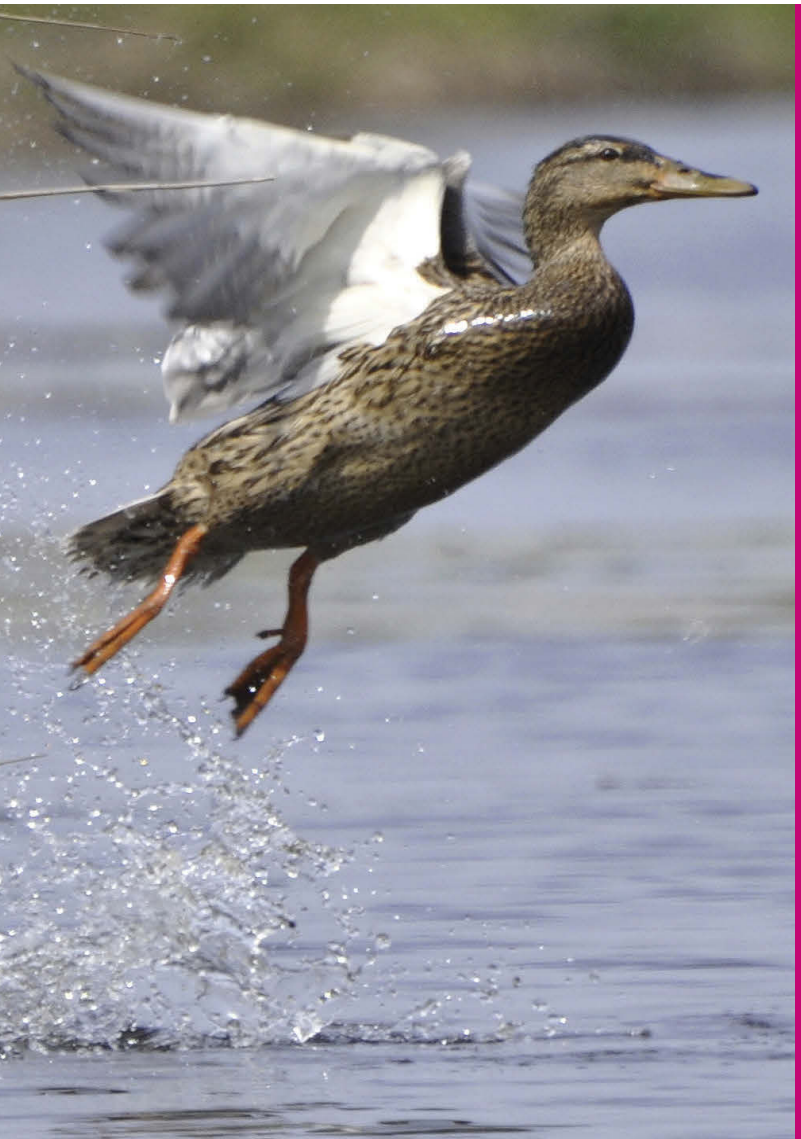
CPB Netherlands Bureau for Economic Policy Analysis

Uncertain supply | *Fragile demand*



# Roads to recovery

## Chapter 2

## *Markets at risk: Banks and financial markets*

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# 2 Markets at risk: Banks and financial markets

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- Disruptions in credit supply have large, negative consequences for macroeconomic performance.
- Small and medium size firms have been hit much harder by the Great Recession than larger firms.
- Key risk in the recovery is the repair of the balance sheets of Dutch banks. Financial problems with firms may resolve themselves as economic recovery gathers pace.

## 2.1 Introduction

The current period of low economic growth started with the banking crisis sparked by the fall of Lehman Brothers in 2008. Whilst the crisis started with losses on financial products linked to the American housing market, the subsequent losses and disruptions to financial markets were not limited to the US because financial interlinkages quickly spread problems from bank to bank. European banks had invested heavily in financial products linked to the American housing market and the realisation that the true value of those products was uncertain, although considerably less than previously thought, set in motion a sequence of events,[5] including collapsing housing market bubbles in Ireland and Spain, that resulted in government bailouts for many European banks. The Netherlands was no exception: between 2008 and today, Fortis/ABN AMRO, ING, AEGON and SNS REAAL have all received emergency support from the government, whilst DSB was allowed to fail and Dutch depositors of the Icelandic bank Icesave were protected. The only major bank not to receive government support was Rabobank.

Recent events are not exceptional in the aftermath of a banking crisis. As introduced in Chapter 1, banking crises have significant effects on the real economy and are associated with significant disruptions in credit intermediation (see Claessens and Kose, 2014). This can mean that firms and households can no longer get credit for profitable investments detrimentally affecting macroeconomic performance. The sensitivity of an economy to banking problems depends on the importance of banks within the financial system: countries with bank-based financial systems are likely highly susceptible to disruptions in credit intermediation. When banks get into trouble, several feedback loops come into play. First, banks reduce credit to the private sector, which negatively affects economic growth. Second, low economic growth feeds back into banks' health by lowering bank profitability and negatively affecting the quality of banks' assets. Lower economic growth also means

[5] The book '*De grote recessie*' (Teulings and Van Ewijk, 2009) provides a popularised and detailed account of this episode.

higher government expenses on, for example, social welfare, increasing sovereign debt levels. In the Great Recession, deteriorating government finances were worsened further by the costs of bank bailouts. Weaker government finances further weakened the banks in two ways: because European banks hold large quantities of euro area sovereign debt and because large banks depend on implicit government guarantees for lower interest rates on their debt payments. Thus, a vicious circle had started whereby weaker banks lead to further disruptions in credit intermediation, further weakening government finances and further reduction in economic growth. The banking crisis in Europe thus morphed into a sovereign debt crisis.[6]

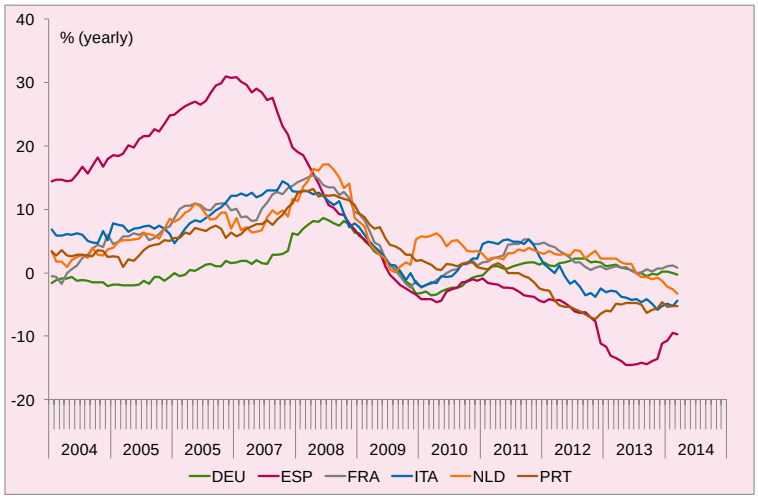
This chapter highlights some recent developments with regards credit intermediation before detailing some channels through which developments in financial markets can have an impact on the real economy. Subsequently our focus will turn to the Netherlands, where we highlight some factors that make the Netherlands more or less sensitive to disruptions in bank lending. Finally, since macroeconomic performance will not return to normal unless credit intermediation returns to normal and weaknesses in the banking system have the potential to hamper recovery, we round of this chapter by discussing some key risks and uncertainties that are likely to arise in the coming ten years.

## 2.2 Recent developments

Banking crises typically involve serious disruptions to credit intermediation. Figure 2.1 shows the growth rate of bank lending in a number of European countries since 2004. Before the crisis started, most countries saw bank lending to firms grow by about 10% per year. Spain and Germany were outliers: high loan growth in Spain because of their real estate bubble and low growth in Germany, which has been attributed to higher than expected loan growth in the preceding period (Eickmeier *et al*., 2009). As can be clearly seen, lending growth had already slowed considerably by the summer of 2008, even before the fall of Lehman Brothers. Since 2009 bank lending has grown at a much slower rate or has even fallen significantly in the euro area crisis countries. Once again, Spain is an outlier: the bursting of the Spanish housing bubble and subsequent deep recession has caused the rapid pre-crisis growth in bank lending to reverse severely. In the Netherlands, bank lending growth held up well in comparison to other countries at the start of the crisis and grew at about 3% until mid 2013. Since July 2013, however, lending to firms in the Netherlands has contracted and the rate of contraction has accelerated recently - in 2014 lending to firms has contracted at an annualised rate of about 3%. That makes the recent developments in bank lending in the Netherlands more similar to the crisis-countries of the periphery than the core euro area countries.

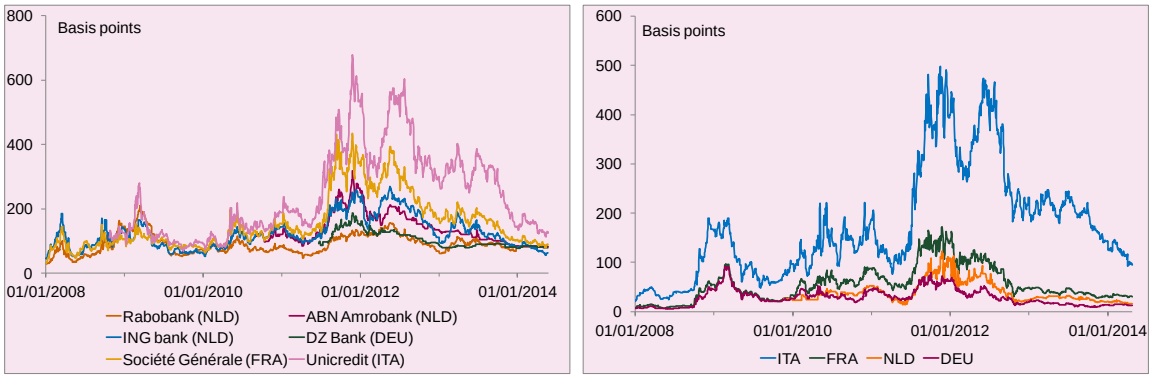
[6] With a vicious circle, the starting point can be anywhere in the process. For example, Greek banks are weak because weak Greek government finances started the ball rolling.

**Figure 2.1 Growth in bank lending to firms (Source: ECB)**




As one would expect, the banking crisis has also had an impact on the banks themselves. Figure 2.2 left compares the credit default swap (CDS) rates for three Dutch banks with a large bank in each of France, Germany and Italy. CDS rates reflect the perceived probability that banks will default on the debt. CDS rates rose after the fall of Lehman brothers with the rate for the Italian bank Unicredit almost reaching 300 basis points and the rate for the Rabobank exceeding 200 basis points in early 2009. However, those increases have been dwarfed by the high CDS rates seen since the crisis morphed into a sovereign debt crisis in Europe: the rate for Unicredit rose to almost 700 basis points towards the end of 2011. Figure 2.2 right also shows CDS spreads for sovereign debt. What is clear is that the banks with high CDS rates are in countries with weak government finances, highlighting the important link between weak government finances and a weak banking system. ABN and ING did show higher CDS rates than Rabobank and required government bail-outs.

**Figure 2.2 CDS spreads of selected banks (left) and countries (right)**




This section has shown that the Great Recession coincided with a dramatic slowdown in the growth of bank lending and also that banks are seen as significantly more risky than before the crisis started. This section has, however, left open the question of causation - has the Great Recession caused the supply of credit to shrink or has the demand for bank loans been

the key determinant of the slowdown in bank lending? In the next section, we will introduce channels through which developments in financial markets can have real effects.

## 2.3 Financial developments and the supply of credit

As shown in Chapter 1, the Great Recession and the subsequent government debt crisis have gone hand-in-hand with poor macroeconomic performance across almost all of the euro area. Before the crisis started, many macroeconomists abstracted from financial developments when thinking about the real economy (see, for example, Angeloni et al 2002, Ng and Wright, 2013 and Roger and Vlcek, 2011). There was, however, a large micro-economically oriented literature on this topic (see Freixas and Rochet, 1998 or Tirole, 2006, for example) describing ways in which financial developments could lead to real effects through the supply of credit in the real economy. But because shocks in financial markets were small during the Great Moderation, the magnitude of these effects on the macro economy in normal times was thought to be small. Clearly, 2008 marked the onset of exceptional times. This section introduces two channels through which developments in financial markets have impacted the supply of credit and the real economy: the bank lending channel, which depends on the strength of banks' balance sheets, and the financial accelerator, which depends on the strength of borrowers' balance sheets (for more information, see Anthony and Broer, 2010 and Bijlsma *et al.*, 2010).

Both channels are the result of asymmetric information (moral hazard or adverse selection in economic jargon), where one party in a transaction has more information than the other. In short, because lenders have less information on the quality of management or investment plans than the borrowers, they need some other way of reassuring them that the borrowers will not simply run away with the money if they lend to them.[7] The bank lending channel applies this logic to banks, who borrow deposits or other sources of finance to make loans. The financial accelerator applies it to firms and households who borrow funds (mainly from banks) and need to convince lenders of their creditworthiness. A key requirement of both the bank lending channel and the financial accelerator is that firms and households have little access alternative financing via capital markets.[8]

The bank lending channel exists because firms that borrow from banks often do so for a reason: they can only secure a loan by submitting to monitoring, something that banks specialise in. Monitoring goes some way to overcoming the asymmetric information problems which typically characterise financial transactions. This monitoring activity makes banks special in the sense that their role cannot easily be replaced by other potential lenders. However, banks themselves also need sufficient incentives to monitor their borrowers. Their own equity levels provide such an incentive. Thus, when banks are hit by financial shocks, their monitoring capacity is reduced and they cut back on lending or increase interest rates.

[7] This asymmetric information typically means that borrowers, especially small firms and households, are reliant on banks for loans.

[8] Asymmetric information makes sure that these alternative sources are indeed not available: alternative lenders have the same information problems as banks.

This has an impact on the real economy, putting some firms into financial difficulties, further lowering the value of assets of banks' balance sheets, which starts a vicious circle of deteriorating economic performance.

The financial accelerator has a different mechanism. The alternative to bank monitoring is to have sufficient equity or collateral to convince financiers that the investments are worth financing. Sufficient equity or collateral is a credible sign of the creditworthiness of the borrower because, in the case that the borrower defaults on the loan if the borrower defaults they lose their equity stake or the collateral used to secure the loan. When the value of collateral drops during a recession, borrowing capacity of these firms is reduced, which lowers investment and, therefore, aggregate demand. Once again, this fall in aggregate demand impacts the real economy, further decreasing the value of collateral leading to yet lower credit supply. This vicious circle[9] magnifies business cycle fluctuations, hence the name accelerator.

The remainder of this section will focus first on evidence for the bank lending channel before turning attention to the financial accelerator.

### 2.3.1 The bank-lending channel

When banks' balance sheets are hit by a shock, these banks have to recapitalise somehow. How they recapitalise has important consequences for those firms reliant of bank financing. Banks can recapitalise by 1) issuing new equity capital, 2) retaining profits[10], 3) selling assets and 4) shrinking the balance sheet. Selling assets may not be attractive to banks if many banks have simultaneously been hit by shocks, since asset prices may no longer reflect their fundamental value. Retaining profits involves cutting back the supply of new loans and raising interest rates, which, unlike issuing new equity, has negative consequences for the real economy.

However, banks may find it difficult to raise equity capital, for example, because market participants no longer trust the creditworthiness of banks. If financiers do not know exactly how many hidden losses are on bank balance sheets they may suspect that only weak banks are asking for more funding.[11] Furthermore, banks' equity holders may be reluctant to issue new capital because of debt overhang,[12] or it may also be that special talents are needed to invest in bank equity capital. Finally, if there is also uncertainty about regulatory developments, such as the phasing out implicit subsidies, that can affect the value of bank equity and make raising new equity capital expensive for existing shareholders. As a result, banks will cut back on lending or raise interest rates instead of issuing new equity capital (see Marinova *et al.,* 2014). An important distinction should be made between the short- and long-run costs of raising bank equity. The bank lending channel relates to the costs of raising

[9] The expositions of the bank lending channel and the financial accelerator here have focused on negative shocks. Following a positive shock the mechanisms work in reverse, putting in process virtuous circles.
[10] Retaining profits is used here as a short-hand expression for a range of activities, from not paying dividends to raising interest rates, all of which would allow banks to rebuild their capital positions out of profits.
[11] A so-called lemons problem.
[12] Debt overhang is when existing debt is sufficiently large that existing debt holders will likely claim a share of future profits sufficient to make the expected return of raising new equity capital negative.

new equity, not the costs of higher equity levels in general. The former are likely significantly more costly than the latter (see Bijlsma and Zwart, 2010).

So what do shocks to banks' balance sheets look like? Banks balance sheets can deteriorate from shocks to either side of the balance sheet: a capital shock to the asset side or a shock to their ability to raise finance on the liabilities sides. The empirical data on the impact of liquidity shocks is limited because it is very difficult to identify liquidity shocks. Nevertheless a few studies exist that do suggest bank lending responds to liquidity shocks (see for example, Kapan and Minoiu, 2014, and Iyer *et al.*, 2014). In contrast, the effect of capitalisation on lending has been studied in more detail and has been found more important, e.g. Peek and Rosengren (1997), Peek and Rosengren (2000) and Houston *et al*. (1997). Examples of cross-sectional studies include Puri, Rochol and Steffen (2009), Jimenez *et al.* (2010), Albertazzi and Marchetti (2010) and Berrospide and Edge (2010).

The bank-lending channel not only has an affect on the quantity of credit in an economy, it can also affect the price of loans. For example, there is evidence that weak banks charge their customers more for loans (see Lown and Peristiani, 1996, and Hubbard *et al.,* 2002). Because firm-bank relationships often rely on information built up over years of repeated interaction, especially small firms will likely find it difficult to switch banks and avoid these higher costs. This observation may be particularly relevant for the Netherlands where, as will be shown in Section 2.4, small and medium sized enterprises (SMEs) pay higher interest rates for loans than comparable firms in other core euro area countries.

All in all, the evidence clearly shows that when banks are hit by a capital shock, they reduce lending. How big the subsequent impact of reduced lending by banks is on the real economy is a different, and less well-studied, issue. Macro level studies would automatically take this into account simply by taking a macro perspective. However, at the macro level there are fewer studies investigating the bank-lending channel, mainly due to the difficulty of incorporating banking institutions into macro models, e.g. Villa (2013).

### 2.3.2 Survey measures of bank-lending conditions and the macro economy

A more direct way to determine if banks have reduced the supply of credit is to look at surveys of bank lending. There are a number of papers that investigate the link between changes in survey measures of banks' lending criteria and subsequent economic effects. They typically find that changes in lending standards precede significant changes in economic activity, e.g. Lown *et al.* (2000), Lown and Morgan (2002, 2006) and Bassett *et al.* (2014) for the US and Blaes (2011), De Bondt *et al.* (2010), Cappiello *et al.* (2010), Ciccarelli *et al.* (2010), Del Giovane *et al.* (2011) and Maddaloni and Peydró (2013) for Europe. Driscoll (2004) opposes these results.

Van der Veer and Hoeberichts (2013) find that in the Netherlands banks have reduced loan supply growth by 3-4% since the crisis started on top of the fall caused by reduced demand for credit. That said, their results still argue that more than half of the large slowdown in credit growth for firms since the start of the crisis has been due to lower demand for credit,

not lower supply of credit. Others have made this point previously (see, for example, Pattipeilohy *et al.*, 2010).

### 2.3.3 The financial accelerator - firms' balance sheets

The financial accelerator[13] channel works through the balance sheets of firms or consumers. This channel operates because firms and consumers are faced with credit restrictions, which arise from asymmetric information in the form of moral hazard or adverse selection (see Tirole (2008) for a theoretical background). In a world without information asymmetry only the expected future cash flows from an investment are relevant for whether an investment project gets financed. If these expected cash flows weigh up against the risk, lenders will be willing to lend money to a firm that wants to invest their money. As a result of adverse selection and moral hazard the amount of investment in an economy depends on the net wealth of the firms in it.

How does this work in the case of moral hazard? Moral hazard can occur when the success of an investment project depends on the effort of a firm's manager and that effort is costly for the manager. Then, if the payoff for the manager is not related to the success of the project, the manager has insufficient incentive to make the effort required to make the project a success. However, giving the manager a share of the expected profits can ensure that they have an incentive to make the project a success. Consequently, to ensure the right incentives, the company must reserve a minimum proportion of the profit for workers performing the project itself. Because virtually all investment projects rely on the efforts of managers or other employees, firms cannot promise to pay all future income from an investment to those who have funded it. As a result, the amount of investment in an economy depends on the net wealth of the firms in it.

The second form of asymmetric information, adverse selection, causes an increase in interest rates to lead to a contraction of bank's loan portfolios (credit rationing à la Stiglitz and Weiss, 1981). When an investment project is funded externally with a standard debt contract, the potential loss to the firm is limited to the value of the collateral, whilst they receive all the profit remaining after deduction of interest. In other words, the firm profits from the upside of risky projects, but has limited losses from the downside. This means that the expected profit of the company increases with the risk of the investment project. Therefore, when interest rates rise, firms want to finance riskier projects, which is bad for the loan portfolio of banks. To combat this, banks can ask for more collateral, which ensures greater losses at firms if a project fails. Again the amount of investment in an economy depends on the net wealth of the firms in it.

Having more equity reduces moral hazard, since the firms themselves have more to lose should a project fail. Likewise, firms can also bring down the costs of financing by pledging their possessions as collateral. If the project fails the firm will lose their collateral. In other words, pledging collateral internalises the costs of moral hazard. Consequently, the value of

[13] Bernanke and Gertler (1990) and Kyotaki and Moore (1997) are two early papers that build the financial accelerator into a model. Bernanke and Gertler (1990) focus on net wealth, whilst Kyotaki and Moore (1997) focus on the value of collateral. Bernanke, Gertler and Gilchrist (1999) provide an overview of the literature.

collateral a firm has available affects the amount of funding that firms can attract. Because collateral is often the means of production of firms or real estate, its value is typically procyclical. This means that companies can borrow more in booms, allowing them to invest more, which in turn increases growth, further increasing the value of the collateral allowing firms to borrow yet more. In recessions the mechanism works in reverse.

There is empirical research that shows how high leverage and declining prices of firms' assets lead to low investment and low growth. The clearest empirical evidence is at the micro level (and especially for the US) and suggests that the financial accelerator exists in practice. For example, the studies of Gertler and Lown (1999), Mody and Taylor (2003) and Gilchrist *et al.* (2009) find a negative and non-linear relationship between corporate bond spreads and economic activity. Since the crisis, a growing number of papers have also found evidence that a financial accelerator mechanism plays an important role in explaining the macro effects of the Great Recession. Examples include Gilchrist *et al.* (2009) and von Quejo Heideken (2009). These papers are, however, still controversial - see for example Brzoza-Brzezina and Kolasa (2013) who found that models with a financial accelerator provide no better explanation for the recession in 2009 than standard models without the mechanism.

### 2.3.4 Households' balance sheets

As we have argued above, large firms often have access to multiple sources of financing for their projects, but small firms do not. Households have even fewer sources of credit: for mortgages, they are almost always reliant on bank finance and need to pledge their house as collateral. There are a number of empirical studies providing evidence of the importance of debt and credit developments for households in the Great Recession. They typically find that areas with high household debt before the crisis started showed the largest falls in consumption during the Great Recession. Examples include Dynan (2012), Mian, Sufi and Rao (2012) and Mian and Sufi (2012). As Dutch households have relatively high levels of debt, see for example Bijlsma and Van Beers (2013), this may play a role in the Netherlands.[14] For a more detailed look at the housing market and at the households' financial positions and consumption, we refer to Chapter 3 and Chapter 6, respectively.

## 2.4 What has the crisis done to the Netherlands?

In the previous section, we described a number of mechanisms whereby developments in the financial sector can affect the real economy. But that begs the question: how important are these mechanisms currently for Netherlands? In this section we describe the main conditions that can strengthen the mechanisms and how important they are for the Netherlands.

[14] Note that the mechanisms that relate falling housing prices to inefficiently low consumption and reduced economic growth typically do not involve the financial-accelerator. In a permanent-income framework, consumers respond to lower house prices by increasing their savings or pay-off their debt in order to make-up for the loss of wealth. This need not be inefficient nor negatively affect consumption, as increased savings or debt pay-offs end up elsewhere in the economy. Inefficient adjustment, may, however, occur if prices do not adjust sufficiently, which may happen if interest rates hit the zero lower bound.

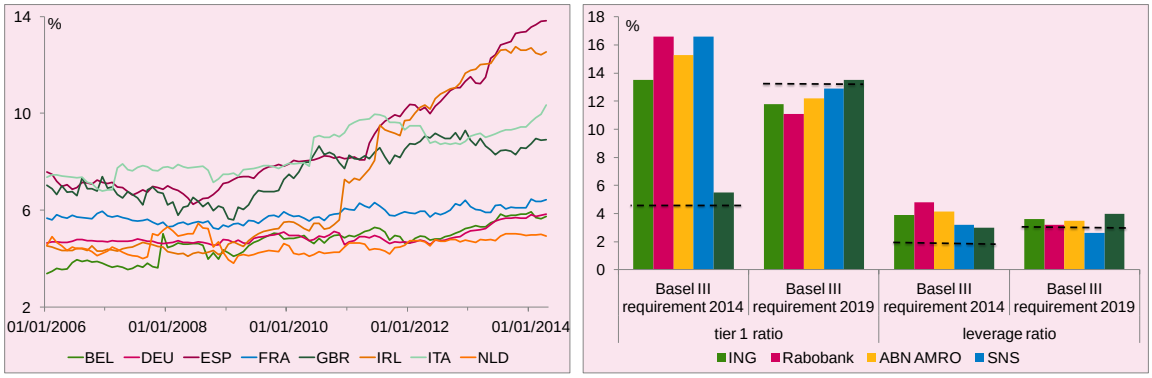
### 2.4.1 Banks and lending

In the discussion above, we saw that banks that are weakly capitalised, heavily dependent on short-term external finance or hold poor quality assets will likely reduce the supply of credit in an attempt to rebuild there balance sheets and to make themselves resilient to liquidity shocks . This section looks at data for Dutch banks to see how relevant these factors may have been in the current economic slowdown.

#### Bank capital

Internationally comparable data on the strength of Dutch banks' capital positions paint a mixed picture. Compared with other European banks, Dutch banks have relatively low unweighted capital levels but score well on risk-weighted measures, as shown in Figure 2.3 left. Since the start of the crisis, banks in most European countries have slowly been building up their equity relative to their assets, especially banks in the bail-out countries. In contrast, the build up of equity by Dutch banks has been relatively slow: at the start of 2014 Dutch banks had the lowest ratio of equity to assets of the major European economies. This suggests that at least at the onset of the financial crisis Dutch banks may be relatively weakly capitalised and that this may have been a factor behind the weak loan growth scene in Figure 2.1 at the start of this chapter.[15] To put this further into perspective, European banks have been much slower raising capital levels than their US counterparts, who were forced to raise equity early in the crisis (see Marinova *et al.*, 2014). In line with the discussion above concerning the side effects of different ways banks can raise capital levels, this difference may go some way to explaining the superior performance of the US economy in the aftermath of the Great Recession.

**Figure 2.3 European unweighted leverage ratios (left) and leverage ratios for Dutch banks (right)**




#### Asset quality

Of course, the simple ratio of equity to assets does not take into account the quality of the assets held by banks. The riskier the assets the more capital banks need to soak up any potential losses. Risk weighting gives a better indication of the idiosyncratic risk of banks' balance sheets.[16] Unfortunately, as we saw at with the valuation of apparently low risk mortgage backed securities in the run-up to the Great Recession, the risk weights depends on

[15] EU state aid rules complicate the picture somewhat. On one hand, they have reduced competition between Dutch banks allowing them higher profits (and, hence, to raise capital levels more quickly), whilst on the other hands placing limits on direct equity injections from the state.

[16] Note that risk-weights do not account for tail risk or systemic risk.

the perceived risks of the assets involved, which may not be correct. As such, there is still uncertainty regarding the quality of assets held on banks' balance sheets - that uncertainty has been one of the key factors in the current crisis.[17] Hence unweighted leverage ratios also form part of the new Basel III regulatory environment. Figure 2.3 right plots current leverage ratios of the major Dutch banks against the Basel III requirements for 2014 and 2019 (shown with a dashed line). As can be seen, the major Dutch banks have risk-weighted leverage ratios well in excess of the minimum requirements for 2014 and are already close to satisfying the stricter 2019 requirements.

Currently, in attempt to clear up uncertainty surrounding the quality of assets on banks' balance sheets, the ECB is undertaking an asset quality review (AQR) and stress test of the largest banks in the euro area as part of the move to the European Single Supervisory Mechanism (SSM).The AQR is, as its names suggests, an examination of the quality of the assets that around 130 euro area banking groups have on their balance sheets, including ABN AMRO, Bank Nederlandse Gemeenten, Rabobank, ING, Nederlandse Waterschapsbank, The Royal Bank of Scotland and SNS in the Netherlands (see ECB, 2013). The assets of all institutions covered total about 85% of euro area banking assets. The stress test will then subject banks asset holdings to a baseline and an adverse scenario to see if banks' capital positions are sufficient to cover any losses. In Europe, the European Banking Authority (EBA) has already carried out three stress tests in 2009, 2010 and 2011, which failed to clear up the uncertainty about the health of euro area banks' balance sheets. However, the stress test that follows on from the AQR is considerably stricter than the previous stress tests. For example, the current stress test will be based on banks withstanding a 7% fall in GDP relative to baseline and a 19.2% fall in euro area house prices relative to baseline instead of 2% and 9.7%, respectively, in the 2011 test (see ECB, 2011, and ESRB, 2014). However, it is still not as strict as, for example, the US stress tests where GDP falls in excess of 8% and house price declines over 20% were used (see Federal Reserve, 2012). For more details on the AQR and stress test, see Van Veldhuizen en van Beers (2014).

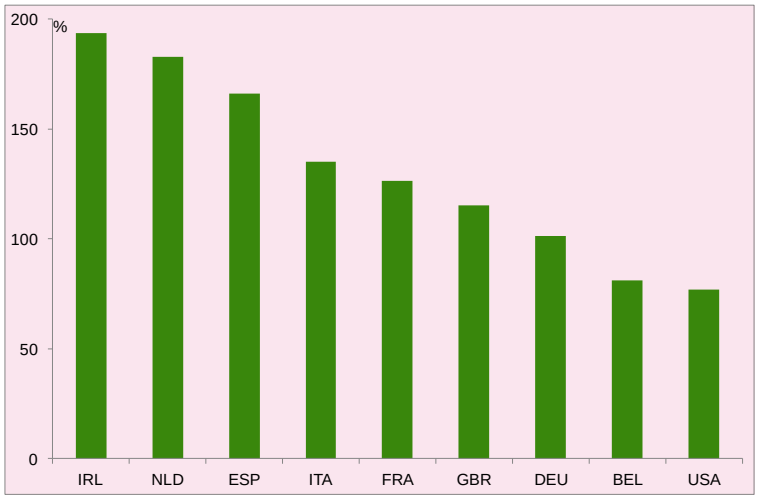
### Susceptibility to liquidity shocks

A bank's susceptibility to liquidity risk depends on the amount of wholesale, short term, funding, which is relatively less stable, and the amount of stable funding, in the form of equity, long-term wholesale debt, and deposits. Due to their relative size, Dutch banks have relatively high foreign liabilities, which likely take the form of wholesale funding. That means that Dutch banks rely relatively heavily on non-deposit financing to finance their loan portfolios. The ratio of the value of loan portfolios and the deposits held by banks is shown in Figure 2.4. Dutch banks' reliance on non-deposit financing is high by international standards. At the end of 2012, the value of Dutch banks' loan portfolios was 83% more than the value of their deposits.[18] That is much more comparable to the crisis countries of Ireland, Italy and Spain, than France, Germany or the US.

[17] Dutch banks have large holdings of relatively low risk mortgages, many of which are backed by the National Mortgage Guarantee (NHG) system, which transfers the risk of some losses to the Dutch government. That further reduces the risk of these mortgages.

[18] This has been falling slowly, in 2013 the differences was 75% (see DNB, 2014).

**Figure 2.4 Loan-to-deposit ratio of banks in various countries (end 2012)**




Source: BIS, DNB and ECB.

This makes Dutch banks susceptible to liquidity shocks, such as occurred when Lehman Brothers fell. This susceptibility makes lending to Dutch banks riskier. Nonetheless, market prices do not seem to reflect the higher susceptibility of Dutch banks to liquidity shocks. This may, of course, be due to the implicit subsidies that arise because too-big-to-fail banks can expect to be bailed-out.

This section has provided some tentative evidence that Dutch banks are relatively sensitive to those factors that make the bank-lending channel more powerful. It is difficult to draw any more detailed conclusions because of the uncertainty surrounding the quality of assets on banks' balance sheets - we must wait for the outcome of the ECB's comprehensive review in October before we will know more about that.

### 2.4.2 Firms' access to credit

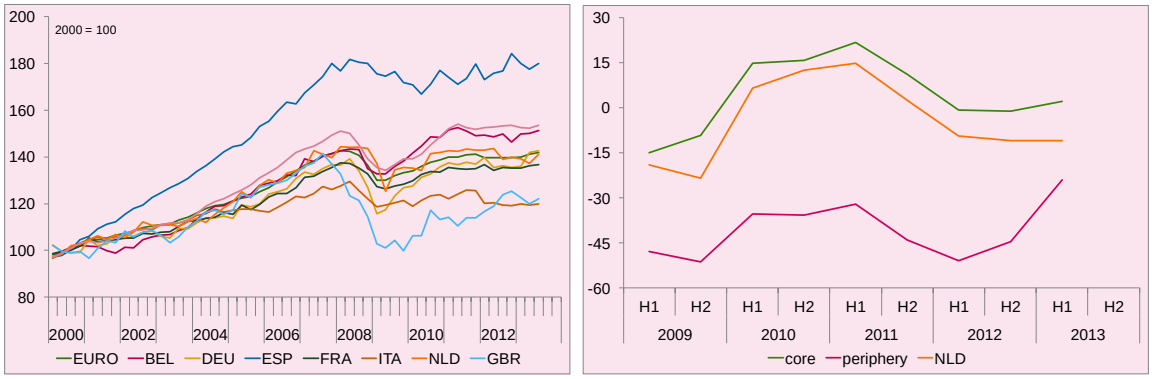
As described above, loan growth in the Netherlands has slowed dramatically since the onset of the Great Recession.[19] Whether this is because the supply of loans has grown more slowly or because the demand for loans has fallen is important because the former implies that firms cannot get sufficient funds to finance profitable investment. Section 2.3 detailed mechanisms through which financial developments impact the supply of loans. However, in a recession as deep and prolonged as the Great Recession, one would expect the demand for loans to contract significantly - if a firm has fewer customers they don't need to produce as much and, therefore, need less external finance. The trouble is, distinguishing between the supply and demand for credit is difficult.

Some firms are reliant on bank financing. Empirical evidence has shown that credit supply did contract in the OECD in 2008 and 2009 and that the effects of this could be seen in industries most dependent on external finance (Bijlsma *et al.* 2013). As described above, firms' ability to obtain external finance depends on their financial health. Figure 2.5 left

[19] This section focuses on lending to firms. Mortgage finance will be discussed in more detail in Chapter 3.

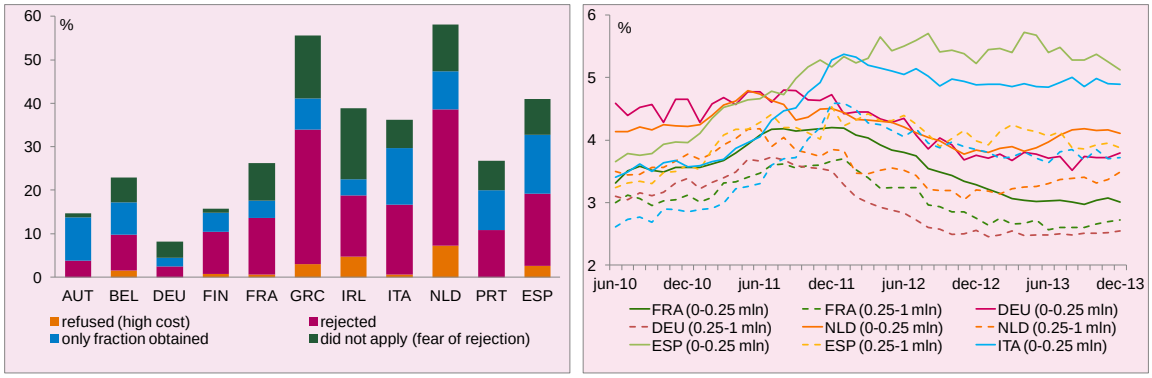
shows one measure of firms' financial health, namely total profits in the Dutch economy in comparison to a number of European countries. Profits at Dutch firms fell sharply in 2009, which is no surprise given the deep recession. Thereafter, profits in the Netherlands have recovered to a similar level as before the crisis in 2008. In fact, these profit figures show a very similar pattern to the euro area as a whole. In any case, firm profits were hit nowhere near as hard as in the UK.[20] Whilst the average firm in the Netherlands is financially healthy with significant savings and hasn't been particularly constrained by lack of access to credit, that average hides significant differences between different firms. Large firms have healthy profits and bank weaknesses do not appear to be a significant constraint on their activities. Whilst Figure 2.5 right also shows that small firms in the Netherlands have similar profitability as in other core countries, their access to credit is much more similar to the crisis-countries of the periphery, as shown in Figure 2.6 left. In fact, SMEs in the Netherlands had the lowest proportion of accepted credit applications in first half of 2013 at 32%, even lower than Greece at 33%. There is some evidence that this is a selection effect. Financially strong firms don't need credit with current low levels of demand leaving only weaker firms applying for loans.

**Figure 2.5 Gross operating surplus for selected countries (left) and profit index of SMEs (right)**




Source: Eurostat, ECB and CPB calculations.

**Figure 2.6 Credit rejections of SMEs (left), interest rates on small loans (right)**




Source: ECB, Survey on the Access to Finance of SMEs, ECB.

[20] Profits in the UK were hit exceptionally hard due to the fall in profits in the financial sector itself, which is included in Figure 2.5 left.

Even so, SMEs in the Netherlands that are successful in obtaining loans pay significantly higher interest rates than, for example, in France or in Germany (see also Figure 2.6 right).

For firms that are unable to finance their investment internally the value of collateral is often important for taking out a loan. The falling value of collateral ensures that firms are no longer able to borrow as much as previously. It is in the nature of net wealth and collateral values that these fall in business cycle downturns. SMEs typically rely on housing and real estate, which were particularly hit in the Netherlands. Since SMEs rely on these to signal their creditworthiness they have problems obtaining credit. Once the recovery picks up their net wealth and the value of their collateral should rise, reducing the difficulties they currently face obtaining finance.

In broad terms, there is evidence that the average Dutch firm has relatively healthy finances compared with firms in other European countries. That average, however, hides some important differences between firms in the Netherlands: SMEs have suffered more than larger firms, and more so than SMEs in other core euro-area countries. More details on SMEs access to credit can be found in Van Veldhuizen and Van Beers (2014).

One puzzle is why this isn't more obvious in investment statistics at the macro level. The investment-GDP ratio has fallen in the Great Recession, but by no more than would be expected in a typical recession. In a recession caused by a banking crisis, one would expect investment to fall more than in a normal recession, see also Chapter 4.

## 2.5 Risks and uncertainties in the coming ten years

In this section, we ask whether banks in the Netherlands will be able to finance the recovery and whether the links between banks and governments are going to continue to plague the euro area financial system. Looking further ahead, we also discuss the possibility that the Netherlands moves towards a financial system where SMEs are less heavily dependent on bank finance and, hence, less susceptible to disruptions in bank credit.

### Response to the comprehensive review

The first key element of the picture is the health of banks' balance sheets, which are currently the subject of a comprehensive review under the auspices of the ECB. Over the next year or two, the outcome and responses to the comprehensive review will be key factors for the economic recovery in the Netherlands. The banks taking part in the AQR and stress test have been told by the ECB that they will be expected to cover capital shortfalls within six to nine months (see, ECB, 2014). The official line is that banks will have to first turn to shareholders and classes of creditors (bail in) to cover the capital shortfalls. Deposits under 100.000 euros will never be touched, they are entirely protected at all times. Of course, how feasible that is depends on the size of any capital shortfalls. A bad outcome would be if a significant number of large banks fail the comprehensive review and require such large amounts of extra capital that they are unable to raise them from private sources. In that case, the single resolution mechanism (SRM) will have insufficient funds as it will only slowly

build up to its target size of €55 billion, reaching that only in 2024. Instead, national governments will have to step in or face disorderly bankruptcies - and some national governments may be unable to raise the funds either. That governments may not be able to bail their banks out, in turn, implies that the negative feedback between the financial position of banks and their governments will not be broken, which has been a key feature of the government debt crisis in the euro area. It also complicates the resolution process because agreement between the SSM, the SRM, the ECB and the national government will be needed.

An even worse scenario would be that the ECB comes under pressure to weaken the comprehensive review (there have already been three comprehensive stress tests in 2009, 2010 and 2011 in Europe). Then the uncertainties regarding the creditworthiness of banks that have plagued banks in Europe for the last five years will remain, with the result that banks may not be able to supply all of the credit that firms and households in the euro area demand.

In contrast, a much more favourable outcome would be that, because the largest banks in Europe have recently written off a large volume of bad loans or announced that they plan to raise more capital (perhaps in preparation for the AQR), very few banks need substantial capital injections. Those that need more capital are forced to issue new equity, since this doesn't have the negative side effects for the real economy that increasing earnings by reducing loan supply does.

At present, this discussion must remain speculative as it is unclear how many bad loans banks have or what their sensitivity to new shocks is until we see results from a strict and credible comprehensive review. For that we must wait until October for publication of the results of the comprehensive review.

### New regulatory framework

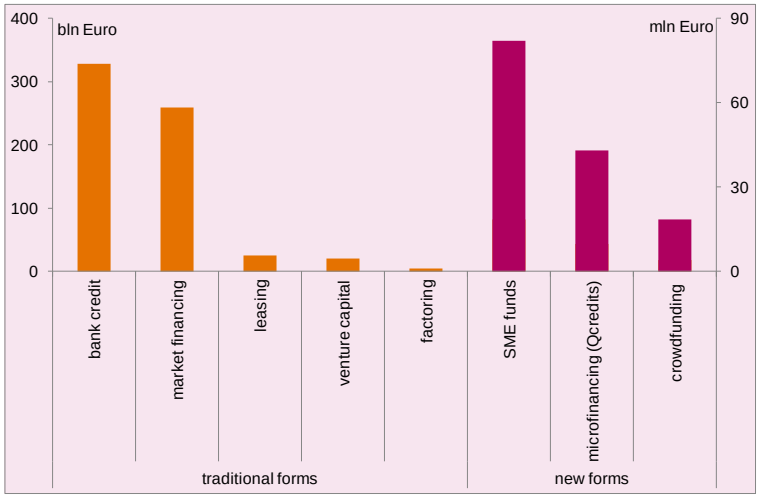
New regulations are also coming into effect, which may have important consequences for the real economy. As shown in Figure 2.3 (right) above, the major banks in the Netherlands already meet the minimum standards of the endpoint requirements of Basel III as formulated in the Capital Requirements Regulation (CRR/CRD IV). In addition to the international requirements, national regulators can require additional capital for systemic banks, which DNB has done for four banks in the Netherlands. ABN AMRO, ING and Rabobank have been told to raise an extra 3% of risk-weighted assets between 2016 and 2019 whilst SNS bank has been told to raise an extra 1%. Dutch banks may have trouble meeting these requirements through retained earnings if economic recovery remains weak (Webbink *et al.* 2014). Indeed, how banks raise extra capital is important. Whilst having more equity will make the Dutch financial system more robust in the long-run and carries little economic costs, in the short-run transition cost may play a role (Bijlsma and Zwart, 2010).

These transition costs arise if the major banks raise capital by reducing the supply of credit instead of issuing equity, firms may not have sufficient funds for investment.[21]

### Interaction between government and bank finances

We have seen above that one reason why euro area bank finances are weak is that they hold large quantities of euro area government debt, which has become considerably riskier since the onset of the Great Recession. If the coming decade were to see robust economic growth, for example because structural reforms in the euro area (see Chapter 7 for more on structural reforms in the euro area), government and household debt problems would be reduced relative to higher nominal incomes. In that case the health of banks balance sheets would also improve, allowing them to increase lending as required by the growing economy.

**Figure 2.7 Size of traditional forms of finance (left axis) and new forms (right axis)**




Source: ECB, DNB, Douw and Koren, FAAN, Nederlandse vereniging van participatiemaatschappijen, Leaseurope, Qcredit, NPEX.

In the long-run, the single supervisory mechanism should also go some way to break the link between weak governments and weak banks. Pan-European supervision lowers the risk of captured regulators, with beneficial consequences for financial stability. Furthermore, more internationally diversified banks would also make the banking system more robust since. For example, the total debts of Greece and Ireland are only small relative to the banking system and similar losses could easily be absorbed if they were evenly distributed across Europe.

### Alternatives to bank finance

It is also possible that the financial system in the Netherlands will develop such that firms are less reliant on bank financing. Figure 2.17 shows the relative importance of traditional and new forms of finance. Whilst still small in comparison to traditional forms of finance, the new forms have grown rapidly in recent years. In the long-run, broader sources of finance

[21] Hebbink et al. (2014) present a number of scenarios for how banks' efforts to raise capital may restrict lending and, therefore, investment and economic growth. Clearly, the required supply of credit depends on where that economic growth comes from. For example, Hebbink *et al*. argue that credit supply may be a restraint on growth in an investment led recovery. That's much less likely to be the case in, for example, an export led recovery.

will make the Dutch economy more robust to problems with banks. Over the next decade, such alternative forms of finance may be able to substitute for some of any shortfall in bank credit supply.

## 2.6 Summary: credits and risks

This chapter has discussed the developments with banks and financial markets since the start of the Great Recession and it has detailed international evidence for two theoretical channels that explain why developments in financial markets matter for the real economy. This chapter has also provided some tentative evidence for the importance of these channels for the Netherlands and has concluded that there is some evidence for weaknesses on banks' balance sheets that may be lowering the supply of credit in the economy. It has also highlighted the problems that small and medium size firms have obtaining credit, although it appears these problems are symptoms of asymmetric information during the economic downturn. Finally, this chapter has also discussed some key risks for the coming ten years. The key risk is that market participants will view the current comprehensive review as insufficiently strict, which means that the current uncertainty about the financial health of banks and sovereigns in the euro area will continue to plague the processes of credit intermediation. Even with a strict and credible AQR and stress test there is a risk that, instead of issuing new equity, banks will restrict lending to build up their capital levels to those required by regulators and market participants. This restricted credit supply may limit the speed of economic recovery. In contrast, many of the financial weaknesses of banks, governments, firms and households would be significantly reduced by faster economic growth.

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