Minskys, Financial Instability Hypothesis "Und Die Deutschen Banken

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Abstract

The financial crisis of 2007/2008 and the „Great Recession" which followed it are one of the most incredible shocks in the history of the market economy. Amidst so many bad news one country seems to have been basically untouched by the financial meltdown: Germany. In this paper we will try to find some first causes of this exception. To do so, we first concentrate on Minsky´s „Financial Instability Hypothesis", as we believe that some theoretical apparatus is necessary to help us analyze our data and current situation. Then we will look at some data about the German financial system and its international connections, which, we can say, show a very specific pattern of development. We find that German banks are highly exposed to risks in the European private and banking sectors.

Keywords: Financial crisis, Germany, German banks, Minsky, Financial Instability Hypothesis

Introduction

The financial crisis 2007/2008 was the greatest breakdown in our economic system since the Great Depression of the 30´s. The similarity was so astonishing that it even got an own nickname: the „Great Recession", pointing out to the fact that the recovery after the shock in most of the western countries is showing to be much slower than expected, despite the fact that the economic and social consequences this time were much less intensive than 80 years ago.

One of the (if not the) most striking points was that this huge financial meltdown occurred at the end of the so called "Great Moderation" beginning in the 80´s. After the breakdown of the Breton-Woods system, the oil price shocks of the 70´s as well as the completely new phenomena of "stagflation" in the USA (high inflation rates with high unemployment), it seemed that the world had entered a new glorious phase. The American economy, for instance, lived indeed in these decades a very smooth growth of the real economy; the country had even a budget surplus in the Clinton years (Bernanke, 2004). The idea that "we have everything figured out" was also shared by some of the most influential economists alive. Blanchard (2008) summarizes the state of macroeconomics as:

Under Prescott's leadership, nominal rigidities, imperfect information, money, and the Phillips curve, all disappeared from the basic model (…), explicit micro-foundations, defined as profit and utility maximization; general equilibrium; and the exploration of how far one could go with no or few imperfections (p.211).

He concludes with a simple and straightforward sentence: "the state of macro is good" (p.210)

But when the investment bank Lehman Brothers filed for bankruptcy in September 2008, the dangers of the situation, which first appeared in the summer of 2007, could not be ignored anymore. The worldwide financial system was at the brink of destruction, and the consequences could have been extreme. In order to avoid such a chaotic crisis, central banks all over the world took very unusual measures, some of them known as quantitative easing (QE) (Koo, 2013).

Many explanations for the crisis were given, but some questions seem to still be alive. How is it possible that such a development had not been foreseen? Had not the United States just got out of the big dotcom bubble just to fall in a housing market bubble? Most economists seemed honestly surprised, but with the strong idea that bubbles can only be really seen when they finally explode.

Krugman (2014), for instance, believes that the only big problem with economics was that it did not pay attention to the rising importance of the shadow banking system; once it had done this, all the theoretical problems had been fixed again.

But is it really fair to say that nobody saw it coming, or was this blindness a result from some deep theoretical decisions of the main-stream economics? Should we simply accept Krugman´s explanation, or ask one more question: *why* were the economists not interested on the very important developments in the financial markets? Bezemer (2009) makes a "field study" and finds 12 professional economists who clearly foresaw a huge breakdown on the way, and the results can speak for themselves. Two of the researchers were adherents of the Austrian school, some heavily connected with behavioral economics and most of them practiced in one or another way "accounting models", which represent a quite different way of understanding economics as a science, its object and its goals. These models are understood in the sense that they represent households', firms' and governments' balance sheets and their interrelations. If *society's wealth and debt levels reflected in balance sheets* are among the determinants of its growth sustainability and its financial stability, such models are likely to timely signal threats of instability (p. 3,emphasis added), and are set in contrast with "equilibrium models" which *by design*, cannot reflect a bubble driven by credit flows to the FIRE (*finance, insurance, real estate*) sector, which bursts due to excessive levels of debt: credit flows, the FIRE sector and debt are not among the variables in the model, nor are they fully reflected in the variables which are included (ibid, p.19, emphasis added).

It is important to notice that the second kind of modeling is the one used in most of the institutions that try to forecast the economic activity, such as the IMF, European Central Bank and OECD (ibid, p.21)

As we can see, there is probably more to the story than some would like to accept. The most important differences have to do with two interrelated topics and the consequences that follow thereafter: the role of money and how it is created in the modern economy. While the main-stream, equilibrium models stand by the neutrality of money in a world where banks and the financial sector are mere intermediaries of wealth from patient people (savers) to inpatient ones (borrowers) (Eggerston & Krugman, 2011; Bernanke 1983; Bernanke 1991), "heterodox" economists see money as the single aspect of economic life which matters the most, and financial institutions here are an extremely active force driving the economic activity; they can create money and *purchasing power* out of thin air, which means that money, understood basically as IOUs on the balance sheets of the actors involved, plays a pivotal role in the real world. But in a downturn the opposite is also true: if the expectations change, the financial markets which once supplied investors with money, securities and liquidity can just stop doing that, putting the endogenous creation of private money to an end (McLeay et al, 2014).

In this paper we will discuss the best known heterodox theory of the last decades, Minsky´s Financial Instability Hypothesis (FIH), the main source for most of the accounting models today. To verify if this theory can explain our world today, we want to look at the structure of the banks in Germany, trying to answer one question: can the FIH deliver some explanation for the reasons why this country looks like the only exception in the most developed western countries? We believe we can answer that affirmatively, and in order to do so this work will be divided in four sections, beyond this introduction. Section 2 presents some precursors of Minsky´s ideas; section 3 summarizes the FIH based on two of Minsky´s works (1992; 2007); section 4 depicts and discusses our empirical data; section 5 concludes.

Section 2 – Some Precursors

Some of Minsky´s main theoretical insights had already been object of studies from other economists, and in this section we would like to deal with two of these, which in our opinion are the most influential on the FIH: 1) the Fisherian debt-deflation and 2) the role of radical uncertainty as developed by Keynes.

2.1 - Debt Deflation

Irving Fisher, one of the most influential economists of the first half of the 20th century is mostly seen in connection with the neoclassical theory. In September 1929 he famously stated that "the stock prices are not too high and Wall Street will not experience anything in the nature of a crash" (Fisher apud Pavanelli, 2001). But when the black Friday happened and the long depression followed, a "second Fisher" enters the scene, and it is in these last works that we find some of the basic insights which led decades later to the FIH.

Following Fisher, the main causes of the prolonged depression have to be sought in two occurrences:

over-indebtedness to start with and deflation following soon after; also that where any of the other factors (e.g. not enough demand, falling profits, bad expectations for the future) do become conspicuous, they are often merely effects or symptoms of these two. In short, the big bad actors are debt disturbances and price-level disturbances (Fisher, 1933, p. 341).

This leaves us then with two questions that need to be answered: what are the causes of over-indebtedness and deflation? In the first point Fisher sees that there is always a "starter" that leads people to become more willing to incur on debts. These can be e.g. a war, which by definition shakes up the way the markets work. But more important than these external factors are internal ones, which are basically new opportunities of (perceived) highly profitable investments: "easy money is the greatest cause of over-indebtedness" (Fisher 1932, p.47; Fisher 1933, p.348). These can take the most different forms, like canal building in the 17th century or broker/dealer loans during the boom of the 20´s (ibid, ibidem). For some time the good news do not stop coming, even more people make even more profits, what impulses newcomers to go on debt and the old ones to increase their leverage, or, "when an investor thinks he can make over 100 percent per annum by borrowing at 6 per cent, he will be tempted to borrow, and to invest or speculate with borrowed money." (ibid, ibidem), what may create a highly euphoric environment. This leads, in turn, to the building up of a pyramidal structure of debt, which for itself is extremely unstable. At some point in time some people will recognize that the situation cannot go on indefinitely, debts are no longer being rolled-over, a process of distress selling of assets for debt-servicing is likely to occur and the economy starts its way down (Fisher 1932, p.13.)

Before we proceed, it is important to have in mind that Fisher does not think that debts for themselves need to become a danger, and "over-indebtedness is always relative to other items" and "it is not a mere one-dimensional magnitude" (Fisher 1933, p. 345). He stresses two factors that should be avoided, on the one hand speculative businesses with borrowed money (used to inflate the price of capital assets), on the other hand the possible mismatch of long-term assets which are funded with short-term liabilities, that normally need be rolled-over daily.

So, as the distress selling starts, the most likely event is that the inflated prices of capital investments will go down, and the ones still holding these assets see their balance sheet values getting worse every moment. This leads to a situation where everybody is selling as fast as they can, and the value of assets which were before seen as completely safe, maybe even as near-money, may now go very near zero, causing bankruptcies and a sharp fall in the firms´ profits. From this moment on, there is a shift on the main goals of the economic sectors from maximizing profits to minimizing debts (Koo, 2013). It is this process that enacts the deflationary tendencies, as money (in the form of deposits) is simply destroyed as long as debts keep being serviced. This is the Fisherian paradox of debt: the more one pays down, the more one owes; one´s liabilities have to be paid by their nominal value, but deflation assures that the *real* debt burden becomes ever bigger (Fisher 1932, p.25). The debt-deflation process will go on until the economy has "cleaned" itself from the unwise commitments of the past, and this is the worst kind of depression there is, as the economy as a whole finds itself completely paralyzed (ibid, p.41).

2.2- Keynesian Uncertainty

The second important insight is the Keynesian "radical uncertainty". Keynes describes the way the classics understand uncertainty as a kind of "Benthamite calculus of pain and pleasures", where probability would be able to reduce uncertainty to a calculable status, just like in the case of a roulette game (Keynes 1937, p.213). We think it worthwhile to cite Keynes at length in this point:

The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper, or the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth owners in the social system in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. *We simply do not know*. Nevertheless, the necessity for action and for decision compels us as practical men to do our best to overlook this awkward fact and to behave exactly as we should if we had behind us a good Benthamite calculation of a series of prospective advantages and disadvantages, each multiplied by its appropriate probability, waiting to be summed (ibid, p.214, emphasis added).

Interpreting this passage, one can see that Keynes tries to show that our system cannot inherently be stable or free from "surprises" forever, as its basic characteristic is the wholly unknowable future.

In the same page he then sums up the ways through which practical people take decisions: 1) we rely on the present moment as a guide for action, ignoring that things can change in the future; 2) the present prices are seen as basically correct and 3) we tend to conform with the majority of opinions at a certain time (ibid, ibidem). Decisions taken on the basis of these three assumptions, full with radical uncertainty, are then crystallized on the prices at the market place, specially in the evaluation of capital assets. When it is finally shown that these extremely fragile expectations were no less than simply wrong, they shift in an unexpected way.

We can then connect this situation with the role of banks, which will be discussed below: as the economic outlook changed suddenly, the financial institutions will not be willing to satisfy the money demand of the investors, exactly in the moment when they most desperately need liquidity. The economy threatens to freeze up and soon break down.

Section 3 – The Financial Instability Hypothesis

In this third section it will be our objective to depict and discuss Minsky´s Financial Instability Hypothesis (FIH). Minsky´s works, which were basically ignored while he was still alive, have found broad resonance since 2008 even among main-stream economists, what Krugman & Eggerston (2011) shows us. Despite this fact, we believe that the FIH is often not understood as what it really is, namely a deep methodological and epistemological shift in the economic sciences. This part of our work will be divided in three subsections, which cover the main insights of the FIH: 1) the nature of capitalism and of economics; 2) the role of the financial system and of money and 3) a discussion of two basic equations in the Minskyan model.

3.1 - Capitalism and Economic Science

As we have seen, main-stream economics rely up to the present time on equilibrium models. This is so because the capitalist economy is understood as a system which is basically stable or, put in another way, the market forces will naturally tend to a market-clearing equilibrium situation, as long as they are left alone to work their way through with no interference. If this stable point is not reached, then because some imperfections, frictions, rigidities or external/institutional forces are at play, and the invisible hand cannot perform as it should (for further discussions on this topic see Mises, nd; Moscati, 2003; Bronk, 2011).

Minsky turns himself against such a vision of our economic system, stating that "the capitalism is inherently flawed (..) and has a cyclical nature" (Minsky, 2007, p.31). Consequently, the notion of equilibrium disappears from his works, as it is impossible to state that our system tends to a quite place; more than that, even *if* there was an equilibrium situation, this should not be seen as extremely important, because each moment of the economy determines the next movement, "each situation has the seeds of its own destruction" (ibid, p.86). Here we distance ourselves from scholars who call the 2008 crisis a Minsky Moment (Krugman & Eggerston, 2011; Whalen, 2007) and agree with Wray (2011) that the FIH is a very long-term theory of capitalism, and we should see the last financial crash as the summit of a slow historic development that started around the 60´s.

This view of the economy is not without consequences for the object of the economic sciences. Minsky describes the neoclassical approach as one that is concerned with decision-making processes from profit-maximizing individuals; the capitalism is studied as a system of goods exchanges, where money is neutral (Minsky, 2007, p.27). In such models, the individuals are constrained by the so called budget line, which is assumed to be a *given* variable (ibid, ibidem). In contrast with this, Minsky sees the FIH as a an alternative interpretation of Keynes´s General Theory (ibid, p.20), "as a theory of the determination of the effective budget constraints. The economics of the determination of the budget constraint logically precedes and sets the stage for the economics of the selection of particular items of investment and consumption." (ibid, p.172). As of this, economics´s main object of study are then the *financial processes and the creation of money to finance investments*, the determinants of the budget line:

The theoretical argument of the financial instability hypothesis starts from the characterization of the economy (..) with expensive capital assets and a complex, sophisticated financial system. The economic problem is identified following Keynes as the ´capital development of the economy` rather than the Knightian allocation of given resources among alternative employments (Minsky, 1992, p.2).

As noted in the introduction, the FIH is the theoretical basis for most of the "accounting models" nowadays. Minsky stresses throughout his work that the economic life has to be understood as a highly complex (and prone to disturbances) system of interrelated balance sheets, where debt structures and leverage play a pivotal role.

These structures lead automatically to a system of *cash inflows and outflows* connecting all of the economic actors; the past, the present and the future are strongly connected through financial relations (ibid, p.4).

From the discussions above the two main theorems of the FIH follow logically. The first is that the economy has financing regimes under which it is stable, and financing regimes under which it is unstable. The second one is that after prolonged times of prosperity, the economy changes from a stable financing structure to an unstable one (ibid, pp.7-8).

The first theorem is explained by Minsky trough his famous differentiation of three "income-debt relations". *Hedge* units are the ones who are able to pay both interest and principal of its debts out of their own cash-flows; the greater its own equity is funding its liabilities, the more stable is this agent. A *speculative* unit can pay only the interest on its loans, but the principal needs to be rolled-over, i.e., new debt is issued in order to fulfill its commitments when they come due. A *Ponzi* unit is the most unstabilizing one, because the cash flows it generates are not sufficient to service either interest or the principal of its debts. This agent can then either borrow more or sell assets to ensure its payments. The first option leads to an ever greater leverage and more instability; the second one, if connected with downward expectations from the market, can trigger a distress selling process as shown by Irving Fisher (ibid, p.7).

The second theorem affirms then that long-lasting good times cause economic units to gradually shift from mainly hedge to speculative and Ponzi agents. If the last two forms predominate, our system finds itself in a highly unstable situation. This insight can help us to understand why the Great Recession happened just after the Great Moderation, and also why most of the main-stream economists were taken completely by surprise.

3.2 - Role of Banks and Money

After we outlined the basic assumptions of the FIH, we shall now try to understand more of the dynamics behind the formation of the budget line and the financing of the economy. To start with, we need to mention that Minsky adopts the Kaleckian view of profits/investment. This theory sees total profits at the aggregate level as a sum of investments, government´s deficits, net exports, consumption out of profits, minus the savings out of wages. As Wray (2011, p.4) notices, being that everything is equal, investments generate higher profits, because it is them that create aggregate demand (Kalecki, 1943; Freiwel, nd). Of course this a characteristic of the economy that may give agents, depending on the expectations they have, a strong incentive to over-invest on certain economic activities.

Even more important, Minsky brings a different way of analyzing money itself and how it is created. As the economy is seen basically as a monetary and financial one, it is clear that *money is not neutral* in the FIH, quite on the opposite, it is the key variable determining investments, aggregate demand and profits. From this follows naturally that banks and financial institutions are major *active* players in capitalism (Minsky, 1992, p.5). In order to grasp how money as a real factor comes to be, we need to abandon the money multiplier story taught in most economics courses. Economists researching at the Bank of England and the Federal Reserve System have recently published papers on this matter, and as their results are no less than a confirmation of Minsky´s insights (Keen, 2014), we will use these texts for our exposition.

The money multiplier theory tells us that the central banks have the ultimate power to control the money supply through the amount of reserves that the commercial banks need to hold. Carpenter & Demilrap (2010) surveys this assumption and after many econometric tests cannot find any clear linkage between reserves and the total money supply (ibid, p.2). This is actually not so surprising, as the most used measure for money aggregates is M2. If we look at this level, we see that M2 averaged $ 7,24 Trillion in the USA in 2007. Out of this, no more than $600 billion, or 8%, were held as deposits which are reservable and whole 20% were to be found on Money Market Mutual Funds, which not only do not need to hold reserves at the central bank as they actually find themselves outside the traditional banking system (ibid, p.5; Pozsar, 2010). Banks are then able to fund their positions by raising external funds, non-deposit liabilities or through the creation of long-time deposits (ibid, pp.16-21). The authors conclude that the financial system is highly responsive to the *demand* of loans, deciding if it will fulfill it or not based on the economic outlooks; the reserves needed to these operations play *no important role at all* (ibid, p.27).

McLeay et al. (2014) shows us how this process actually happens in real life. To do so, the authors warn us against two misconceptions: that central banks can control the money supply through reserve requirements and that banks act simply as intermediaries, lending out the deposits that savers place with them. (…) In fact, when households choose to save more money in bank accounts, those deposits come simply at the expense of deposits that would have otherwise gone to companies in payment for goods and services. *Saving does not by itself increase the deposits or funds available for banks to lend* (p.15, emphasis added). If both reserves and deposits are not the main variables determining the money creation, how then does it take place? It is actually quite banal. If the financial system is confronted with a demand for loans and believe that it would profitable to lend them out, they simply create a new deposit out of thin air, so issuing money and, of course, purchasing power (ibid, p.16; see Picture 1 for an illustration).

As we can see, expectations of the future play again the decisive role in this activity. As for the central banks, the authors see their influence mainly through the setting of the interest rate, as this is the price of lending money, directly changing the profitability of new commitments (ibid, p.21).

After we have seen the view of money creation that we find in the FIH, we must still discuss another role of the financial markets that shapes the way the market functions: the so important financial innovations. About this matter, Minsky emphasizes:

Like all entrepreneurs in a capitalist economy, bankers are aware that innovations assure profit. Thus bankers (using the term generically for all intermediaries in finance, whether they are brokers or dealers), are merchants of debt who strive to innovate in the assets they acquire and the liabilities they market. (1992, p.6).

If one thinks about it, what could be the form of innovations on the financial markets? Broadly speaking, they are assets that offer a higher yield with (hopefully) less risk. If the new product is seen by the market participants as a riskless investment, this can become what is called *near-money*. The near-money then is defined as a highly liquid kind of asset, which can be sold at large quantities at any point in time, without that one should fear its price going down (Minsky, 2007, p.98). With this, we find again expectations as the real motor of the economy, because the acceptance of near-money depends wholly on how investors perceive this new asset (that they can be wrong should not be surprising anymore). As it should be clear, "this innovative characteristic of banking and finance invalidates the fundamental proposition of the orthodox Quantity Theory of money" (Minsky, 1992, p.6), as there is no fixed "thing" that can be defined as money, at least not in the eyes of investors on the financial markets. As we see, the central banks have even less influence in the money supply as depicted above, because huge sums of (near-)money are created in, through and by the *private sector itself* .

3.2 - 2 Equations

In this last subsection, we wish to present two equations put forward by Minsky that aim at mathematically representing the dynamics exposed until now. Although they are still a first attempt and highly simplified, we believe that they will be able to clarify our discussions so far.

If we adopt a monetary view of the economy like the FIH suggests, one needs first, of course, to define the money demand function and its determinants, keeping in mind that in an economy with complex and sophisticated financial relations, the relevant set of transactions for determining the demand for money is far larger than the set of transactions in goods that are related to final income, which the standard quantity theory emphasizes. Among the transactions that are relevant are the cash-payment commitments as stated in financial instruments and the purchase, sale, and financing of positions (p.101).

With that we become the following equation:

$$M^D = M_1 + M_2 + M_3 - M_4$$
$$= L_1(Y) + L_2(r, P_K) + L_3(F) - L_4(NM)$$

M^D is the aggregate money demand.

$L_1(Y)$ is the known Keynesian transaction motive. The higher the output is, the more money will be demanded in order to fulfill the purchases of services and goods.

$L_2(r,P_K)$ stands for the speculative motive, also described by Keynes. Minsky´s innovation is to understand it as a function of *both* interest rate on bank loans (r) and the price of capital assets (P_K, determined by the activities of the market actors).

As it is a function of two variables, it is not clear the effect of an increasing in r, as the expectations of even higher P_K can offset the former´s effect. In such a view, P_K is a displacement parameter of the money demand curve.

$L_3(F)$ stands for the precautionary motive, the cash holdings of subjects with the objective to ensure that commitments will be paid when they come due. F is then understood as the changing relation between *expected* cash outflows and *expected* cash inflows. It will normally increase if new investments are correlated with new commitments of future cash payments.

$L_4(NM)$ describes the effect of near-money. As these assets have a high degree of liquidity, they are able to substitute the cash holdings needed, represented by F. It is important not to forget that these are in many cases created by the private sector.

The counterparts of this money demand are the financial institutions of all sorts, who alone have the power to supply this quantity of liquidity.

We believe that Minsky´s goal of representing the money demand as a multilateral phenomena was achieved. Specially the influence of near-money, which had been almost completely forgotten by many economists, plays a pivotal role on our real world today. More than that, Minsky delivers a very dynamic money demand function, which can unexpectedly shift both up- or downwards. If we addict the basic Kaleckian view of profits in this system, we see that investment, profits and output are also consequently subject to sudden changes, responding to the monetary fluctuations brought about by the market itself.

The second equation is the capital asset valuation function, defined as:

$P_K = K(M, q, c^* - c)$, where
P_K is the price of capital assets.
M is the quantity of money. It is assumed that a higher amount of money will lead to a higher asset valuation, albeit with diminishing effects.
q is the expected cash inflows from investments, from the ones that have already been made as well as from future investments.

*c** is the acceptable liabilities structure at a certain time. This variable is then understood as a general evaluation from side of the market participants about the broad economic outlooks. If euphoric expectations are present, a much higher level of indebtedness and leverage will be accepted. This variable is a displacement parameter of the curve and can represent the level of instability to be found at a certain point in time.
c are the cash outflows caused by the portfolio decisions of economic subjects.

Once again, this formula explicitly takes uncertainty and expectations seriously as a determinant of the functioning of the market. More interesting, if we look at both equations together, we see that the whole dynamics of our system follow logically from internal movements and changes in the subjective evaluations of the market participants, which are in turn reflected on prices at the market place. One special feature of this model is that it endogenously allows for positive and negative self-fulfilling feedback loops, much in the sense proposed by Soros (2009).

With this ideas in mind, the FIH offers us a first stylized story of the business cycle. The starting point is just after the last financial shock, when the expectations are still very low. This means that c* is strongly downward biased, leading to smaller P_Ks. The money demand is concentrated at the precautionary motive (people are holding cash) which in turn brings the pace of investments and output growth to a decline. Once the (perceived) q´s start to get higher, investors tend to believe that the crisis is forever over, and the displacement parameter c* goes up, enabling agents to borrow more to invest. Now we find ourselves in the recovery phase, when things look like they are coming back to normal. But, following the FIH´s second theorem, the liabilities structure of investors tend naturally to shift away from stability. At some point in time it is probable that an euphoric environment will take hold of the market. This pushes c*, P_K and M^D ever more up. One more destabilizing factor that can appear at this phase is the creation of near-money, making investors feel much more secure and enabling them to leverage up even further. In such a situation, the new money is mostly used to buy existing capital assets, inflating their prices, rather than to finance investments in the real sector. When the bubble finally bursts, some kinds of near-money may no longer be accepted as collateral, forcing a distress selling of assets in order to keep the commitments c´s. Many asset classes will strongly lose on value, what in turn worsens the situation even further. r and specially F are also very likely to go up, so that we have a high net growth of demand for liquidity.

But as c* (and the expectations in general) are once more extremely low, the financial markets will not satisfy this desire. Bankruptcies and a debt-deflation spiral are the probable outcomes, and from this point on "It", a Great Depression, should be awaited.

After this longer theoretical discussion, one sees that the source of instability for the FIH has to be found on the *debt structures* of economic agents, which can be visualized on their *balance sheet composition*. As these debts are used to inflate assets prices, the latter´s behavior is also a good measure for the level of activity of the financial markets and their possible instability. Coming back to our initial question, can we explain the German trajectory since 2008 by these variables? Were they sufficiently different from those of other countries so that we can hope to arrive at an explanation? Those questions will be the theme of our next section.

Section 4

In this section it will be our objective to perform a first analysis of the German financial system, looking for (possible) sources of instability, based on discussions about the FIH above. As it is quite well known (Detzer et al, 2013; Vitols, 2005) this country has had since its industrialization a "bank-based" system, in contrast with more typical "market-based" systems, as in the USA or the UK. This is so until present days, as 74,3% of the financial assets are in depositary institutions against only 24,6% in the USA (Vitols, 2005, p.3) Being so, we will mainly look at the structure and composition of the German banks´ balance sheets in order to address our question.

All data that follows was retrieved from the Bundesbank, with our own calculations We always used the figures for December of each year and of March for 2014 (the newest data available). The German Central Bank divides the banking system in ten different groups (an explanation of the groups is given in the Appendix 1), we added the foreign branches of German banks, which are not showed in the Bundesbank´s main data. In the following we used a division between state-owned (including *Sparkassen*, *Landesbanken*, *Genossenschaftliche Zentralbanken*, *Kreditgenossenschaften* and *Bausparkassen*) and private-owned banks (with all other groups plus the foreign branches of German banks). Although this definition is not perfect, our objective was to separate banks that work with the *general public* but are somehow outside the "normal" banking system, trough heavy regulatory frameworks and/or with state guarantees, from the other ones.

4.1– Banks´ Balance Sheet

Figure 1 depicts the total balance sheet size of German banks, including the ten groups plus the foreign branches of German institutions. The series starts in 1973, when this sum was at 884.019 billion euros. From there until the year 2001 (8,075.445 billion euros) we see a constant growth, with a slight decline up to the year 2003, which represents a turning point. From there to the crisis in 2008, the banks´s size grew once again, reaching 9,671.934 billion euros, followed by a short fall. The year 2010 presents a new growth, and the all time peak is seen in the year 2011 (10,783.268 billion euros). As of 2014 the balance sheets summed up to 9,386.454 billion euros, or 261% of the 2013 GDP. One can recognize from these numbers that the importance of banks assets have experienced an exponential growth in the last decades for Germany, a trend just shortly halted by economic turbulences.

Leaving the most aggregate level, Figure 2 shows the distribution of banking assets by each group. The largest one are the foreign branches, with 1,769.713 billion euros (18,8%) . They are followed by the *Großbanken* with 1,736.756 billion euros (18,5%), *Sparkassen* with 1,103.191 billion euros (11,75%) and *Landesbanken* with 1,099.232 billion euros (11,7%). With this one can see that the banking assets are quite diversified within these groups in Germany.

Figure 3 shows the banking assets distribution according to state (36,7%) or private owned enterprises (63,3%). We see that the former´s size flattened after 2000, while the latter´s grew almost uninterruptedly. There was indeed a shrinkage in 2000, but the trend was again caught up after 2003. With this data we confirm the findings of Vitols (2005) and IMF (2011) about the importance of public and cooperative banking activities in Germany, the highest figures within developed countries.

As the group of the foreign branches seems to play a pivotal role, we wanted to clarify how much of all of Germany´s banking businesses were actually performed abroad. Figure 4 depicts this. As of 2014, 62,87% of the credits stayed in Germany and 37,13% went to other countries. Again we find 2000 as a turning point, and from this year on the loans made to Germany were almost constant, mostly around 4,700 billion euros, whereas the loans abroad grew trough the whole period, again with the years from 2003 up to 2007 as an important section.

In 2007, the highest figure, loans to foreigners amounted almost the same as those to Germans (4,222.382 and 4,727.489 billion euros respectively). We believe these findings to be very important to our analysis, and here we can agree with Koo (2013) that the dotcom bubble had a huge impact on the German private sector. When the bubble burst in 2000, households and firms in Germany stopped altogether to borrow more, and, consequently, to invest as much as before. From this point on it seems that activities in other countries stepped in to assure the banks´ profitability, specially after 2003, when the ECB´s interest rate reached its then all-time low of 2% (Koo, 2013).

We now want to take a closer look on the international businesses of the German banks, as it seems unlikely that the internal sector could be a source of financial instability. Figure 5 shows the loans made to foreign public sectors, for which we only have data from 1999. Starting at 292.632 billion euros, the peak is reached in the year 2007 at 415.024 billion euros, when the amount of loans began to fall. After a short increase in 2014, the figures show 294.646 billion euros in loans, almost the same level as in the beginning of the series. Of these, only 11,26% were performed by state-owned and 88,74% by the private banks. This is a very different distribution than the one in Germany, showing how concentrated this kind of business is. From the data we can assert that the presence of German banks in the financing of foreign states has showed just a short increase in the years covered, but they never even reached the benchmark of 500 billions. Although it is true that some European countries currently have sovereign debt crisis and could possibly default on their obligations, we do not believe that this shock *by itself* would trigger a financial meltdown in Germany, as this kind of assets accounts for only 4,42% of the total.

Figure 6 shows the loans to foreign private sectors. The data again is only available from 1999, when there were 637.276 billion euros in credit. This sum grew until 2001, when it reached 961.741 billion euros, falling until 2003, at 883.657 billion euros. From 2004 onwards we find a new rapid growth, and the peak was 2007 with 1528.82 billion euros, more than doubling the figures in 1999. We find again a peculiar distribution: 23,46% of the credits were provided by state-owned and 76,54% by private banks, showing once again that the latter are the main active players abroad. Unlike the loans for foreign states, here we observe a very rapid boom that still has not gone back to its pre-crisis levels (959.943 billion euros in 2014). Unfortunately, we do not have the distribution of loans according to countries, but we believe it is safe to assume that most of them went to European states. In this case, we can affirm the the German banks are highly exposed to the economic situation of whole Europe. If a bankruptcy crisis in the private sector were to happen at some point in time in the continent, the consequences for Germany could be worse than expected.

Figure 7 depicts the loans performed to foreign banks with data since 1973, when they were at 21.957 billion euros. As of 2014, only 17,27% were accounted for state-owned banks, showing once more the role of private banks abroad. The growth shows to have been at a stable pace until the early 90s, but the amount of loans surges from 1997, reaching 1,337.064 billion euros in 2000. Again we can see a downward trend from this year up to 2003, when the former exponential growth takes place once more. The all-time high was in 2007, when there were 2,247.305 billion euros worth of credit outstanding. The loans fell sharply until 2013, but just like in the case of the foreign private sector, an upward trend is seen in the first months of 2014, when the figures are at 1,529.259, corresponding to 58,03% of the 2013 GDP. To serve as a comparison, Figure 8 depicts the loans to home banks: exponential growth up to the year 2000 and then stagnation, the same pattern seen for loans inside Germany in Figure 4.

As of 2008, 46,8% of loans to banks abroad went to countries in the euro-zone, 22,5% to the UK and 9,6% to the USA; in total, around 80% of bank loans went to European countries (Detzer et al, 2013, p.101). We see then how heavily connected to the financial markets in Europe the private German banks are, and we believe that this is the main source of instability for the country. If a banking crisis were again to hit e.g. the UK or Spain, the situation for the German banks could easily become desperate, specially if this turmoil is followed by bankruptcies of foreign financial institutions.

Summarizing our findings, we notice a very unique financial system in Germany, heavily dependent on banks and with a high rate of state-owned enterprises playing a pivotal role. We also saw that in the 90s there was a rapid growth of the German banks, caused mainly by the dotcom bubble. Until the year 2000, when it burst, the German households, firms and banks were getting more indebted, a trend which was almost completely halted up to the present. From the year 2003 on, the balance sheet size of German financial institutions rapidly grew once more, but this time it was directed toward other countries (mainly in Europe), concentrated on loans for the foreign private sector and specially for foreign banks.

It is clear then that, in the sense of the FIH, the main threat to the soundness of the German economy are to found on the *foreign (European) banking and private sectors*. A strong negative shock in these areas would hit the most important German banks very hard, and a rapid channel to the real economy could be awaited.

To corroborate our thesis, Figure 9 shows the the indebtedness of households and firms as a percentage of GDP for Germany, Spain, UK, Ireland and the Netherlands. In 1972, Germany had the highest rates, together with Spain.

In the 90s it had the same level as the UK and the Netherlands, all other countries showing smaller figures. But after the early 2000s, the picture changes completely: the ratio in Germany actually falls and is at slightly over 100% in 2008; all other states reach a number higher than 200% of GDP in the same year. It cannot be denied that the behavior of the German private sector did not follow the international trend. With reasonable debt structures in international comparison, this sector seems to be well protected.

Figure 9 shows the development of housing prices for Ireland, Spain, Great Britain, France, USA, Germany (AL) and Switzerland (1987=100). While the index for Germany remained flat since 1994 at around 150, the ones for all others, with exception of Switzerland, skyrocketed. At the peak near the year 2006, the USA had the *least* overheated market in this group, with an index of 300; both Ireland and Spain saw their home prices grow by a factor of almost 6 between 1987 and 2008. The fact that Germany did not see a boom on the financial markets inside the country can explain such a big discrepancy.

Conclusion

We started our work with a theoretical discussion about Minsky´s Financial Instability Hypothesis, first discussing how the writings of Irving Fisher and John M. Keynes influenced it, then turned ourselves to the FIH itself. It was only after understanding these theories that led us to analyze the German financial system, expressed on its banks´ balance sheets.

From our empirical data, we had already expected a rise on the banks´ assets, even an exponential growth, but the developments in Germany were a surprise. In all our Figures the year 2000 represents a turning point, where the banking system for the first time since 1973 actually shrinks. This downward trend is seen to have lasted until the year 2003, when it started to grow again. But this time the patterns are others: the internal market and the growth of the state-owned group stopped, while the businesses of private German banks abroad, specially with the *European private and financial markets*, experienced a strong boom. Here we agree again with Koo (2013) in that the German private sector lived a "balance sheet recession" before other countries. Interestingly, one could say that it was exactly this fact that forestalled the building up of a debt boom in the German private sector in these last years, the clearest difference between Germany and other industrialized countries states. We think that this point can explain why the economic downturn in the country was not so strongly felt. To the extent of our knowledge, Koo is the only author who analyzes the consequences of the dotcom bubble on the German balance sheets, and it its clear that this point deserves further research. But one can not forget that the German banks are highly exposed to the risks in other European economies. If we sum the loans for foreign banks and foreign private sectors as of 2014, we reach an amount of 2,489.199 billion euros of debt outstanding, representing 69.28% of the 2013 GDP. Using the figures in Detzer et al, (2013, p.101) as a proxy, 80% or 1,991.359 billion euros went to countries in Europe. We feel safe to affirm that the good economic outlooks for Germany depend on a high degree on a stable economy in the whole continent.

Should the Minskyan view be correct, this would have broad consequences for the political debate about the European crisis. First, the FIH sees this crisis as a structural one, involving more than some certain banks or speculators as the "bad guys"; it is nothing less than the natural tendency of the capitalism. If we want to prevent something similar to happen again, the reforms needed are much deeper (and more difficult) than what has been so far brought about (WRAY, 2011, p.10). Second, *we shift the focus from sovereign debt crisis to a private debt crisis*, a situation in which the German banks are strongly connected. Being so, austerity politics aiming at budget surpluses for crisis-ridden countries lose any sense as a real possibility of recovery. We do not know the exact measures that must be taken to bring down the private debt-burden in an orderly way, but it is clear that they are much different that what has being done. The FIH approach seems to be not quite present on the German academic debate; should it be correct, Germany and its banks are currently facing high risks at the European level that have not been yet studied thoroughly, actually adding one more layer of instability to this country.

Appendix 1 – Bank Groups in Germany

Großbanken stands for the biggest institutions in the country. In 2014, there were only four of such (Deutsche Bank, Commerzbank, HypoVereinsbank and Deutsche Postbank).

Regionalbanken are banks that have their main activity based on just one region, although some of them are already present outside their original area.

Zweigstelle ausländischer Banken stands for the foreign banks acting in Germany.

Landesbanken are state-owned banks that have the goal of helping on the economic development of their own Länder, but are allowed to fulfill all normal banking activities. Sparkassen are also state-owned saving banks and allowed only to function in one federal state. According to their charta, their main goal is not profit maximization but the well-being of the people living in their jurisdiction.

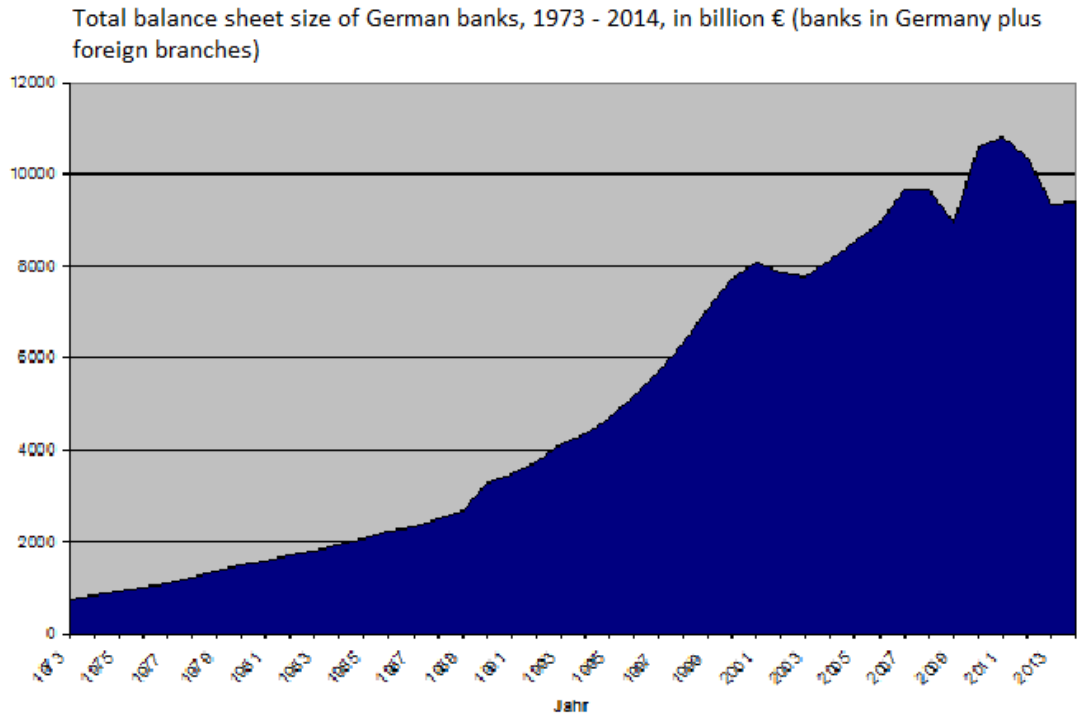
Genossenschaftliche Zentralbanken are the central banks for the whole cooperative banking system. Included in this group is the DZ Bank, which ranks 4th biggest in Germany. Kreditgenossenschaften are cooperative credit institutions.

Realkreditinstitute stands for special banks specialized on mortgage issuing. They can be both private- or state-owned, but their activities are strongly regulated.

Bausparkassen are also both public or private; they are only allowed to give credit for the purpose of housing construction.

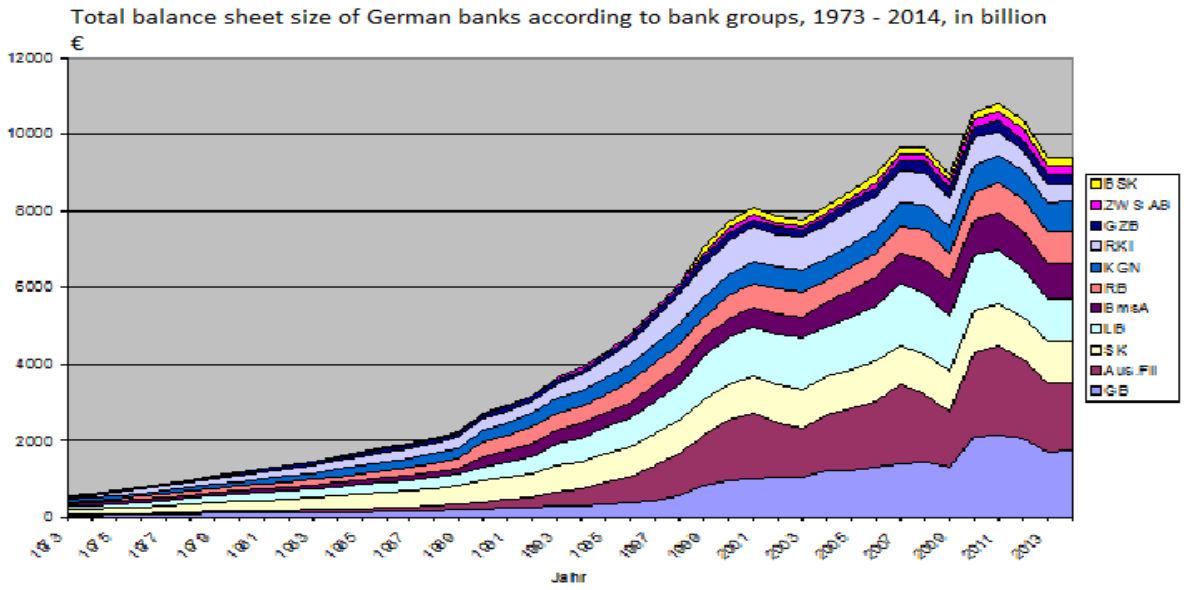
Banken mit Sonderaufgaben are specialized banks. The Kreditanstalt für Wiederaufbau (KfW) belongs in this group. It was founded in 1948 to finance Germany´s reconstruction after World War II, and until today it is a 100% public developing bank, financing mainly infra-structure projects. It is the biggest development bank worldwide and ranks 3rd in Germany.

Figure 1



Source: Deutsche Bundesbank, own calculations

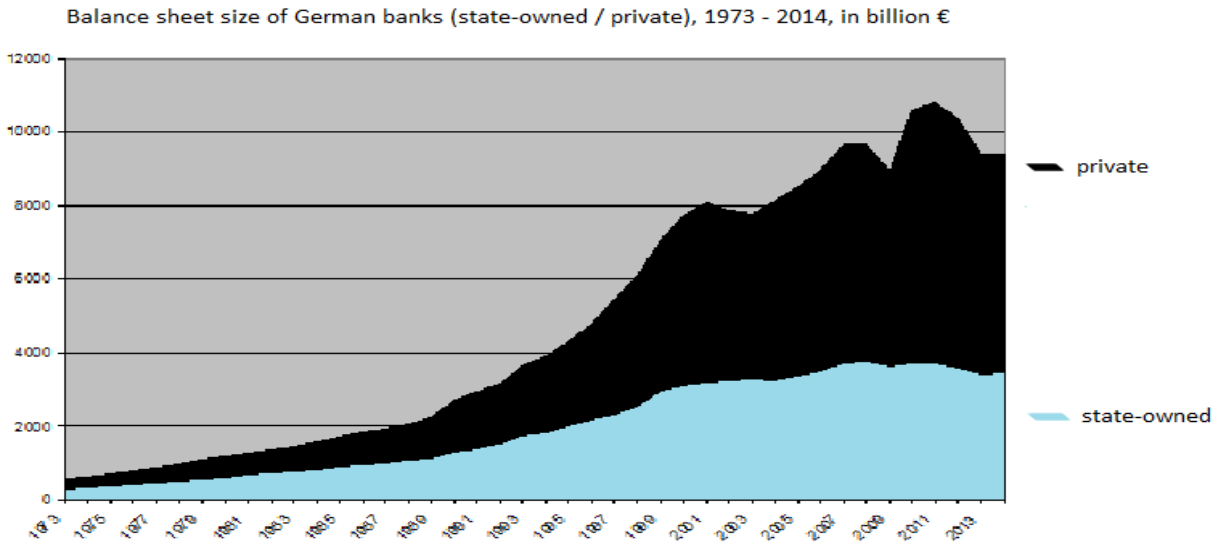
Figure 2



Source: Deutsche Bundesbank, own calculations

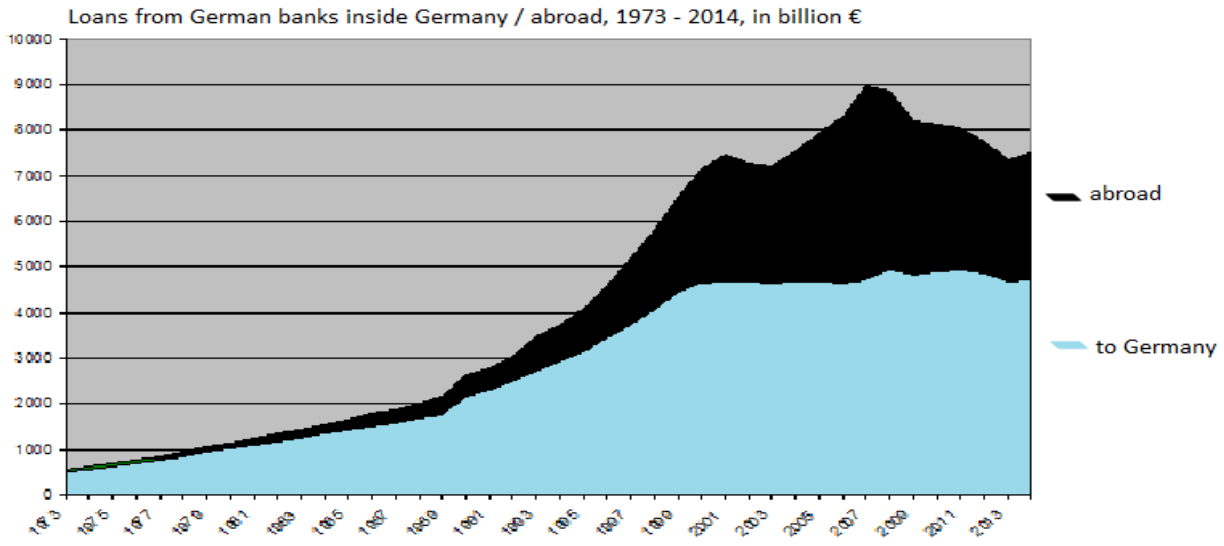
BSK: Bausparkassen
ZWS AB: Zweigstellen ausländischer Banken
GZB: Genossenschaftliche Zentralbanken
RKI: Realkreditinstitute
KGN: Kreditgenossenschaften
RB: Regionalbanken
BmsA: Banken mit Sonderaufgaben
LB: Landesbanken
SK: Sparkassen
Aus. Fil.: foreign branches
GB: Großbanken

Figure 3



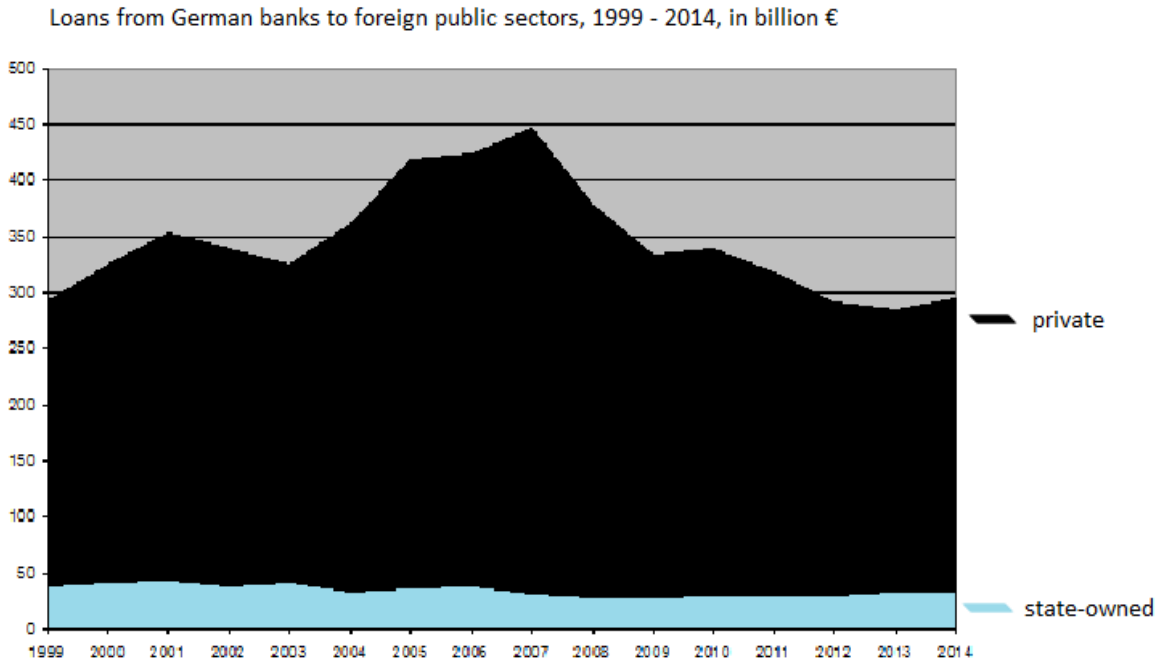
Source: Deutsche Bundesbank, own calculations

Figure 4



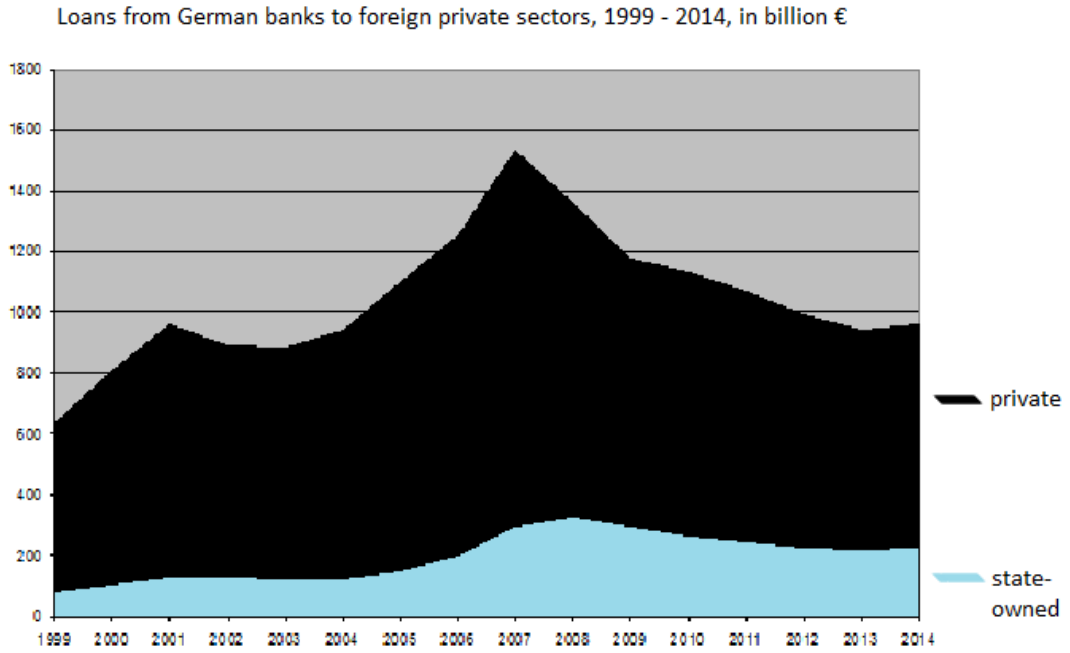
Source: Deutsche Bundesbank, own calculations

Figure 5



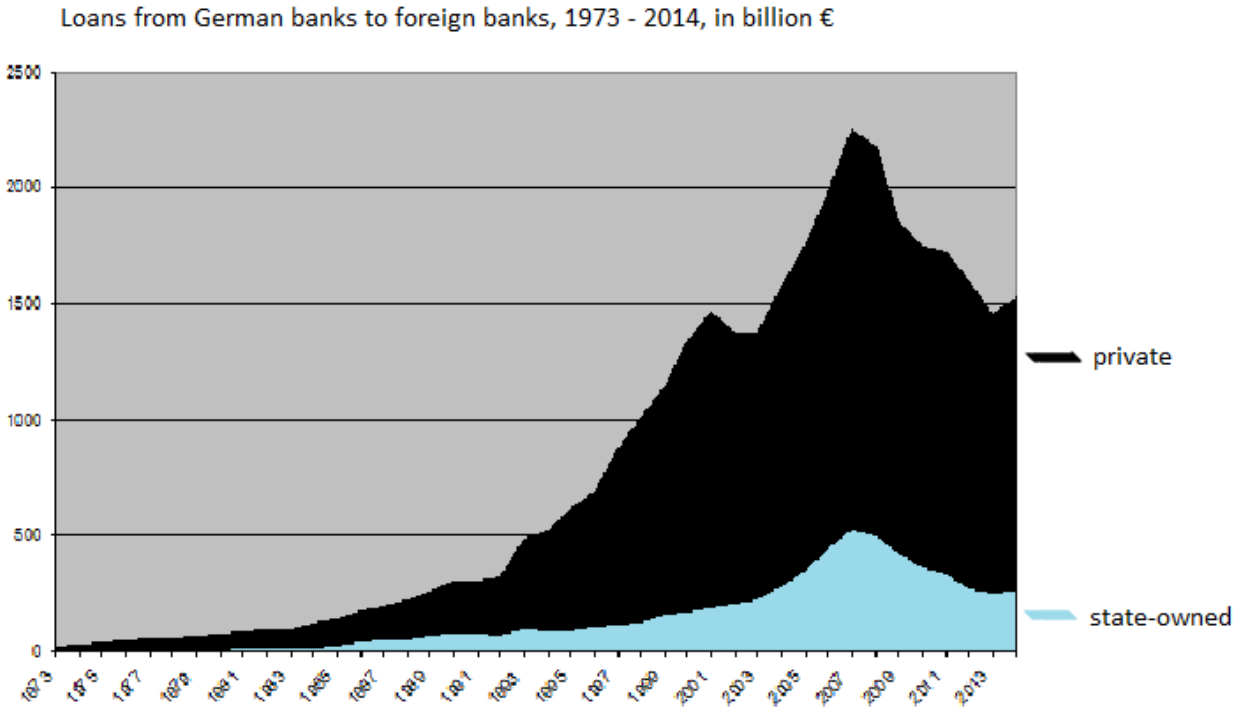
Source: Deutsche Bundesbank, own calculations

Figure 6



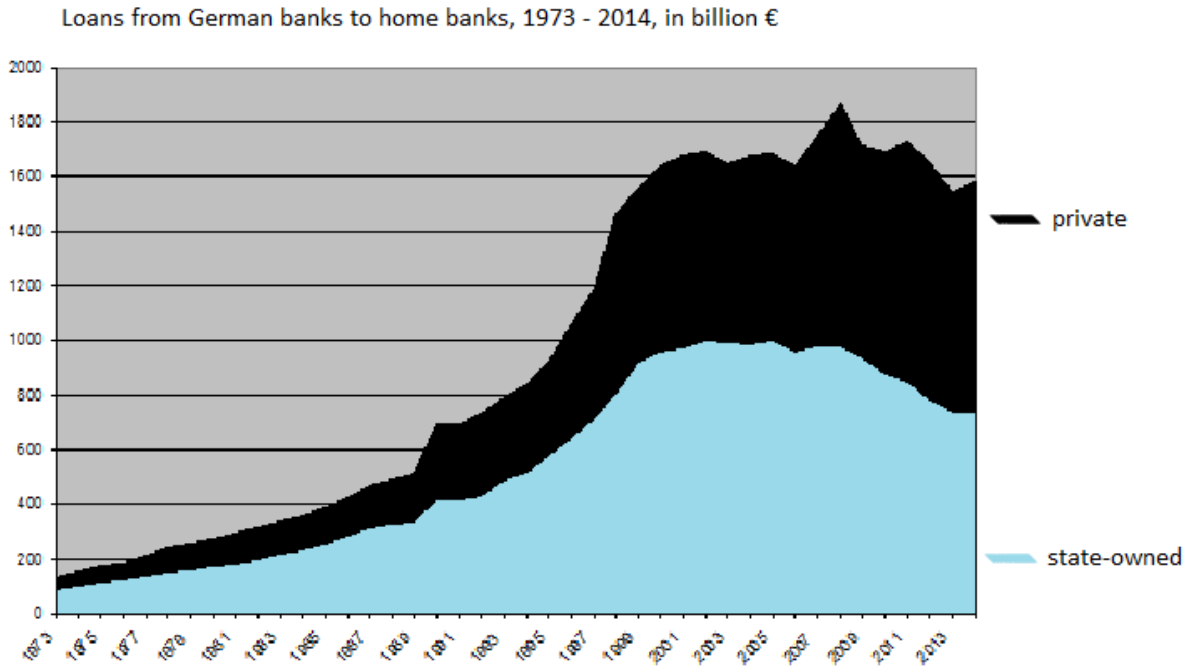
Source: Deutsche Bundesbank, own calculations

Figure 7



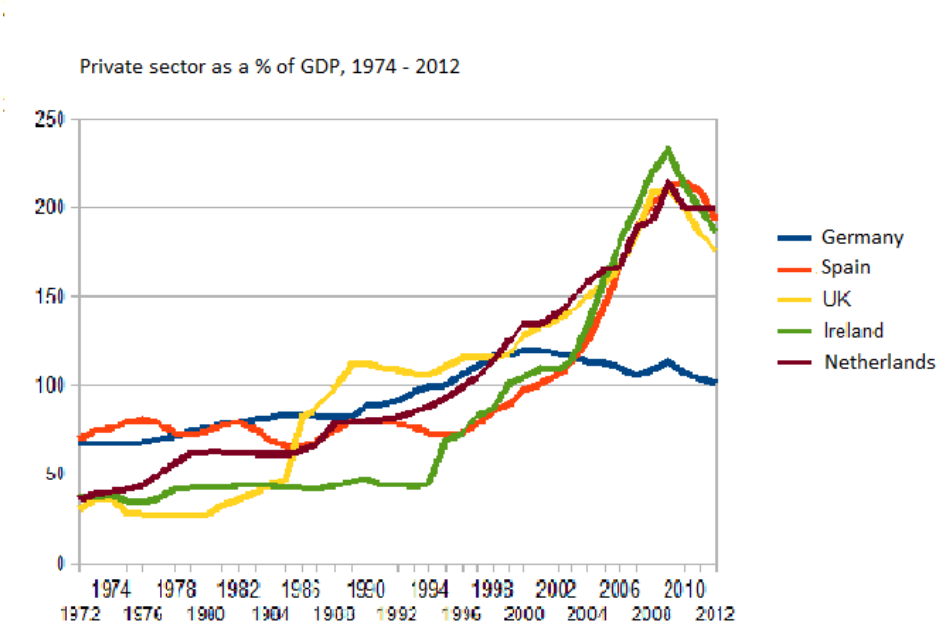
Source: Deutsche Bundesbank, own calculations

Figure 8



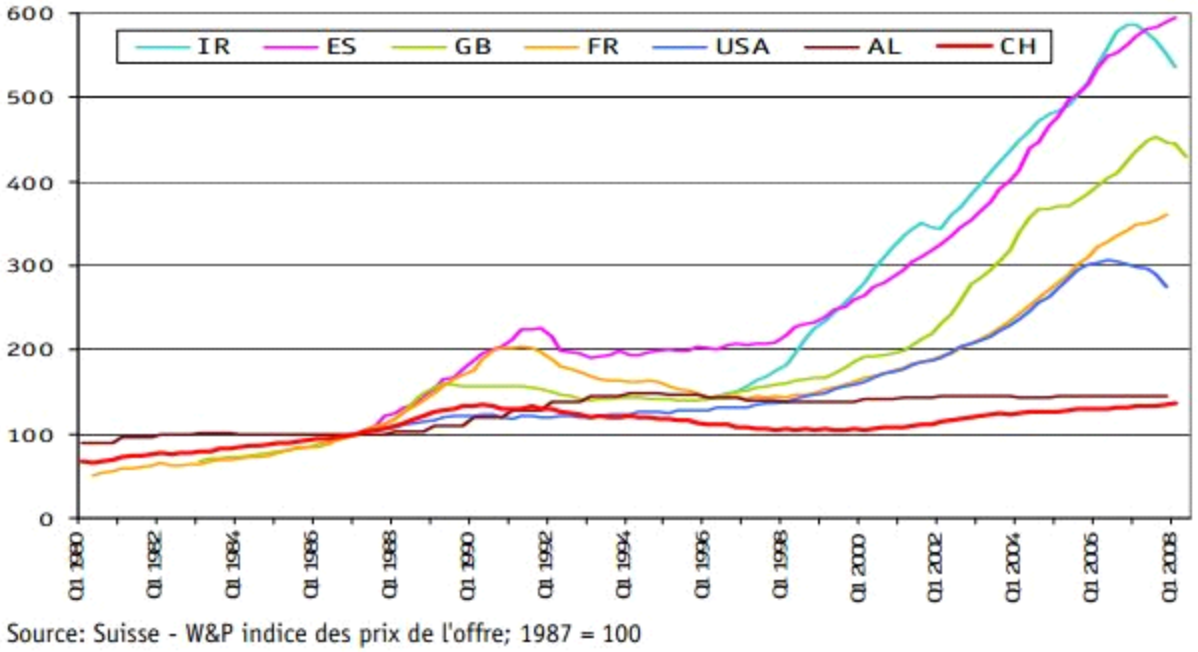
Source: Deutsche Bundesbank, own calculations

Figure 9



Source: World Bank Database, own calculations.

Figure 10: House Prices in Different Countries (1987=100)



Source: DORGAN (2013)

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