free market capitalist economy is inherently characterised by cycles of boom and bust, in which phases of optimism and pessimism feed a credit cycle: *Manias, Panics and Crashes* (Kindleberger, 1979); (2) in many cases, an "innovation" is at the basis of the phases of optimism and pessimism, like the "dot.com bubble", which burst in March 2000. In the present crisis, financial innovation, especially securitisation, was at the heart of the cycle. A crucial belief was that the redistribution of risk was leading to not only a more efficient but also a more stable financial system. The process of financial innovation went also, to a certain extent, together with a tendency towards financial deregulation; (3) around 2005, a "liquidity overhang" was contributing to an accelerated erosion of risk awareness, a decline in risk premiums, a mispricing of assets, and growing leverage. A controversial issue was whether loose monetary policies, especially in the United States, and the US current account deficit were important causes of this liquidity overhang.

Alexandre Lamfalussy was one of the "Cassandras" who had been warning about the fragility of the financial system and a potential crisis. In 2004, Lamfalussy observed that financial innovations cannot "insure" the system against a breakdown of asset prices, but could only redistribute this loss. Moreover, he insisted that central banks should worry about asset price bubbles, as the bursting of a bubble might create a propitious environment for a systemic crisis: "If a central bank does not try to discourage 'irrational exuberance', it may well fall into the trap of asymmetrical policy reactions, with obvious moral hazard implications" (Lamfalussy, 2004, p. 11).[2] In 2006, he drew attention to the worldwide "liquidity overhang". He warned that this was a breeding ground for asset

[2] A slightly veiled criticism of US monetary policy. Lamfalussy (2000, pp. 136-138) also criticised the asymmetry of US monetary policy in 1987 and 1998.

price bubbles and was driving down risk premiums to historical lows. He concluded that "excess liquidity represents a genuine, although unquantifiable, danger for the stability of our financial system" (Lamfalussy, 2006, p. 12).

In this paper, it will be argued that Alexandre Lamfalussy, who was at the Bank for International Settlements from 1976 to 1993, played a crucial role in shaping the BIS view of financial stability with its emphasis on the macro-prudential dimension. We start with a section on the characteristics of the micro- and macro-prudential approaches. In the next section, we trace the origins of Lamfalussy's sensitivity to financial fragility, going into his formation as an academic and a commercial banker. Thereafter, we move to the Bank for International Settlements itself, focusing especially on Lamfalussy's involvement in the Latin American debt crisis and research on financial innovations.

2. Marrying the micro and macro-prudential dimensions of financial stability

The attention paid by the BIS to the macro-prudential dimension of financial stability came clearly to the fore in speeches by the General Managers of the BIS, Andrew Crockett and Malcolm Knight, at the International Conferences of Banking Supervisors in 2000 and 2006. Both speeches discussed the theme of "marrying" the micro- and macro-prudential dimensions. In both presentations, a strengthening of the macro-prudential dimension was advocated.

Crockett (2000, p. 2) defined the macro-prudential objective as "limiting the costs to the economy from financial distress, including those that arise from any moral hazard induced by the policies pursued". As such, it is very much concerned with "systemic risk".[3] It contrasts with

[3] Borio (2003, p. 6) emphasises that systemic risk arises primarily through common exposures to macroeconomic risk factors. He argues that widespread financial distress, arising from the failure of an individual institution, which then spreads via contagion mechanisms (like payment and settlement systems or the interbank market) through the financial system, is much less significant.

Table 1 - *A stylised view of the macro- and micro-prudential perspectives*

	Macro-prudential	Micro-prudential
Proximate objective	Limit system-wide distress	Limit distress of individual institutions
Ultimate objective	Avoid output (GDP) costs	Depositor protection
Model of risk	(in part) endogenous	Exogenous
Correlation and common exposures across institutions	Important	Irrelevant
Calibration of prudential controls	In terms of system-wide distress; top down	In terms of risks of individual institutions; bottom up

Source: Borio (2003), p. 2.

the microprudential objective, which focuses on limiting the failure of individual institutions ("idiosyncratic risk").[4] The macro-prudential approach actually focuses on the financial system as a whole, paying special attention to the risk of correlated failures and to institutions that have a systemic significance for the economy. White (2006, p. 1) noted some interesting similarities between the macro-prudential approach and Austrian business cycle theories, like a focus on imbalances in the economy, the assumption of systemic errors of judgment by economic agents and an inherent tendency towards periodic crises.[5]

A second characteristic of the macro-prudential approach is the view that aggregate risk depends on the collective behaviour of individual institutions, the so-called "endogeneity of risk". As Knight (2006, p. 2) argued, "A macro-prudential orientation highlights the fact that asset prices and the macroeconomy are themselves strongly affected by how financial institutions behave; a micro-prudential orientation tends to take movements in asset prices and the macroeconomic backdrop as given - as 'exogenous'". A crucial consequence is that actions that might be appropriate for individual financial institutions may not result in desirable

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[4] The micro-prudential paradigm was greatly influenced by the 1974 Herstatt collapse, which was very much behind the creation of the Basel Committee on Banking Supervision (cf. *infra*).

[5] Lamfalussy was a student of Dupriez, whose business cycle theory was very close to the Austrian approach, cf. *infra*.

aggregate outcomes (for instance, extensions of credit driven by concerns for market shares in good times or sales of assets in bad times).

The macro-prudential approach also has clear policy implications. It implies the calibration of regulatory and supervisory arrangements depending on the institutions' systemic importance (a top-down approach). Moreover, the macro-prudential orientation emphasises the importance for financial institutions to build up buffers in good times, when financial imbalances and the associated risks increase (even if risk perceptions decline).

Knight (2006, p. 2) argued that there are two "overarching" reasons why a macro-prudential orientation is an important complement to a micro-prudential one. Firstly, he suggests that the "dynamics of distress throughout history" show that the financial crises that have caused the most significant costs for the real economy have not generally arisen from the contagious spreading of problems encountered by individual institutions. Rather, they resulted from common exposures to macroeconomic risks. Moreover, "these financial crises have been exacerbated by the behaviour of financial institutions themselves, both in the build-up of the financial imbalances and in the blow-out of distress" (Knight, 2006, p. 2). Knight's second argument is that structural changes have increased the relevance of the macro-prudential orientation. Financial innovations are one of the first factors. "New financial instruments have made it much easier to transfer risk across the financial system ... Strengthened regulation of traditional financial institutions has been a factor contributing to a migration of risk onto the balance sheets of institutional investors, other asset management vehicles and the household sector" (Knight, 2006, pp. 2-3). The consequence was that a financial crisis might now also arise outside the banking sector. The other structural change was the growing internationalisation of the financial industry. So, the macro-prudential approach has to be global too. In this respect, White (2006, p. 2) argued that the "keeping one's house in order" view might not be sufficient to provide international financial stability. White argues for a "new international monetary order" to help prevent the build-up of external financial imbalances.

3. Lamfalussy's formation as an academic and a commercial banker

3.1. Early academic work

Alexandre Lamfalussy was born on 26 April 1929 in Kapuvar, Hungary. He started his economics studies at the Budapest Polytechnic. In January 1949, he succeeded in leaving Hungary and came to Belgium, where he continued his studies at the Catholic University of Louvain.

At that time, Louvain was one of the leading places for economics in the francophone world. The dominant figure was Léon-H. Dupriez, a prominent scholar in business cycle analysis (Maes, 2008). Two elements were typical for Dupriez's approach. Firstly, he based his analysis on extensive empirical investigations (with a lot of attention to descriptive statistical methods, as well as graphs and tables). Secondly, he was not in favour of Keynesian economics. He disliked the use of models, econometrics and national income accounts. In his view, it was crucial that economic theory should go back to individual economic decisions. His theoretical framework and methodological approach were close to Hayek's general equilibrium-oriented business cycle theories of the late 1920s (Hayek, 1928).

Lamfalussy became Dupriez's assistant. However, Lamfalussy took more "Keynesian" positions (Maes, 2009). While Dupriez disliked formal model-building, Lamfalussy saw this as a way to make explicit the implicit model which one was using .[6] Lamfalussy was also strongly in favour of government intervention and planning. However, through time, Lamfalussy became more and more positive about Dupriez, acknowledging that Dupriez understood that cycles should be moderated, but not suppressed.

Lamfalussy went to Oxford for his doctorate. The theme was investment and growth in post-war Belgium, with Philip Andrews as supervisor and Sir John Hicks as the main examiner. Later, under the

[6] Later, Lamfalussy (1985a, p. 412) remarked about Schumpeter's growth theory: "When I read his writings, more years ago than I care to remember, I hardly understood what he had in mind and dismissed it anyhow because I could not convert it into equations".

influence of Robert Triffin, he went to Yale, which gave him an American experience.[7]

In *Investment and Growth in Mature Economies. The Case of Belgium*, Lamfalussy (1961a) focused on growth and investment theory. At that time, Lamfalussy was intrigued by the issue of the reconciliation of macro- and microeconomics (especially imperfect competition theory). For Lamfalussy, this preoccupation was strongly pragmatic. He had seen that other countries were developing new industries, which were notoriously absent in Belgium. Lamfalussy's objective then was to reconcile imperfect competition theory with the theory of investment in order to explain the investment and growth performance of Belgian industry.[8] In *The United Kingdom and the Six. An Essay on Economic Growth in Western Europe*, Lamfalussy (1963), emphasised virtuous (or vicious) circles, in which stronger export growth promotes higher investment, which in turn strengthens productivity and investment, further reinforcing exports. Broadly speaking, Lamfalussy's analyses fit into the Keynesian tradition. His emphasis on vicious and virtuous circles clearly showed that the free market economy was not stable and self-adjusting. Even now, Lamfalussy is still considered as one of the main protagonists of the Keynesian approach of export-led growth (Crafts and Toniolo, 1996, p. 12).

3.2. A career as a commercial banker

Lamfalussy returned to Belgium in 1955 and started working at the Banque de Bruxelles, Belgium's second commercial bank, becoming Chairman of the Executive Board in 1971. In the early 1960s, he was entrusted with responsibilities in the area of investment management. He was involved in the creation of mutual funds and played a role in international investment banking. For instance, in July 1963, he

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[7] He also met James Tobin, who was already more critical about the functioning of the financial system.

[8] There is a certain similarity here with Lamfalussy's later work, trying to reconcile the macro- and micro-prudential dimensions of financial stability, paying special attention to financial institutions which are of systemic importance.

represented the Banque de Bruxelles at the signing of the subscription agreement for the first Eurobond issue, a $15 million bond for Autostrade. Lamfalussy became an authority on European financial markets. So was he a member of the Segré Committee, which investigated the integration of the capital markets in the EEC (CEC, 1966).

However, during Lamfalussy's time at the helm of the Banque de Bruxelles, in 1974, some traders took important open foreign exchange positions, which caused significant losses for the bank (Moitroux, 1995, p. 217).[9] It became Lamfalussy's first exercise in financial crisis management. The National Bank of Belgium opened special discount and credit facilities for the Banque de Bruxelles (which, however, were not used, PV CD n. 3479/19 of 26 November 1974, NBBA). At the end of 1975, Lamfalussy resigned from the bank. Evidently, all this had a strong impact on Lamfalussy's view of the financial system: risk and financial fragility became important preoccupations for him.

During his time at the Banque de Bruxelles, Lamfalussy's research interests shifted to monetary and financial issues. Lamfalussy was intellectually close to the Radcliffe Report. He defended it against criticism from Robertson and Harrod who argued that the principle of "loans create deposits" applies only to banks. In their view, all other financial institutions were pure intermediaries, who can only lend what they get. Lamfalussy claimed that this argument breaks down if non-bank financial intermediaries provide near-money assets which are quasi-perfect substitutes for money held in excess of transaction balances. Consequently, effective demand in the economy may grow although the supply of money and liquidity preference remain unchanged. If non-bank financial intermediaries are able to create appropriate near-money assets, "they cease, of course, to be intermediaries: they become creators of near-

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[9] The breakdown of the Bretton Woods system marked an important turning point in the environment in which financial institutions operated. It implied a significant increase in the risks of foreign exchange and arbitrage operations. At that time, there were no prudential regulations concerning open foreign exchange positions in Belgium.

money in just the same way as banks are creators of money" (Lamfalussy 1961b, p. 48).[10]

4. The BIS in the 1970s

The Bank for International Settlements was set up in 1930, to administer the German reparation payments and as a forum for central bank cooperation aimed at improving the functioning of the gold-exchange standard (Toniolo, 2005). It provided central bankers with three main services: research on issues relevant to international payments and prudential supervision, a venue for regular and discreet meetings, and a financial arm (particularly important in the gold market).

In the postwar period, Basel was one of the main centres of international monetary cooperation, contributing to the longevity and success of the Bretton Woods system. In the 1960s, central banks became more and more interested in the growth of the Euro-currency market and its impact on international liquidity creation. So, in order to monitor the euro-markets, the Standing Committee on the Euro-Currency Market was set up in April 1971.

The collapse of Bretton Woods, in the early 1970s, contributed significantly to a shift in the objectives of central bank cooperation. With floating exchange rates, increasing capital mobility and financial liberalisation (also inside countries), cooperation shifted away from monetary stability towards financial stability. The high-profile collapse of certain banks, especially Herstatt, further reinforced this tendency. In December 1974, the central bank governors of the G10 countries set up the Committee on Banking Regulations and Supervisory Practices (the name was later changed to Committee on Banking Supervision). It led to an agreement allocating cross-border supervisory responsibilities among member authorities, the so-called "Concordat", in 1975 (Borio and Toniolo, 2008). This was followed by the development of good practice

[10] There is a certain similarity with the "shadow" banking system as one of the sources of liquidity creation at the origin of the present crisis.

guidelines and standards in all areas of banking regulation and supervision. A landmark was the agreement on minimum capital standards, the so-called “Basel Capital Accord” in July 1988.

5. Alexandre Lamfalussy at the BIS

In January 1976, Lamfalussy joined the Bank for International Settlements as Economic Adviser. He was General Manager from May 1985 until the end of 1993. With his academic background and his knowledge of the financial markets, he was well suited to navigate the BIS through the new environment of financial uncertainty.

In this section, we will look further into Lamfalussy’s role at the BIS and his involvement in the Latin American debt crisis, research on financial innovations and efforts at strengthening the financial system.

5.1. The Latin American debt crisis

5.1.1 The Latin American debt build-up

During his time at the BIS, Lamfalussy was very much involved with the Standing Committee on the Euro-Currency Market. In the mid 1970s, with the oil price shock and the recycling of the petrodollars, the focus shifted from the traditional Euro-currency markets to Eurodollar lending to developing countries. The recycling also implied an increase in the country risks of the international banks. The BIS therefore extended its analysis from the Euro-currency market narrowly defined to international bank lending in general. The BIS data clearly showed the massive growth in indebtedness of certain countries as well as its increasingly short-term character. In a speech in 1976, Lamfalussy already warned for the debt problem (Lamfalussy, 1976).

Lamfalussy also emphasised that a borrowers’ market had been developing. Important causes of this borrowers’ market were loose monetary policies and the US current account deficit, which was pumping liquidity into the international financial system. So, a distinguishing characteristic of Lamfalussy's approach is that he placed debt problems in a broader macroeconomic context, paying particular attention to the interaction of global imbalances and debt dynamics. Noteworthy, too, is that Lamfalussy was less concerned about potential inflationary consequences of these imbalances than about potential financial stability effects (just as he was later, in the first decade of the 21st century).

5.1.2. Efforts at restraining the debt build-up

With the debt increasing, Lamfalussy advocated the creation of a risk office. His idea was that the 40 or 50 major commercial banks would submit, directly to the BIS, information on their claims to individual countries, including a breakdown into the four or five major economic categories and a broad maturity structure.[11] Lamfalussy had further discussions with commercial bankers to explore the feasibility of the project. He argued that it would provide a much better picture of the debt situation than the available data. It is an example of Lamfalussy's pragmatic approach, focusing on getting crucial information to understand the essence of the debt problem. It also shows a typical element of his "macro-prudential" approach: a focus on the key players, which are of systemic importance.

Lamfalussy's idea was not taken up. However, the discussions led to improvements in the BIS statistics. In 1978, the statistics were supplemented by information on the maturity structure of exposures. The Standing Committee on the Euro-Currency Market thus played a key role in the development of international financial and banking statistics.

Lamfalussy was further involved in behind-the-scenes efforts to moderate international bank lending. In 1977, Arthur Burns, the then Chairman of the Fed, suggested drawing up a "checklist of questions" for banks which were lending to sovereign borrowers (Lamfalussy, 2000, p. 12). The idea was to ask the banks to have a look at the relevant

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[11] Note by Lamfalussy, Some remarks on the Memorandum on The Euro-currency market and regulations of international financial flows, 9 July 1976, BISA 7.18(15), LAM 27/F72.

economic indicators before taking their lending decisions. Lamfalussy contacted fifty-seven international banks to sound out their willingness to participate in this arrangement. However, he was met with scepticism and reluctance. The main reason was that banks feared losing lucrative business to unfair competitors. Moreover, Lamfalussy discovered that the CEOs of the banks did not know about the BIS statistics, a crucial tool for understanding the credit risks they were taking.

A few years later, in May 1979, the G10 Governors decided to investigate how the Euro-currency market could be better "controlled". A study group, chaired by Lamfalussy, had to examine the different possible approaches to limit the growth of the banks' international lending.

Within the Lamfalussy Group, there were "profound divergences", mainly between Lamfalussy and Axilrod (Federal Reserve Board), according to the minutes of the representatives of the National Bank of Belgium.[12] They concerned in particular: (1) the mandate of the Group, with Lamfalussy emphasising an approach to control international bank lending and the Fed focusing on control of international liquidity;[13] (2) the role of national monetary policies in the control of the Euro-markets, with Lamfalussy emphasising that the key lay in domestic monetary policy,[14] while the Fed and the Bundesbank were in favor of a permanent and uniform system of international control based on reserve requirements; (3) the nature of reserve requirements, which were considered by Lamfalussy rather as one of the disparities between official regulations of domestic and international banking, which could be removed, while the Fed and the Bundesbank considered them as a technique for controlling the Euro-currency market.

In his invitation for the Working Party, Lamfalussy proposed to investigate four main approaches to curbing the growth of international bank lending: equalisation of competitive conditions between Euro-currency and domestic currency bank lending, direct controls on the

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[12] Notes of 29 June 1979 and 20 February and 6 March 1980, NBBA, C.416/6.
[13] At that time, the monetary aggregates were the intermediate target of US monetary policy.
[14] In line with his view that the strong growth of international lending was related to the borrowers' market and loose US monetary policies.

growth of international bank lending, the appropriate use of domestic monetary policies, and prudential measures (Telex of 8 June 1979, NBBA, C.416/6).

The use of prudential measures to limit international bank lending aroused quite some debate at the first meeting of the Group, on 19 June 1979. Axilrod was sceptical of the idea, which was defended by Lamfalussy and MacMahon of the Bank of England. The discussions continued during the second meeting of the Group, on 7 November 1979, on the basis of a paper by the Bank of England, “The use of prudential measures in the international banking markets” (BISA, 7.18(15) LAM25/F67).[15]

In the Bank of England paper, the “macro-prudential” concept was forcefully advanced.[16] The paper argued strongly that the micro-prudential aspect of banking supervision needed to be placed in a wider perspective. The paper characterised the “macro-prudential approach”, as focusing on problems that “bear upon the market as a whole as distinct from an individual bank, and which may not be obvious at the micro-prudential level”. The paper suggested three examples of macro-prudential problems, to illustrate that the micro-prudential viewpoint might fail to take full account of the wider macro-prudential picture:

– the growth of the market. While the growth of an individual bank’s business might seem wholly acceptable from a microprudential standpoint, the overall rate of growth of international lending might be risky. For instance, banks might make optimistic assumptions about balance of payments adjustments;

– the perception of risk. As bad debt had been low in recent years, “sovereign risk has appeared to the banks not only to be low but perhaps even to be declining”;

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[15] As London was an important centre of the Euro-markets, the Bank of England was closely monitoring international banking developments (see, e.g., the regular articles in the Quarterly Bulletin of the Bank of England). Moreover, after the “secondary banking crisis” of 1973-1974, the Bank of England was invested, in 1979, with statutory responsibility for banking supervision. This naturally stimulated interest in supervisory issues.

[16] According to Clement (2010, p. 60), Peter Cooke (of the Bank of England) had also used the term macroprudential in a meeting of the Banking Superrvusion Committee of 28-29 June 1979.

– the perception of liquidity. Banks are faced with both interest rate risks and funding risks. Banks mostly regard interest rate risk as the greater risk, “and at the micro-level this perception is both understandable and in most circumstances correct”. So, banks may be “unduly complacent” about the funding risk. However, the structure of the international markets, with chains of transactions between banks, might make banks vulnerable to an exogenous shock.

The concept of macro-prudential supervision was also very prominent in the Lamfalussy Group’s final report (of 29 February 1980, BISA, 7.18(15) LAM25/F66). The term “macro-prudential supervision” was used six times, including three times in the conclusion.

The Bank of England paper further discussed five groups of (micro-) prudential measures to constrain the growth of international bank lending: control of banks’ foreign exchange exposure, control of banks’ country risk exposure, capital ratios, maturity transformation, and controlling the “entry” of new market participants. The paper was quite positive on the use of prudential measures, concluding that they “could be a useful approach to ensuring that growth of international bank lending markets is soundly based. They could further have some, albeit modest, constraining influence on that growth”.

The Bank of England paper was a topic of intense discussion. In the end, it was decided to consult the Committee on Banking Supervision (chaired by P.W. Cooke of the Bank of England) about the technical feasibility of using some of these prudential measures. So, a questionnaire was sent to the Cooke Committee.

The Cooke Committee was not very much in favour of a “macro-prudential” approach.[17] In its Report, it took as its starting point that “supervisors should not impose on the banks for which they are responsible any measures for which there are not sound prudential reasons”. The Cooke Committee rejected the proposals of the Lamfalussy Group to use (micro-)prudential measures in order to constrain international bank lending, not only for technical reasons, but also

[17] Report on the use of certain prudential measures to constrain the growth of banks’ international lending, February 1980, BISA, 7.18(15), LAM25/F67.

because of a lack of prudential justifications and even of a potential conflict between macroeconomic and prudential aims. It observed that the two proposed prudential measures (balance sheet provisions for involuntarily rescheduled loans and capital ratios biased against the banks international business), "would be technically difficult to implement at the national level and, on the basis of experience to date, both would be difficult to justify on prudential grounds. More importantly, both appear to pose problems of conflict between macroeconomic and prudential aims;[18] and neither appears likely to exercise much constraining influence on banks' international lending beyond what would be achieved by effective prudential controls on individual banks applied on a consolidated basis".

In its final report, the Lamfalussy Group emphasised three elements: the need for effective supervision of the international banking system, the reduction of inequalities in competitive conditions between domestic and international banking, and the monitoring of international banking developments.[19] In this respect, the Report pleaded for improvements in the timeliness and quality of the statistics reported to the BIS. On the basis of the different reports, the G10 Governors decided to officially entrust the Standing Committee on the Euro-Currency Market with the monitoring of international banking developments.

The Lamfalussy Group provided an example of the, sometimes very difficult, dialogue in the central banking community on prudential issues, especially between the Committee on Banking Supervision and the Standing Committee on the Euro-Currency Market.[20] The Committee on Banking Supervision typically took a micro-prudential point of view. Its main objective was to check the compliance of the banks with prudential regulations. The Euro-Currency Committee took a more "macro-prudential" approach, pointing to the increasing debt of certain countries. However, for the Committee on Banking Supervision, the risks of these credits were regarded as limited: it were short-term credits (floating-rate

[18] The "problems of conflict" were not specified.

[19] It also mentioned that "a number of members of the Working Party" were in favour of prudential measures to constrain international bank lending.

[20] Interview, Lamfalussy, 5 May 2009.

notes) which could be withdrawn quickly if there was the slightest danger (a rather naïve view, one might argue, as a general withdrawal would lead to a collapse of the system). For Lamfalussy, this was an eye opener: he became there conscious of the need to combine micro- and macro-prudential supervision, implying also a crucial role for the central bank. It was to become a recurring theme in Lamfalussy's discourse on financial stability.

In August 1982, the Latin American debt crisis broke out. The BIS played an important role in crisis management, especially in the provision of "bridging loans" (before IMF stabilisation loans could be accorded). Moreover, the BIS statistics were invaluable for policy-makers to quickly identify the banks involved in the debt crises and the amounts of their credits.[21]

5.2. Financial innovation and fragility

5.2.1. The spread of financial innovations

In the mid 1970s, financial innovations increasingly became a topic of discussion among economists and policy-makers, especially in the United States. An important reason was that conventional money demand functions began to overpredict the quantity of money in circulation, leading to the "puzzle of the missing money" (Goldfeld, 1976). Financial innovation and its effects on monetary policy thus became a crucial topic of research among central bankers.[22]

However, as observed by Wenninger (1984), the impact of financial innovation on financial fragility was rather neglected. Naturally, there were exceptions, especially at the Federal Reserve Bank of New York (which was responsible for the supervision of the large banks and close to the international financial markets where many financial innovations had

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[21] Lamfalussy now talks with a hint of "*nostalgia*" about the Mexican debt crisis, as compared to the lack of transparency during the present crisis.

[22] An overview of the main research in the Federal Reserve System can be found in Akhtar (1983).

their origin). Richard Davis, a NY Fed official, argued in 1981 that there was growing evidence of financial fragility.[23] His main arguments were that shorter debt maturities increased the problem of debt roll-over and that variable interest rates implied more interest rate risk for banks, as not all this risk can be passed on to the borrowers (Davis, 1981, p. 25). Also other authors of papers on financial innovations and monetary policy, like Akbar Akhtar (NY Fed) or Charles Goodhart (Bank of England),[24] argued that innovation was increasing financial fragility.

In the early 1980s, the Bank of England also paid more and more attention to financial innovations (see Fforde, 1983). In May 1983, it organised an important conference on financial innovations, at which Lamfalussy was a "super-discussant" and which he had been encouraging.[25] The conference also looked at the implications for banking supervision. The general impression was that banking was becoming "a more risky and uncertain activity" (Bank of England, 2003, p. 360). Three main reasons were advanced: excessive competition (which could erode the profitability of banks), higher volatility of interest rates and risks associated with technological developments.

Financial innovation became a crucial topic of research at the BIS. This became apparent in the 1982-1983 Annual Report, which included for the first time a chapter entitled "Financial Markets and Financial Innovations". The main preoccupation, not unnaturally, was the impact of financial innovations on monetary policy. This was also the theme of the 1983 central bank economists' meeting (BIS, 1984). The introductory paper was written by Akhtar, an economist on secondment from the New York Fed.

In his analysis of the financial innovations, Akhtar (1983, p. 6) distinguished five broad categories of change: (1) the increasing use of interest-sensitive funds by banks and other financial institutions; (2)

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[23] The main prophet of financial doom was naturally Hyman Minsky. His work was quite well known at the BIS (see McClam, 1982).

[24] For instance, Goodhart (1984, p. 142) argued that, with the erosion of low-cost retail deposits, banking was becoming riskier, reinforcing the need to pay more attention to prudential control and capital adequacy.

[25] Letter from J. Fforde, 3 June 1983, BISA, 7.18(15), LAM2/F6.

variable rate lending or borrowing and maturity shortening; (3) the growth of financial markets and of marketable financial instruments; (4) more competitive retail banking; (5) the blurring of distinctions between different types of financial intermediaries.

The debate on financial innovations was very much focused on the United States and the United Kingdom. They were generally regarded as the leaders in this area. The European continent was generally considered to be lagging. However, Lamfalussy begged to differ, drawing on his previous experience as a commercial banker. He argued that innovations did occur in continental Europe, but they were not recognised. He advanced two reasons. Firstly, in several countries, especially small open economies, financial innovations had taken the international route. This especially concerned wholesale banking, where floating rate bank lending had been introduced via the Euro-markets and where active liability management and the management of banks' liquidity positions was occurring via foreign exchange transactions. A second reason was that in continental Europe, with a tradition of universal banking, many innovations were taking place within institutions. An example was the development of mutual funds by banks, "fixed-interest mutual funds, taking in their portfolio bonds denominated in foreign currencies and in domestic currency, originated in these countries and in the banks. I speak from experience, since in my earlier incarnation, I played a role in putting one of these funds on the market" (Lamfalussy, 1983, p. 2).

Lamfalussy very quickly took a cautious attitude towards financial innovations. At the Bank of England conference in May 1983, Peter Cooke, the chairman of the Committee on Banking Supervision, said that supervisors never question whether financial innovations are a good thing. Lamfalussy (1983, p. 4) replied, "Well, in some of my more courageous moments, I do". Lamfalussy further confessed that, "It doesn't seem to me intuitively obvious that, *on balance*, financial innovations are a good thing". Lamfalussy did not question that financial innovations could improve efficiency and help protect market participants against uncertainty. However, in his opinion, financial innovations also create problems, especially for monetary policy-making, "if the result is that we end up in a monetary policy mess, and therefore major policy mistakes ... then I begin to have doubts about the balance of *pros* and *cons*" (Lamfalussy, 1983, p. 4).

In the following years, Lamfalussy became more and more cautious about financial innovations, not only their impact on monetary policy, but also their effects on the stability of the financial system. In a certain sense, Lamfalussy always kept a "Keynesian" *Weltanschauung*, with a certain scepticism about the functioning of financial markets.[26] In a conference in Amsterdam, Lamfalussy (1984) argued in favour of a research programme in the field of "normative financial economics", referring to Tobin's Fred Hirsch memorial lecture, which raised questions about the efficiency of the financial system (Tobin, 1984).[27]

5.2.2. Financial innovations and financial fragility

At the end of December 1984, Lamfalussy was a speaker at the American Economic Association meeting. The topic was "The changing environment of central bank policy" (Lamfalussy, 1985a). Financial fragility was one of the main themes of the presentation.

Lamfalussy emphasised that the financial systems of the Western industrial countries were in the midst of several interconnected evolutionary processes, like disinflation, internationalisation, innovation and deregulation. Lamfalussy started with the disinflation process. He stressed that the process of disinflation was going slowly, which implied significant uncertainty regarding future inflation rates. He was very

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[26] At a conference in Brussels, Lamfalussy remarked that economists generally adhere to the "principle – or an act of faith that I do not share – that the market knows better than anybody what the right price of a financial asset is" (Lamfalussy, 1985b, p. 5). As is well known, also Keynes was critical about the functioning of the financial markets, "Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done [...]. It is usually agreed that casinos should, in the public interest, be inaccessible and expensive. And perhaps the same is true of stock exchanges" (Keynes, 1936, p. 159).

[27] Throughout his life, Lamfalussy had also a profound distrust of systems of floating exchange rates (fearing exchange rate misalignments) and was a strong advocate of international policy coordination and European monetary integration.

concerned about the implications of this slow disinflation for the prudential side of central banking policies, "Can manifestations of financial fragility be taken care of by the normal market mechanism, or does their containment require specific lender-of-last-resort intervention by central banks in order to prevent domino effects? Here, too, I would much welcome a wide-ranging theoretical debate on the mechanics of financial adjustment during a slow process of disinflation, as distinct from crisis manifestations at cyclical turning points" (Lamfalussy, 1985a, p. 410).

Thereafter, he turned to the internationalisation process. For Lamfalussy, a crucial implication was that no country could isolate itself from other countries, whatever its exchange rate regime (an old theme of Lamfalussy's). He then went into the consequences of the growing cross-border interdependence for financial stability. Lamfalussy was cautious about the idea that fiercer competition would strengthen the resilience of the financial system. He was especially concerned about asymmetries in the opening of markets, with more active competition in some fields (internationally), coupled with continued market imperfections in others (domestically).

The third evolutionary process concerned the accelerating speed of financial innovation. This was leading to a flow of new financial instruments and techniques, as well as the blurring of dividing lines between institutions and between markets.[28] After discussing the implications for monetary policy, Lamfalussy turned to the prudential implications. He raised several issues: "What should be done, for instance, on a purely technical level, with a number of balance-sheet items listed as contingent liabilities, or with the host of intermediary balance-sheet items classed somewhere between equity and "traditional" liabilities? How should minimum capital ratios be established? Should such ratios be established at all? Are they not going to produce "evasive" innovations? What are the macroeconomic implications of assigning greater control responsibilities to the supervisory authorities?". His last, and most fundamental question, concerned the effects on financial

[28] Already a theme of the 1959 Radcliffe Report, to which Lamfalussy was sympathetic (see above).

stability of the redistribution of risk by these new techniques and instruments, “You may argue that when risk-averse market participants shift risks associated with unexpected interest and exchange rate developments onto willing risk takers, everybody is going to be better off. This may well be the case, but increased collective happiness does not necessarily mean greater systemic stability. Or does it?” (Lamfalussy, 1985a, p. 411).

In a speech in 1986, Lamfalussy gave a negative answer to the question whether the redistribution of risk improved financial stability. His argument was strongly influenced by his analysis of the Latin American debt crisis. In his view, the shift to a generalised use of floating interest rates in medium-term bank loans, during the petrodollar recycling phase, allowed banks to protect themselves against the erosion of their margins of intermediation. However, it also had the effect of passing on short-term market interest rate movements to borrowers. With negative real interest rates in the 1970s, credit demand was stimulated, leading to a period of over-expansion. The return to positive real interest rates in 1979 placed a “crippling” burden on many debtors. The ensuing debt crisis threatened the world financial system. Lamfalussy concluded: “Innovation allowed banks to transform margin risk into capital risk which, in this case, was probably a greater threat to the stability of the international banking system – not to mention its rather disastrous effects on the borrowers themselves” (Lamfalussy, 1986, p. 14).

An important concern for Lamfalussy was that, with financial innovations, the transparency of the financial system was waning. “The proliferation of different types of assets and liabilities, both on and off banks’ balance sheets, clearly obscures their activities – for the banks’ own management, for bank supervisors and for the market” (Lamfalussy, 1986, p. 14). This also had serious consequences for the statistics which the BIS had been constructing, as did the gradual merging of the Euro-bond market with international bank lending, “progressively eroding the usefulness of traditionally defined international banking statistics and removing the little transparency which we have managed to create in this particular field” (Lamfalussy, 1985a, p. 411).

In his policy conclusions, Lamfalussy stressed that it would be undesirable to halt the progress of the financial revolution. Important elements of his reform proposals were a more prudent management of banks, a standardisation of the new financial products[29] and a strengthening of the capital base of financial institutions (which would be taken up in the Basel agreement of 1988).

5.3. BIS work on strengthening the financial system

In his different functions at the BIS, Lamfalussy also played a major role in the Bank's efforts at strengthening the international financial system. At the heart of this work was Lamfalussy's vision that the micro- and macro-prudential dimensions of financial stability very much overlap. Typical for Lamfalussy is a focus on the systemically important financial institutions, whereby the failure of an individual institution might threaten the entire system. Moreover, while Lamfalussy was very conscious of the growing globalisation of the economy, his view was very much that crises would have regional origins, especially in the periphery, like the debt crises in emerging economies.[30] One of his crucial policy conclusions was to strengthen the robustness and resilience of the banking system (with higher capital requirements) as well as the infrastructure of the financial system (especially payment and settlement systems).[31]

Three main lines of work at the BIS can be singled out: research on the evolution of the financial system, the elaboration of measures aimed at strengthening the banking system and efforts to improve the infrastructure of the financial system.

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[29] An issue which is also on the financial reform agenda now.

[30] Lamfalussy (2000, p. 141) mentions the 1998 LTCM crisis as a watershed and a new type of crisis, "LTCM seems to have gone under, and needed to be rescued, not because of poorly assessed credit risks, but because its risk-taking decisions had been based on the expectations of a certain pattern of asset price behaviour and of adequate market liquidity expectations which turned out to be mistaken".

[31] When compared with the stylised macro-and micro-prudential perspectives of Borio (2003), one might argue that Lamfalussy was very much taking a "meso" perspective, with his focus on the important financial institutions and attention to regional shocks.

The BIS continued its research on financial innovations and financial stability. In April 1986, the so-called Cross Report on “Recent Innovations in International Banking” was published (BIS, 1986). Besides the sharp acceleration in the globalisation of financial markets, the report emphasised two main tendencies. Firstly, a move towards securitisation, which contributed to a blurring of the distinction between bank credits and the capital markets. Secondly, an increasing importance of off-balance-sheet items, especially derivative products, like currency and interest rate swaps, currency and interest rate options and forward rate agreements. The Cross Report also focused on the implications for financial stability and macro-prudential policy. A main theme was the blurring of distinctions between banks and other financial institutions (which was also impairing the usefulness of the BIS statistics). The Cross Report became an important input for the work of the Standing Committee on the Euro-Currency Market, which Lamfalussy himself chaired.

In the area of banking, a landmark was the so-called “Basel Capital Accord” of July 1988, establishing minimum capital standards. A key objective was to strengthen the banks’ resilience in the event of losses on loans, as with the Latin American debt crisis. Moreover, the international convergence of bank capital standards was also intended to establish a “level playing field” between banks in different countries. An important contribution to the agreement was the research work of the Monetary and Economic Department of the BIS, which was under the responsibility of Lamfalussy.

Moreover, growing attention was being paid to the infrastructure of the financial system. October 1981 saw the first meeting of a newly established Group of Payment System Experts. In November 1990, it was transformed into the Committee on Payment and Settlement Systems (CPSS). Several reports were produced, among them, the “Report of the Committee on Interbank Netting Schemes” (the so-called Lamfalussy Report, as the group was chaired by Lamfalussy, BIS, 1990). It is noteworthy that, during the financial crisis of 2007-2008, there were no serious problems with the financial infrastructure. The clearing, settlement and payment systems continued to function properly. This contrasted with the "Great Crash" of 1929, when there were severe problems.

6. Conclusion

In this paper, it is argued that Alexandre Lamfalussy, who was at the BIS from 1976 to 1993, played a crucial role in shaping the BIS view of financial stability, with its attention to the macro-prudential dimension.

Lamfalussy's early academic work was very much in the Keynesian tradition. It focused on growth and investment theory and Belgium's and Europe's growth patterns in the postwar period. Gradually, he would move towards the ideas of Dupriez, his teacher in Louvain and a leading scholar on business cycles, acknowledging that cycles should be moderated, but not suppressed (as argued in the high days of Keynesian economics). However, Lamfalussy (not unlike Tobin) retained a certain scepticism about the stability of the financial markets. This mix of business cycle theory and a Keynesian *Weltanschauung*, that a market economy is not sufficiently self-correcting, is also very much the vision behind the BIS macro-prudential approach.

In 1955, Lamfalussy started working at the Banque de Bruxelles, Belgium's second biggest commercial bank. While there, he developed an awareness for the financial markets. However, in 1974, some traders took large open foreign exchange positions, causing significant losses and leading to Lamfalussy's resignation in 1975. It evidently had a strong impact on his view of the financial system, with risk and financial fragility becoming important concerns.

In the mid 1970s, the BIS was going through a fundamental transformation. The collapse of the Bretton Woods system led to a shift in the objectives of central bank cooperation. With the advent of floating exchange rates and financial liberalisation, cooperation shifted from exchange rate stability towards financial stability. The high-profile collapse of certain banks, especially Herstatt, was a further factor behind this.

Lamfalussy moved to the BIS in January 1976. Two of the main challenges during his time at the BIS were the Latin American debt crisis and the rise of financial innovations. As early as the mid 1970s, Lamfalussy was warning about the debt build-up in Latin America. Moreover, he stressed the interrelationship with loose US monetary policies and the US balance of payments deficit. In 1976, he proposed to create a "risk office" at the BIS in order to collect crucial information on a limited number of systemic banks. In 1979-1980, a Working Party which he chaired advanced the term "macro-prudential". In the Working Party, there was also a heated debate on the use of (micro-)prudential instruments (like capital ratios) to moderate the growth of international bank lending. While Lamfalussy was in favour of this idea, it was rejected by the Committee on Banking Supervision.

In the early 1980s, central bankers gave more and more attention to financial innovations, mainly for monetary policy reasons. Lamfalussy quickly turned to the impact on financial stability. In 1985, he questioned whether financial innovations, and the redistribution of risk which they entail, do actually contribute to greater systemic stability.

Lamfalussy's cautious vision of the financial markets also permeated his view of the foreign exchange markets. He remained sceptical of floating exchange rate systems, fearing currency misalignments with severe consequences, including calls for protectionism. It made him a strong advocate of international policy coordination and European monetary integration.

Lamfalussy stimulated work on financial stability issues at the BIS, "marrying" the micro- and macro-prudential approaches. Examples are the Cross Report on financial innovations or work on strengthening the financial infrastructure. Moreover, and very fundamentally, he greatly contributed to the creation of a "BIS atmosphere", namely that one should be attentive to imbalances, debt build-ups and bubbles, which may sow the seeds of financial crises.

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