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The Swedish 1990s banking crisis

A revisit in the light of recent experience

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To be presented at the Riksbank Macroprudential Conference, Stockholm 23-24 June, 2015

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1. Introduction

When the Swedish banking crisis erupted in the fall of 1992, it was – after the Norwegian crisis a few years earlier and along with the Finnish and Japanese crises – the first major financial crisis to hit an industrialized country since the 1930s. It has come to play a distinctive role in the crisis-management discussion. The Swedish way of crisis resolution based on prompt action and government take-over of failed banks has come to be seen as a benchmark for crisis management. This is probably better described as a Nordic benchmark, in contrast to, e.g., the Japanese approach; see Moe et al. (2004), Jonung et al. (2009), and Borio et al. (2010) for studies taking a Nordic perspective.

The broad patterns of the Swedish crisis are already well documented from a number of studies including Ingves and Lind (1996, 2009), Bäckström (1997), Berg (1998), Drees and Pazarbaşıoğlu (1998), Englund (1999), Moe et al. (2004), Jonung et al. (2009), and Honkapohja (2014). Why yet another paper? Compared to those previous studies this paper differs in two ways. First, it is a bit more comprehensive. It tells the story all the way from the regulated financial system around 1980 to the post-crisis situation in the mid-1990s. Second, it views the Swedish crisis in the light of the recent worldwide financial crisis and tries to identify differences and similarities. Would the set of regulations that are now being introduced have helped to prevent the Swedish crisis? Does Swedish type resolution really provide a benchmark for today's more sophisticated financial system?

The paper is organized in six sections apart from this introduction and some brief concluding remarks. The next section provides an overview of the financial environment of the early 1980s, including the regulations that restricted the banks and the macroeconomic environment. The following sections give a broadly chronological narrative of the development of the crisis. This part of the paper is in many ways an extended version of Englund (1999). Section 3 describes the deregulation and the following credit boom, followed by a discussion of the crisis in section 4. The resolution, including an evaluation of Securum, the bad bank, is treated in section 5 followed by a summary and evaluation of the cost of the crisis in section 6. Section 7 is more thematic and tries to identify the salient features of the Swedish crisis experience and relate them to the current crisis. It is split in four parts. The first looks at the developments leading up to the crisis, the second discusses how it might have been prevented, the third looks at the resolution, and the fourth discusses the role of supervision and policy.

In telling the history of the Swedish crisis, this paper does not draw on new research. In fact, the crisis has attracted strikingly little academic research, partly because bank archives remain closed. An exception is the study on Securum by Bergström et al. (2002), which is based on internal archives from the bad bank. But there is also a shortage of relevant macro-oriented research. For example, we know little about the real impact of credit constraints as they were released by the deregulation and tightened by the crisis. In contrast to Norway (Finansdepartementet, 1994), there has been no public investigation of the Swedish crisis. A government committee of experts was appointed in 1993, but failed to agree on a final report and only published two volumes of reports by individual authors, Bankkriskommittén (1994, 1995). There are also several inside accounts by some of the main actors during the crisis, all in Swedish. They include personal memoirs by policy makers like the governor of the Riksbank, Dennis (1998), the finance minister before the crisis, Feldt (1991), and the financial markets minister during the crisis, Lundgren (1998), as well as shorter papers by the head of the Bank Support Agency, Ingves and Lind (1996, 2009), and the secretary of state in the finance ministry, Bäckström (1997). There are also inside accounts from several of the crisis banks, by the CEO of Första Sparbanken, Pettersson (1993, 2013), the CEO of Gota, Urwitz (1998), the chairman of Nordbanken, Palmstierna (2008), and the CEO of Nordbanken, Dalborg (2014), as well as a journalistic account of the Nordbanken story by Reinius (1996). The perspective of the chairman of the bank least hit by the crisis, Handelsbanken, is available in Wallander (1994).

2. The Swedish Financial System in the Early 1980s

To better understand how the crisis emerged, we need a bit of historical perspective. A good starting point is around 1980. During the first decades after WWII the freedom of action for Swedish banks were severely circumscribed by regulations aimed at channeling savings to areas of high priority such as housing, infrastructure, the public sector, and to some extent the export industry. Banks were obliged to invest in government and housing bonds, whereas their lending to the public was tightly regulated. Further, banks had little access to other funding than deposits as there was no active money market and the issuance of bonds was regulated. All of this made the banking system quite stable but also very static. There was little room for competition over market shares, except by offering attractive deposit contracts, and there was little reason for the banks to engage in risk analysis. This changed gradually in the 1970s and 1980s as active markets started to develop and regulations were modified and finally, in the mid-1980s, largely abolished.

It is necessary to understand this process in order to understand the developments leading up to the banking crisis. Let us start with the regulations.

2.1 Monetary policy regulation

Since the 1940s, monetary policy¹ in Sweden like in some other European countries was largely conducted by regulating banks and other financial institutions (Hodgman, 1976, Englund, 1990). In Sweden, these regulations, for a long time, took the form of “voluntary agreements”. Bank actions were continuously scrutinized by the Riksbank, and views on proper bank behavior were communicated in weekly meetings between the governor and representatives of the major banks.² As one result of these meetings, the banks would commit to keep their lending within certain limits. It was only in 1974, however, that a law was passed giving the Riksbank the right to impose legally binding regulations.³ The regulations included the following main elements:

- *Cash requirements*, requiring banks to hold a fraction of their balance sheet in cash.
- *Liquidity ratios*, requiring banks to hold a minimum fraction of their assets in bonds issued by the government and by mortgage institutions. (The term may seem a bit ironic since the bonds were far from liquid.)
- *Lending ceilings*, putting a cap on the stock of loans for “other purposes”, which typically included all purposes except residential construction and sometimes other forms of business investment. The ceiling was expressed individually for each bank as a ratio of last year’s lending.
- *Interest regulations*, putting a cap on lending rates, typically expressed as a margin over the discount rate. There was no regulation of deposit rates after 1978.
- *Bond issuance permits*. Access to funding over the bond market needed special permits.

Apart from banks, other intermediaries – such as insurance companies, pension funds, and mortgage institutions – were also subjected to regulations obliging them to invest in government and housing bonds and limiting their lending.

The use of regulations reflected a tension between the goal to secure cheap funding for government deficits, housing investments, and other high-priority activities and the standard

¹ The term “monetary policy” may be a misnomer. I use it to refer to the policy of the Riksbank intended to affect aggregate demand in the economy, including both the set of regulations described in this section and changes in the discount rate. Swedish policy makers at the time used the term credit policy (*kreditpolitik*) to distinguish it from changes in the terms of borrowing in the Riksbank.

² See Jonung (1993) for a detailed and fascinating account of these meetings.

³ *Lagen om kreditpolitiska medel* (1974:22).

monetary policy goal of stabilizing economic activity. Lending ceilings and liquidity ratios were varied frequently with the purpose of balancing these often conflicting objectives. As an example, liquidity ratios were changed 26 times between 1952 and 1982.⁴ In most cases the change was upwards as a reflection of large budget deficits and an ambitious program for residential investment. By 1982, the liquidity ratio stood at 47 percent, i.e. banks were required to hold almost half of their assets in government and housing bonds, typically with long maturities and issued at below-market interest rates. Effectively, banks were transformed into repositories for long-term bonds, crippled in fulfilling their key function to screen and monitor loans for consumption and investment. They were forced to take considerable interest risk due to the maturity mismatch between assets and liabilities, but had no reason to take on much credit risk. The interest regulation limited the ability of banks to make a profit from risky lending as well as to capture scarcity rents created by the lending restrictions.

2.2 Prudential regulation

Whereas the role of regulations in the conduct of monetary policy was at the center of debate, little attention was paid to the role of regulations in ensuring financial stability.⁵ In a sense this may seem natural, since banks had little incentive for risk taking in a world where both the quantity and price of loans were regulated. The banking law⁶ included requirements on banks to hold capital in proportion to their total assets weighted according to credit risk. The structure of risk weights across different types of loans was fairly similar to what was later to become Basel I standard, but requirements for mortgages were much lower. The basic rate was 8 percent, but loans for office, retail and residential buildings with a loan-to-value ratio below 75 percent only required 1 percent capital. So did loans to other financial institutions. Higher LTV mortgages required 4 percent. Capital originally had to come in the form of equity, but changes in the 1970s and 80s also allowed including subordinated debt (*förlagslån*). This change illustrates that the capital requirements seem to have been interpreted with a degree of flexibility. As expressed by the head of a major bank: “If there were problems, the authorities solved them by changing the regulations. The access to capital did not limit credit expansion. It was rather the other way around: the rate of expansion determined the definition of capital required” (Wallander, 1994, p. 137, my translation). As a result banks were allowed to operate with little own capital. Including

⁴ Kreditpolitiska utredningen (1982), pp. 57-58.

⁵ In his account of the development of the financial markets, Werin (1993) does not even mention capital requirements or other aspects of prudential regulation.

⁶ SFS 1955:83.

hidden reserves, equity as a fraction of assets had trended down from 20 percent in the first decades of the 20th century to around 5 percent from the 1970s and onwards, with equity proper (excluding untaxed reserves) being only around 2 percent (Hortlund, 2005).

Other dimensions of risk than credit risk were not subject to specific regulations beyond general formulations requiring “safeness and soundness”. The task of monitoring whether banks lived up to these ideals was entrusted a government agency, *Bankinspektionen*.⁷ Overall, it seems that its supervision for a long time focused on formalities and documentation rather than on economic issues of risk exposure and control (see e.g. Sjöberg, 1994). It is also worth mentioning that Sweden, in contrast to many other countries, did not have a deposit insurance system. It was only after the crisis, in 1996, that such a system was introduced.

2.3 A financial industry crippled by regulation

The structure of credit markets and the activities of different types of financial institutions was largely a function of the regulations. This section gives a brief overview of the Swedish financial intermediaries in the early 1980s. The market for loans was split between banks and various specialized lenders; see Figure 1 for the development of market shares from 1980 to 1993. In the beginning of the decade, banks accounted for 39 percent of the total stock of loans to the private sector. The other major group, with 34 percent of the market, was the mortgage institutions. Insurance companies, including the government pension funds, stood for 13 percent of the market and so-called finance companies for 5 percent. The bank market share was decreasing in the early part of the period, reflecting that banks were more tightly regulated than other financial institutions. By 1985, the bank share was down to 35 percent. As a counterpart to this, the mortgage institutions had increased to 36 percent and the finance companies to 7 percent.

Banks differ from other intermediaries by their exclusive access to deposit funding. With a poorly developed money market before the 1980s, the supply of deposits effectively put a limit to the opportunities for expansion. This restriction became gradually less important as a liquid money market started to develop in the early 1980s and as banks started to access international financial markets. With these new options to broaden bank funding, the fraction of bank assets covered by deposits decreased from 67 percent in 1980 to 58 percent in 1985 and 40 percent in 1990, while the fraction borrowed from other Swedish and international banks increased from 23 percent in

⁷ Insurance companies were monitored by a separate agency. In 1991, the two agencies were merged to form *Finansinspektionen*.

1980 to 28 and 43 percent in 1985 and 1990, respectively. An increasing fraction of the borrowed funds came from the international money market, 44 percent in 1990 (Werin, 1993, p. 74).

There were two main categories of banks, commercial banks with 70 percent of all bank lending in 1980 and savings banks – often very small – with 30 percent of the market. The group of *commercial banks* was dominated by two nationwide universal banks – SEB and Handelsbanken – with strong historical ties to the largest Swedish corporations. Further, the state was the majority owner of one bank, PK-banken, which was originally the result of state intervention in the banking crisis of the early 1920s and more recently had grown as a result of a merger with a bank owned by the postal system. The social democratic government that came into power in 1982 had strong ambitions for this bank and wanted it to be able to challenge the dominant position of SEB and Handelsbanken. As we will see, PK-banken and its successor Nordbanken came to play a prominent role in the crisis. Apart from these three banks, there were a number of regional banks of differing size with strong relations to their local communities. With the loan ceilings expressed in terms of the percentage increase over the previous year, there was little room for expansion and weak incentives for active competition over market shares through organic growth. Nor was good risk analysis crucial. This made banks ill prepared for the deregulated environment that they would enter a few years later. There were stronger incentives to cut costs and increase market shares through mergers and acquisitions, which made it possible to increase efficiency by exploiting scale economies, e.g. by reducing the duplication of branch offices. By the end of the decade the number of major commercial banks had been reduced from more than a dozen to four.

Originally, the activities of the *savings banks* were restricted by special legislation and it was only in 1968 that the law was changed to give the savings banks equal opportunities of operation as the commercial banks. This stimulated expansion into new markets. In 1982, savings banks in Stockholm and Gothenburg were merged to form Första Sparbanken, which became Sweden's fourth largest bank. Adding Sveriges Föreningsbank that was formed in 1989 by a number of cooperative agricultural banks, Sweden had six major banks by the end of the 1980s.

Mortgage institutions were specialized in specific fields like housing or agriculture. Some of the mortgage institutions were bank subsidiaries, whereas others were mutually owned. Not having access to deposits, they were funded in the bond market (primarily with five-year bonds to match the standard mortgage maturity). Indirectly, the mortgage institutions were largely funded by the banks, since their bonds were to a large extent bought by banks and insurance companies. These institutions were obliged by liquidity ratios and other regulations to invest in government and mortgage institution bonds.

Finance companies made up a rather heterogeneous group of financial institutions which originally were specialized in activities like leasing, factoring, installment loans and credit cards, but gradually had expanded into other forms of lending. They had benefited from being outside the control of the Riksbank and were generally seen as part of the “grey” lending market, or to use a more modern term, the shadow banking system. It was only in 1980 that they were brought into the regulatory system and were subjected to loan ceilings. Some finance companies were bank owned, others were owned by suppliers (e.g. car manufacturers), and a number of the more active ones were independent. They were funded by a combination of bank loans and tradable investment certificates (*marknadsbevis*). Since issues of investment certificates were typically guaranteed by banks, the finance companies were in practice closely linked to the banks, and banks were indirectly exposed to the risk that finance companies took on.

Regulations also stimulated loan transactions outside the balance sheets of intermediaries. As an example, direct loans from seller to buyer were common in connection with housing transactions. Banks acted as brokers between lenders and borrowers and facilitated such loans by issuing guarantees to the lenders. In its regular meetings with the banks, the Riksbank repeatedly warned the banks against using such guarantees to circumvent regulations (Jonung, 1993, pp. 373-375). Trade credits offered another source of credit when bank loans were rationed. Ingves (1982) shows how trade credits and bank lending tended to offset each other.

2.4 Credit constraints and the private sector

In spite of the fact that regulations were primarily directed against lending to households, Swedish households were in fact more indebted than households in many other countries. According to Jappelli and Pagano (1989) the average ratio of household debt to consumption 1965-83 was 117 percent in Sweden compared to 84 percent in the USA and 56 percent in UK.⁸ In 1980, Swedish household sector debt amounted to 67 per cent of disposable income (33 per cent of household sector gross assets). This relatively high indebtedness was partly a result of government-sponsored systems of housing finance and loans for university studies, which entitled students and buyers of newly constructed homes to favorable loans with little or no credit evaluation.⁹ Furthermore, as noted above the market had found ways of circumventing the regulations. An indication of the overall impact of credit constraints on household consumption

⁸ Looking at the ratio of bank loans to GDP on the other hand, Sweden scores relatively low with a ratio of around 50 percent in 1970 (Taylor, 2015, Fig. 5). This ratio is relatively low because household consumption is low relative to GDP in Sweden due to the large public sector, and because a large fraction of loans come from non-bank sources.

⁹ Berger et al. (2000) analyze the housing finance system.

patterns can be gained from Euler-equation studies.¹⁰ Such studies on aggregate data (Jappelli and Pagano, 1989; Campbell and Mankiw, 1991; Agell and Berg, 1996) indicate that Swedish households on aggregate were among the *least* credit-constrained within the OECD group of countries. These results do not rule out the possibility that credit constraints mattered for sub-groups of households.¹¹

2.5 The macroeconomic environment

In the early 1980s, Sweden had experienced more than a decade of higher inflation than many other countries. Between 1970 and 1980 the average Swedish inflation rate was 9 percent. This had resulted in an ongoing real appreciation of the krona, interrupted by occasional devaluations, five times after the breakdown of the Bretton-Woods system in 1973. A sixth devaluation – by as much as 16 percent – was undertaken by the newly elected government in 1982. It was widely advertised as the “final” one and resulted in a temporarily undervalued currency which gave a boost to the economy and resulted in a couple of years of rapid export-led growth. Like in many other countries at the time, the exchange rate peg (against a currency basket) was announced as a binding norm supposed to discipline macro policy and wage formation. As a complementary norm introduced in 1984, any public borrowing to cover budget deficits should be made in domestic currency. Consequently, the domestic interest rate had to be kept high enough to make it attractive for the private sector to borrow in international currency and take on exchange rate risk in times of public deficits. The cost of lacking credibility for the exchange rate regime would be indicated by high borrowing costs for the private sector.

After the 1982 devaluation, Swedish inflation came down temporarily, but it was still higher than in other countries and the krona continued to appreciate in real terms, by 8 per cent only between 1982 and 1985. Naturally, this fostered renewed devaluation expectations that were reflected in high interest rates necessary to defend the exchange rate. During the second half of the decade, the Swedish one-year interest rate was consistently 1–2.5 per cent above the international average. In periods of currency speculation, as in 1985 and on later occasions, the margin rose to as much as 5–6 per cent. The credibility of the exchange rate was further harmed by weak government finances, with the deficit for the consolidated public sector standing at around 7 per cent of GDP in 1982. The deficit was gradually brought down, however, and even turned to small surpluses in

¹⁰ An Euler equation is the first-order condition of a life-time utility maximization problem. It states that, absent borrowing restrictions, the marginal rate of substitution between consumption this and next year should be equal to the discount factor (one plus the interest rate). Deviations from this norm, e.g. the significance of a temporary income change, can hence be interpreted as an indication of the importance of credit constraints.

¹¹ Unfortunately, household-level consumption data are not available in Sweden.

the later boom years 1987–90. In 1990, at the peak of the business cycle shortly before the banking crisis, the government debt was 44 percent of GDP, slightly below the OECD average. High inflation interacted with a tax system that allowed full deductibility of nominal interest payments to make real after-tax interest rates low or even negative. The marginal tax rate was varying between 50 and 60 per cent for the medium income earner until 1991¹², when it was lowered by a tax reform to 30 per cent. Figure 2 depicts the development of the *ex-post* real 5-year after-tax interest rate. The interest rate was strongly negative all through the 1970s, came close to zero after 1980 but became negative again after 1985. It was only in connection with the crisis of the early 1990s that Swedish households met positive costs of borrowed funds for the first time in three decades.

It is natural to ask how an economy could operate with negative borrowing costs for such a long time. A large part of the answer no doubt lies in the prevailing credit market regulations, regulations that were soon to be lifted.

3. Deregulation and lending boom

3.1 The 1985 deregulation

Deregulation had been advocated by economists for a long time, but when it took place it happened with a swiftness that surprised most observers. An early step was the abolition of the liquidity ratios for banks in 1983. Interest ceilings were lifted in the spring of 1985, and finally the lending ceilings for banks and the placement requirements for insurance companies went away on November 21, 1985.¹³ A main force leading to the deregulation was the rapid development of financial markets, particularly the growth of an active money market in t-bills and commercial paper in the early 1980s. This development was further stimulated by the decision in 1984 to finance the mounting budget deficits exclusively in the domestic market. The new environment of active financial markets had given finance companies and other non-banks easy access to liquid funding and contributed to making existing regulations increasingly inefficient except in boosting the unregulated sector. This was acknowledged in the official statement from the Riksbank announcing the deregulation where it was stated that “the aim of restricting credit expansion is not attained, whereas permanent usage of regulations has a distortive effect on the

¹² Earlier, before a tax reform in 1982, interest payments had been fully deductible within a comprehensive income tax system. For a high-income earner, the tax rate could be up to 80 percent, making the after-tax interest rate even more strongly negative.

¹³ The law (*Lagen om kreditpolitiska medel*), which allowed the Riksbank to impose the various regulations remained in existence. Formally, at this time, the Riksbank only decided not to make use of its legal right to impose a loan ceiling.

structure of credit markets.”¹⁴ Deregulation was still not complete, however, since international transactions remained partly regulated. In particular, Swedish residents’ portfolio investments in foreign currency and foreigners’ investments in domestic securities were restricted, until the currency regulations were finally abolished in 1989.

The Riksbank realized that the deregulation would stimulate bank lending and increase credit-market competition. To counter this effect, the cash reserve requirement for banks was increased from 1 to 3 per cent. But in no other way did monetary or fiscal policy change as a result of the deregulation. Banks, mortgage institutions, finance companies and others now entered a new environment where they were free to compete on the loan market.

3.2 The boom years

The impact of the deregulation was immediately apparent. The rate of increase of lending from financial institutions to the private non-financial sector, which had fluctuated between 8 and 13 per cent per year in the first half of the 1980s, jumped to 16 per cent in 1986, a rate that was maintained on average over the five year period 1985-1990 (corresponding to a real increase per year by 9 per cent); see Figure 3. These numbers are somewhat difficult to interpret as they include lending that previously had been unregistered, e.g. brokered loans. Since the loan ceilings had been monitored only at the end of each year, it had been common practice for banks to move some loans out of the balance sheet at year’s end. Part of the increase after the deregulation was simply due to (unknown amounts of) such loans now staying on bank balance sheets. In discussing the experience of the first deregulated year, af Jochnick (1987) concludes that this may explain a significant part of the observed increase in lending.

The lending boom was accompanied by an employment increase in the banking sector by 20 percent from 1985 to 1990 (Engwall, 1995, fig. 1). Deregulation opened up new opportunities for competition over market shares. The institutions that had been most directly hit by the regulations now expanded most rapidly, banks by 174 per cent and mortgage institutions by 167 per cent between 1985 and 1990 (Wallander, 1994, Table A1).¹⁵ Finance companies and insurance companies on the other hand, which had thrived as a result of regulatory arbitrage, lost market shares. Now that banks regained much of the loan market, finance companies ventured into

¹⁴ *Kredit- och valutaöversikt*, Sveriges Riksbank 1985:4, p 15 (my translation).

¹⁵ These numbers include lending to other financial institutions.

more risky forms of lending, including loans that had been turned down by banks, especially real estate loans with low-priority claims.¹⁶

This was a time of rapid growth and cultural shifts within many banks. Loans now started to be sold as any form of merchandise and marketing departments were growing at the expense of risk control and other more mundane activities. From 1985 to 1990, the number of employees in banks' marketing departments increased by 25 percent, while the number of employees in internal auditing departments decreased by 22 percent (Engwall, 1995, fig 7). With hindsight of the crisis that followed it is obvious that most financial institutions took higher risks than before. To what extent this extra risk taking was a conscious decision at the time and seen as an instrument for competition over market shares, is an open question. To many of the actors, expansion simply seemed very profitable with positive interest flows coming immediately and credit risks manifesting themselves only later; see e.g. the inside accounts of the CEOs from two of the most rapidly expanding banks, Första Sparbanken and Gota. Both emphasize that internal targets geared at maximization of return to equity led to expansion without proper account for risk taking; see Pettersson (1993), p. 123 in particular, and Urwitz (1998), p. 59.

The period after the deregulation saw rapid shifts in market shares. Between 1985 and 1988, the lending shares increased for Sparbanken Sverige¹⁷ from 20.8 to 22.1 percent of all bank lending and for Gota from 7.9 to 8.9 percent, while the Handelsbanken share decreased from 19.4 to 15.1 percent.¹⁸ In order to gain market shares, banks with a weak market position had essentially two options. One was to attract established customers from other banks, not an easy task in a market where long-term relationships were prevalent.¹⁹ The other option was to take on customers that were not attractive to other banks, i.e. in practice high-risk borrowers. As shown by Pettersson (1993), p. 199, there is a significant positive correlation between the rate of credit expansion after 1985 and the credit losses during the same period, indicating that expansion came at the price of extra credit risk. For the seven banks with a yearly lending growth below 20 percent, the average (unweighted) loss rate (credit losses/lending stock) was 0.4 percent. For the seven banks with lending growth above 20 percent, the average loss rate was almost twice as high, 0.7 percent. Note that this correlation was observed already before the crisis, although at very low loss rates.

¹⁶ Jennergren (2002), p. 10.

¹⁷ Sparbanken Sverige was formed through a merger in 1992 between Första Sparbanken and a number of smaller savings banks. Statistics for market shares and credit losses (e.g. in Table 1) are taken from Wallander (1994) and numbers for "Sparbanken Sverige" include all banks that later were merged into Sparbanken Sverige.

¹⁸ The reversal of market shares started already before the crisis, and in 1990 Gota was down to 7.6 and Sparbanken Sverige to 21.4.

¹⁹ Berglöf and Sjögren (1995) study microdata on the bank relations of Swedish corporates and find some signs of increased borrower mobility between banks in this period. In fact, most firms in their sample changed its main bank relation at least once between 1985 and 1993. Nevertheless, the dominant role of SEB and Handelsbanken as house banks remained unchallenged.

There is reason to come back to look at the corresponding correlation with losses in the crisis period in a later section.

Given that banks did not quantify their risks and that CDSs and other financial instruments tied to default risks did not exist, it is hard to verify whether banks took on more risk after the deregulation, in an *ex ante* sense. A simple indicator is bank benchmarks for maximum loan-to-value ratios for housing mortgages. This ratio was held constant at 75 per cent for three years after the deregulation but was increased to 90 percent in 1988, after several years of increasing property prices.²⁰ This indicates that risk taking increased with a lag after the deregulation. Pent-up credit demand in 1985 may have given little reason for banks to compete aggressively over new lending immediately, when administrative and other factors prevented a faster expansion. In early 1991, when the crisis was well under way, the LTV ratio was again reduced to 75 per cent.

The lending boom was not only driven from the supply side. It was also stimulated by increasing demand due to a lax fiscal policy. Real disposable income increased by 10.4 percent between 1984 and 1987. Sweden's macroeconomic weaknesses with high inflation continued to show up in higher interest rates than internationally. This tendency was aggravated by the government's policy of not borrowing abroad to finance budget deficits, which implied that SEK interest rates had to be high enough to make private borrowing in foreign currency attractive. Foreign borrowing was intermediated by the banking system. Lending in foreign currency increased from 27 per cent of total bank lending in 1985 to 47 per cent in 1990.²¹ It is not known how much of this was hedged by forward contracts²², but clearly the private sector took on considerable exchange rate risk. Apparently many actors overestimated the credibility of the exchange rate. This included not only large corporations that may have taken calculated risks, but also small firms and individual entrepreneurs who may have been ignorant about the risk involved.

3.3 Impact on the private sector – households and firms

Initially after 1985, the lending boom affected households and firms equally; see Figure 3. Between 1985 and 1988 the rates of lending increase were about the same, 56 percent for corporations and 61 percent for households. But in the following years there were dramatic divergences. Between 1988 and 1990, household borrowing stagnated and only increased by 14

²⁰ Edin et al. (1995) fig. 4. The numbers are from one of the leading mortgage institutions (SPINTAB) but should be representative for the market as a whole.

²¹ Wallander (1994), tables A1 and A3.

²² Dennis (1998) p 307 reports calculations made by the Riksbank indicating that around 20 per cent was hedged in 1992.

percent whereas corporate borrowing accelerated and grew by 51 percent. Much of this was in foreign currency. Such lending increased by 149 percent in only two years between 1988 and 1990; see Figure 4. It was largely used for investment in domestic financial assets to benefit from the interest difference.

For *households*, the ratio of debt to disposable income increased from 99 per cent in December 1985 to 131 per cent in December 1988, after which it decreased slightly. The increase was accompanied by a rapid increase in *consumption*, by more than 4 per cent per annum in 1986 and 1987, see Figure 5. It is tempting to infer a causal relation, but available studies on aggregate data offer little support. Agell and Berg (1996) estimate Euler-equations augmented by an income term recursively for the aggregate household sector starting in 1950. The coefficient of the income term, which can be interpreted as an indicator of credit constraints (see note 10), is around 0.3, a typical number for countries with well-developed financial markets. This is also consistent with earlier Euler-equation results discussed in section 2.4. The coefficient remains stable at the same level as the estimation window is rolled forward to include years after 1985, giving no sign of a structural break. After 1990, however, it shows some tendency to increase, i.e. indicating more of rationing when the banking crisis was well under way. Agell and Berg instead ascribe the consumption boom to income expectations fuelled by the rapid rise in disposable income between 1984 and 1987.²³ Summing up, the available evidence suggests that the deregulation had a sizeable impact on household borrowing but that it did not have much direct effect on aggregate consumption. A full evaluation has to await the discussion of asset prices in the next section.

While there may not have been a lot of suppressed consumption in the early 1980s, the credit regulations had certainly limited household portfolio choices. The deregulation was followed by increased investment in financial assets. The value of household stock holdings doubled from 1985 to 1988, at about the same rate as the increase in stock prices. But, as seen from Figure 6, debt grew slightly faster than financial assets and the ratio of debt to financial assets increased from 61 percent in 1985 to 67 percent in 1990. In this sense household leverage was pro-cyclical. Much borrowing was of course invested in housing. Including owner-occupied homes among assets the debt-to-asset ratio also increased, from 35 percent in 1985 to 39 percent in 1990. A

²³ An unpublished study by Ekman (1997) estimates consumption as a function of non-human wealth and permanent income on data from repeated cross-sections of household balance sheets over the period 1981-1993. If previous regulations had been important one would expect to see the marginal propensities to consume out of permanent income, and perhaps also out of non-human wealth, to increase after 1985. Interestingly no such patterns appear. On the contrary Ekman's consumption equation – which is estimated on micro data unrelated to the national accounts – is quite successful in tracking the increase in consumption observed in macro data without any shift around 1985. In his equation the observed consumption increase is instead explained by rapid growth of disposable income.

special reason for borrowing was to exploit profitable tax arbitrage opportunities. Swedish capital taxation was still strongly asymmetric with interest payments fully deductible and various forms of capital income taxed at much lower effective rates. This gave opportunities for various forms of tax motivated transactions. Some were very simple operations like borrowing and investing in tax exempt vehicles, often supplied by the government like lottery bonds and savings in special mutual funds (*allemanfonder* ("everyman's funds")). Others involved more sophisticated schemes, e.g. the type of leasing arrangement analyzed in detail by Angelin and Jennergren (1998). Tax arbitrage, facilitated by the deregulation, probably played a role for the boom in the stock market.

Also the *corporate sector* saw an increase in leverage. Measured over the whole five-year period 1985-1990, the ratio of debt to gross assets increased from 65.5 to 68.2 per cent. Since smaller firms tend to be more dependent on bank finance, one might expect them to have been more affected by the deregulation. There is nothing in the data, however, to support this hypothesis. On the contrary, the debt-to-asset ratio for firms with less than 20 employees *fell* from 74.6 per cent in 1985 to 72.3 per cent in 1990.²⁴

Aggregate *investment*, which had boomed before the deregulation as a result of the devaluation in 1982, stagnated in 1985 and 1986 and increased rapidly again in 1988 and 1989; see Figure 7. Like for households, there is no systematic evidence that the deregulation had a direct impact on behavior. Hansen and Lindberg (1997) have estimated the effects on corporate investment using panel of manufacturing firms-. They capture borrowing restrictions by treating the marginal cost of capital as an increasing function of indebtedness. This effect is significant, but quantitatively small, in their estimated Euler equations, but there is no sign of any change after 1985.

The banking data show that an increasing fraction of lending was related to the real estate sector. But there is little counterpart to this tendency in the composition of real investment. Investment in buildings increased only slightly faster than machinery, by 82 percent compared with 71 percent between 1985 and 1990. Measured by volume the difference even goes the other way with building investment increasing only 5 percent compared with 50 percent for machinery. Apparently, the debt increase largely supported the increased valuation of a slowly growing stock of real estate.

It may be surprising that the investment response was so limited. To get a more concrete picture, we may turn to the Stockholm office market. Figure 8 depicts three market indicators: yearly changes in total office space, in office-sector employment, and the vacancy rate. As expected, employment fluctuates much more than available space, and the "building boom" with a space

²⁴ Source: Financial Accounts.

increase of 8.2 percent between 1985 and 1990 was modest relative to the employment increase by 23.7 percent over the same period. When vacancies started to shoot up in 1990, it was not because of a dramatic increase in supply but because employment was falling.

There was some overbuilding in this period, but that was mostly in multi-family housing and primarily driven by government subsidies to residential housing construction; see Berger et al. (2000) for an analysis of the subsidy system and Rönnerberg (2002) for an analysis of the credit losses.

Summing up, the evidence suggests that, although the 1983-85 deregulation certainly contributed to a rapid expansion of private sector borrowing and inflated balance sheets, the *direct impact* on the real economy appears to have been limited. Consistent with the view of the Riksbank and other observers at the time and with the results of academic studies, the regulations may not have been quantitatively important for the real decisions of households and corporations. On the other hand, there can be no doubt that financial stocks and flows were affected in an important way. Credits were increasingly channeled via financial institutions like banks and mortgage institutions rather than directly between firms (e.g. trade credits) and households (e.g. seller financed housing loans). Loans were also increasingly used for high leverage financial investments. Leverage was pro-cyclical in the sense that it went up as asset prices increased. These effects on financial flows may, via their impact on asset prices, have had important effects on the run-up to the banking crisis.

3.4 Asset markets

We have found little evidence that the lending boom released credit constraints in consumption or investment. Instead the increased lending largely supported ascending prices of financial and real assets. The stock price index increased rapidly shortly after the deregulation, by 77 per cent within a year from the deregulation date 21 November 1985.²⁵ The increase was particularly dramatic for the two sectors most directly affected by the deregulation: banks and real estate companies. For these sectors the subindexes increased by 97 (banks) and 107 percent (real estate) over the same period; see Figure 9. The stock price boom continued more or less uninterrupted, and when the peak was reached on 16 August 1989 the increase from the deregulation date was 228 percent for the overall index, 258 percent for banks, and 372 percent for real estate companies.

²⁵ The decision itself was not much of an information event, however. The stock index increased 2.4 on the announcement day and 5.2 percent within a week.

By nature, the *real estate* sector is particularly dependent on external funding. Much of the increase in lending to the corporate sector went into real estate. Between 1986 and 1990, loans to real estate holding companies (*fastighetsförvaltning*) increased from 6 to 10 percent of all bank lending to domestic companies (Wallander, 1994, table B1). Also the finance companies expanded their real-estate related lending. Naturally, this contributed to boosting the market for *commercial real estate*. Figure 10 indicates that the price level for office buildings in Stockholm increased by around 20 percent per year in real terms after 1985, faster than most places in Europe. Note, however, that the rate of increase was equally high prior to the deregulation as after it. The increase before 1985, which was in stark contrast to the stagnant prices for owner-occupied homes during the same period, can partly be accounted for by increasing rents (+46 per cent in real terms between 1981 and 1985), largely a lagging effect of the deregulation of commercial rents in 1972.

The question is to what extent the continued explosion of commercial real estate prices after 1985 reflects fundamentals and to what extent it may have been driven by released credit constraints. Identifying fundamentals with rents, and assuming real estate assets to be valued as perpetuities, we can focus on the development of the yield, defined as the ratio of rents (net of depreciation and operating costs) to property values. The yield fell from 10 per cent in 1980 to 7 per cent in 1985 and to an all-time low of 3.75 per cent in 1989²⁶, the same year as prices reached their peak and rents were already falling since a year. Assuming a market with constant long-run growth (and no bubbles), the yield would equal the after-tax discount rate (safe interest plus risk premium) minus the expected growth rate of rents (“Gordon’s formula”). This implies that the dramatic decrease in yield could in principle be ascribed to changes in either of four factors: the after-tax real risk-free interest rate, the risk premium, the expected rent growth, and borrowing restrictions. Comparing 1985 with 1990, it is difficult to see that the first three of these factors could account for a decrease in yield by three percentage points. The real interest rate (*ex post*) was about the same in 1990 as in 1985, real estate investments were hardly less risky in 1990, and it wouldn’t seem rational to have higher rent increase expectations in 1990 after a decade of increases. This line of argument would suggest that the decrease in yield was due to a combination of released credit constraints and unrealistic expectations (“bubble”).

At these high Swedish property prices, it seemed very attractive to Swedish investors to invest in other property markets. For a short period in the late 1980s, Swedish investors became major property investors in the London office market, investments that were to give rise to credit losses for Swedish banks and finance companies a few years later.

²⁶ Source: Sveriges Riksbank, Financial Stability Report 2009:2.

The price development for *owner-occupied houses* shows a much clearer break in the mid-1980s, when five years of stagnant nominal prices (36 percent decrease in real terms from 1980 to 1985) turned into a real increase by 38 per cent (67 for Stockholm) from 1985 to the peak in 1990; see Figure 11. This was a relatively modest increase, both compared with the commercial property market in the same period and with the still ongoing house price boom in the 2000s. Still, it is possible that the price increase was at least partly driven by eased borrowing constraints.

According to econometric models (e.g. Hort, 1998, and Clausen et al., 2011), however, the price development is well explained by fundamentals. According to Clausen's model, the major part of the run-up in price before 1990 is due to variations in the real interest rate (Clausen et al., 2011, Diagram 2.2). Other fundamentals like real income and the development of financial wealth only play a minor role, and little of the price variation is left unexplained by the model. Both Hort and Clausen also find a tendency to price overshooting with price increases followed by more price increases for some time before a new equilibrium level is approached. The models are somewhat less successful in tracing the bust after 1990. Possibly, the increased indebtedness built up during the late 1980s made housing demand more sensitive than before to disturbances, thereby aggravating the downturn in the 1990s.²⁷

Summing up, owner-occupied housing shows only limited sign of a price bubble, while it is more difficult to explain the development of commercial real estate prices purely in terms of fundamentals. There are two, possibly complementary, explanations for excessive price increases. One is that it reflects increased volatility induced by a recently deregulated credit market allowing high-leverage property transactions. Alternatively, it may be regarded as the result of shocks to fundamentals – increased inflation, expansionary macro policy and low post-tax real interest rates – propagated by “normal” market price dynamics. Remember that real estate markets always tend to be volatile, since supply adjustments take time and the price of increasingly scarce land is an important price component. Based on the discussion above, it seems reasonable to conclude that the deregulation did not play a decisive role in triggering a price boom, either in commercial or owner-occupied housing. However, once the price booms were under way they may have been amplified by the new borrowing opportunities and by lax risk analysis in financial institutions. Both inexperience in a new environment and competition among credit institutions unleashed by deregulation played important roles in this process. The crisis that was to follow could be seen as the logical next step of the credit and asset price cycle initiated in the second half of the 1980s.

²⁷ This is consistent with US evidence on the relation between indebtedness and house price volatility reported in e.g. Lamont and Stein (1999) and Mian and Sufi (2009).

But, as we will discuss in the next section, it was also affected by new shocks that occurred at the turn of the decade.

4. The Crisis

4.1 *The turning point*

At least until the fall of 1989 there were few signs of an impending financial crisis. The stock market continued to boom and reached a peak in August 1989, 42 per cent above the level at the beginning of the year. But there were strong signs that the economy was overheated. The open unemployment rate reached an all-time-low of 1.4 per cent, and consumer prices continued to rise faster in Sweden than in other countries. The real exchange rate had appreciated by 15 per cent since the devaluation in 1982. Yet, there was still little parliamentary support for a restrictive fiscal policy, and monetary policy was tied up by a fixed exchange rate that was increasingly lacking credibility. As a result, the interest rate gap versus the German mark remained around 5 per cent. Apart from occasional episodes of even higher interest rates to defend the exchange rate, there was nothing on financial markets that signaled a crisis.

At this stage, the economy was hit by a number of shocks, both from the world economy and from domestic policy. First, geopolitical events – the German unification and the downfall of the Soviet Union – triggered increasing international interest rates and unrest in currency markets. The German 3-month rate went from 3.7 per cent in December 1987 to 5.6 in December 1988 and to 8.5 in December 1989. Second, Swedish macro policies finally started to change. In February 1990, the Finance Minister resigned over lack of support within the government for a more restrictive fiscal policy. This led to currency speculation and prompted the Riksbank to raise the interest rate. In an attempt to maintain credibility, the Riksbank decided in May 1991 to peg the krona to the ECU. Finally, the priorities of fiscal policy started to change towards combatting inflation. A first minor step was taken in the spring of 1990, when the VAT was raised. This was followed in October by a more comprehensive, but still limited, package with cuts in government expenses corresponding to 15 billion SEK (1 per cent of GDP). Third, a major tax reform was decided by parliament in June 1990 and came in effect in January 1991. The most important component was a reduction of the tax rate on capital income and interest deductions from 50 per cent for most tax-payers to a flat 30 per cent. Combined with increasing pre-tax interest rates it led to a jump in the real after-tax interest rate faced by households from –1 per cent in 1989 to +5 per cent in 1991; see Figure 2.

The real economy now changed rapidly. Production stagnated and GDP grew by only 0.9 percent in 1990 and fell by 1.1 percent in 1991. Unemployment remained very low by international standards, but started increasing, to 1.7 percent in 1990 and 2.8 percent in 1991. Investment increased by a mere 0.8 percent in 1990 and fell by 9.8 percent in 1991. Bank lending continued to increase in 1990, by 15.3 percent, but fell in 1991 by 6.3 percent. The timing - with production and investment stagnating in 1990 but loans still increasing – suggests that the real crisis started before the financial crisis.

All of this radically altered the fundamentals of asset prices. The stock market reacted rapidly and by the end of 1990 the stock price index had fallen by 37 percent from its peak on August 16, 1989. Early indications that problems were spreading to the financial system now came from the shadow banking system. But so far, bank shares did not fall more than shares in general. At the end of 1990, the market did not see the signs of the coming crisis.

The commercial property market was particularly hard hit. Office rents fell by 3 percent in 1989 and by 12 percent in 1990 and the office vacancy rate doubled. Now property prices started to fall with some lag, by 6 percent in 1990 and by as much as 40 percent in 1991. These are somewhat uncertain estimates as the market dried up with very few transactions, making the empirical basis for the property index even thinner than usual.

4.2 *The finance company crisis*

The first crisis came in the shadow banking market. In the spring of 1990, one of the finance companies Nyckeln ("the Key")²⁸ reported that some of its clients – both in Sweden and in its British subsidiary – were unable to honor their obligations. But so far, this was not taken as a signal of a more widespread crisis among the finance companies. In fact, there was no increase in funding interest spreads between Nyckeln or other finance companies relative to the safest mortgage lender (Stadshypotek); see Jennergren (2002), Figure 2. But problems deepened, and in September 1990 the member banks in the consortium guaranteeing Nyckeln's investment certificate program were informed about rapidly increasing credit losses. As a result, investors decided not to roll over maturing certificates and a number of other lenders started demanding immediate repayment. This was a market run; rather than actively running to the bank and withdrawing deposits previous holders of investment certificates, otherwise routinely reinvesting,

²⁸ See Jennergren (2002) for a detailed account and analysis of the finance company crises. Using event study methodology, he shows that negative news about finance companies had no impact on bank shares before September 1990.

refused renewed funding, in order to secure their investment in the face of an imminent bankruptcy.

Now, the crisis immediately spread to the whole market for investment certificates, which dried up in a couple of days. Nyckeln and two other finance companies defaulted in the fall of 1990, whereas the three remaining independent finance companies had to resort to bank borrowing. Banks were competitors to the finance companies. But they were also doing business with them, lending that had been profitable in the short term but that now proved to be high risk. Direct lending to finance companies accounted for 4 per cent of all bank lending.²⁹ Now that the finance companies were in crisis, the banks were put under pressure by *Finansinspektionen* to secure continued funding for the finance companies (see, e.g., Urwitz, 1998). This solved the problems for the time being, but it added credit risk to the banks. They had very incomplete information about the credit portfolios of the finance companies, although they were often competing about the same customers. Later the banks would in many cases find borrowers that they themselves had earlier turned down for loans now showing up in their books as non-performing loans from the portfolios of insolvent finance companies.³⁰ Possibly, the development of the crisis may have been different if more finance companies had been forced to realize their collateral assets at an earlier stage.

After the finance company crisis, signs of problems spread rapidly to other parts of the money market with generally increasing margins between t-bills and various forms of commercial paper. As a result, also bank funding costs increased.

4.3 *The banking crisis*

The crisis now spread rapidly to the banks. For a long time, their total reported credit losses had fluctuated between 0.2 and 0.6 per cent per year as a fraction of the total stock of loans. By the end of 1990 the loss rate had increased to 1.1 per cent. But as seen from Figure 12 this was just the beginning. By the end of 1991 losses were running at 3.5 per cent of lending and at the peak of the crisis in the final quarter of 1992 at 7.5 per cent, about twice the operating profits of the banking sector. Over the period 1990-1996 accumulated losses came to a total of 20 per cent of the loan stock at the beginning of the period.

²⁹ Wallander (1994), Table B1. The number holds both for 1986 and 1990.

³⁰ As an example, SEB reports that one third of the credit losses in 1990 (459 out of 1400 million SEK) were related to finance companies.

Table 1 shows the distribution and timing of losses across the banks. Credit losses include reservations for future losses from non-performing loans. Since reservations are to some extent arbitrary and depend on accounting principles, it is not easy to interpret the time profile of the losses, in particular not bank by bank. The size of reservations was affected by requirements from Finansinspektionen in 1991 to apply stricter principles for collateral valuation.

The first signs that the losses caused solvency problems came in the fall of 1991, when it became clear that both Första Sparbanken and Nordbanken needed new capital to fulfill their capital requirements. In Nordbanken, the state increased its ownership share, first by participating in an equity issue in the fall of 1991 and then – when there were new losses to be covered – by bailing out the private minority owners at a cost of 2 billion SEK and by making an extra shareholder contribution in the spring and summer of 1992. For Första Sparbanken the situation was more complicated, since it was not state-owned. Lundgren (1998), the minister in charge of financial markets, gives an account of the negotiations between the government and representatives of the savings bank group. The result was an agreement, where Sparbanksgruppen AB would add 300 million in equity and give a 3.8 billion interest free loan to Första Sparbanken due to be repaid before the end of 1994. The government issued a guarantee for the loan, at a fee. When problems soon returned in the spring of 1992, a new guarantee was issued and the earlier guarantee was transformed into a subsidized loan at an eventual cost to the state of 1.3 billion SEK.

In the spring of 1992, problems also surfaced in Gota Bank. In April, the bank's private owners put up new equity, but at about the same time the CEO of the main owner, an insurance company, made a statement indicating that its ability and willingness to support Gota further was limited. This resulted in a minor bank run, where 5 percent of deposits were withdrawn within a week (Urwitz, 1998). This was the beginning of the end, and on September 9, 1992 Gota Bank was insolvent and acquired by the state-owned Nordbanken.³¹ At this stage, the other three main banks were also making losses but were still able to meet their capital requirements.

Up until the summer of 1992, each crisis episode – in Nordbanken, Första Sparbanken, and Gota – had been dealt with in isolation. The state had been directly involved as the owner of Nordbanken and also by the guarantee to the owners of Första Sparbanken. Public involvement was particularly natural as Sweden had no formal deposit insurance or any other ingredients of an organized safety net. Hence, the authorities had to take direct responsibility in a situation where the payments system was potentially at stake.

³¹ Gota Bank was owned by a holding company Gota AB. In September 1992, the main owner of Gota AB, the insurance company Trygg-Hansa, refused to convert debt into equity. This led to the bankruptcy of Gota AB and the acquisition of Gota Bank by Nordbanken at the price of SEK 1.

From early September, when it became clear that Gota was unable to survive on its own and that the old owners were pulling out, the situation was handled as a systemic crisis. On September 9 – the day of the first currency crisis (see next section) – the government announced a general guarantee for all of Gota's obligations, including all forms of bank debt, not only deposits, and excluding only equity.

A key factor that deepened bank problems in 1992 was the unrest in international currency markets, caused by the outcome of the Danish EU-referendum and growing misalignment of several currencies in the European Exchange Rate Mechanism. In order to protect the krona, the Riksbank was forced to raise its interest rate. This created problems for many bank customers and threatened to have an adverse effect on Swedish banks international funding. With more than 40 per cent of their lending in foreign currency banks were heavily dependent on access to international financial markets, and with increasing signs of crisis, available funding maturities shortened. It was soon clear that all banks were facing funding problems, and only two weeks after the Gota guarantee, on September 24, a corresponding blanket guarantee was extended to the creditors of all banks.

4.4 The currency crisis

The Swedish banking crisis coincides in time with the European ERM-crisis. This spilled over to Sweden, not surprising given the legacy of high inflation and recurring devaluations. In November 1991, the Finnish markka had been devalued, which led to pressure on the krona and prompted the Riksbank to raise the overnight rate temporarily to 17.5 percent. In the summer of 1992, there was renewed speculation in currency markets, and the Riksbank again responded by raising the overnight interest rate to 12 per cent in July and to 13 and 16 per cent in August.

In early September 1992, the pound and the lira touched the lower limits of their currency bands and on September 8 the Finnish markka was left floating. This led to new attacks on the krona and on September 9 (the day of the Gota default) the overnight interest rate was raised to 75 per cent. A week later, on September 16 and 17, UK and Italy left the ERM and the Riksbank now had to increase the overnight rate to 500 per cent to defend the krona. In this situation, the general bank guarantee that was announced a week later played a crucial role in securing continued international funding for the Swedish banks. The Riksbank also provided liquidity support for the banks by depositing part of the foreign exchange reserves in the banks.

Later in the fall, the Swedish government presented some fiscal measures that for some time managed to increase the credibility of the exchange rate, and it was possible for the Riksbank to lower the overnight interest rate gradually down to 11.5 per cent. But the relief was only temporary, and in November speculation against the krona resumed. Now the Riksbank did not fight back, and on November 19, 1992 the krona was left free to float, leading to an immediate depreciation by 9 per cent the next day and by 20 per cent by the turn of the year.

The interaction between the currency crisis and the banking crisis is complex. During the 1980s the Swedish private sector had built up a large stock of foreign currency debt as a result of the decision to fund government budget deficits exclusively in kronor. According to unpublished calculations done within the Riksbank, the currency debt of the non-bank private sector amounted to 541 billion SEK in September 1992 (35 percent of GDP). Most of this was intermediated by the banks, whose net position in foreign currency was relatively balanced. The net spot position was positive (20 billion SEK), and the net position on the forward market was minus 65 billion,³² both rather small numbers relative to total assets of 1440 billion.

This situation involved two risk elements. One was the liquidity risk faced by banks. Even if they were not directly exposed to exchange risk, they faced the risk of foreign lenders refusing to roll over short-term credit lines. Such liquidity problems have contributed to deepening many other banking and currency crises (see e.g. Mishkin, 1999), and they were about to hit Swedish banks in September 1992. The blanket guarantee and the liquidity support provided by the Riksbank played a key role in avoiding a liquidity dry-up.

The other element of risk was the currency mismatch in private sector portfolios. Whereas the banks themselves had a relatively balanced position, many of their customers were heavily exposed in foreign currency. Profiting from the gap between domestic and foreign interest rates had indeed been a main purpose of much of the borrowing. In the aggregate, however, the private sector held foreign currency assets to offset the debt. Financial assets in foreign currency amounted to 174 billion SEK, making the net financial position in foreign currency minus 367 billion SEK in September 1992. Adding direct investments abroad and holdings of foreign shares made the total net position a trivial minus 13 billion SEK, i.e. the balance sheet of the aggregate private sector was not very vulnerable to a Swedish devaluation.³³ But of course the average hides an uneven distribution with many small and medium-sized bank customers heavily exposed to currency movements. Among the one hundred corporations listed on the A-list of the Stockholm stock exchange two-fifths reported currency losses and one-fifth reported currency gains in 1992

³² Internal data from the Riksbank; see Englund (1999).

³³ Dennis (1998) quotes similar but slightly different numbers yielding a net position of *plus* 67 billion SEK.

and 1993. Adding over the two years yields a net loss of mSEK 1343, corresponding to 0.4 percent of GDP per year.³⁴

The fact that the banking crisis started at least a year before the currency crisis with credit losses culminating in the fall of 1992 just before the fixed rate was abandoned indicates that there was no strong *direct* link from currency losses to the banking crisis. On the other hand there was clearly an *indirect* link with the defense of the krona by high interest rates increasing debt burdens and causing credit losses, thus deepening the banking crisis. There was also a feedback effect with the banking crisis reinforcing the currency crisis. As the precarious situation of the Swedish banking sector became recognized internationally during 1992, actors in these markets came to realize that the Swedish banks and many of their customers would not survive an extended period of very high interest rates. This improved the odds of speculating against the Swedish krona, thereby prompting further interest increases.

Could another exchange regime, where the krona had been left to float at an earlier stage, have eased the banking crisis? The answer is not as obvious as it may appear with hindsight. First, the vigorous, if short-lived, defense of the krona during 1992 left borrowers some time to hedge or get out of their currency positions thereby avoiding even more serious losses when the devaluation finally occurred.³⁵ Between August and November 1992, the stock of foreign currency loans was amortized by 73 billion SEK (corresponding to 14 per cent of the stock in September). In the end, currency losses in the private sector were rather small. Second, a Swedish devaluation before the ERM crisis, at a time when the Swedish anti-inflation stance was weak, might have triggered quite different exchange rate dynamics with a more dramatic depreciation and imported inflation, and with potentially serious negative consequences for the banking sector.

5. The Resolution

5.1 *Crisis management*

In September 1992, the Swedish government was the owner of two banks in default, and the rest of the banking system was on a path towards more defaults and a system-wide crisis. Issuing a blanket guarantee was a natural first step towards resolution, but it was not clear how to make it operational. There was no deposit insurance or other administrative structure in place to handle a

³⁴ Dennis (1998), p. 311. Reported currency effects tends to disregard stock valuation effects, which explains that the net effect is negative in spite of a balanced overall currency position.

³⁵ This is discussed in Dennis (1998), pp. 307-323.

systemic crisis. The task of Finansinspektionen was crisis prevention rather than resolution, although the agency had taken an active role in restructuring a small failing savings bank (Tomelilla Sparbank). It also actively replaced management of banks in trouble; the CEOs and chairmen of Nordbanken and Första Sparbanken were forced to resign in 1990 and 1991 on the direct initiative of the general director of Finansinspektionen. In both cases the motivations given seem to have been related to “orderly conduct” rather than to excessive risk taking (see Reinius, 1996, Pettersson, 2013, ch. 6). Resolving a systemwide crisis was an altogether more complex and difficult task. In the beginning bank support was handled within the Finance Ministry. A special agency, *Bankstödsnämnden* (the Bank Support Agency) started to operate towards the end of 1992, although not formally constituted until more than half a year later, in May 1993.

It was clear that any resolution policy would have to be quite comprehensive, but from the start it was not possible to state the form the guarantee would take with much precision. Since the guarantee would necessarily have budgetary consequences it would need to be based on decisions in parliament. To be effective, it was also essential that the guarantee was seen as credible by the market. Combining comprehensiveness and credibility was particularly difficult since it was not possible to specify the costs in advance with any precision and since a decision in parliament would have to come later. This balance was expressed in the press release announcing the guarantee, which set down a number of general principles:

1. Broad political support. Agreement with the main opposition party, the social democrats, ensured 95 percent of the votes in parliament.
2. Broad coverage. The guarantee covered all kinds of bank obligations except equity capital and included all banks with subsidiaries, but no other financial institutions.
3. Minimizing the subsidy to the banks and their owners. Support payments should be recovered as far as possible.
4. Only banks deemed to be profitable in the long run should be supported.

At the announcement date, no details were given about the particular support measures or about the organization of the bank support except for a statement that a special government agency could be set up in the future. The guarantee was nevertheless successful in the short run. Principles 1 and 2 secured the continued international funding of all banks, even though maturities tended to be shorter than under normal times. This allowed banks to go on with their main business more or less as usual. By lowering the funding costs, the guarantee added value to all banks. To the extent that this was enough to keep a bank solvent, it didn't have any budgetary consequences *ex post* although it clearly was a valuable transfer to the banks *ex ante*.

While the guarantee took care of the short-run liquidity problems, it remained to develop a strategy to handle more or less insolvent banks. Banks seeking support were required to open up their books to the Bank Support Agency. To be eligible for support a bank should have a positive value as a going concern. Aided by international consulting teams, the agency analyzed the credit portfolios and evaluated the future viability of each bank. All major banks except Handelsbanken entered into discussions with the Bank Support Agency, but in the end the need for any extra support to non-state owned banks beyond the guarantee turned out to be limited. Only in the case of Föreningsbanken did the process result in a special agreement, about a “capital requirement guarantee” where the state committed to purchase new equity should the capital ratio of the bank fall below 9 per cent. This was to be combined with an option for other shareholders to repurchase the shares before 1998. The guarantee was never used. The guarantee for the loan to Sparbanken Sverige, which was later converted into an interest subsidy, was discussed above. Beyond this, there was no need for extra support to Sparbanken Sverige or any other savings banks. SEB, that suffered heavy losses, managed to handle the situation on its own and raise new capital from its owners.

It is striking that once the guarantee was in place, the banks did not require much further support. In this sense, the ability to live up to principles 3 and 4 were never given a very hard test. This may suggest that it was mainly a liquidity crisis. But it could also be argued that bank prospects improved rather fast as a function of the general recovery of the Swedish economy. A main reason for the rapid recovery was the depreciation of the krona starting in November 1992 when the fixed rate was abandoned. At one stroke, this improved the situation for Swedish industry and limited bank losses. Just as the fixed exchange rate had been a key factor in creating the crisis, its abandonment offered an effective measure to get out of it.

Another key factor affecting how fast the banks could get back on track was the rate of recovery of the asset markets, in particular real estate markets. A destabilizing mechanism in many crises is the downward price spiral generated by fire sales. It was thus essential to avoid a situation where massive property sales put extra downward pressure on prices. A key factor in avoiding such a development was the bad banks that played a key role in the resolution of the Swedish crisis.

5.2 *The bad bank*³⁶

5.2.1 *Setting up Securum*

The separation of distressed loans into a separate institution, a bad bank, is not a Swedish invention. It seems that the bad bank idea should be credited Mellon Bank in the U.S. that set up a special subsidiary in 1988, Grant Street National Bank, to handle distressed loans and assets. This served as an inspiration for Nordbanken when it decided in the spring of 1992 to have its own bad bank, Securum³⁷. At this stage, before the peak of the crisis, it was not seen as a device to handle a systemic crisis, but just intended to deal with the internal problems in Nordbanken. Securum was a bad bank in the sense of starting out with a portfolio of mainly poorly performing loans. Over time it was transformed into an asset-management company as the problem loans were liquidated and underlying assets taken over. Other Swedish banks also created separate asset-management companies, but these companies only handled assets taken over and not non-performing loans.

The rationale of separating distressed loans and assets to put them in an independent company depends on the time frame of the process. A simple alternative, which would not require any special organization, would otherwise be to auction off the loans, or else to auction off the collateral once it had been taken over. Such an approach could in principle handle a large loan portfolio in a short time. But in a deep crisis, extensive fire sales can be problematic.

There are at least two reasons to avoid fire sales. The first is that loans in default and the collateral underlying them may be particularly difficult to value in a crisis, especially for a prospective outside buyer. Often maintenance has been neglected by the old owners, and there is a risk that large values will be lost before the creditor has time to assume control of the asset. This makes problems of asymmetric information unusually severe, since the seller (the bank or the asset management company) would know a great deal more about the potential value of the assets than can credibly be communicated to a buyer. By delaying liquidation and investing in care and maintenance such problems may be reduced.

The second reason to avoid fire sales is that, in conjunction with a combined industry-banking crisis, demand is often curtailed by the inability of potential buyers to raise external or internal funding. In 1992, most traditional actors in the Swedish property market were in a weak financial position, and the general uncertainty in the market held back many of those with stronger finances. This had three consequences: assets were temporarily cheap relative to their long-run

³⁶ The discussion of Securum draws on Bergström et al. (2002).

³⁷ Reinius (1996), ch. 4.

values; asset prices were extra sensitive to supply; and large-scale sales would have had negative externalities on other financial institutions. Given this, it made good sense for an owner with deep pockets, such as the state, to allow the winding-up process to extend over a number of years. A forced sales process would have been costly to the seller and also risked deepening the problems for other financial institutions.

Given that the winding-up process is allowed to take time, there are good reasons to set up a special organization to deal with problem loans. First, there may be scale economies in handling many similar loans or assets, e.g. distressed real estate. Second, it may be easier to devise an appropriate incentive system in a separate organization with the sole objective to dispose the assets with maximum profit. Normal banking operations, by contrast, are long-term by nature, and incentives need to be linked not just to the handling of problem loans but to the overall history of the loan commitment, from the first decision to grant the loan to the final liquidation. Third, separation may have an impact on the combined value of the remaining healthy bank and the bad bank. Having got rid of distressed assets, the healthy bank becomes more transparent, which should make it easier to assess for outside investors and, hence, reduce the good bank's cost of external funds. The bad bank, on the other hand, is naturally funded predominantly by equity from the owner of the good bank in order to minimize problems of asymmetric information.

All in all, the arguments both for establishing a separate unit to handle non-performing loans and for organizing it in the form of an independent bad bank with the task of liquidating the assets take on greater strength the larger is the volume of loans and assets in default, the longer the time needed for profitable liquidation, and the freer the mandate given for managing the assets taken over. All of these conditions were fulfilled in Sweden in 1992.

Securum was formally constituted in October 1992 as a subsidiary of Nordbanken. It took over roughly a third of the balance sheet of the bank. Loans and other assets with a face value of SEK 67 billion were purchased by Securum at a price of SEK 50 billion, leaving Nordbanken with a portfolio of mainly sound loans with a face value of SEK 120 billion. Securum was well capitalized from the start with an equity value of SEK 24 billion, giving it the financial strength for a long life if necessary; 15 years was mentioned. It has been argued that the price paid to Nordbanken for the loan portfolio was on the high side, i.e. perhaps serving as an indirect way of capitalizing Nordbanken³⁸. In January 1993, Securum became directly owned by the state and formally completely independent of Nordbanken. A similar bad bank, Retriva, was also set up for distressed loans from Gota and was later merged into Securum.

³⁸ Bergström et al. (2002, p.51) note that report very high credit losses in 1993, indicating that they paid a high price. Obviously, this is hard to verify in retrospect.

The Securum management was given a great deal of freedom and considerable financial strength. The government delegated responsibility to a professional and independent board. This set-up was intended to minimize the possibilities for political interference, which has been a problem in Mexico and other crisis countries. But independence also created a classic owner-management principal-agent problem. Ownership and control were separated, and the government had abdicated from the role of an active owner. Nor did the capital market exercise any restraint on the management, since Securum was so well capitalized that there was no need for external funds in the foreseeable future. This would seem to have paved the way for the management to pursue private goals like empire building or other self-serving actions. The most obvious fear was that management would let the company grow into a state conglomerate rather than seeking to wind up affairs swiftly.

The fact that Securum's assignment was to be carried out within an undetermined period of time was an additional complication. An organization of this kind, where appointments are meant to come to an end but the end date is undetermined, makes special demands on both personnel and pay policies. The employees can hardly be motivated by career prospects within the company, and the methods to motivate staff may differ from those used in companies of a more permanent nature. Linking some form of bonus to performance is a way to motivate staff for the planned duration of the organization. The idea of incentive programs turned out to be controversial for political reasons, however, and it took until spring 1994 before a limited incentive program was introduced, a bit late since most loans had already been liquidated at that time. Similarly, the government showed little understanding of the need to attach people in leading positions more securely to the organization. The chairman of the board of Securum had to resign in 1994, following a press debate and a conflict with the government about an incentive scheme for leading staff. In the end, bonus systems were quite limited. In view of this and the great independence enjoyed by Securum management, it is particularly interesting to study how well Securum performed its tasks.

The primary initial task was to rescue whatever values the loan portfolio contained. First, it had to be decided how loans should be liquidated. Then Securum could take over the underlying collateral and get control of any operations so as to secure that the underlying economic activities were run efficiently. Second, assets should be developed and packaged in such a way that the potential market value was maximized, and third, they should be sold at the best possible price.

5.2.2 Liquidation of loans

Securum started out with a portfolio of some 3000 loans to around 700 different corporations. Most borrowers were deeply insolvent, and the task was to determine whether and how firms could be reorganized with respect to both management and financial structure. This involved deciding whether to have the debtors file for bankruptcy or not. A drawn-out solution could be expensive, as companies with excessive debt often are unable to focus on key operations and investment decisions. The owners – with little capital at their disposal – could not be expected to make the right choices on investments or day-to-day maintenance, when part of the profits would accrue to Securum and other creditors. Already by mid-1994, most of the loan portfolio had been liquidated.

In as much as 70 per cent of all companies in Securum's client register, bankruptcy was the chosen solution. Bergström et al. (2002) found that, compared with other companies with similar profitability and financial characteristics, a disproportionate fraction of Securum companies were declared bankrupt. Thus, the speed of the process seems to have come at the cost of a slightly greater bankruptcy risk for Securum related companies. Since incumbent owners and management naturally have a preference for reorganization over bankruptcy, it is no surprise that Securum was criticized for taking too hard a line. In some cases, the companies lacked future prospects and assets were repackaged and sold. In other cases, the operations were viable and were carried on in a new corporate guise. Ultimately, many of the Securum companies that went bankrupt were reconstructed and sold to buyers who continued their operation.

5.2.3 The turn-around of Securum firms

After the loan liquidation phase, efforts focused on generating value in the various companies and properties. Most of the industrial companies had been in such deep financial trouble that the owners had been unable to devote sufficient time to the business itself, and property maintenance was often long overdue. The various companies were organized in a few holding companies, which focused their efforts on restoring an efficient financial and operating structure so as to enable focusing on production and value creation rather than on financial issues.

In many cases the organizational structure of the companies was changed, e.g. by replacing the CEO and adjusting the board composition. The financial structure was altered by reducing the debt-to-equity ratio, with Securum often acquiring a majority of the shares. Prior to restructuring, most of the companies were management owned. In cases where the old management remained in place but were deprived of ownership, there was a risk of an adverse effect on management

incentives. To counter this risk, various incentive systems like buy-back options were introduced. These measures seem to have been successful, and in most companies results improved relative to comparable firms outside Securum within a couple of years after reorganization (Bergström et al., 2002, ch. 6).

5.2.4 Asset sales

The timing of asset sales had to be done with an eye to market developments, in particular the recovery of the real estate market. When the loans had been liquidated Securum was the owner of around 2500 properties with an estimated market value of 15-20 billion SEK, corresponding to between one and two per cent of the total stock of commercial real estate in Sweden. Putting all of this on the market immediately, e.g., by auctions, would have led to large losses and depressed the real estate market even further.

Assets were sold in three ways: IPOs on the stock exchange, corporate transactions outside the stock exchange and transactions involving individual properties. Most of the sales were done in 1995 and 1996 when the real estate market had started to recover, but when prices still were low by historical standards. As it turned out, the process was much faster than originally envisaged and Securum was dissolved already by the end of 1997. Already in September 1995, less than three years after the start, the board of Securum presented a proposal to the effect that the group should be wound up by mid-year 1997. Asset liquidation had already begun on a small scale in 1994 and 1995, but the pace was now stepped up in 1996. This involved individual companies or properties, but also sales of corporate groups by IPOs or private placements.

Most of the assets were real estate. Property sales started already in 1994, but approximately 85 per cent of all sales were undertaken in 1996-97. At this time, the property market had started to recover slowly and was regarded as more liquid³⁹, but 1997 prices were still much lower than even in 1991 and 40 percent below what they would be three years later (see Fig. 9). In retrospect, it is easy to see that the economic outcome would have been better if this had been a more gradual process and part of the property portfolio had been sold a couple of years later.

There are different ways of selling a property portfolio: as individual units one by one or lumped together in packages of properties, or included in property holding companies. Securum used all methods, but the majority of properties, by value, were sold as part of property companies. In no case were auctions used, despite the experience from, e.g., the U.S. savings-and-loans crisis where

³⁹ This is not confirmed by looking at the number of sales of rental properties, which was quite constant all years 1992-96, until it started to increase in 1997 (Statistics Sweden).

the Resolution Trust Corporation successfully used auctions as a sales method. Instead individual properties and packages of properties were sold in traditional fashion, following direct negotiations with selected potential buyers. Bergström et al. (2002) found Securum sales prices to be 5-10 percent lower than comparable market prices. Perhaps, the shortening of the time frame was reflected in a tendency to sell properties somewhat below-market prices. IPOs of property companies were used in order to reach a broader circle of investors, including those with no interest in operating properties. Particularly in a situation where a number of the traditional actors on the direct property market were still wrestling with liquidity problems, this may have been a significant factor.

In total, Securum carried out five IPOs, four in Stockholm and one on the London Stock Exchange. Three of these were property companies. On average, the shares were sold off at a slight premium, in contrast to the rebate which is standard. The aggressive pricing may be attributable to the strong position Securum occupied when the bid price was set in negotiations with the investment banks. The first IPO, the property company Norrporten, was done already in 1994. Considering that property prices still were close to the bottom of the cycle this would seem to be too early, as also argued by Securum's advisers. There is no doubt that Norrporten would have obtained a higher valuation at a later point. Possibly, a need to demonstrate the intention to liquidate assets, affected the timing. It also has to be remembered that Securum's sales were not the only ones considered by the Swedish state at the time. Other cases included, e.g., the telecom company Telia with a value 15–20 times higher than that of all the companies listed by Securum combined.

To sum up, Securum must be considered a success story. It seems to have done a good job at making the assets productive and it avoided depressing the market further through a wave of fire sales in 1993, but it also avoided the risk of developing into a permanent state holding company. Probably, some assets could have sold at slightly higher prices if the process had been allowed to extend over a couple of more years, but expecting such fine tuning of the process would be unrealistic.

6 The Aftermath

6.1 The recovery

The real economy started recovering soon after the fixed exchange rate was abandoned. The effective exchange rate of the krona fell by 13 percent in the fall of 1992 and continued to fall in

1993 to reach a total of 21 percent depreciation by the end of the year. This allowed the Riksbank to reduce its policy rate gradually from 12.5 percent in November 1992 to 7.75 percent at the end of 1993. The depreciation was a major boost to the Swedish economy. Calculations made by the Riksbank indicate that the profit margins of the export industry were back at the levels after the devaluation in 1982 already in the first half of 1993.⁴⁰ As a result, exports increased by 8 percent in volume in 1993 and by 13 percent in 1994. Private consumption fell by 3 percent in 1993 and then started to recover slowly, but it was not until 1996 that it reached its 1989 level. Private sector investment fell more dramatically, by a total of 35 percent from the peak in 1990. The recovery was slow and it would take until 1999 before investment was back at its pre-crisis level. The net effect was that GDP continued to decrease also in 1993 before it started to grow again, by 4 percent in 1994. See Figure 13.

Household debt stagnated in nominal terms for several years, and combined with increasing disposable income – partly as a result of the tax reform – the debt-to-income ratio fell to 85 percent in 1995, lower than before the deregulation in 1985. In spite of falling housing prices the debt ratio also fell slightly in relation to household assets.

For 1992 all banks showed losses, in aggregate corresponding to 3.4 percent of the loan stock. In 1993 the situation improved. Credit losses decreased and operating profits increased, as seen from Figure 12.⁴¹ The exact timing of credit losses is hard to specify, however, as the numbers include reservations for expected future losses and the reporting may have reflected the banks' need for external capital and government support. As noted by Urwitz (2001), there are considerable differences in the timing of losses between the banks. For Nordbanken and Gota – the two banks that were recapitalized early – 94 percent of the total credit losses 1991-96 were reported in 1991-93. For SEB that entered into discussions with the Bank Support Agency but was anxious to avoid state ownership, the corresponding fraction is much lower, 65 percent, and for Handelsbanken, which never applied for support, the fraction is in between, 74 percent.

The banks also benefited from improved operating results. Primarily this was due to improved interest margins. These were caused by generally decreasing interest rates, by the bank guarantee that led to smaller risk and liquidity premia, and by a reduced dependence on expensive market funding as deposits increased and the demand for loans decreased. On the other hand, all banks agreed to rent concessions. For borrowers with temporary liquidity problems the interest was

⁴⁰ *Inflation och inflationsförväntningar i Sverige*, Sveriges Riksbank, March 1994, Fig. 1

⁴¹ The definition of credit losses includes reservations for future expected losses for non-performing loans. It does not include interest concessions where the terms of the loans were renegotiated.

temporarily set down. For some banks such concessions affected a significant fraction of the loan stock: 5 percent for SEB and 3 percent for Handelsbanken in 1992.⁴²

With brighter prospects for the future, it was also possible for all banks to raise new equity in 1992-93. By the end of 1992, several banks were close to the minimum capital requirement of 8 percent. The average capital ratio across all banks was 8.9 percent. As a result of additional equity and adjustments to the asset portfolio⁴³, every bank could report an improved capital ratio in 1993. By the end of this year, the average capital ratio had increased to 11.2 percent, well above the required minimum. The situation continued to improve. In 1994, some banks still reported losses, but from 1995 all banks were again profitable with an average return on equity of 20 percent. In 1996, the bank support was formally abolished. At that time Swedish banks were back to normal, in fact more profitable and better capitalized than banks in most other European countries.⁴⁴

6.2 *The bill to tax payers*

To evaluate the resolution of the banking crisis it is natural to first take a bookkeeping perspective and look at the cash flow over the government budget. Government payments to the banks are summarized in *table 2*. Out of a total of 66 billion SEK, only 3.1 billion went to the old bank owners: 1 billion in interest subsidies to the owners of Sparbanken Sverige and 2 billion to repurchase shares from the old owners of Nordbanken. In this sense the government followed the stated principle of rescuing the banks but not their owners. The two exceptions relate to decisions at an early stage, before the crisis was seen as systemic. The remaining government expenses, 63 billion, came in the form of new equity to firms that were 100 percent state owned: Nordbanken, Gota, and Securum. The net impact on the government budget, taking into account the value created by the state-owned firms, was of course much less than 66 billion. One possibility is to close the books and calculate the net amount in July 1997, when Securum was dissolved. The total government expenses then come to 71 billion SEK, including the value of the state-owned shares in Nordbanken when the crisis started (taken to be January 1991). On the income side are dividends from Nordbanken, proceeds from a partial privatization of the bank in 1995, the market value of the remaining state-owned shares in Nordbanken in 1997, and the proceeds from Securum asset sales including the market value of its remaining assets. Using the

⁴² Source: Yearly reports.

⁴³ Loan portfolios were sold to other institutions and guarantees were acquired for loans that put them in another risk category; see Lind and Nedersjö (1994).

⁴⁴ *Finansmarknadsrapport 1997:1*, Sveriges Riksbank.

3-month t-bill rate to transform these items into current values in July 1997, Jennergren and Näslund (1997) have calculated the final bill to the taxpayer to be 35 billion SEK, 2.1 per cent of GDP in 1997.

Closing the books in 1997 is of course a bit arbitrary. After all, Nordea, where the state retained a stake until very recently, has grown into a highly successful banking group. Taking a longer perspective, Barr and Pierrou (2015) have recently performed a corresponding ex post calculation with an end year in 2013, when the Swedish state sold its final holding of Nordea shares. Their calculation also differs from Jennergren and Näslund in two other respects. First, they use a higher discount rate which reflects the average interest paid on the government debt rather than the 3-month rate. Second, they include items related to losses on government housing loans, administered by the holding company Venantius that was set up in 1995. Bearing these differences in mind, they calculate the NPV of the bank support to 1.5 percent of 1991 GDP.

These numbers, be they 2.1 or 1.5 percent of GDP, are quite modest compared with the dramatic increase of the government debt in the crisis years as depicted in Figure 14. In a few years, the government debt almost doubled, from around 40 percent of GDP in 1990 to 75 percent in 1995. Crises are generally costly to the tax payers not because of the direct expenses to save the banks but because the harm they are causing to the overall economy and the impact this is having on the tax base and on welfare related expenditures.

6.3 Macroeconomic costs

To assess the wider economic costs and benefits one has to ask how the ability of the banking sector to fulfill its key functions in the economy was affected by the crisis. I take the traditional view that banks have two key functions. First, tied to the liability side of the balance sheet, they provide liquidity and payments services. Second, tied to the asset side, they provide information-sensitive credits to those households and firms that don't have easy access to markets for traded financial assets. The latter function involves screening customers before granting a loan and monitoring them after the loan is given.

The ability of the banks to provide liquidity services was unimpaired throughout the crisis, but it was in jeopardy at the time of the Gota default in the fall of 1992. At that stage a guarantee encompassing all banks and all liabilities was probably necessary, in order not to risk some form of bank run. As mentioned, Gota had already encountered a small run earlier in the spring. But, as the finance company crisis had illustrated, a major run would more likely have been initiated

from the financial markets. In fact, a dry-up of international funding was in all likelihood imminent in September 1992. From that perspective the liquidity support given by the Riksbank in the fall of 1992 was crucial.

The second major task of banks is the provision of credit to small and medium-size business. The wave of bankruptcies that followed on the banking crises bears witness that the banks had failed in their function of monitoring their clients. This had social costs before the crisis by facilitating projects with negative present value, and it had social costs after the crisis in the form of interrupted production processes and underutilized resources. Further, the crisis left the banks poorly capitalized and, temporarily, less well equipped to take on new loans than under normal times. Between 1990 and 1993, the stock of bank loans decreased by 21 per cent in current prices and the margin between the money market rate and the average bank lending rate reached a high of more than 5 per cent in 1992. This may be taken as evidence of a credit crunch, i.e. a shift of the supply curve for borrowed funds due to a shortage of bank capital. However, it may also reflect a collateral squeeze; the balance sheets of households and corporations were weakened by falling collateral values which increased the fraction of potential borrowers that would have been denied a bank loan even by financially strong banks. Further, the general uncertainty in society increased, stimulating savings and hampering investment demand. All these effects are related to the banking crisis, but it is difficult to disentangle what fraction of the fall in lending depends on the credit crunch, the collateral squeeze, and the savings shock.⁴⁵

In several respects the effects of the crisis on the banking sector appear to have been short-lived. As we have seen, various performance indicators were back at pre-crisis levels already in 1994. The margin between deposit and loan interest rates was down from 6.4 per cent in December 1992 to 4.4 per cent in December 1994 and the rate of return on equity before tax was up at 15 per cent. Subsequently interest margins came down further to little more than 3 per cent and the return on equity has increased to above 20 per cent.⁴⁶ On the other hand, it took until 1998 before bank lending reached 1992 levels in nominal terms, but this is more likely to be the result of lack of demand than of supply restrictions. All in all, any credit crunch effects on the private sector appear to have been short lived.

Two simple illustrations of the possible cost of the crisis in terms of lost production are given in Figures 15a-b. Figure 15a follows the most common approach and compares the actual

⁴⁵ These three different shocks are identified in the model of Holmström and Tirole (1997), where collateral is needed for borrowing and banks need a capital base for lending. In their model both a savings shock and a credit crunch decrease the risk-free market rate and increase the bank lending rate. A collateral squeeze decreases both rates. Given that we saw both interest rates going down, but the market rate more than the lending rate, the Holmström-Tirole model suggests that a collateral squeeze was an important part of what was going on.

⁴⁶ Sveriges Riksbank, *Financial Markets Report* 1998:2, figures 8 and 10.

development of GDP with a hypothetical growth path obtained by assuming the observed average growth rate 1980-1990 to hold for all subsequent years. The area between the two curves can be interpreted as the cost of the crisis. According to this measure, it took until 1999 for the economy to get back to the trend path. The average deviation 1991-1999 amounts to 6.0 percent of GDP per year. While illustrative, such a calculation is of course quite arbitrary and builds on a particular counterfactual, that it would have been possible to maintain the earlier growth rate if the crisis somehow had been prevented. One might, instead, take the view that the deregulation in 1985 caused both the rapid growth in the late 1980s and the crisis. This would suggest extrapolating the 1980-85 growth rate (1.95 percent) all the way from 1985. The result of this alternative view is shown in Figure 15b. Now there is again a GDP loss relative to trend during the crisis years, but this gap is more than offset by a gain relative to trend all years after 1999. Perhaps this is little more than playing around with numbers. But if one takes the view that the crisis was a hard-to-avoid consequence of the deregulation, it may be a more realistic counterfactual and an illustration of the positive connection between growth and financial development.

7. An Assessment

When financial crises hit Sweden, along with Norway and Finland, they were seen as a relatively unique set of events. Not since the 1930s had highly developed industrial countries experienced such systemic crises.⁴⁷ Today, two decades later, the world has more experience, unfortunately. This makes it natural to look in the rear mirror in evaluating the Swedish case. What are similarities and differences between the Swedish crisis and the world-wide crisis of 2007-08? How helpful would the insights from the recent policy debate and regulatory reform agenda have been in preventing and resolving the Swedish crisis a quarter-century ago? And vice versa, what lessons for today can be drawn from the Swedish crisis experience?

It is natural to split the discussion in two parts: crisis creation and crisis resolution. In general, such a dichotomy may be a bit artificial, since any resolution principles that are stated *ex ante* are bound to feed back on the incentives of the actors and hence on the probability of creating a crisis. Dividing the discussion in these two parts is also natural, since the conventional view is that Sweden did many things wrong in the process leading up to the crisis but many things right

⁴⁷ Earlier crises like the Spanish in the 1970s and the US Savings-and-Loans crisis in the 1980s concerned larger numbers of banks but only smaller parts of the total banking sectors.

in resolving it.⁴⁸ To the extent that this is true, it suggests that Sweden would have had a lot to learn in the 1980s from the experience of the 2000s, but that the world of today may have something to learn from Swedish way of resolving the crisis. So, let us examine these conjectures.

This section has four subsections. The first is essentially a brief account step by step of the road leading up to the crisis, emphasizing differences and similarities with the recent crisis. The next section discusses the various insights from the recent crisis that figure on today's agenda for regulatory reform and asks how helpful the proposed new regulations would have been in preventing the Swedish crisis, had they been in place thirty years ago. The following section looks at the resolution and asks if different aspects of the Swedish approach are more generally applicable. The final section looks specifically at the roles played by supervision and policy in the development of the Swedish crisis.

7.1 Creating a crisis.

The credit boom. A key theme in virtually any discussion of financial crises is the role of credit. Booms in credit sow the seeds of coming crises. This is well documented in historical research from, say, Kindleberger (1978) to Reinhart and Rogoff (2009). Looking backwards, almost all crises have been preceded by credit booms. But this does of course not imply the reverse. Looking ahead, not all credit booms have been followed by crises. Recent work by Schularick and Taylor (2012) has shown, based on century-long data series for several countries, that credit growth is a powerful predictor – perhaps the only robust one – of financial crisis. Clearly, the Swedish case fits perfectly into this picture. But as illustrated in a pedagogical fashion by Schularick and Taylor (see their so called Receiver Operating Characteristic Curves), there is a considerable risk of making false predictions by relying on credit growth as a crisis predictor. A case study, such as this one, allows us to ask why Sweden got a credit boom in the 1980s and why this particular credit boom ended so badly.

Boom triggers. Even though credit cycles do exist statistically and seem to live their own lives somewhat independently of business cycles (see e.g. Claessens et al., 2012, and Borio, 2014), they do not arise out of thin air. To understand how lending booms start and develop it is useful to think in terms of triggering factors and propagating mechanisms. Both of these can come from at least three areas: market institutions and regulations, lender and borrower incentives, and the macroeconomic environment. In the Swedish case, the obvious triggers came from changes in institutions and regulations. Apart from the 1985 deregulation, the evolution of an active and

⁴⁸ See, e.g., Borio et al. (2010) for an expression of this view.

liquid money market and the increased access to international funding were also key factors to get the process going. Taken together these changes enabled the deregulated banks and other financial institutions to compete actively over lending as they had not done in decades. For the individual bank, funding was no longer limited by the flow of deposits.

These triggering institutional factors that increased the supply of loans were given extra leverage by three aspects of the incentive system and macro environment that stimulated the demand for loans: negative real interest rates due to the combination of an asymmetric tax system with rapid inflation provided incentives to borrow; an expansionary fiscal policy led to rapid income growth and record low unemployment; and the adherence to a fixed exchange rate which was defended by high interest rates made levered financial investments seem attractive (“interest arbitrage”). Nearly all these factors – except the growth of the money market – are directly related to policy decisions. In the run up to the recent worldwide crisis policy also played an important role in several ways: changes in housing policy that contributed to the credit boom; the special role played by government-sponsored institutions; and loose fiscal and monetary policy.

Propagation. The deregulated environment after 1985 created a new type of dynamics based on the interaction between debt and asset prices. Levered investments, particularly in commercial real estate, fuelled asset prices, and higher collateral values fed back and provided the basis for even more lending. Portfolio choices seem to have reflected a combination of optimism and low risk awareness. This is indicated by the fact that leverage was pro-cyclical; in the boom years leading up to the crisis, the ratio of debt to total assets increased slightly both for firms and households. Another indication of over optimism comes from the office market. As discussed in Section 3.4, the price-earnings rate was peaking around 1990 more or less simultaneously with office prices and slightly after rents had reached the top. At the peak of the property cycle, when real office rents had increased by 75 percent and prices had increased more than three-fold since the beginning of the 1980s, the market price implied expectations of further rapid rent and price increases and/or very low risk premia. It is hard to see how this squares with rational asset-pricing. The combination of high leverage and inflated asset prices made the property market extremely sensitive to negative shocks.

Crisis triggers. The above also suggests that if the asset price and lending boom had been allowed to develop uninterrupted, the landing is unlikely to have been soft. At some stage, some piece of negative news would have broken the unrealistic price expectations and prices would have started to fall. Then many levered actors would have seen their equity eroded and would either have been forced to sell or have defaulted on their loans with negative consequences for financial stability. But the process would probably have been less dramatic, had it not been for the

combination of three major shocks around 1990: the international interest increase, the tax reform, and the changing fiscal policy. These changes may not have had such dramatic effects in a normal situation. But now they hit an economy with inflated asset prices and excessive leverage, particularly in the commercial property sector.

7.2 Preventing a crisis

It is easy to see in retrospect that Sweden in the 1980s provided fertile ground for a credit boom, and that the shocks that hit the economy around 1990 were severe enough to cause a crisis.

Given this, how relevant would the current regulatory initiatives have been in taming the process.

Bank capital. The recent crisis has shown that bank capital was generally too low to be adequate as a buffer and instead gave incentives for excessive risk-taking. Likewise, as noted in Section 2.2, Swedish banks in the 1980s operated with very little equity, around 5 percent including hidden reserves. Capital requirements were generally fulfilled with a narrow margin, leaving little cushion in times of losses. The margin between the required minimum and the actual capital base was generally smaller than one percent (Pettersson, 1993, Figs 4.12 and 4.13). Building excess capital in good times to have a buffer in times of crisis had hardly been necessary in the pre-1985 regulated world. Apparently it was not required by the market either, in contrast to after the crisis, when banks were recapitalized and increased their margins over the required rate to 2-3 percent.

There were two reasons why banks could operate with so little equity despite the 8 per cent requirement. As noted in Section 2.2, the definition of the capital base had been broadened in the 1970s and 1980s to include subordinated debt, partly to accommodate demands from banks with difficulties to raise extra equity. Further, most loans did not require full capital coverage. Two categories stand out: mortgages and loans to other financial institutions, e.g., finance companies. The weight on mortgages was much lower than according to the new Basel rules that were introduced from 1990. In fact, as late as 1988 Swedish authorities argued strongly in the Basel negotiations against increasing the weights on mortgages (including commercial properties) based on the low historical loss rates on such loans (Wallander 1993, p. 138).

Shadow banks. A main insight from the recent crisis is the importance of the long intermediation chain from lender to borrower with a series of intermediaries that operated under the radar screen of the regulator and typically were not subject to capital requirements and other regulations. When these shadow banks, like money market funds and hedge funds, ran into

problems and started shedding their assets, it created waves throughout the system that ultimately hit the banks. In the Swedish crisis, the finance companies played the role of simple shadow banks. They were linked to the banks that guaranteed their funding through issues of commercial paper. As a result, the banks had to step in when the finance companies were unable to roll over their short funding, and when finance companies became insolvent the banks were coerced by *Finansinspektionen* to take over their loans, often loans that would have been too risky to be granted by the banks in the first place. An antecedent is the crisis for the British “secondary banks” in 1973. Like the Swedish finance companies these banks had thrived due to the bank regulation and were put under competitive pressure when bank operations were deregulated; see Davis (1992) p 152-153. There are also parallels to the demise of Northern Rock in the recent crisis with the important difference that Northern Rock was a bank and was also subject to a regular bank run (Shin, 2009).

Regulatory arbitrage. Capital requirements and other regulations vary in at least three dimensions: different institutions are regulated differently (if at all); different assets carry different risk weights, not necessarily well adapted to the actual risk; and different types of capital may be included in the capital base. The Swedish crisis offers example of exploitation of all three asymmetries. Banks expanded lending to other financial institutions (finance companies) where the risk weight was much lower, even taking account of the capital requirement on finance companies. Banks expanded collateralized lending in commercial real estate, where risk weights were low. Banks added subordinated debt and hidden reserves rather than equity in order to fill up the capital base as lending was growing. Adding a straight leverage ratio to the regulatory tool box, as in Basel III, would effectively have limited the credit expansion of the Swedish banks in the 1980s.

Pro-cyclical regulation. Capital should provide a buffer that could be depleted under adverse conditions, ensuring that core business would not be affected. But with banks constantly close to the regulatory limit, it tends to work the other way around. First, in times of crisis, assets migrate into higher risk categories (e.g. as LTV is increasing). Second, forward-looking accounting principles and a prudent supervisor may require banks to make reservations for expected credit losses before they are actually realized and to value collateral assets at market prices (even in an illiquid market). This is exactly what the Swedish regulator did in 1990/91 when the crisis was just starting to develop (Urwitz, 1998; Ingves and Lind, 2009). Counter-cyclical capital buffers as in Basel III would have given the Swedish banks more of a margin when they went into the crisis.

Liquidity. The 1980s saw a radical change in funding patterns for Swedish banks due to the development of a liquid money market. This started to develop already around 1980, largely

driven by a need for an active interbank market that allowed banks and big corporations to handle short-run liquidity positions. The money market also opened up new opportunities for non-bank lenders without access to deposits to compete with banks. At the same time, largely because the government did not borrow abroad after 1984, banks increasingly turned to the international money market. All of this changed the nature of banking business and liquidity management. Lending was no longer tied to the deposit base, since funding could be bought on the market. Over time, deposits came to account for an ever smaller fraction of bank lending.

The increased reliance on non-deposit funding also changed the character of liquidity risk and the nature of potential runs. Instead of coming from depositors fearing to be last in line, liquidity risk now was stemming from investors fearing to be unable to get out before the market dried up. Arguably, Swedish depositors in the early 1990s felt their deposits to be safe, in spite of the absence of deposit insurance. Hence, the risk of a depositor run was small, and even in a very critical situation deposit withdrawals could be expected to be limited. Access to short market funding, on the other hand, turned out to be very volatile which played a crucial role in the crisis. In 1991, it killed some of the finance companies and brought others back to be funded by the banks, and in 1992 it would have killed more than one bank had the Riksbank not stepped in and guaranteed funding. Clearly, some form of liquidity regulation, such as the Basel III rules that are now being implemented, would have gone some way towards making the Swedish banks less vulnerable to a market run such as the one in the fall of 1992.

Proprietary trading and market making. Losses related to trading portfolios played a role in the recent crisis. It has led today's regulators to propose more stringent restrictions on proprietary trading and various types of narrow-banking schemes. By contrast, this does not seem to have been an issue in the Swedish crisis. By and large, this crisis was exclusively due to credit losses.

All in all, we see that most of the current reform initiatives address issues that played key roles in the Swedish crisis.

7.3 Resolving a crisis

Early recognition. The first step towards resolving a systemic crisis is obviously to recognize it as such. Early recognition matters because it is a necessary condition for early intervention which may limit the severity of the crisis and the ultimate resolution costs. In the Swedish case, as we have seen, recognition took a while, and it was not until September 1992, that the systemic nature of the crisis was well understood. Even as the finance company crisis in 1991 had demonstrated

the force of a run on the market, the possibility of an analogous funding crisis for the banking system doesn't seem to have been widely entertained. Instead, by letting the banks take over loan portfolios from the finance companies the authorities contributed to export the problems to the banks, apparently without considering the fragility of the banking system. When problems arose for some banks, they were first mainly dealt with in a piecemeal fashion bank by bank.

Even though the extent of the problems was not fully recognized, systemic considerations did play a background role in motivating the early support measures, e.g. the guarantee for Första Sparbanken in the fall of 1991. According to Bo Lundgren, the financial markets minister, the government considered the possibility to issue a guarantee limited to deposits up to SEK 150,000 in case of bankruptcy specifically for this bank (Lundgren, 1998, p. 34). In the end, however, the decision was to guarantee a loan from the owners to the bank, thereby indirectly guaranteeing the survival of Första Sparbanken. In the case of Nordbanken, the government acted in its capacity as owner without explicit concern for any systemic impact. When the general director of Finansinspektionen intervened in 1990 and 1991 to get the CEOs and chairmen of Nordbanken and Första Sparbanken replaced, it was more out of concern for "orderly conduct" within the banks than out of any system wide considerations. When the government decided to bail out the old shareholders of Nordbanken and to create Securum, the primary reason was the desire to lay the foundation for a strong bank, not to save the system.

A special reason why early recognition matters is that poorly capitalized banks otherwise are incentivized to take on extra risk. Allowing banks to operate with very little capital risks increasing the probability of a crisis and making it deeper if it comes. Given that several of the Swedish banks could continue to operate with very small capital margins above the required minimum, it may be surprising that it is difficult to find unambiguous examples of gambling for resurrection.

In summary, Sweden did not do so well on early recognition, but better on speedy intervention once the systemic nature of the crisis was recognized.

Timely intervention. It was only in September 1992 that the crisis was dealt with as systemic. The combination of a currency crisis, the insolvency of Gota, and widespread bank funding problems made its systemic nature obvious. At this stage, the key measure was the blanket guarantee for all bank obligations. While this was crucial and announced swiftly, it should be emphasized that it required broad political consensus in order to be credible. This was demonstrated through an agreement between the government and the social democrats – in political opposition at the time – that was announced in a press release, two months prior to the decision in parliament. In

another political climate, like today's (?), such swiftness may not have been possible if there were no advance resolution planning.

Credibility. A blanket guarantee is associated with another credibility problem. It requires reasonably strong government finances as the cost is essentially open-ended. In the Swedish case, the government debt stood at 44 percent of GDP in 1990 prior to the crisis, which was sufficiently modest to lend enough credibility. By 1995, the debt had grown to 75 percent of GDP despite the relative success of the resolution. From a weaker starting position, bearing in mind the risk of a less successful recovery, it is not clear that the guarantee would have been fully credible.

Comprehensiveness. The all-encompassing blanket guarantee has been seen as a key ingredient of “the Swedish model” and inspired resolution schemes in other countries. It was comprehensive in the sense of guaranteeing “all” external obligations, but in doing so it drew a sharp line between equity and all other liabilities, including subordinated debt. This may have been natural in the situation of Sweden in 1992, where all banks met immediate market funding problems, but it doesn't necessarily make it a good general principle if we see the supply of deposits and the associated payment services as the key function of banks that make authorities reluctant to let banks fail by the same process as other firms. This suggests that the sharpest line should instead be drawn between deposits and other liabilities, and that some form of bail-in scheme where other creditors face the risk of a hair-cut may be preferable to a blanket guarantee. This is especially so if one takes the strain on government finances into account. Obviously, the more general the guarantee and the larger the banking system, the stronger the financial muscles of the state have to be. Sweden seems to have been on the safe side in 1992 in contrast to some more recent crisis countries. As it turned out, the generality of the guarantee was only tested in the case of Gota and it is an open question how well it would have worked if more banks had been insolvent.

Burden sharing. The Bank Resolution Agency stated the basic principle that in case of insolvency no support should go to the old shareholders. If the government were to recapitalize a bank, it would be in the form of state ownership, effectively nationalizing the bank as in the case of Gota. As events unfolded, this principle was never put to a hard test. The other banks managed to recapitalize themselves by going to the market, including their old shareholders. While this was successful, it is quite possible that private capital would not had been forthcoming had it not been for the government's principle of not offering capital without ownership and influence. The importance and credibility of this threat is difficult to infer in retrospect for an outside observer.

Which banks should be saved? The principle of the Bank Support Agency – as stated by Ingves and Lind (1996, 2009) – was to identify those banks that were viable in the long run and, hence, should be kept alive one way or the other, and separate them from those banks that would not have a positive value even in the long run. Among those banks that should be kept alive, some may be able to do that on their own, whereas others would need temporary support, e.g. because a debt overhang problem may have made it difficult to raise new capital in the short run. This, of course, was easier said than done. The practical application of such a principle is not so easy in a deep crisis. Since, in the Swedish case, the vast majority of the non-performing loans were one way or the other related to the commercial real estate market, the long-run viability of any bank in trouble depended crucially on the ability to predict future property prices and rents. It just takes a quick look at Figure 10 to recognize the difficulty of this task. In 1992, one could look back at a period when real rents had nearly doubled and prices increased almost four-fold from the early 1980s to the peak around 1990 before falling back to or below their starting levels. Such volatile historical evidence did not give much guidance about the “fundamental” long-run price level, which essentially depends on two factors: the future attractiveness of the major metropolitan regions, which determines rents, and the real interest rate and riskiness of real estate, which together determine the cap rate. In other words, the crucial factor was the rate of recovery of the economy, which in turn was a function of the success in resolving the crisis.

As it turned out, the ability to predict the real estate market was not quite so crucial. The board of experts that was appointed by the Bank Support Agency set down valuation principles (essentially a set of cap rates for different property types). While the experts were working and their valuations were fed into the loan portfolios of the various banks, the general outlook for the economy improved to such an extent that all banks that hadn't already received support were able to get fresh capital on the open market. The ability to distinguish between viable and non-viable banks wasn't really put to a test.

The good-bank bad-bank separation. By making Securum capitalized for a long life, a clear signal was given to the market that there wouldn't be any fire sales. Thus reducing the supply of properties on the market in a situation where many potential buyers were constrained, gave indirect support to real estate prices in general to the benefit of all banks. In setting up the bad bank, it seems that the government acted both as bank owner and as being responsible for financial stability more broadly. Since the bad bank was an internal arrangement within banks that were already state owned, the transfer of loans and assets from the good to the bad bank was an internal transaction within the public sector, and the price paid to Nordbanken was simply a transfer between two state-owned firms. Paying above-market price for the loans taken over (as may have been the

case) was an indirect way of capitalizing Nordbanken. Creating a bad bank based on non-performing loans from privately owned banks would have been a very different and more complicated operation, since the price paid in that case would have meant a direct transfer from tax payers to private owners.⁴⁹ Hence, the positive Swedish bad-bank experience may not be so easy to apply in other situations.

Winding up. From the principle only to take over banks that are viable in the long run, but that cannot raise capital in a crisis-ridden market, it follows that the intervention may be less costly to the tax payer if it is not wound up until the market has fully recovered. This was the reason Securum was capitalized for at least a decade-long life. Against this, it may be claimed that private owners may be more efficient under normal market conditions, which would suggest winding up any state ownership as soon as possible. Optimal timing should reflect a trade-off between these two effects. From that perspective, the winding up of Securum must be considered a success. Assets were sold before markets had fully recovered, but the risk of developing the company into a state conglomerate with an unclear business idea was avoided.

Impact on the structure of the banking industry. The build up towards the crisis coincided with a wave of bank mergers and acquisitions, where six nationwide banking groups were created and strengthened. In some cases the credit losses were in fact concentrated to the acquired regional banks, and it seems that transitional problems of internal organization and control within the newly formed banking groups contributed to the problems that led to the crisis. As a result of the crisis, the six banking groups were reduced to five by the Nordbanken-Gota merger, later to develop into Nordea, and further reduced to four a couple of years later when Sparbankernas Bank and Föreningsbanken merged into Föreningsparbanken, today's Swedbank. In the case of Nordbanken, there is some reason to claim that the bank was given a competitive advantage over the other banks, essentially an effect of having an owner with deep pockets. The alternative would have been to sell the bank, whole or in parts, to private interests. It is hard to see that this would have been viable in the midst of the crisis. The decision to keep Nordbanken as a state-owned bank, with the plan to sell it at some time in the future, also contributed to reducing the final bill for the tax payers.

Incentive effects for the future. A guarantee is a valuable asset even to those banks that have no immediate need to use it. It doesn't appear in the ex post calculations of the cost to the tax payer that we have presented above. But if it is seen as a component of a resolution system to be used also in future crises, then it clearly has a downside in affecting the incentives of banks and their

⁴⁹ The private banks set up their own asset-management companies as subsidiaries after the underlying loans had been liquidated.

financiers other than depositors. From that perspective a clearly defined bail-in system would be preferable. As long as bail-in schemes haven't been tried on a large scale in practice, the market will continue to anticipate future bail-outs.

The direct *cost to the tax payer* of the crisis resolution turned out to be rather modest, on the order of a couple of percent of GDP, a small number compared to the increase in the public debt by 35 percent as an indirect effect of the crisis. The feedback effects on the government budget from the depression and the erosion of the tax bases were much more important even from a narrow fiscal perspective. This suggests that the problem with a comprehensive approach to bank resolution does not normally relate to the impact on the government budget, but rather to the behavioral effects that would come from creating expectations of future rescue operations.

All in all, the resolution was quite successful in Sweden at the time, but as we have seen the success depended crucially on a number of factors that were quite situation specific. A blanket guarantee requires broad political support to be credible. Depending on the macroeconomic development and the size of the banking sector it can also be very costly and require strong government finances, as demonstrated, e.g., by the Irish experience. Further, the principle not to bail out the bank owners was not put to a strong test as most banks were able to recapitalize themselves.

7.4 The role of supervision and policy

In a sense a crisis can always be seen as a failure of policy makers and supervisors, the actors with a system-wide responsibility. Several of the comments throughout this paper have referred to the role of supervision and policy, and this section will try to synthesize these comments.

Supervision. In general, it is clear that the supervisor, Finansinspektionen,⁵⁰ demonstrated little understanding of the growing systemic risks. Sjöberg (1993) has studied how the supervisor interpreted its quite broad mandate from the government and how it allocated its scarce human resources. He emphasizes the long tradition of regarding “safeness and soundness” more as a legal and formal requirement than as having to do with economic riskiness and financial stability. The 1980s was a time of rapid development in financial markets far beyond the impact of banking deregulation, and the supervisor faced a difficult problem in getting the priorities right. New tasks were put on the supervisor such as consumer protection, monitoring trades in options

⁵⁰ Until 1991, there were separate supervisory agencies for banks and insurance companies. Finansinspektionen was formed in 1991 as a merger of these two agencies. To avoid confusion, I use the name Finansinspektionen also for the earlier period.

and other new financial instruments and keeping an eye on insider trading. Notwithstanding the difficulty of the overall task, it is hard to avoid the conclusion that the supervisor, at least until the late 1980s, was pretty much out of touch with the key developments in the market. On-site inspections of banks were given reduced priority. To the extent that the supervisor paid any attention to the risks in financial institutions, this had focus on trading and operational risks rather than the credit risks that would cause the crisis (Sjöberg, 1993, p. 197).

It was only late in the game that the supervisor came to play a more active role. The case of Nordbanken, as told by Reinius (1996), is an interesting example. According to her interview with the general director of Finansinspektionen, signs of poor risk control (e.g., lack of internal control of exposures towards individual clients) in Nordbanken were observed already before the merger with PK-banken in 1989, but Finansinspektionen “lacked the technical capabilities to undertake that control. The computer systems were not up to it.”⁵¹ Later, however, in the fall of 1990, Finansinspektionen filed a very critical report that forced the CEO of Nordbanken to retire.

Generally speaking, it seems that Finansinspektionen played a passive role during the entire boom phase when risks were building up, but was more active as signs of crisis in individual banks emerged. Some of the actions at this stage, like demanding stricter accounting principles when property prices started to fall, no doubt sped up the crisis rather than prevented it. Whether a more forgiving attitude would have helped is doubtful, however.

The government as an owner. In many countries governments have been permanent owners of financial institutions, which has played an important role both in the Swedish crisis and in the recent crisis. Think, e.g., about Cajas in Spain, Landesbanken in Germany, or Fannie Mae and Freddie Mac in the U.S.. In Sweden, the political ambition to develop Nordbanken into a competitor on a par with the leading commercial banks and thereby influence the entire banking system, seems to have contributed to some of the risk taking and early losses that initiated the crisis.⁵²

This brings us to *the role of policy*. Why did policy makers allow the process to go so far as to develop into a full-fledged crisis? It is almost trivial to note that if financial stability had been a policy goal and the growth of private sector debt had been an indicator, then policy would have

⁵¹ The quotation refers specifically to the ability to check the exposure of a bank towards a single individual or business group (Reinius, 1996, p. 29).

⁵² Within the governing social democratic party, there was a long standing opinion in favor of bank socialization. But demands for socialization were regularly voted down at party congresses, partly based on the argument that the state owned bank provided some checks and balances against the private “monopolies”. In practice, this line of reasoning worked as a signal to Nordbanken to increase its market share, in particular in lending to major corporations. See Reinius (1996), ch. 1.

been different. Swedish policy makers were certainly concerned about the lending boom, but more as an indicator of increasing aggregate demand than for fear of a financial crisis. The need for turning macro-economic policy more restrictive was well understood and clearly signaled by standard indicators like unemployment and inflation at least from 1988. As long as monetary policy was restricted by the fixed exchange rate, any policy change would have to come from fiscal policy. The reason why fiscal policy changed much too late lies in the political domain. For a long time, the finance minister pushed for tightening fiscal policy, but finally had to resign in frustration in February 1990.⁵³ Likewise, the sequencing of the deregulation relative to the tax reform was due to the need for political consensus rather than to considerations of optimal timing. The deregulation came earlier because it could be decided by the Riksbank, whereas the tax reform required a decision in parliament.

It is hardly fair, however, to put much blame on politicians for neglecting the threats to financial stability. In fact, the whole generation of Swedish bankers, supervisors, and policy makers who were active at the time had no crisis experience whatever and did not much consider how far changes in market regulations could affect financial stability. Nor did academic economists issue any warnings.⁵⁴ Not even as the Norwegian crisis developed in the late 1980s was it seen to contain lessons for Sweden (Englund, 1989). The times were not seen as different, although they indeed were.

8. Concluding comments

Crises don't arise out of thin air. History has taught us that crises are typically preceded by lending booms. What creates a lending boom? In the Swedish case, the trigger came from an institutional change: the transition from a tightly regulated environment – where bankers were more like civil servants, granting credit to those who fulfilled certain predetermined criteria, rather than like actors on a market – to a competitive environment where understanding of risk was crucial. The 1985 deregulation stands out as the symbol for the move away from this old regime, but the causes run deeper. The development of a modern money market, the proliferation of different types of actors on financial markets, and international influences more

⁵³ See his own account of the events in Feldt (1991).

⁵⁴ A good example is given by the yearly reports by *SNS konjunkturråd*, a group of academic economists sponsored by a think tank. Nowhere in the reports from 1985 to 1991 is there any discussion of the risks for financial stability. The impact of the deregulation is analyzed in a chapter in the 1986 report, where it is claimed that “the thought of a bank failure in Sweden is farfetched” (Calmfors et al. 1986, p. 82). Policy recommendations instead focused on removing remaining obstacles for competition.

broadly made the old regulations less and less meaningful, and in the end the deregulation was inevitable.

Whatever the deeper reasons, there is no doubt that the second half of the 1980s saw a cultural revolution in the Swedish credit market. Loans were now sold and marketed as any other services, and they were sold by bankers with little or no experience in risk analysis. But just like market participants were ill prepared for the new risky environment so were policy makers and supervisors. There may be a parallel to the recent crisis where the market for hard-to-understand asset-backed securities exploded, and many bankers and other market actors were led into taking positions in assets that were poorly understood. Likewise, supervisors had difficulties catching up with the new world of complex instruments and intertwined financial institutions.

Lending booms tend to develop in symbiosis with asset markets, where prices gradually get out of touch with fundamentals. In the Swedish case, this primarily hit the commercial property market where yields reached record-low levels as rents were peaking, a valuation that could only be consistent if rents were expected to increase even faster in the future or if the risk premium was lower than before. Sooner or later some form of exogenous shock will burst the “bubble”. In the Swedish case, there was not just one shock but at least three that occurred around 1990: higher international interest rates, a tax reform, and a change of fiscal policy. Interacted with the European ERM crisis and the rather desperate attempts to keep the peg of the krona, these shocks triggered the crisis.

A lending boom may be a necessary condition for a crisis, but it is far from sufficient. The task of good regulation is to prevent the boom from developing into a full-fledged crisis even in the face of adverse shocks. It is easy to see in retrospect that Swedish regulation failed in more or less the same ways as regulation failed worldwide a couple of decades later. Swedish banks were allowed to operate with too little capital. Lending to real estate, including commercial property, was given too little risk weight. Regulation turned out to be pro-cyclical and was sharpened as the crisis was under way. There was regulatory arbitrage via loosely regulated shadow banks with links back to the banking system. There was no regulation of bank liquidity, even though market funding had come to be crucial for the banking system. All in all, many of the elements of the 2008 crisis were present in the Swedish crisis and that much of the new regulatory structure that is introduced today would have been helpful in preventing the Swedish crisis.

The Swedish resolution of the crisis is sometimes hailed as a model for other countries. The key element was the blanket guarantee, which managed to restore market confidence in the Swedish banks and allow them to continue to operate normally. The guarantee worked because it was seen

as credible. Credibility depended on two conditions which both were fulfilled in Sweden in 1992, but may not be so in other countries at other times. The market was confident that the government would deliver what it had promised. First, the guarantee had broad political support and there was no risk that it would be overturned later by parliament. Second, the government finances were sufficiently strong that there could be little doubt of the ability to honor the obligations, even if more banks would come in need of support. In a more confrontational political environment or with weaker government finances, the Swedish model would be more difficult to apply. Some form of bail-in, where some creditors take part of the burden might be more robust in such cases.

Swedish crisis management was obviously successful in the sense that the Swedish economy got out of the crisis faster than most observers expected. This success, however, depended to a large extent on the decision to leave the fixed exchange rate (which was a large part of what brought us into the crisis) combined with an improved world economy. As a result, the burden put on government finances by the blanket guarantee was rather modest and the “Swedish model” was never put to a hard test.

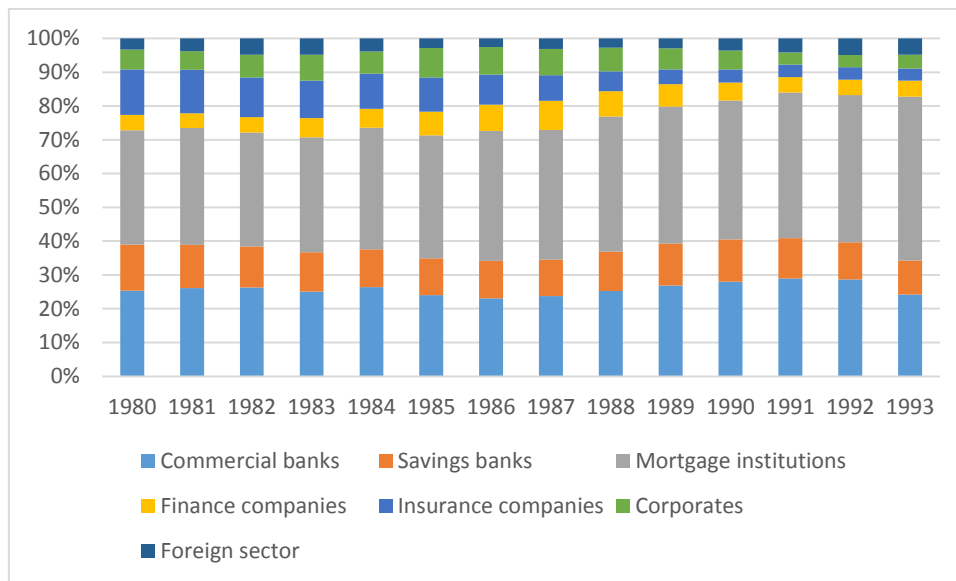
Table 1: Reported credit losses 1990-1996, billion SEK

	1990	1991	1992	1993	1994	1995	1996	1990 loan stock
<i>Handelsbanken</i>	0.7	2.8	7.1	6.0	2.5	1.6	1.6	174.7
<i>SEB</i>	1.7	4.3	9.6	9.0	8.1	3.6	0.9	209.6
<i>Nordbanken</i>	3.6	9.8	18.2	14.3	1.7	1.1	0.6	214.9
<i>Gota</i>	0.9	3.7	12.5	12.0	78.0
<i>Sparbanken Sv</i>	2.8	9.8	16.6	9.6				220.9
<i>Föreningsbanken</i>	0.8	2.7	3.3	4.0				64.9
<i>Other savings banks</i>	0.2	1.1	1.5	1.5				32.5

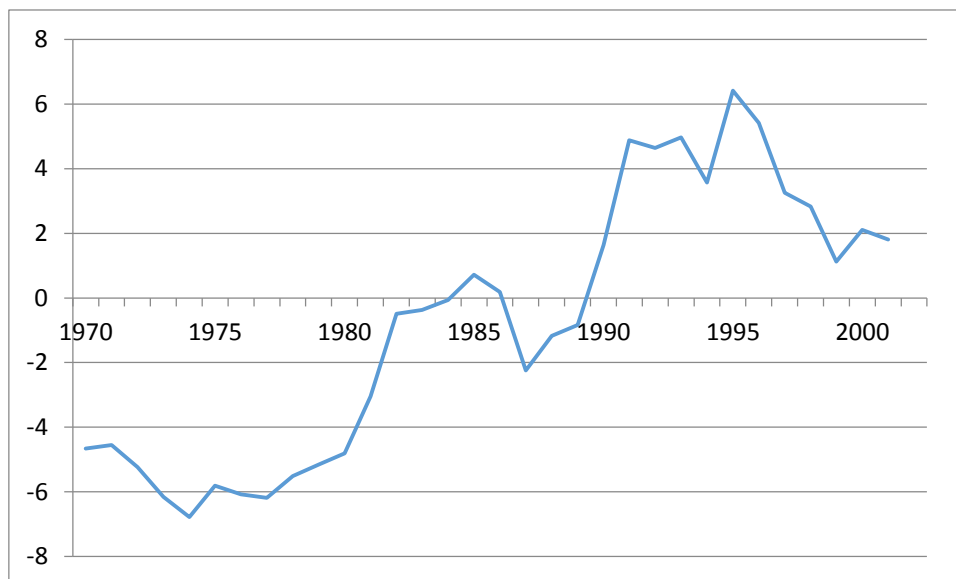
Source: Wallander (1994), tables 1 and A1.

Table 2: Bank support payments

Date	Event	Value (billion SEK)
1991	Nordbanken, new equity	4.2
1992	Nordbanken, bailout old shareholders	2.1
	Nordbanken, new equity	10.0
	Securum, equity	24.0
1993	Gota new equity	25.1
1994	Första Sparbanken, interest subsidy	1.0

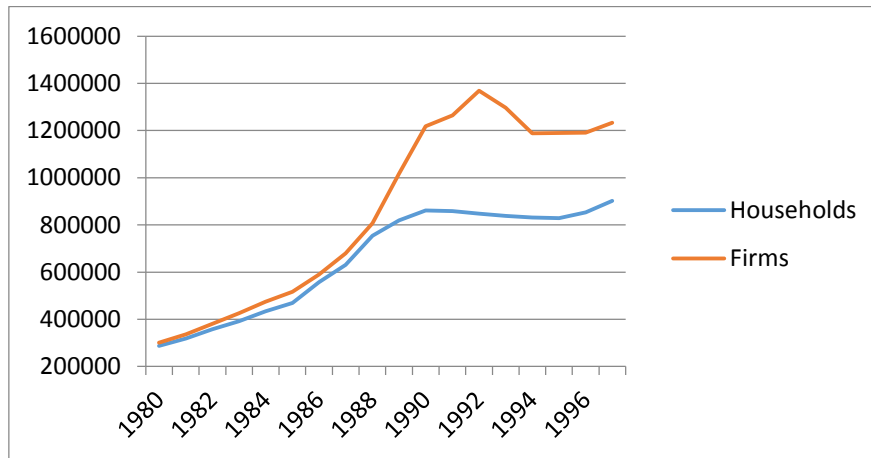
Figure 1: Market shares of total lending

Source: Wallander (1994), Table A1.

Figure 2: Real after-tax *ex post* interest rate

Note: Interest on five-year government bonds after tax deductions for an average-income tax payer (Hansson, 1983) minus the realized inflation rate over the life of the bond. January data.

Figure 3: Lending from financial institutions to households and firms, billion SEK



Source: Financial Accounts.

Figure 4: Total bank lending, billion SEK, by currency

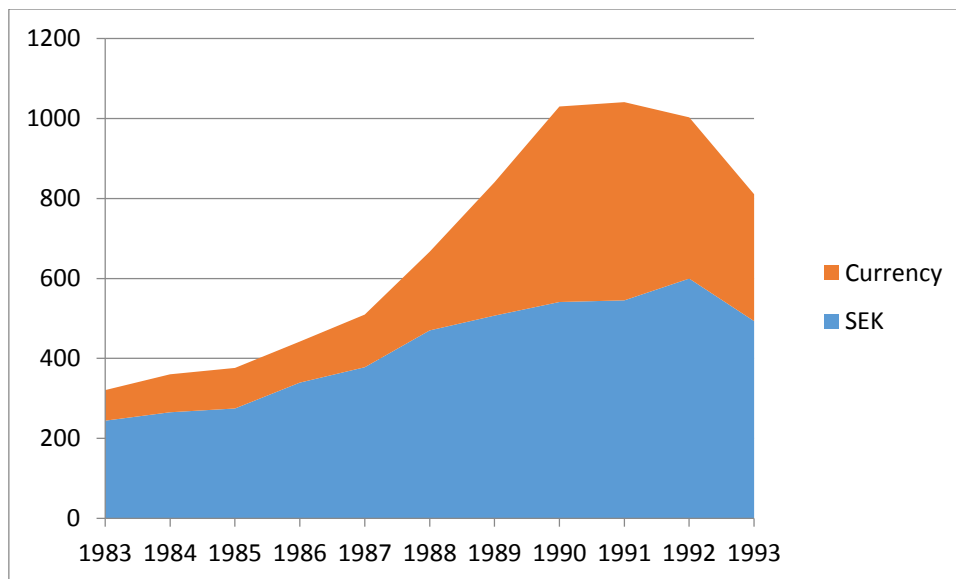
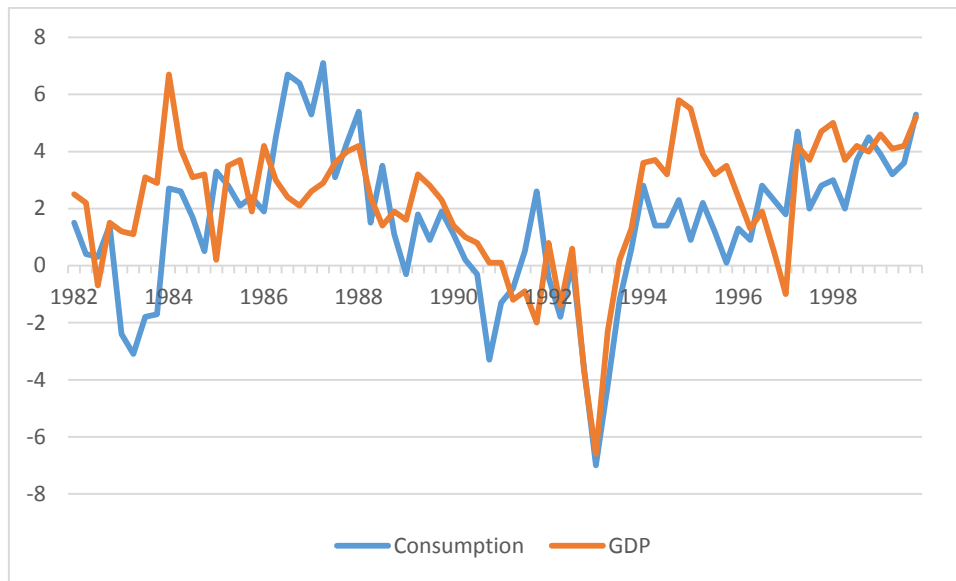
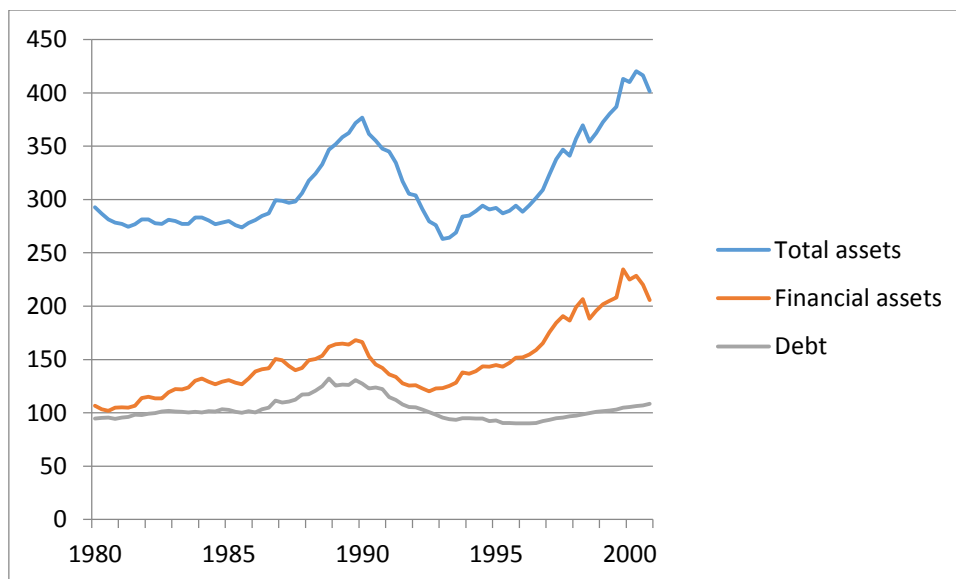


Figure 5: Household consumption and GDP, real four-quarter percentage changes



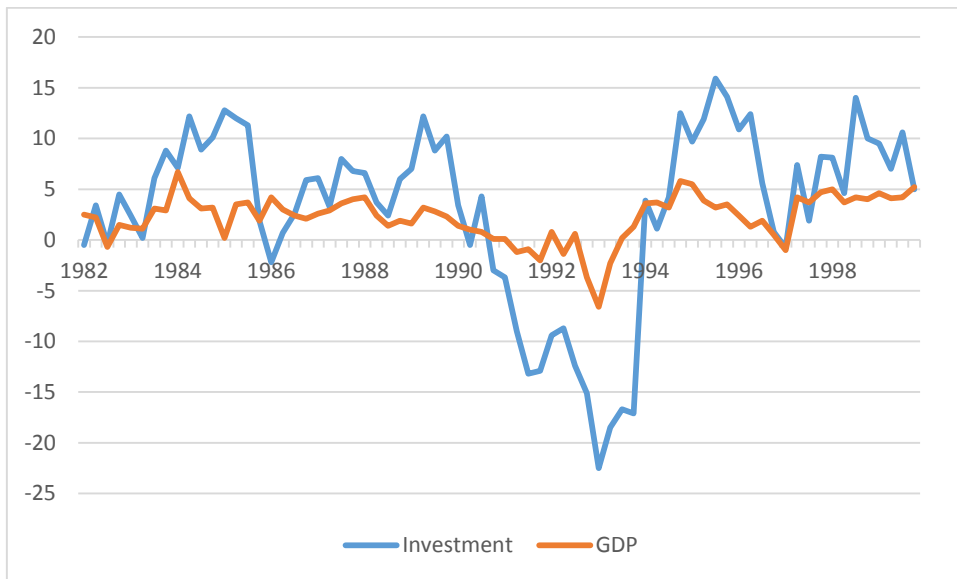
Source: National Accounts, Statistics Sweden

Figure 6: Household debt and financial assets, percent of disposable income



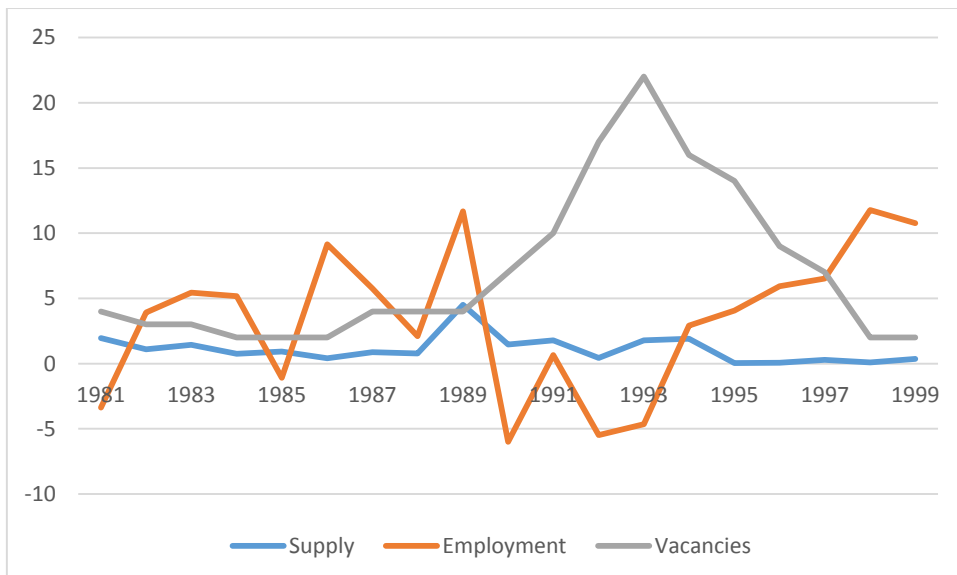
Source: Sveriges Riksbank, Financial Stability Report, 2014:1.

Figure 7: Private sector investment and GDP, real four-quarter percentage changes

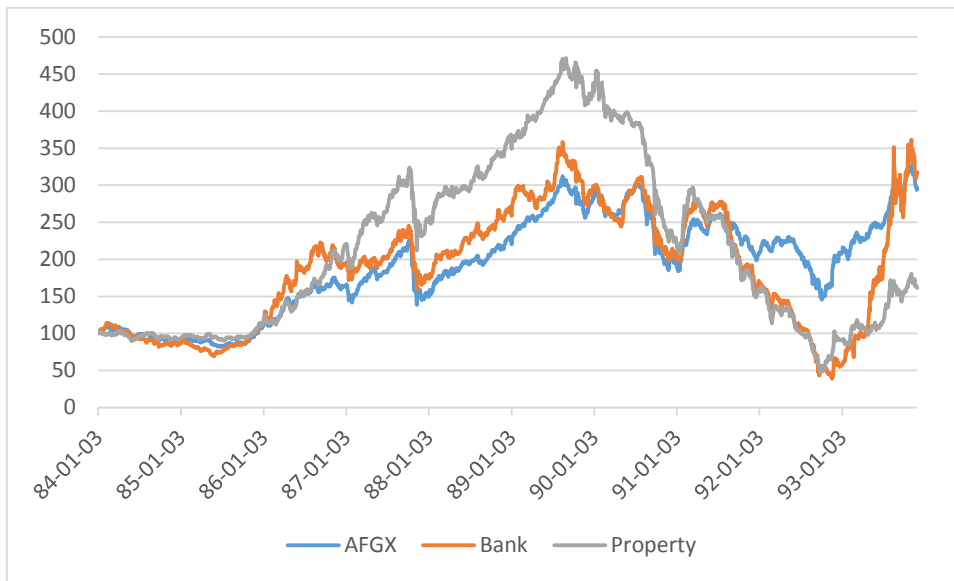


Source: National Accounts, Statistics Sweden

Figure 8: The Stockholm Office Market

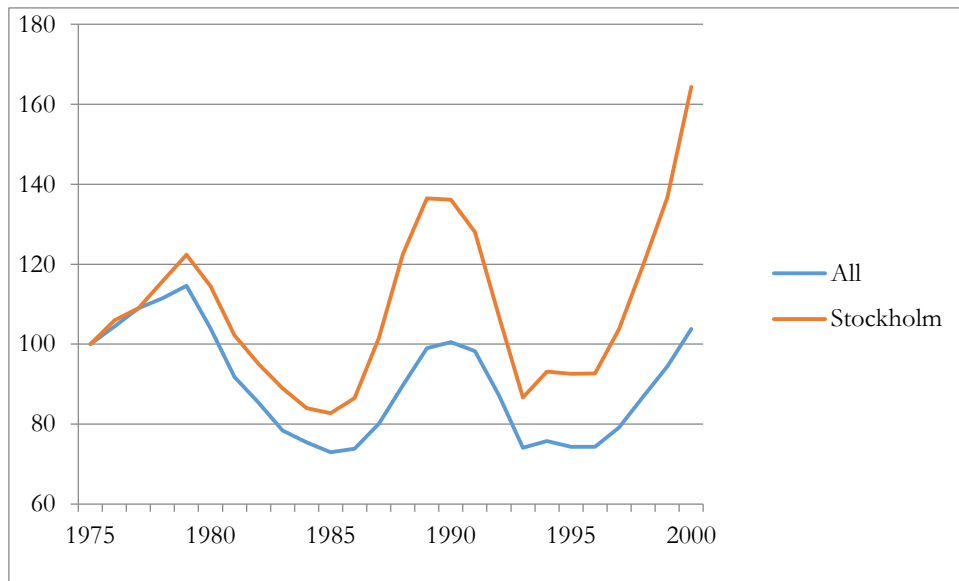


Source: Englund et al. (2008)

Figure 9: Stock price indices, 1984 - 1993**Figure 10: Real price and rent indexes for centrally located office properties in Stockholm (deflated by CPI)**

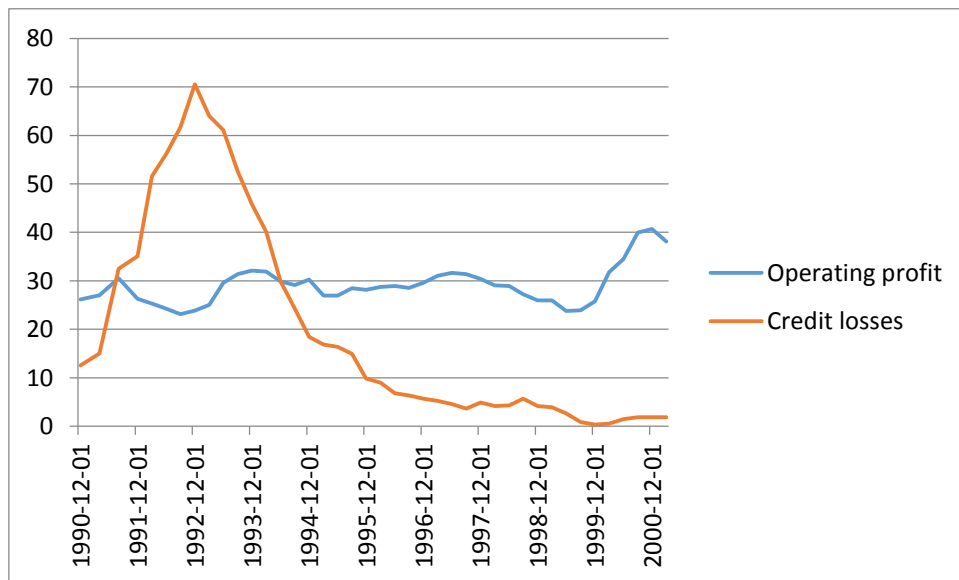
Source: Sveriges Riksbank, Financial Stability Report 2009:2

Figure 11: Real price indexes for owner-occupied one-family houses (deflated by CPI), all country and Stockholm



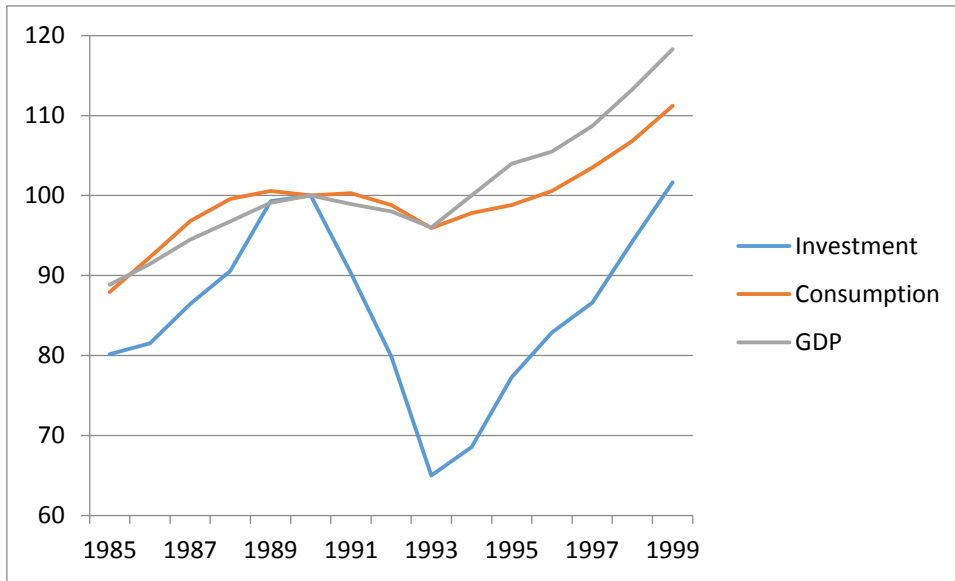
Source: Property Price Index, Statistics Sweden.

Figure 12: Bank credit losses and net operating income, 1990-2014, rolling 4-quarter sums, fixed 2006 billion SEK



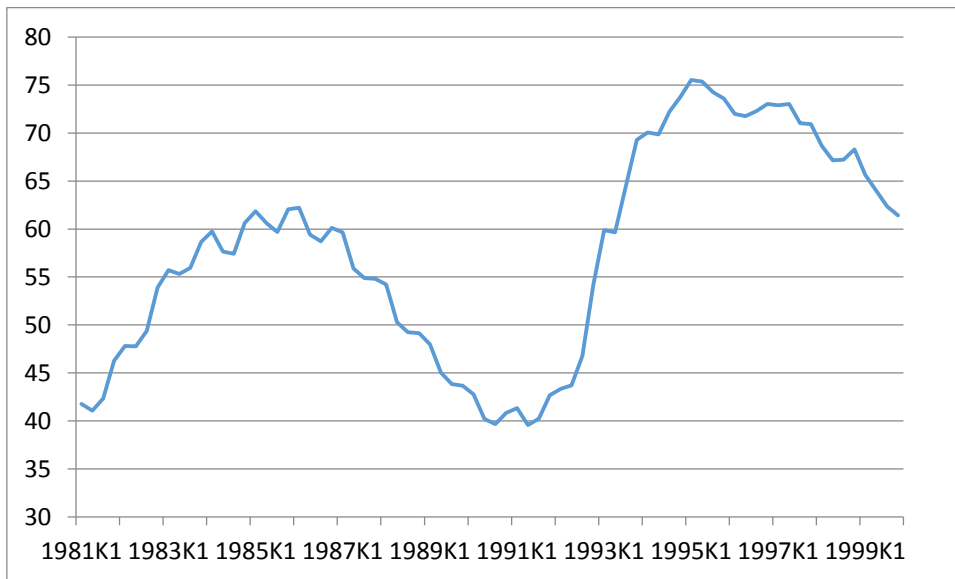
Source: Sveriges Riksbank, Financial Stability Report

Figure 13: Real GDP, private consumption, private fixed investment, volume indexes (1990 = 100)



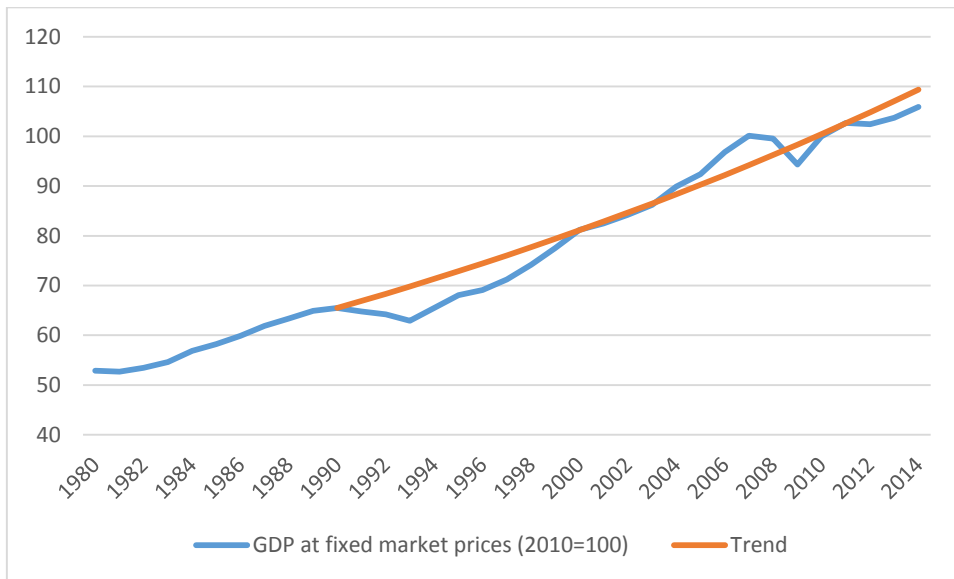
Source: National Accounts

Figure 14: Government debt in percent of GDP



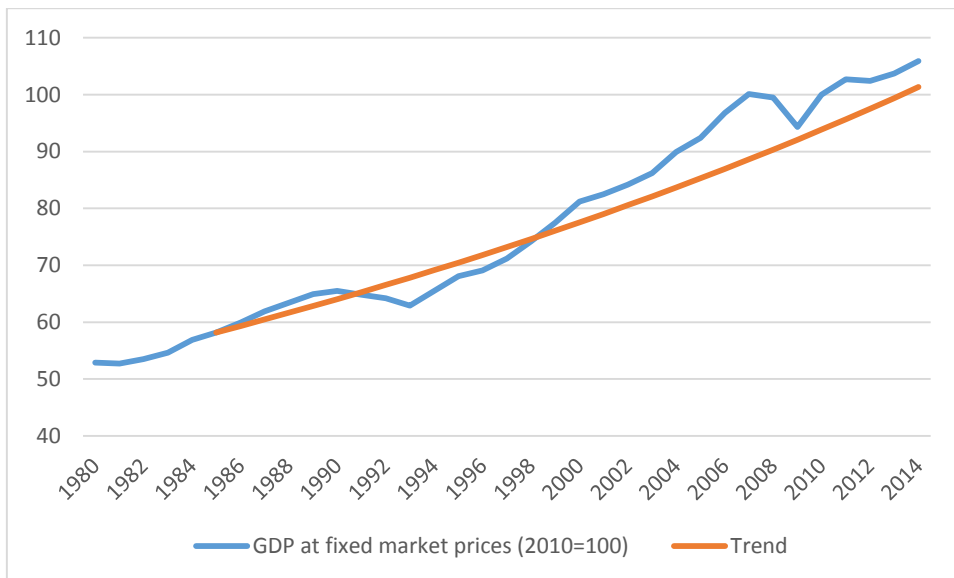
Source: Statistics Sweden.

Figure 15a: GDP at market prices, 1980-2014 and trend GDP 1991-2014



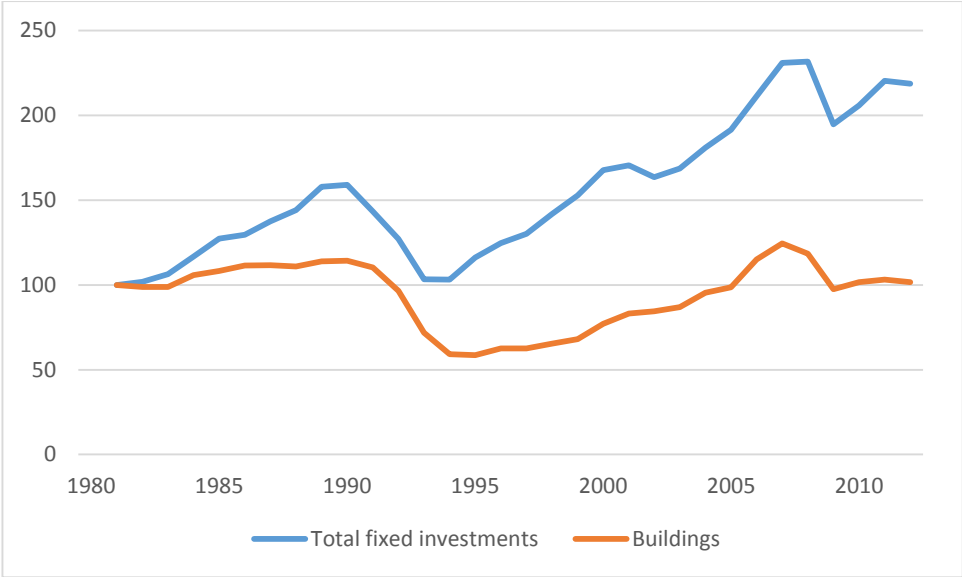
Note: trend is an extrapolation from 1990 of the actual growth rate 1980-1990 (2.1 per cent per year)

Figure 15b: GDP at market prices, 1980-2014 and trend GDP 1985-2014



Note: trend is an extrapolation from 1985 of the actual growth rate 1980-1985 (1.95 per cent per year)

Figure 16: Total fixed investment and building investment, fixed prices, indexes (1981=100)



Source: National Accounts, Statistics Sweden.

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