



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

Low Interest Rates and Financial Stability

IN-DEPTH ANALYSIS

Abstract

The ECB's QE announcement has made it clear they intend to keep interest rates in the euro area at very low levels for a long period of time. This policy should help to boost economic growth and move inflation back towards the ECB's target. However, every economic policy produces winners and losers and certain sectors of the economy will be negatively affected by this policy. This paper presents evidence on sectoral balance sheets and household asset holdings to explain how low interest rates affect various groups. It also discusses the impact a prolonged period of low interest rates has on different types of financial institutions. The paper concludes that, at present, the risks of low interest rates provoking a new financial crisis are low.

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EXECUTIVE SUMMARY

- The ECB's QE announcement has made it clear they intend to keep interest rates in the euro area at very low levels for a long period of time.
- This policy should help to boost economic growth and move inflation back towards the ECB's target.
- However, every economic policy produces winners and losers and certain sectors of the economy will be negatively affected by this policy. Debtors benefit from interest rate cuts while creditors lose out. Some types of financial institutions benefit while others lose out.
- This paper presents evidence on sectoral balance sheets and household asset holdings to explain how low interest rates affect various groups.
- On average, euro area households are net holders of financial assets and have large holdings of deposits and pension fund wealth. Euro area businesses and government have large net debtor positions.
- This means that low interest rates will tend to have a negative income effect on households and a positive income effect for businesses and government.
- Within the household sector, however, most wealth is held by households that likely have lower marginal propensities to consume, so it is unclear whether the direct income effect on consumption spending is negative. In addition, low interest rates change behaviour, encouraging spending and discouraging saving even with constant income. For these reasons, low interest rates boost spending and have a positive medium-term impact on the economy.
- Banks usually benefit from periods of low short-term interest rates because these are usually associated with a steep yield curve and a higher net interest margin. The current expectation of low interest rates for an extended period of time, however, means that the yield curve is not steep and so this policy is not benefitting banks.
- Life insurers and other providers of longer-term fixed liabilities, such as defined benefit pension funds, are negatively affected by low interest rates and an extended period of low rates may threaten the solvency of these institutions.
- However, at present, the risk of low interest rates provoking a new financial crisis are low.
- Failures at life insurance and pension funds are unlikely to provoke a systemic financial crisis.
- Credit growth in the euro area remains negative, though there are some signs that it may be picking up. In the absence of a credit boom, concerns about low interest rates sowing the seeds for a crisis when interest rates rise again seem to be largely unfounded.

1. INTRODUCTION

With inflation in the euro area having turned negative, the ECB finally announced its long-awaited Quantitative Easing (QE) programme. This announcement has made it clear to investors that the ECB intends to keep interest rates in the euro area at very low levels for a long period of time. The early signs are that QE is having its intended impact on financial markets: Interest rates have fallen and the euro has declined significantly since the announcement of the programme in January.

These impacts should help to boost economic growth and move inflation back towards the ECB's target and I consider the QE programme to be welcome (in fact, long overdue). However, very few economic policies are of the "free lunch" variety and there are legitimate concerns that a policy of extended low interest rates may lead to unintended negative consequences and perhaps sow the seeds for some future crisis.

This paper addresses these various concerns. Section 2 starts from the observation that lower interest rates clearly do not benefit all and as such can do some harm as well as some good. Debtors benefit from interest rate cuts while creditors lose out. Some types of financial institutions benefit while others lose out. I discuss the implications of low interest rates for various groups, presenting evidence on net asset and liabilities for various sectors of the euro area economy and explaining why the medium-term effects on the economy of the current low interest rate policies will be positive.

Section 3 discusses potential sources of systemic financial risk associated with a sustained period of low interest rates. I conclude that while this phenomenon requires regulators to be careful in monitoring certain kinds of financial institutions, the weak behaviour of credit in the euro area suggests that (as of yet) there are few reasons to be concerned about a systemic financial crisis due to cheap credit.

2. WINNERS, LOSERS AND ECONOMIC IMPACT

It is generally presumed in macroeconomic discussions that reductions in interest rates provide a medium-term boost to the economy as a whole. However, this is far from saying that interest rate cuts benefit everyone. As such, it is useful to consider how different groups are affected and why aggregating over these various effects, this policy is likely to have positive effects on aggregate demand. I discuss these issues in two parts, first focusing on the impact on the household, business and government sectors, then discussing how various types of financial institutions are affected.

2.1. Households, Businesses and Government

A useful source of information that sheds light on who gains and loses from interest rate changes is the ECB's sectoral accounts. These figures show total financial assets and liabilities for the different sectors of the euro area economy, including households, nonfinancial corporations, government and financial institutions.¹ Table 1 on the next page repeats figures describing the position of each of these sectors as of 2014:Q3.

The table shows that the euro area as a whole has financial assets and liabilities that are relatively close to each other, so its overall net asset position is quite small. Within the sectors, however, households are the only sector with a large positive net financial asset position, with assets of €20.9 trillion and liabilities of €6.8 trillion for a positive net position of €14.1 trillion. Offsetting this are negative net financial asset positions of €9.7 trillion for non-financial corporations and €6.9 trillion for governments.

The table also reports the composition of assets and liabilities for each sector, so we can see the mechanisms through which lower interest rates will affect each sector. Within the households sector, those who contribute to owing €6.1 trillion in loans will benefit, while those who contribute to currency and deposit assets of €7.3 trillion and insurance and pension assets will lose out. (Of course, many people will have positions in all three categories.) Nonfinancial corporations will benefit (and so, indirectly, will those who own these corporations) while governments will also benefit, implying an indirect benefit for taxpayers throughout the economy.

There are also likely to be differences across countries in how low interest rates impact various sectors. For example, popular debate about monetary policy in the euro area has commonly referred to the idea that German households are particularly affected by low interest rates because they adopt a conservative investment strategy and keep most of their money in bank deposits. However, this is not the case.

Figure 1 repeats a graph from a research presentation from Allianz showing bank deposits as a percentage of total financial assets in 2013 across a range of euro area member states.² It shows that deposits were 40 percent of German financial assets in 2013, well behind the figures for Greece and Spain and only marginally ahead of the figures for Portugal and Ireland.

The ECB's 2013 report on its Eurosystem Household Finance and Consumption Survey (HFCS) provides further insights into the pattern of household asset holdings for different European countries. This survey (based on data collected in 2010) estimated that bank deposits accounted for 43 percent of the financial assets of Euro area households with the equivalent figure for Germany being 44 percent.

¹ These figures are published as Table 3.1. in the ECB's Statistical Bulletin.

² Allianz (2014).

Table 1: Euro Area Sectoral Financial Accounts

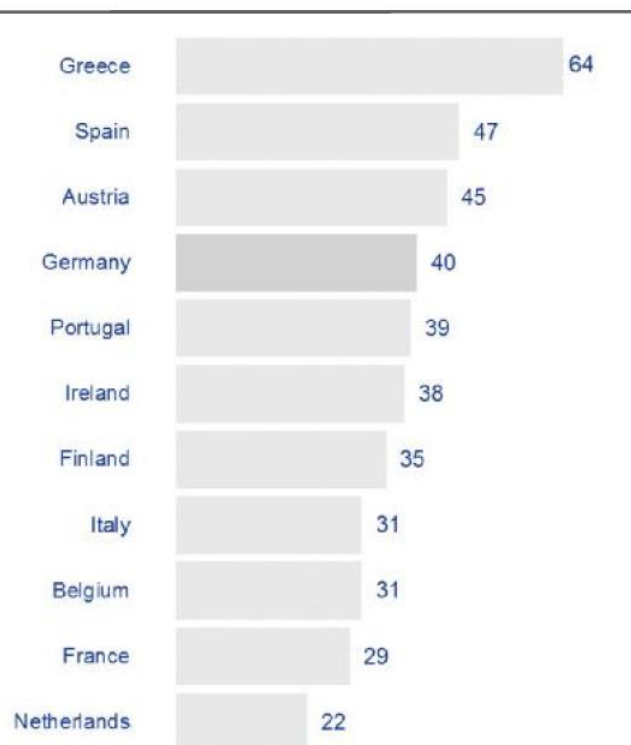
Assets	Euro area	Households	Non-financial corporations	MFI	Investment funds (except MMFs)	OFI	ICPF	General government	Rest of the world
2014 Q3									
Opening balance sheet, financial assets									
Total financial assets	105,789	20,891	18,437	31,137	8,051	13,748	8,600	4,925	20,469
Monetary gold and special drawing rights (SDRs)	415			415					
Currency and deposits	22,377	7,294	2,100	9,154	285	1,843	787	913	2,903
Short-term debt securities	1,054	57	50	459	305	93	61	29	588
Long-term debt securities	14,728	1,091	248	5,863	3,155	622	3,308	440	4,591
Loans	22,662	96	3,458	12,600	91	4,658	733	1,026	2,967
Shares and other equity	30,501	5,238	8,691	1,712	3,836	6,146	3,227	1,652	8,411
Listed shares	6,131	844	1,258	355	2,447	544	374	309	.
Unlisted shares and other equity	18,159	2,857	7,062	1,126	120	5,364	491	1,139	.
Investment fund shares (including MMF shares)	6,211	1,538	370	231	1,268	238	2,362	204	.
Insurance and pension schemes	7,188	6,646	202	33	0	1	295	11	437
Other accounts receivable and financial derivatives	6,864	469	3,688	900	380	383	190	854	519
<i>of which: Trade credits and advances</i>	2,991	153	2,681	2	0	80	13	61	221
Total liabilities	107,159	6,814	28,189	31,133	8,256	12,744	8,134	11,890	18,766
Monetary gold and special drawing rights (SDRs)									
Currency and deposits	22,548			22,179				289	2,731
Short-term debt securities	1,421		68	569	3	151	1	629	222
Long-term debt securities	16,262		1,074	4,401	6	3,003	60	7,717	3,057
Loans	21,694	6,156	9,015		70	3,620	358	2,476	3,934
Shares and other equity	31,367	28	14,422	2,743	7,920	5,673	547	33	7,545
Listed shares	5,910		4,604	633	0	522	151	0	.
Unlisted shares and other equity	16,709	28	9,818	1,284	0	5,150	395	33	.
Investment fund shares (including MMF shares)	8,749		827		7,920				.
Insurance and pension schemes	7,626		362	122	0	5	7,022	6	0
Other accounts payable and financial derivatives	6,187	521	3,193	1,064	257	267	147	739	1,195
<i>of which: Trade credits and advances</i>	2,923	167	2,483	44	0	80	13	131	288
<i>Net financial worth</i>	-1,370	14,077	-9,752	4	-205	1,004	466	-6,964	

Source: ECB Statistical Data Warehouse

Furthermore, the HFCS figures show that, contrary to the popular image, the German fraction of assets held in mutual funds and shares is higher than in Greece, Spain, Italy, Portugal, Austria and the Netherlands. Moreover, shares are owned more widely in Germany than in other euro area countries: About 17 percent of German households have investments in mutual funds, compared with 11 percent for the euro area as a whole.³ These figures show it is better to rely on hard figures and analysis rather than anecdotes when discussing the impact of economic policies.

Figure 1: Bank Deposits as a Fraction of Total Financial Assets

Bank deposits as % of gross financial assets



Overall, across the euro area, the direct impacts on income flows of a change in interest rates probably sum up to close to zero. However, this does not mean that the effect on consumption or investment spending will be zero.

In relation to household spending, the available evidence suggests that wealth in the euro area is more concentrated among households that are older and have higher incomes. Table 2 on the next page reproduces a table from the ECB's 2013 report on its Eurosystem Household Finance and Consumption Survey (HFCS).⁴ This shows that average net wealth for households with a reference person aged between 55 and 64 are almost twice those of households with a reference person aged between 35 and 44. Average net assets of those in the top income quintile are over ten times the average net assets for those in the bottom quintile. This ECB report also reports that households in the lower income deciles are more

³ See my blog post "The Myth of the Special German Saver" for more details. <https://medium.com/bull-market/the-myth-of-the-special-german-saver-718102ae1fd2>

⁴ ECB (2013).

likely to have been turned down for credit (or to have decided not to apply for credit) than households in higher income deciles.

Taken together these figures show that households with more positive net asset positions are older, have higher incomes, save more and are less likely to be credit-constrained. All of these facts point to these households having relatively low marginal propensities to consume, so the fact that interest-sensitive assets are larger for households than their interest-sensitive liabilities doesn't necessarily mean that the income effect on household consumption is negative. In any case, the income effect on business spending, which tends to be very cyclically sensitive, is likely to outweigh any potential negative effect on household spending.

This analysis only considers the direct impact of income changes on spending. However, low interest rates also affect saving behaviour itself, discouraging saving and encouraging spending by households and businesses. Taken together, these considerations explain why low interest rates will tend to boost aggregate demand.

2.2. Financial Institutions

Just as different sectors of the economy are affected in different ways by low interest rates, it also the case that impact on financial institutions varies depending on their line of business.

Banks

Traditional conventional wisdom is that banks benefit from low short-term interest rates and a steep yield curve. Bank assets tend to be longer in duration than bank liabilities, so a reduction in interest rates sees tends to see more its liabilities being reset to lower interest rates than its assets, thus boosting profitability. The margin between new longer-term loans and existing loans also usually rises when short-term rates are low and the yield curve becomes more steep.

The low interest rates of more recent years, however, have been different from the scenarios of the past where interest rates were temporarily low during a recession and were expected to rise quickly once the economy had recovered. Due to a combination of economic weakness and policy commitments to maintain low interest rates for a long period, interest rates on many asset categories are now very low right across the yield spectrum. For example, during 2009, in the early days of the ECB's low interest rate policy, the average difference between yields on 10 year AAA-rated euro area government bonds and 1 year AAA-rated bonds (as measured by the ECB's yield curve) was 2.9 percentage points.⁵ As of March 10, after two days of QE purchases, this gap stood at only 0.49 percentage points.⁶

This means that the current environment in which interest rates are expected to be low for a long period is not positive for bank profits. By restraining bank profitability, the low interest environment is perhaps slowing the process by which European banks boost their capital levels as to move towards compliance with Basel 3.

⁵ These data are available at

http://sdw.ecb.europa.eu/quickview.do?SERIES_KEY=165.YC.B.U2.EUR.4F.G_N_A.SV_C_Y_M.SR_1Y and

http://sdw.ecb.europa.eu/quickview.do?SERIES_KEY=165.YC.B.U2.EUR.4F.G_N_A.SV_C_Y_M.SR_10Y

⁶ See Genay and Podjasek (2014) for a discussion of the negative effects of a flat yield curve on bank profitability in the US.

Table 2: The Distribution of Net Wealth in the Euro Area

Table 4.1 Net wealth by demographic and country characteristics				
	Median Net Wealth (€1,000)	Mean Net Wealth (€1,000)	Share of Total Net Wealth (%)	Share of Households (%)
Euro Area	109.2	230.8	100.0	100.0
<i>S.E.</i>	<i>(1.9)</i>	<i>(4.2)</i>		
Household Size				
1	39.6	134.9	18.5	31.6
2	148.2	279.4	38.9	32.1
3	135.2	246.7	17.7	16.6
4	175.4	285.4	17.5	14.1
5 and More	121.6	307.9	7.5	5.6
Housing Status				
Owner-Outright	241.2	391.3	69.1	40.7
Owner-with Mortgage	171.1	266.6	22.4	19.4
Renter or Other	9.1	49.5	8.6	39.9
Percentile of EA Income				
Less than 20	26.7	89.2	7.7	20.0
20-39	53.2	124.9	10.8	20.0
40-59	104.9	172.5	14.9	20.0
60-79	157.3	226.8	19.7	20.0
80-100	295.3	540.8	46.8	20.0
Percentile of EA Net Wealth				
Less than 20	1.2	-2.8	-0.2	20.1
20-39	27.0	29.4	2.5	19.9
40-59	109.2	111.9	9.7	20.0
60-79	230.6	235.1	20.4	20.0
80-100	506.2	780.7	67.6	20.0
Age of Reference Person				
16-34	16.1	71.3	4.9	15.7
35-44	94.5	191.3	16.2	19.6
45-54	148.3	266.6	22.9	19.9
55-64	186.6	344.4	25.5	17.1
65-74	163.9	283.6	17.8	14.5
75+	126.1	220.9	12.7	13.2

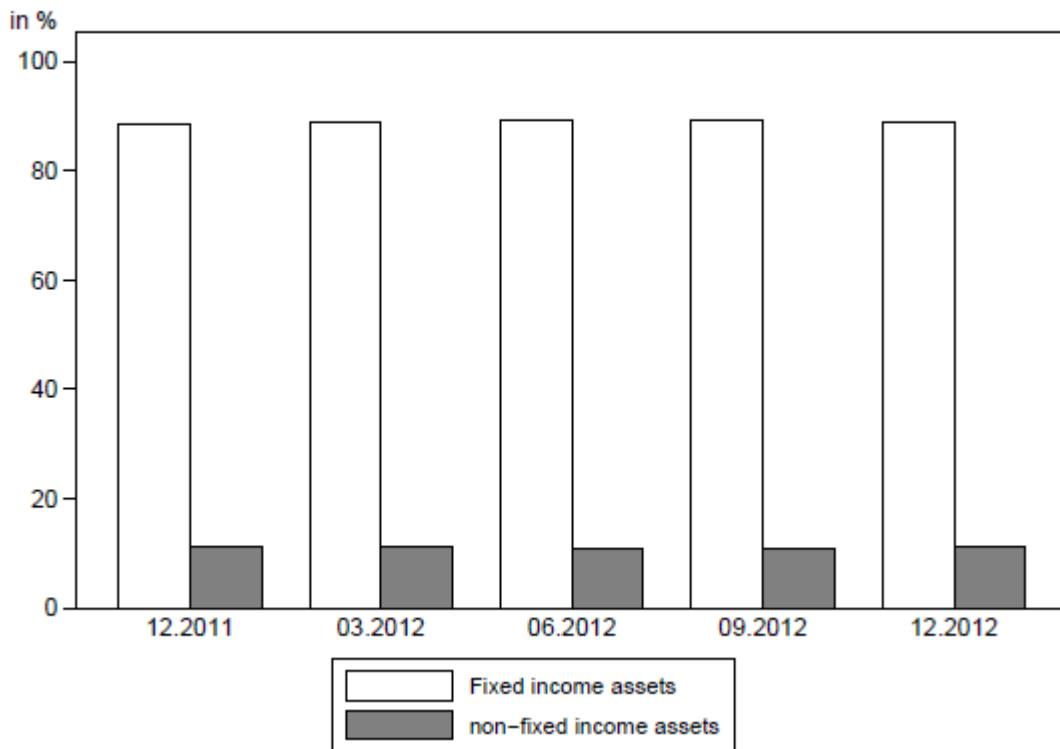
Source: ECB Household Consumption and Finance Network

Life Insurance Companies and Defined Benefit Pension Funds

Other types of financial institutions are more seriously affected by a low interest rate environment. Life insurance companies, defined benefit pension funds and businesses that sell annuities (often also sold by life insurance companies) have long-term liabilities, the costs of which do not adjust downwards when interest rates decline.

Unlike mutual funds or defined contribution pension funds, businesses like life insurance companies and defined benefit pension funds are not focused on "value maximisation", a strategy that may involve a willingness to take risks in order to generate longer-term returns. Instead, their focus is on investments with limited risk but that can, ideally, allow them to deliver on their legal obligations to make the future payouts that they have committed themselves to. This leads to a relatively conservative investment strategy. So, for example, the figure below (taken from Kablau and Weiss, 2014) shows that the assets of German life insurers are dominated by fixed income assets.

Figure 2: Composition of Assets of German Life Insurance Firms



Given these investment patterns, these companies are being negatively affected by the current low interest rate environment. Kablau and Weiss (2014) argue that a number of German life insurers will fail to meet regulatory solvency requirements if the low interest environment persists. Berends, McMenemy, Plestis, and Rosen (2013) show that, since the global financial crisis, share prices for US life insurance companies have varied inversely with the yield on ten-year Treasury bonds.

3. UNINTENDED CONSEQUENCES OF LOW INTEREST RATES?

The fact that there are winners and losers from an extended period of low interest rates should not on its own be a reason to be concerned about adopting this policy. The evidence still suggests that the benefits of this policy in boosting aggregate demand and moving inflation back towards its target level make this a warranted policy.

But is it possible that a policy of keeping interest rates low for a long time can store up risks in the financial sector that then provokes another crisis? The previous time global interest rates were very low for an extended period of time was last decade. During this period, there were occasional warnings that the monetary policy was contributing to financial sector excesses which could end with a crisis (Borio and White, 2004 and Rajan, 2005, were too well known examples). However, these warnings were largely ignored by policy makers and financial imbalances ultimately triggered the largest global economic crisis since the Great Depression.

My assessment is that the conditions are not yet in place at present for an extended period of low interest rates to be a threat to financial stability in Europe or elsewhere. One reason for this is that interest rates are probably set to rise in the US and UK in recent years, which will limit the global nature of cheap credit. The other reasons, as I outline below, are that the institutions that are currently the source of concern are unlikely to cause a systemic crisis and that credit growth is likely to be weak in the coming years.

To be clear, I am not arguing that a financial crisis in the next decade is out of the question. The outcome of the global financial crisis was that the largest financial institutions now control an even larger share of the global banking market than prior to the crisis, so the too-big-to-fail problem is as big as ever. And Europe's newly developed bank resolution tools are yet to be tested in a crisis so it is hard to predict how the next financial crisis in Europe will play out. But, at present, low interest rates do not appear to be producing the ingredients for a financial crisis.

3.1. Threats from Pension Funds and Insurance Companies

The previous section discussed how an environment of low interest rates could have a negative effect on financial institutions such as life insurance companies and pension funds. In itself, this doesn't trigger a crisis. However, it is possible that weak profitability at these institutions could induce risk taking behaviour that causes problems later.

Rajan (2005) describes this possibility as follows:

"Insurance companies may have entered into fixed rate commitments. When interest rates fall, they may have no alternative but to seek out riskier investments – if they stay with low return but safe investments, they are likely to default for sure on their commitments, while if they take riskier but higher return investments, they have some chance of survival. This phenomenon, known as risk shifting ... tends to induce participants to ignore collective downside risks (including illiquidity) since their attention is focused on the upside, the only circumstances under which they survive."

This suggests that the current period of low interest rates could potentially contribute to a crisis in industries such as life insurance and defined benefit pensions. If they adopted "gambling" strategies, it would be inevitable that some of these firms would be affected by downside risk and become insolvent.

While acknowledging this risk, I think it is unlikely that this scenario could trigger a systemic financial crisis.

One key point is that not all types of institutions are equally important for the global financial system and not all types of financial losses are equally important. For example, many mutual funds and pension funds lost large amounts of money in the “dot com” crash of the early 2000s but there were few knock-on financial consequences. The losses were largely inflicted on better-off households who were able to absorb them and there were no failures of financial institutions that threatened the wider financial system.

In contrast, the housing bust of 2007 onwards caused large losses across a wide range of households and left many with debt burdens they could not afford. This, in turn, affected the health of the banking system, which plays a crucial financial intermediation role in the economy. For this reason, similar-sized losses in two different parts of the financial system can result in very different impacts on the economy.

Based on this comparison, future failures at life insurance companies and pension funds seem less likely to threaten the financial system as a whole than the losses associated with housing debt.

Of course, it is possible that such a crisis could trigger fiscal costs if governments decided to use public money to compensate insurance policy holders or pension scheme members for shortfalls. For this reason, it is important that regulators play close attention to how life insurers and pension funds invest their assets. Sound regulation, increased charges for financial products and a reduction in the generosity of future payouts, rather than a future crisis and government bailouts, are the appropriate approach to these problems.

3.2. Credit Growth and the Next Interest Rate Cycle

The other reason the current period of low interest rates is unlikely to trigger a future financial crisis is the current absence of strong credit growth. Most of the well-known discussions of potential problems due to low interest rates, such as William White’s 2012 paper warning about “unintended consequences”, focus heavily on how low interest rates induce households, business and financial institutions to take on additional debt. These higher debt burdens then become a problem when interest rates start to rise later, leading to financial stress.

The current situation with credit in the euro area is the exact opposite of the low interest rate-fuelled credit boom that is warned about in most discussions of the cyclical build-up of financial risks. Figure 3 shows year-over-year growth in loans to households while Figure 4 shows the corresponding chart for nonfinancial corporations. While there is a sign of a pick-up in recent months, both types have credit have been declining, with business credit falling steadily over the past three years.

There are a number of reasons for the weakness in credit in the euro area in recent years despite highly accommodative monetary policy. Many banks that relied previously on cheap funding from international wholesale markets have had to scale back their operations. Banks are also adopting a more conservative approach to assessing credit risk than prior to the crisis so credit standards have tightened significantly. The banking sector has also been focused on building up capital and reducing risk-weighted assets to meet the requirements of Basel 3. Uncertainty about potential loan losses in the face of the euro area’s long slump have also acted to make debt and equity funding more difficult to obtain for many banks which has also acted to reduce the provision of credit.

In addition to these factors, weak demand for credit for households and businesses that are focused on reducing debt levels has also influenced the contraction in credit supply.

There are a number of signs that this period of extremely tight credit may be coming to an end. The ECB’s comprehensive assessment exercise has improved transparency of the

accounts of Europe's largest banks and made comparisons across countries easier. Banks that were holding back on providing new credit because of concerns about their performance in the comprehensive assessment are now more likely to return to a more normal pattern of lending.

The negative effects of Basel 3 compliance on credit also appear to be tailing off. Figure 5 shows the capital shortfalls of the EU's largest banks (Group 1 are the 40 largest banks, Group 2 are the next 108 biggest.)⁷ The figure shows that, as of June 2014, the shortfalls relative to Basel 3 requirements had been reduced to a relatively small amount. Further capital raising since then likely means that, on average, European banks are ready to comply with this aspect of Basel 3.

Figure 6 shows how capital raising and reductions in risk-weighted assets have combined to increase the capital ratios of the Group 1 set of banks. Risk-weighted assets fell by about 20 percent from June 2011 to December 2013 but flattened out during the first half of 2014.

So there are some signs that bank credit may be set to grow again in the euro area, albeit probably fairly weakly. We are still a very long way away from having a dangerous credit boom. Most likely, if credit did begin to grow at a fast pace again, it would be in the context of an expanding euro area economy in which inflation had returned to target and monetary policy would also be transitioning back to its normal operational procedures.

At present, then, there is little reason to think that the next cycle of interest rate increases is likely to trigger anything like the stress in the household, business or financial sectors that was seen in 2007. Europe's banks are better capitalised than in the past and have adopted a conservative approach to credit provision that is unlikely to have stored up the types of problems that emerged in 2008.

3.3. Zombie Firms

One other concern about extended periods low interest rates that occasionally gets mentioned, for example by White (2012), is that they may lead to a delay in restructuring of failing firms. This concern stems from evidence reported by Peek and Rosengren (2003), Ahearne and Shinada (2005) and Caballero, Hoshi and Kashyap (2008) on the relationships between banks and firms in Japan.

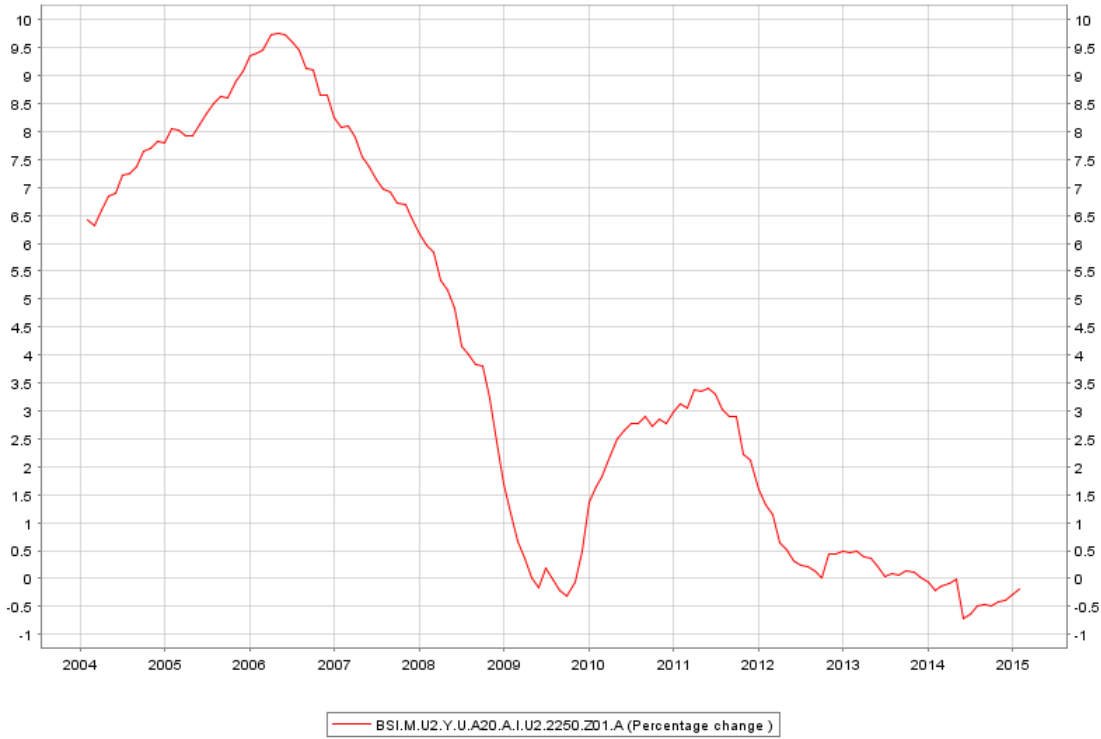
These studies reported that during the 1990s and early 2000s, many Japanese banks had weak capital positions. Thus, rather than admit to having made bad loans to failing firms, the banks would regularly roll over these loans. This "evergreening" process was made easier by the fact that interest rates were so low, so failing firms only had to make very small repayments to maintain the appearance of keeping up with the required repayments. This method of allocating credit slowed down productivity growth and perversely rewarded poorly performing firms over good performers.

This concern does not seem to be a particularly relevant one in Europe today. The Japanese experience in this area was largely related to its particular system of corporate governance which feature keiretsu, large groupings of interrelated businesses that could include banks and this aspect does not translate to Europe today.

Prior to last year's comprehensive assessment, there were grounds for concern about how some banks in Europe were treating non-performing business loans, with different definitions of non-performance being applied across countries. However, the ECB has now introduced standard definitions in these areas and we should expect a strong supervisory approach to recognition of loan losses in the future.

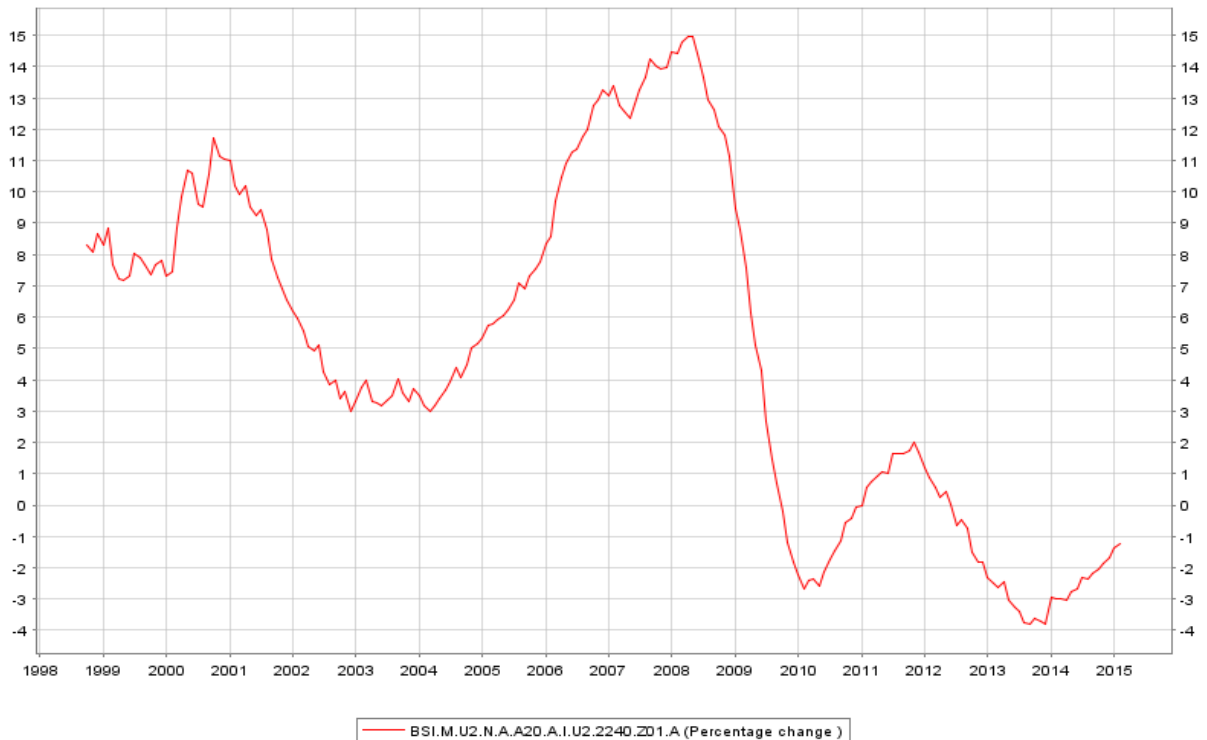
⁷ These figures are from European Banking Authority (2015)

Figure 3: Annual Growth Rate of Loans to Euro Area Households



Source: ECB Statistical Data Warehouse

Figure 4: Annual Growth Rate of Loans to Euro Area Nonfinancial Corporations



Source: ECB Statistical Data Warehouse

Figure 5: Capital Shortfalls at EU's Largest Banks

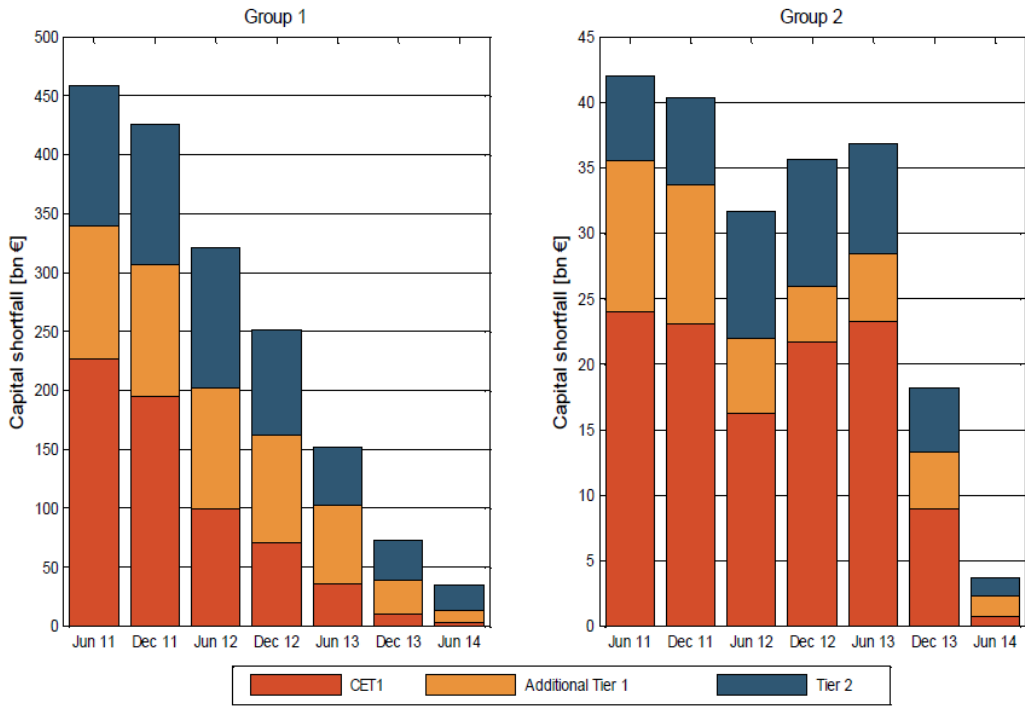
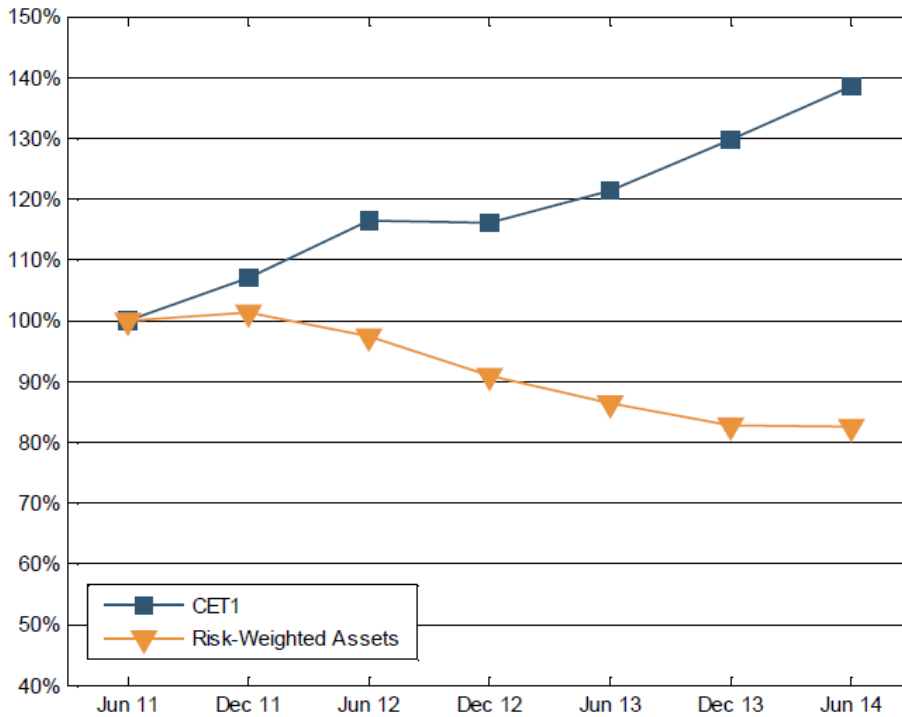


Figure 6: Core Equity and Risk-Weighted Assets at "Group One" Banks



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