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**The Determinants of Bank Profitability in Slovenia, 1999–2014**

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Special thanks and appreciation go to the Editorial Board for the international issue: Dr. Božo Jašovič (president), Dr. Janez Fabijan, Mag. Kristijan Hvala, Dr. Marko Košak, Dr. Damjan Kozamernik, Dr. Mojmir Mrak and Dr. France Arhar for their readiness to volunteer their valuable time and share their experiences and insights.
Ladies and gentlemen,

An old anecdote says that a successful banker should operate according to a 3-6-3 rule. Bankers would gather deposits at 3 per cent, lend them at 6 per cent and be on the golf course by 3 o’clock in the afternoon. Needless to say that the rule oversimplifies responsibilities bank management have, but it still describes in a nutshell one of the essential goals of regulating the financial system: the ability to put savers’ money where it will make profit. There are also other goals such as risk management, encouraging wealth accumulation, development and economic growth, and the efficient operation of payment systems. It is difficult to imagine how in today’s banking environment, the 3-6-3 rule could be anything but an anecdote.

It is, however, up to a legislator/regulator to observe all these goals. To that end, a legislator/regulator has to decide which goals should be given priority. Just take beefing up the capability of the financial system with the aim to avert future shocks and create a shock absorbing buffer if disaster strikes by raising the bar for capital requirements translates into higher cost of capital and lost investment opportunities. Deciding which goal should be fast-tracked is a tricky business. This casts some light on another rule followed until recently: in financial regulation less may be more, so legislators/regulators should not be heavy-handed when writing regulations. The events witnessed over the past few years have shown that a heavy hand might be needed so that lax regulatory frameworks do not lead to wobbly markets.

One consequence of having come to terms with the phenomenon has been stepping up legislative activity. And not only in Slovenia. And not only in the European Union either. All more important financial markets have enhanced regulations of entities that operate on financial markets by more or less concerted efforts. The cutting edge of legislative changes comes from redesigned capital requirements (CRD IV and Solvency II), regulation of unregulated activity (e.g. activities pursued by shadow banks), regulation of unregulated financial entities (e.g. managers of alternative investment funds and rating agencies) and enhancing macro-prudential supervision.

As a result of the intensified regulatory activity, practically all framework laws were amended in the course of 2014. The regulatory changes were promulgated or they are to be adopted shortly: the new Banking Act, Investment Trusts and Management Companies Act, Alternative Investment Fund Managers Act, Insurance Act, Financial Instruments Market Act ... All these changes have effect on financial market participants and on the legal relationships they have at the moment when legislative changes enter into force. Consequently, all legislative changes have to be purposeful and deliberate. Purposeful and deliberate legislative norms should not be engineered to encompass all details of financial markets functioning. Such a regulatory framework would either lag behind the market reality since it would either be too rigid to address the latest market innovations or it would stand in the way of progressive development of new products or even prohibit it. An adequate regulatory framework in place should enable development of different business models (e.g. by taking into account inherent risk levels), provide a level playing ground both for large and small financial market participants and leave room for an individual to act so as to avert potentially negative consequences for himself with the aim to ensure legal security.

Nevertheless, financial market regulations should not be focused only on individual market participants. As the recent events have demonstrated, financial market regulations have to take markets as a whole. It is the only way to prevent that the soldiers (financial institutions) march in step across the bridge (financial market) match with their stride the bridge’s frequency of vibration (threaten the financial system security with their conduct), and unintentionally break the bridge apart (contribute to the emergence of problems on the market). The laws sited above take into account this aspect of financial markets regulation.

Having said that, we should keep in mind that the beacon of financial markets regulation should still be awareness that abstract legal acts (laws, directives, regulations...) are not an aqueduct serving to deliver political goals to the legal order. Therefore, even if we can hardly imagine banks operating by anything close to the 3-6-3 rule, we may not prohibit it only on the ground that we do not fancy it.

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1 I would like to acknowledge the excellent input of Aleš Butala, Head of the Financial System Department, Ministry of Finance of the Republic of Slovenia, in the preparation of this contribution.

2 There is a proper measure in all things.
A central banker’s view on the future of European banking

Yves Mersch*

What are the main challenges facing European banking, what are the potential dangers for the wider economy and what are the right responses by banks themselves and by policy-makers? In this contribution, I outline the challenges to European banks’ business models and the potential threats that they create – notably to consumer protection and to lending to the smaller firms that form such an important part of Europe’s economy.

I then argue that banks need to reinvent themselves and reinvigorate their business models – and that policy-makers in various fields need to make some improvements in setting the right incentives for banks. At a time when the future for the sector is clouded in uncertainty, I believe that we need to take a balanced approach: supporting the healthy forces of creative destruction, while at the same time protecting consumers and the essential functions of banks in servicing the economy.

Challenges to the business models of European banks

European banks are coming out of the crisis facing disruptive forces from all sides. They confront three main challenges to their business models.

The first is dealing with the legacy effects of the crisis on their balance sheets. Since 2009, banks have been going through an arduous process of restructuring and deleveraging: shedding non-core business lines, writing down impaired assets and increasing provisions.

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1 This paper was presented at the Economist Future of Banking Summit in Paris, 10 March 2015.
This process has been costly both in terms of lower profits and diverted management time. Many banks also still have to work through their large stock of non-performing loans (NPLs), which further weighs on their earnings prospects. Sufficient recovery from NPL resolution is hindered by slow national insolvency procedures for firms and an underdeveloped European market for distressed debt. The second challenge is adapting to the new wave of regulation since the crisis. Banks have been required to improve both the quantity and quality of their capital, which has, in the short term at least, led to a ‘de-risking’ of their balance sheets to improve risk-weighted assets. The incoming leverage ratio, which will put a cap on balance sheet size, is also obliging banks to make difficult decisions over how to allocate assets and which business lines to maintain. In addition, reform proposals are on the horizon that will limit cross-subsidisation between banking and trading activities, which will require some adaptation in the business models of Europe’s universal banks.

Third, banks are faced with profound structural changes. As evolving customer preferences interact with new technology (for example, in the growth of internet and mobile banking), barriers to entry into banking are falling. Banks with large branch networks are being exposed to competition from lower cost and less regulated operators. We see this already in the emergence of peer-to-peer lenders and technology firms offering banking services. There is also increasing competition in banking services more generally, as firms such as PayPal become well established in markets such as retail payments that were previously the preserve of high street banks.

On top of this, the trend towards more capital market-based financing in Europe – supported by the new initiative on a Capital Markets Union – will inevitably weaken banks’ market power, especially for firms that can easily substitute bank and market finance. Furthermore, although the role of ‘shadow banks’ (such as asset managers, pension funds and private debt funds) in direct lending is still relatively small in quantitative terms, it is growing, which heralds a shift towards a less bank-dominated financing mix. Taken together, this represents a uniquely challenging environment for European banks, something that is apparent in their generally weak financial performance: price-to-book ratios are low and profitability is meagre. Many banks have a cost of equity that exceeds their return on equity. Moreover, there is little chance of the economy coming to the rescue or of interest rates rising any time soon. Banks will have to return to profitability in the context of a slow recovery with depressed net interest margins.

Dangers in a difficult climate

Should we be concerned about how banks will fare in this difficult climate? In my view, we need to take a nuanced stance here that balances principle and practice.

In principle, the developments in the banking sector should be largely positive for society at large. Many banks grew too quickly before the crisis and developed unsustainable business models, which means that a period of consolidation is both desirable and inevitable. The aim of the regulatory agenda - which is to make banks more resilient and reduce the burden of bank failure on society – is also fully justified. Indeed, these structural changes should be welcomed. If we believe in the benefits of creative destruction for normal firms, then we must also believe in it for financial firms. Innovation that raises competition in retail lending, and leads to better and cheaper services for customers, is a net gain for the economy. A priori, I do not see any role for regulators in protecting banks from new operators - on the contrary, innovation should be nurtured and encouraged. Equally, the objective of a Capital Markets Union is clearly in the public interest. It will benefit, in various ways, financial stability, access to finance and entrepreneurship. In particular for equity risk capital, which is critical for innovative young firms, market fragmentation in Europe creates a self-fulfilling brake on progress. Venture capital firms do not have a large enough deal flow to cover the majority of investments that will fail, which means that fewer investments are made (Veugelers, 2011). We need to work towards a genuine single market for all forms of financing – for loans, bonds and equity. Nevertheless, despite all these positive aspects, we must also recognise that, in practice, the process of adaptation and structural change in the financial sector could have unwelcome consequences. As such, we cannot be completely agnostic about how that process evolves. Indeed, there are at least two possible
outcomes from the changing environment that we need to be particularly careful to avoid. The first is that innovation comes at a cost to consumer protection. We have already seen in some European countries the risks posed by the emergence of new actors with little official oversight – internet payday lenders, for example. Such activities by unregulated non-banks can create pressure for a ‘race to the bottom’ among more regulated banks, which would also be detrimental to consumer security. We therefore need to ensure the right balance between innovation and regulation. The regulatory landscape should not stifle new operators or protect the rents of banks, but it also needs to be consistent and fair.

The second outcome that we need to avoid is that the pressures of the new environment cause bank lending to fall too much and then stay too low. This is not because there is any ex ante preference for bank lending over other forms of credit. Rather, it is because, whether we like it or not, banks have a vital social function in Europe in taking the credit risk to lend to small and medium-sized enterprises (SMEs). Even with a more diversified financing mix in Europe, this function is essentially irreplaceable by non-banks. It is only really banks – and in particular larger banks – that have large enough balance sheets to diversify effectively the idiosyncratic risks from SME lending, by lending to a sufficiently broad range of firms. It is also only banks that have the relationship networks and screening and monitoring processes to manage the information asymmetries associated with smaller firms. For non-banks, obtaining adequate information is simply too costly and resource-intensive. Thus, were banks to respond to regulatory and structural changes and weak profitability by taking less credit risk vis-à-vis SMEs, or by shifting their asset allocation to mortgage or securities, non-banks could not easily fill the gap. As SMEs account for around 85 per cent of total employment growth in the European Union, and have a much higher employment growth rate (one per cent annually) than large enterprises (0.5 per cent a year), then the costs for the European economy would be very high.

**Building a more resilient sector that lends to smaller firms**

How can we avoid a scenario in which bank lending is not readily available for Europe’s smaller firms? First of all, a large body of research suggests that banks need to be strong to lend: to give just one example, the Bank for International Settlements (BIS) finds that European banks with higher capital levels and stronger profitability have lent more during the crisis than others (Cohen and Scatigna, 2014). This means that banks themselves need to face the challenge; they need to reinvent themselves and reinvigorate their business models. Many banks have already begun this process – for example, by shifting their focus from trading and wholesale banking to retail banking and asset management. They have also worked hard to reduce costs. All this is an important part of adapting to the new environment.

But banks must be careful that responding to short-term pressures does not come at the expense of longer-term viability. Specifically, if they elect to cut costs and boost profits through underinvestment, over time they will not be able to keep up with technological change and evolving customer demands – and in the end, they will not have a business model. Most importantly, retail customers now expect to be able to move seamlessly across digital channels such as online and mobile banking, which requires adequate investment in digital platforms. If these expectations are not met, customers are also now increasingly prepared to switch accounts, causing banks to lose a cheap source of funding. In short, more than ever, banks need to innovate to keep their customers loyal. One way for banks to raise profits without shirking investment is through genuine efficiency gains. In this context, I see a large ‘low hanging fruit’ in Europe that is ripe to be picked: consolidation within the sector.

According to most indicators, there are too many banks in Europe relative to the size of the market. For example, the Herfindahl-Hirschman concentration index (HHI) for the euro area currently stands at around 700. As a general rule, an HHI below 1,000 signals low concentration, while an index above 1,800 signals high concentration. For values between 1,000 and 1,800, an industry is considered to be moderately concentrated (ECB, 2014). This implies that there is significant scope to benefit from rationalisation, and without exacerbating the problem of ‘too big to fail’. Moreover, these benefits have become easier to realise now that we have a Banking Union and an end to supervisory divergence.

Research suggests that the economies of scale from both within-country and cross-country banking mergers and acquisitions (M&A) could be sizeable in terms of, among other things, information technology and corporate overhead costs (Kovner, Vickery and Zhou, 2014). Banks that implement a pan-European balance sheet strategy could also access a more diversified customer base and, under the Single Supervisory Mechanism, they could optimise their use of capital and liquidity. Being
European would provide a platform for banks to launch new products on a European scale, thus increasing the returns to investment and innovation. In short, there is every reason for banks to capitalise on the opportunity provided by the Banking Union and turn themselves into genuinely European players. This would go a long way towards creating a banking sector with the resilience and capacity to maintain the essential social function of lending to Europe’s smaller firms.

Getting the incentives right for banks

Addressing the SME issue is not only about banks adapting; it is also about policy-makers in various fields setting the right incentives for banks. That means, first of all, ensuring that the Banking Union delivers on its promise that the era of national champions is really over. But it also means making a rigorous assessment of the wider policy environment confronting banks – and the various ways in which it might be holding back bank lending.

In my view, there are three areas in particular where we could make improvements. The first is by accelerating efforts to put the legacy of the crisis behind us. For example, there is a great deal more that could be done at the national level to make NPL workouts more efficient, such as improving inter-creditor mediation or in- and out-of-court restructuring frameworks. To complete insolvency proceedings in Italy takes 1.8 years, while in Ireland it takes just 0.4 years [World Bank, 2013]. Pan-European initiatives could also play a role in reducing the legacy stock of NPLs, for example, by adopting a centralised approach to speed up the pace of NPL write-offs.

The second area is making progress on the agenda to revive high quality securitisation in Europe. Securitisation is where banks and capital markets meet – a well-functioning asset-backed security (ABS) market means more bank lending. There are many issues involved in reviving the market, which I have discussed at length elsewhere (Mersch, 2014), but one of the most important is improving information for investors. The ECB is playing its part here through its loan-level initiative, and various credit-scoring initiatives by national authorities are helpful. But over the medium term, I am convinced that we need to work towards a pan-European central credit database. This would facilitate multiple country SME ABS, which in turn would reduce both the risk and price of issuance. Third, it is now key to provide more regulatory clarity. Regulators have put a large burden on banks and it has probably come at a cost. If banks are simultaneously having to lower costs while raising the resources they dedicate to regulatory compliance, there must be a consequence elsewhere. For example, information technology resources may be diverted away from innovation. We also still hear reports from market participants that regulatory uncertainty is constraining bank lending. It is therefore time to make clear what the future regulatory landscape will look like.

Many banks also still have to work through their large stock of non-performing loans.

Conclusion

The European banking sector is facing profound challenges that are reshaping financial intermediation in Europe. In principle, these are positive forces and regulators should not stand in their way. It is banks that need to respond and face the challenges. But we should also not be naïve: we need strong banks in Europe to support our economy, and policy has a role to play in achieving that. This does not mean helping individual banks or promoting national champions. Rather, it means creating an environment with better capitalised banks, better information and better regulation. Then, banking will have a solid future in the emerging European financial landscape.

REFERENCES


Persistently ultra-low interest rates: causes and consequences

Claudio Borio*

Interest rates have never been so low for so long (Graph 1). They have been low in nominal and real (inflation-adjusted) terms, and low against any benchmark.

Introduction

Between December 2014 and end-May 2015, on average around $2 trillion in global long-term sovereign debt, much of it issued by euro area sovereigns, was trading at negative yields. At their trough, French, German and Swiss sovereign yields were negative out to five, nine and 15 years, respectively. Such yields are unprecedented. At the time of writing, policy rates are even lower, in both nominal and real terms, than at the peak of the Great Financial Crisis (GFC). And in real terms, they have now been negative for even longer than during the Great Inflation of the 1970s. Yet, exceptional as this situation may be, many expect it to continue. There is something deeply troubling when the unthinkable threatens to become routine.

What are the proximate and deeper causes of such low rates? And what are their consequences, for both the financial industry and the macroeconomy? These are the two questions addressed in this paper. At the outset, it is important to acknowledge that the answers are exceedingly difficult and controversial. What will be offered here is a specific perspective that differs from the prevailing paradigm, to which the popular secular stagnation hypothesis (Summers (2014)) and saving glut hypothesis (Bernanke (2005)) also belong.

* Claudio Borio, Bank for International Settlements
It is the perspective that the Bank for International Settlements (BIS) has been putting forward for some time with a view to enriching the debate (e.g. BIS (2014, 2015); see also Borio (2014a)). The difference in perspective matters, since the policy implications are quite different. The basic thesis outlined here is that such low rates are, in fact, not equilibrium rates or, as economists would call them, “natural” rates, i.e. rates that are conducive to sustainable and balanced global expansion. Rather, they are a symptom of a broader malaise. For some time now, policies have proved ineffective at preventing the build-up and collapse of hugely damaging financial imbalances – or financial cycles (Borio (2014a)) – in advanced and emerging market economies (EMEs) alike. These have left long-lasting scars in the economic tissue, as they have sapped productivity and misallocated real resources across sectors and over time. Thus, rather than just reflecting the current weakness, the low rates may in part have contributed to it by fuelling such costly financial booms and busts. The result is too much debt, too little growth and excessively low interest rates (Graph 1). In short, low rates beget lower rates. Such low rates, if persistent, can sap the financial industry’s strength and raise significant financial and macroeconomic risks. Section I considers the proximate determinants of such persistently ultra-low rates. Section II addresses the question of whether such rates should be considered equilibrium ones. Section III explores the possible risks ahead. The conclusion notes key policy challenges ahead.

I – Why have interest rates been so low for so long?

In the economics profession, there is a broad consensus about the proximate determinants of interest rates. Market interest rates are determined by a combination of central banks’ and market participants’ actions. Central banks set the nominal short-term rate and influence the nominal long-term rate through signals about future policy rates and through purchases of assets, given the amounts outstanding. Market participants adjust their portfolios based on their expectations of central bank policy, their views about the other factors driving long-term rates, their attitude towards risk and various balanced sheet constraints. Given these nominal interest rates, actual inflation determines ex post real rates and expected inflation determines ex ante real rates. Thus, the influence of saving and investment is only indirect, through these proximate factors and, in particular, through their influence on central banks’ and market participants’ perceptions – and the key word here is indeed “perceptions” – of what the right level of interest rates should be.

It is therefore straightforward to understand why interest rates have been so low. Following the eruption of the GFC, central banks rightly pulled out all the stops to avoid a dangerous spiral between a collapsing financial system and the economy. And they succeeded. Thereafter, however, what they thought would be temporary measures became
much longer-lasting. If anything, central banks were increasingly drawn into unfamiliar territory, taking steps that, just a few years back, would have been unthinkable. Their balance sheets continued to grow, and policy rates in some jurisdictions were pushed below what had been thought to be their lower bound, i.e. into negative territory.

Why has policy normalisation proved so elusive? Here, the analysis necessarily becomes more conjectural. But it is possible to suggest at least a couple of reasons. The first concerns domestic monetary policy frameworks. Post-crisis, at least in the advanced economies most affected by it, output has tended to fall short of expectations. In addition, and more generally, inflation has, on balance, evolved below numerical objectives. And with private sector balance sheets impaired and interest rates already quite low, monetary policy has had less traction on the real economy than usual. As a result, central banks have felt the need to press further on the accelerator. The second reason concerns the interaction of monetary policy regimes internationally. With domestic transmission channels less effective, a greater burden of adjustment has fallen on the exchange rate. Thus, as countries stuck in the mud tried harder, their exchange rates depreciated. This, in turn, generated unwelcome appreciation pressures elsewhere, by possibly threatening those countries’ output and inflation performance as well as their competitiveness. As a result, easing has begotten easing. Arguably, these patterns are partly explained by the specific nature of the recession, at least in the countries most affected by the crisis and its aftershocks. The post-crisis recession has been no ordinary recession, but a balance sheet recession. During much of the postwar period, recessions had been triggered by a tightening of monetary policy to head off rising inflation. In this case, the trigger was a largely spontaneous collapse of a previous unsustainable financial boom, in the form of unusually strong increases in credit and property prices on the back of aggressive risk-taking. And the boom had occurred against the backdrop of low and stable inflation. As a result, when the recession set in, the debt and capital stock overhangs were much larger, the financial sector was much more damaged, and the policy room for manoeuvre was much more limited. The closest equivalent in advanced countries prior to the GFC was Japan’s experience in the 1990s. This helps explain why the domestic transmission mechanisms functioned less smoothly than in the past, why output disappointed – mirroring past post-crisis patterns – and why we have seen a disproportionate reliance on the exchange rate. Moreover, the failure in several cases to address banking problems head-on, by promptly repairing balance sheets and cutting overcapacity in the sector, added to the burden on monetary policy. This was an important unheeded lesson of previous crises (Borio et al 2010). But there is yet another reason why the huge and persistent monetary stimulus post-crisis has not produced the hoped-for results. This reason, which requires more elaboration, has to do with the mechanisms through which financial booms and busts are so disruptive to output – their impact on the economy’s output potential – or what economists call the “supply side”, notably factor productivity, i.e. the efficiency with which labour and capital are employed.

It is worth stressing that most of the attention in the economic literature so far has focused on the impact of financial booms and busts on demand factors. More specifically, the disruptive interaction between high debt and the collapse in asset prices saps spending, makes monetary policy less effective and results in a protracted slump (eg Koo (2003), Reinhart and Reinhart (2010), Rogoff (2015)). To the extent that aggregate supply factors come into play, they are actually seen as aggregate demand-induced: for instance, persistently soft demand results in high unemployment which weakens skills, turning cyclical unemployment into structural unemployment – so-called “hysteresis”. As long as the root cause of weakness is demand, protracted easier monetary policy is a natural response. Recent BIS research, however, has found that supply factors are more important than imagined so far. The evidence suggests that financial booms and busts misallocate resources, shifting them towards less productive sectors and producing long-lasting damage to productivity growth. More specifically, that research, based on 22 advanced economies over the period 1980–2010, makes three findings (Borio et al 2015)). First, financial booms tend to undermine productivity growth as they occur (Graph 2). For a typical credit boom, over 1/3 of a percentage point per year is a kind of lower bound. Second, a considerable
A chunk of this – almost 3/4 – reflects a shift of factors of production (labour) to lower productivity growth sectors. Examples could be shifts into a bloated construction sector or into the financial sector. The rest is the impact on that part of productivity that is common across sectors, such as the common component of aggregate capital accumulation. Finally, the impact of the misallocations that occur during a boom is much larger if a crisis follows. The average loss per year in the five years after a crisis is more than twice that during a boom, around 0.7 percentage points per year. Taking, say, a five-year boom and five post-crisis years together, the cumulative impact would amount to a loss of some 6 percentage points.

The most obvious implication is that the existence of resource misallocations further weakens the effectiveness of monetary policy easing in countering financial busts. It is not just that agents wish to deleverage and weaker banks impair the transmission mechanism of policy. The point is that easy monetary policy cannot undo the resource misallocations. That is, it cannot – and, in fact, it should not – bring idle cranes back to life when there is an oversupply of buildings.

The bottom line is a kind of “monetary policy curse”. On the one hand, the specific nature of a balance sheet recession weakens the effectiveness of monetary policy. On the other hand, the protracted slump, especially if inflation remains below targets, combined with that very loss in effectiveness encourages central banks to push harder. As a result, interest rates plunge to new depths and central bank balance sheets balloon while traction remains limited.

II – Are such persistently ultra-low interest rates equilibrium ones?

So much for the proximate causes. The deeper question, however, is whether the persistently ultra-low interest rates that have prevailed post-crisis – and those that prevailed pre-crisis, for that matter – can be regarded as equilibrium, or natural, rates. Answering this question holds the key to a fuller understanding of the possible consequences and appropriate policy response. Whether the interest rates that prevail at any given time are equilibrium, or natural, ones is necessarily an analytical question, and the answer must be model-dependent. Equilibrium rates are simply a theoretical construct and, as such, inevitably unobservable. Moreover, their definition fundamentally shapes their measurement, requiring a set of strong maintained assumptions. There is a sense in which equilibrium rates, like beauty, are in the eye of the beholder.

The prevailing view, shared by proponents of the savings glut and secular stagnation hypotheses (Bernanke (2005), Summers (2014)), is that the equilibrium, or natural, interest rate equates saving and investment at full employment and that when this does not happen, inflation rises (if there is excess demand) or falls (if there is excess supply). The behaviour of inflation is the key signal of unsustainability.

Graph 2: Financial booms sap productivity by misallocating resources

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**Graph 2: Financial booms sap productivity by misallocating resources**

- **Resource misallocation**: Annual impact on productivity growth of labour shifts into less productive sectors during the credit boom, as measured over the period shown.
- **Other**: Annual impact in the absence of reallocations during the boom.

some cases, it has coincided with high unemployment. So, the ultra-low market interest rates that have been prevailing for so long should be close to, if not above, equilibrium rates. Indeed, to many proponents of this view, output has been as weak as it has precisely because monetary policy has not been sufficiently expansionary, given the, admittedly porous, zero lower bound constraint. Some have even gone so far as to argue that natural rates are now negative, ie that the inflation-adjusted rates consistent with full employment and full capacity utilisation are below zero.

But there is another possibility: so defined, the concept of the natural interest rate may be too narrow. Another signal that the interest rate is not at its equilibrium, or natural, level may be the build-up of financial imbalances. The reasoning is straightforward. Acknowledge – as indeed some of the proponents of the previous view have – that low interest rates are a factor in fuelling financial booms and busts. After all, intuitively, it is hard to argue that they are not, given that monetary policy operates by influencing credit expansion, asset prices and risk-taking. Acknowledge further that financial booms and busts cause huge and lasting economic damage – in fact, no one denies this. Then it follows that if we think of an equilibrium rate more broadly as one consistent with sustainable good economic performance, then rates cannot be at their equilibrium level if they are inconsistent with financial stability. Seen in this light, the previous, narrower definition of the equilibrium rate is more a reflection of the incompleteness of the analytical frameworks used to define the concept – frameworks that do not incorporate financial instability – than a reflection of an inherent tension between natural rates and financial stability. There is a need to go beyond the full employment-inflation paradigm to fully characterise economic equilibrium.

To non-economists, this may appear to be a rhetorical quibble. After all, many, though not all, the proponents of the narrower view acknowledge that low rates can create damaging financial instability. But, in fact, the difference in perspective matters, because it has important policy implications, which will be discussed later. The basic reason is that there is a consensus that “good” monetary policy is defined by the central bank setting the policy rate at its equilibrium, or natural, level. Thus, the definition of the equilibrium rate also determines what the central bank should do. This analysis also has implications for how to interpret the trend decline in real interest rates that we have seen at least since the early 1990s. In the prevailing view, interest rates have followed an equilibrium path, reflecting factors that are completely independent of monetary policy. Examples include not only deep supply forces, such as a slowdown in technological progress or in population growth, but, as stressed in recent contributions, also structural deficiencies in demand. These may be linked to, say, the high propensity to save of current account surplus countries (the “savings glut” hypothesis), or to changes in income distribution and a fall in the relative price of investment goods (the “secular stagnation” hypothesis).

According to the view laid out here, however, the long-term decline in real interest rates is not just an equilibrium phenomenon; rather, it reflects, at least in part, an asymmetrical monetary policy strategy over successive financial and business cycles (Borio and Disyatat (2014), BIS (2015)). Monetary policy fails to lean against unsustainable financial booms as long as inflation is not a threat. Booms and the subsequent busts cause long-term economic damage. In turn, policy responds aggressively and persistently to the busts. And, by so doing, it sows the seeds of the next problem.

Importantly, the successive financial booms and busts need not occur – although they sometimes have – in the same country. Low rates in the countries stuck in the mud, especially if they are large and home to international currencies, such as the US dollar or the euro, may induce financial booms elsewhere (see below). Put differently, over sufficiently long horizons, low interest rates to some extent become self-validating. Too low rates in the past are one reason – not the only reason – for such low rates today. Policy rates are not simply passively reflecting some deep forces independent of monetary policy; they are also helping to shape the economic environment policymakers take as given (“exogenous”) when tomorrow becomes today.

III – What are the consequences of persistently ultra-low interest rates?

Let me just highlight a number of consequences of persistently ultra-low interest rates, which become more compelling once one acknowledges the possibility that they are not equilibrium ones. The first has to
do with the financial industry and the second with the macroeconomy more generally. These consequences suggest that, in contrast to what is sometimes argued, such rates are not a free lunch and that the balance of benefits and costs needs to be assessed very carefully.

Persistently ultra-low interest rates raise challenges for the profitability and strength of the financial industry (BIS (2015)). These impinge on banks, on insurance companies and pension funds, and on the financial system more generally. Consider each effect in turn.

Such low rates can weaken banks’ profitability. To be sure, by boosting asset prices, they can have one-off positive effects on valuations. And, of course, as long as they boost economic activity, they help banks more generally. But, over time, especially if the effectiveness of easy policy diminishes or is low, the main impact is likely to operate through compressed interest margins. This is because very low rates shrink the gap between market rates and deposit rates (the “endowment effect”) and that between returns on assets and the equity base (“equity effect”). The impact of low rates is compounded if it coincides with a flat term structure. And it naturally becomes larger as rates approximate the lower bound. Valuation gains dissipate, but lower interest margins stay.

Indeed, recent BIS research finds empirical evidence for such an effect in a sample of over 100 banks from 80 countries (Borio et al (2015)). For instance, taken at face value, the results suggest that, on balance, after a positive effect on return on assets in the first two post-crisis years (2009–10), of the order of 0.3 percentage points cumulatively, the impact turned negative in the following four (2010–14), amounting to some 0.6 percentage points. Ironically, therefore, rather than boosting lending, such low rates may even inhibit it. This is especially the case if a negative term premium eats into banks’ returns from maturity transformation or banks come under pressure to shrink their balance sheets, as they seek to pass on some of the costs to their depositors. For instance, anecdotal evidence suggests that this has started to happen at least for large deposits in Switzerland, where policy rates have been deep into negative territory. But persistently ultra-low interest rates

**Monetary policy fails to lean against unsustainable financial booms as long as inflation is not a threat.**

have stronger effects on insurance companies and pension funds. These financial intermediaries are especially vulnerable to low rates, since the duration of their liabilities typically exceeds that of their assets. Particularly exposed are insurance companies that offer products with guaranteed returns issued when interest rates were higher and that hold fewer equities, so that they cannot benefit from the initial boost to their valuations. Admittedly, accounting or regulatory practices can smooth or attenuate the impact of the fall in interest rates on the value of the liabilities for a while. But this becomes harder as time wears on and may simply mask the underlying economic reality. Ironically, here, attempts by the industry to close the duration gap to hedge interest rate risk might even make matters worse, as the required purchases of long-duration bonds could depress yields further. There is indeed some empirical evidence for this type of behaviour (Domanski et al (2015)). This is yet another mechanism whereby low rates beget lower ones. Finally, the effects of persistently ultra-low rates on the financial system as a whole are broader-ranging. For one, such rates may delay the necessary balance sheet adjustments, both within the financial sector and for overly indebted non-financial borrowers. For instance, they make it harder, and reduce the incentive, to identify non-performing loans, encouraging extend-and-pretend practices. And, more generally, they foster risk-taking (eg “search for yield”) and asset overvaluation, as they infect the pricing of all asset classes. Concerns of this type have been prominent post-crisis, despite lacklustre economic activity: high risk-taking in financial markets, where it can be dangerous, has gone hand in hand with low risk-taking in the real economy, where it has been badly needed (BIS (2014, 2015)). In addition, persistently ultra-low rates also raise risks for the macroeconomy, in both the short term and the longer term.

In the short term, there may even be perverse effects on aggregate spending. To be sure, by reducing interest payments, low rates provide breathing space for those who are overly indebted. This effect is especially powerful when a lot of the debt is short-term or is at interest rates linked to short-term rates. For instance, recent BIS research has found that, even at the economy-wide level, debt service ratios have a sizeable effect on spending (Drehmann and Juselius (2015)). But for those seeking to save for retirement, such
rates may induce higher saving (eg Rajan (2013)) – this is precisely what the widespread underfunding of pension schemes shows. These effects are likely to be more powerful when interest rates are unusually and persistently low, as the need for higher saving becomes more evident. And thinking of investment more specifically, it is hard to believe that such persistently low interest rates can promote fully rational investment decisions: a tide lifts all boats. In fact, these rates may favour firms that have more interest rate-sensitive collateral available – firms that need not be the more productive ones. This is true whether we think of what happens across sectors, such as construction or finance at the expense of other sectors, or within sectors, such as incumbent firms at the expense of newcomers. In fact, these rates may be precisely some of the mechanisms through which financial booms misallocate resources and sap productivity (eg Aghion et al (2015)).

Longer-term, the main economic risk, as noted above, is that of fuelling potentially hugely damaging financial imbalances (eg BIS (2014, 2015)). Post-crisis, several of the countries least affected by it have exhibited trademark symptoms of the build-up of financial imbalances – symptoms that have been qualitatively similar to those prevailing pre-crisis in those countries subsequently hardest hit by it. And the rapid expansion of foreign currency borrowing, mainly through market funding, has played an important role, especially for EMEs (Shin (2013), McCauley et al (2015)). The set of countries affected has included some of the largest EMEs and, to a lesser extent, some advanced economies too. Among them, commodity exporters have been especially prominent, given the boost they received from the commodity price boom, which has collapsed over the past year. The corresponding risks should not be underestimated. All this points to the worrying possibility of a “debt trap” (Borio and Disyatat (2014), BIS (2014)). As discussed above, the asymmetrical policy response over successive financial and business cycles can induce a downward bias in interest rates. In turn, this can induce an upward bias in both private and public debt levels relative to output and incomes. As a result, the room for policy manoeuvre shrinks over time and it becomes harder to raise interest rates without causing damage to the economy. This is what economists call “time inconsistency”, to refer to a series of policy measures that, taken in isolation, may appear reasonable and compelling but, as a sequence, take policy astray. All this is reminiscent of the old joke about the stranded tourist who, having asked for directions, was told: “If I were you, I wouldn’t start from here.”

**Conclusion**

Interest rates have been unusually low for an unusually long time regardless of benchmarks. In the immediate aftermath of one of the biggest financial crises in history, very low interest rates, alongside growing central bank balance sheets, are easy to understand. What has proved harder to explain is their persistence.

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**Graph 3: Interest rates sink as debt soars**

![Chart showing the relationship between interest rates and debt.](chart)

Sources: IMF, *World Economic Outlook*; OECD, *Economic Outlook*; national data; BIS calculations.
MACROECONOMIC DETERMINANTS OF BANKING SECTOR DEVELOPMENT

-- in fact, their further decline -- well after crisis conditions dissipated. This has given rise to a debate about the likely consequences and deeper causes of these developments. This paper has argued that such persistently ultra-low interest rates are not a free lunch. They have helped to sustain the economy in the short term, but have also given rise to a number of side effects that deserve close attention. They have weakened the profitability and financial strength of significant segments of the financial system; they have fostered aggressive risk-taking in financial markets; they have probably undermined productivity; and they have contributed to financial stability risks and hence macroeconomic risks further down the road. The benefits are apparent in the short term; the costs are only revealed in the longer term. Short-term gain may come at the cost of long-term pain. And the balance of benefits and costs deteriorates the longer the conditions persist. A full cost-benefit analysis is badly needed. A key question underlying this debate is whether such interest rates are in some sense “equilibrium”, or “natural”, ones. The prevailing view is that they indeed are: such low real rates – in fact, negative ones – are consistent with full employment and stable prices in any given period. Central banks and market participants have simply guided rates towards their natural levels, to offset deeper forces beyond their control, notably a persistent shortfall in aggregate demand. The view put forward here questions this conclusion. If such interest rates generate financial instability and financial instability causes major, long-lasting damage, it seems unreasonable to regard them as equilibrium ones. Doing so arguably reflects the incompleteness of the analytical frameworks used to define the concept - frameworks that do not incorporate financial instability but rather focus on short-term output and inflation behaviour. In this view, the interest rates that prevail now are in part the consequence of past policies that have been unable to prevent the build-up and collapse of hugely damaging financial cycles, which have left long-lasting wounds in the economic tissue. From this perspective, low rates beget lower rates. This analysis points to desirable adjustments to monetary policy frameworks, both domestically and internationally. Given the limited space available, it is not possible to explain or justify them fully (Borio (2014b,c), BIS (2014, 2015)), but it is worth highlighting their main features. Domestically, monetary policy strategies could become more symmetrical over financial booms and busts, tightening more deliberately during booms even if inflation is not a threat in the near term, and easing less strongly and persistently during busts. This would help avoid the easing bias that can, over time, lead to a partly self-validating decline in real interest rates and risk exhausting the policy room for manoeuvre. Such a strategy would also require corresponding and supporting adjustments to prudential and fiscal frameworks alongside greater reliance on structural policies. This is the only way to prevent monetary policy from becoming overburdened, as it has in the past. Internationally, there is a need to take into account more systematically the spillovers, spillbacks and the impact of the collective stance of national monetary policies. This would limit the risk that the interaction of national monetary policy regimes may inadvertently lead to the build-up of disruptive financial imbalances across the world. To be sure, adjusting domestic frameworks would be a major step forward, as it would limit the intensity of negative spillovers, by strengthening national anchors. But one could imagine further steps based on increasingly tight international co-operation – from enlightened self-interest, through occasional joint decisions also in prevention mode and, more ambitiously, all the way to agreement on common rules of the game that constrain national discretion (eg Rajan (2015)). The precondition of any such steps, both domestically and, even more so, internationally, is a sufficiently broad consensus on the nature of the problem along the lines suggested here. This is still a long way off. But then, as it was once famously said: “All long marches begin with small steps”.

Booms and the subsequent busts cause long-term economic damage.

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Low interest rates challenge the business model of Danish banks

Steen Hauskou Bertelsen and Niels Storm Stenbæk*

N egative interest rates have for long mostly been an academic discussion. However, as a result of an appreciation pressure on the Danish krone and low interest rates in the ECB among other things, the Danish central bank lowered its rate of interest on certificates of deposit consecutively reaching -0.75 per cent at the beginning of February. This is the lowest level to date and the central bank has kept it unchanged until now (August).

The central bank of Denmark’s effort to ensure the fixed exchange rate policy, which is a very important priority, results in more liquidity in the banking sector. This presents a number of challenges for the banks, including loss of earnings due to a negative return on deposits in the central bank. The banks can lend more money to households and companies at a higher interest rate, but all things being equal, this hardly changes the total deposits in the central bank, since the monetary system is a “closed” system, which will be evident in this article.

The tool box works, but it has its price

The central bank of Denmark functions as bank for the banks. The net position, which is the banks’ aggregate account with the central bank of Denmark, consists of the amount of certificates of deposit bought by the banks and current account deposits less monetary policy lending.

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1 This article is an update of a former article published 26 March 2015 in the Danish journal Finans/Invest no. 2 2015.
The net position can be understood as the money which the banks have placed in the central bank of Denmark, and it corresponds to the so-called autonomous factors on the central bank’s balance sheet, more specifically the demand for cash, the foreign-exchange reserve and the government deposit\(^2\).

When the central bank of Denmark intervenes by purchasing currency from the banks, e.g. buys euro for Danish kroner to support the fixed exchange rate policy, the net position increases. The net position will also increase when the state makes payments to the citizens through the banks, for example salaries to state employees. Therefore, the decision taken by the central bank of Denmark to suspend issuing new government bonds also means that the liquidity in the banks increases, since the budget deficit is financed via the state deposit with the central bank of Denmark instead. These three cases are all examples of an increase in the banks’ need to placing Danish kroner with the central bank of Denmark.

The banks’ liquidity surplus can be placed in the central bank’s current account, in certificates of deposit or alternatively in other banks through the money market\(^3\). However, since the monetary system in Denmark is a closed system, a money market transaction will in principal simply move the need to place funds with the central bank from one bank to another\(^4\). At the moment, there is plenty of liquidity in the banks, which is why, for example, the exchange of liquidity between the banks in the money market is declining. And that, even though the central bank of Denmark has also increased the spread between the lending rate and certificates of deposit rate, which helps to increase the incentive to use the money market instead of placing it on the account in the central bank.

When the Danish bank customers go to the bank with their cash or when a company wants to place its liquidity surplus with the bank, some of the money will of course be lent to other customers who have borrowing needs. This is the essence of banking. Liquidity management and optimisation in a bank is a discipline by itself. Simply put, when banks manage their day-to-day liquidity, they have the opportunity to buy certificates of deposit from the central bank, use collateralised lending or use the day-to-day money market at the so-called tomorrow/next (T/N) interest rate. Since the banks’ net position at the moment is positive, i.e. they need to place funds, it is the certificate of deposit rate that determines the development of the short-term money market rates, since the alternative to buy certificates of deposit is placement in the short-term money market. The T/N rate will thus be close to the certificate of deposit rate, despite the small difference in their maturity\(^5\).

In late February 2015, the Danish central bank still had negative interest rates on certificates of deposit (-0.75 per cent), which was why the T/N interest rate was also negative (-0.80 per cent on 26 February 2015). The longer money market rates at that time reflected the market’s expectations of the future T/N interest rates – and thus the expected interest rate on certificates of deposit.

On 26 February 2015, the 3 and 6-months CIT\(^6\) interest rates\(^6\) were fixed at -0.55 per cent and -0.47 per cent respectively. At that time, there was thus a market expectation of a decreasing T/N interest rate in the subsequent months.

The net position at the Danish central bank reached a record high EUR 51.5 billion at the beginning of April. But the pressure on the Danish Krone has since been eased. At the beginning of August, the net position at the Danish central bank is approximately EUR 40 billion which still is a long way from the 2014 average of EUR 18.9 billion. The rate on the certificates of deposits is still -0.75 per cent, but the 3- and 6-month CIT\(^6\) rates are now fixing at levels around -0.28 and -0.24 per cent.

**Cost for the banks**

These interest rates show what the banks face when they have excess liquidity. And this is the price that banks must pay to receive deposits from customers, as the deposits in several banks carry interest at the rate of 0 per cent. The banks usually make some considerations about the deposit and lending rates when the central bank of Denmark changes its key interest rates and thus the conditions for the fundamental banking operation in Denmark. In the current situation, the banks have so far, with few exceptions, refrained from apply-

\(\text{CITA (Copenhagen Interbank Tomorrow/next Average) is the T/N IRS.}\)

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2 See ‘Monetary Policy in Denmark (2009)’ for a description of the Danish monetary policy and the central bank of Denmark’s instruments.

3 To keep the liquidity as cash is also an alternative, however, it is not a sustainable solution, which we will describe in a later section.

4 See Bang-Andersen et al. (2014) for a description of the money, credit and banking system.

5 Note that there are individual limits for deposits on the individual bank’s current account, which is why it is not an alternative to certificates of deposit. If the limit is exceeded, the amount is converted to certificates of deposit. See Nationalbanken (2009) for a detailed description of the current account system.
The banks have also had earnings as a result of the falling interest rates.

The banks’ opportunities
One can rightfully ask why the banks do not drive large trucks up in front of the central bank and withdraw...
their deposits to large bank notes, which will then carry interest at a zero interest rate. However, storage of even small cash reserves is associated with costs, including counting, transportation, insurance against fire and bank robberies etc., cf. Jørgensen and Risbjerg (2012). Moreover, the banks need considerable liquidity in the central bank, as they regularly make mutual payments through the central bank’s systems and other facilities. The banks are in principal also ready to pay for this liquidity management.

In addition, the best alternative to deposits in the central bank (which in principal is associated with zero credit risk), namely lending to households and companies, has some difficulty getting to a higher level. Both households and companies have consolidated themselves since the financial crisis and the demand for loans for sound investments and consumption are still limited. Since the monetary system, as previously mentioned, is a closed system, this will not have major consequences for the total deposits in the central bank. If a bank x lends money to a consumer, who buys a TV set, the TV seller generates earnings, which the seller again places as a deposit with the bank y. However, the increased lending may help stimulate economic activity and thus generate inflation and higher market interest rates in the long-term (fully aware that the short-term Danish interest rate is determined out of concern for the fixed exchange rate policy).

The banks’ situation mirrors the rest of the society
The low interest environment is a challenge for the banks and negative interest rates, as an additional cost, is a bigger challenge. If the negative interest rates continue for an extended period, it will probably affect the banks’ deposit and lending activity negatively in the long-term, as long as the real ‘production costs’ are not passed on to the customers. If negative interest rates are introduced to non-financial sectors for a long period of time, one can fear that they will pull deposits out of the banks. It is of course gratifying if this is transformed into new consumption and more investments, which will partly contribute to increasing the economic growth, and subsequent higher inflation and interest rates. However, if people do not keep their money in the bank, it can ultimately impose limits on the banks’ core tasks, including term transformation (i.e. “make” short-term deposits into long-term loans) and reallocation of savings into productive investments.

If the banks get poorer opportunities for taking up their role in the society, it will inhibit the real-economic growth.

Banks earn fees when mortgage borrowers refinance mortgage loans.

Financial conditions of the banking sector is important
The economic cycles are also indirectly affected by the changes in interest rates through the impact on the banks’ net interest margin. If earnings on the core activity come under pressure because of a diminishing net interest margin, it can lead to less capital strength (i.e. less financial stability) and thus affect the ability to lend money. The net interest margin ensures, among other things, a return to the bank’s owners and covers the expected losses on the loans, and thereby maintains the capital adequacy ratio.

It is crucial for the banks to be able to run a profitable and healthy business, and thereby be a solid and agile financial partner for the Danish consumers and companies. On top of this, it is important that the banks
run a sound business to sustain the good ratings by the rating agencies, and thus maintain the opportunity to obtain attractive funding prices, etc. All these factors are currently beneficial for the Danish bank customers and for the Danish economy. Therefore, it is important to maintain a healthy, robust and cost-effective banking sector.

Reaction from customers (money under the mattress or new bed?)

The interest rate cuts have made it less attractive to hold Danish kroner. However, the interest rate cuts also affect households and companies through the interest-rate, wealth, bank-lending and balance-sheet channel, as well as through the effect of mortgage interest rates and movements in the exchange rate8. And all this in the long-term. But, what can the customers do by themselves in the short-run? At the time of writing, the banks have decided to shield the private customers against the negative interest rates. However, many customers will experience that the banks will set their deposit rates close to or equal to zero. For professional customers, such as institutional or large corporate customers, there are different alternatives and therefore a possibility that they can be affected by the negative interest rates to a greater extent. And several professional customers have already been affected. If the negative interest rates are fully passed on to all customer segments, the negative interest rates will change from being a cost for the sector to being a cost on savings. Whether this will result in more money under the mattresses in the Danish households is very uncertain9. Instead, it will probably be transformed into consumption, investments in companies or used to invest in securities. The official interest rates fixed by the central bank of Denmark constitute the anchor at the short end of the Danish yield curve. With a normal term structure of interest rates, we see that the negative interest rates decrease, the longer the maturity is. Therefore, it also applies that the shorter the time deposit is on the deposit, the greater the cost. As a result, it will be worthwhile for many customers to set a horizon on their cash deposits in the bank. At first, actively consider how large a portion of liquid funds that is needed to be readily available10. And further consider how great a portion that possibly can be tied up for a longer period of time and which will thus not be affected by possible negative interest rates. Moreover, it is always a good idea for the customer to make this assessment, but the negative interest rates stress the need. The low interest rate environment in general and the negative interest rates can also present some challenges when giving financial advice – especially to retail customers. However, the current situation merely stresses the importance of the customer getting a true picture of his or her risk profile. In addition to considering the allocation between different terms of the cash deposits, it is the customer’s individual trade-off between risk and return as well as the time horizon that determine a possible allocation between the different asset classes and the portfolio’s total amount of risk.

More of the same

The Danish central bank has used different instruments to handle the pressure on the Danish krone in the first months of 2015, and the banks support the necessary measures. The official interest rates and the short-term money market rates are very low and at the beginning of April further interest rate cuts still looked like it might be an option. However, this reflection also considers that there was still room for increasing the foreign exchange reserve, which despite the historic high level still remained well below the level that the central bank of Switzerland operated with. And the central bank of Denmark did not and still do not have to be worried about the inflation, since the inflation risk currently is and has been quite low. In several contexts, the development is linked to the situation in Japan where low interest rates and low inflation almost became a permanent state. However, this seems less likely. An important difference is, contrary to the Japanese banks, that the Danish banks are very robust and have

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8 The impact of the central bank of Denmark’s interest rates on the bank lending rates is rather high, although it has decreased after the financial crisis. This might be a result of new banking regulation etc. Furthermore, the banks do not finance themselves directly through the central bank of Denmark at the moment (cf. the positive net position), but collect funding through the money market (whose interest rates reflect the central bank of Denmark), bond issuance, retail deposits etc.
9 So far, increased note and coin circulations have not been registered, cf. the central bank of Denmark’s statistics.
10 Often, more is not needed on a current account than what can cover unforeseen expenses, such as a visit to the dentist or auto mechanic, or for a new washing machine.
made larger write-downs on assets throughout the financial crisis. The banks are therefore ready to increase lending when an economic recovery makes it necessary. Furthermore, the deflation that we have temporarily seen has primarily been driven by lower energy prices, which can help increase the economic growth and thereby the interest rates and the inflation in the long-term. The hope of the majority was, of course, that the pressure on the Danish krone would be reduced over time. Now, it seems to be the case but the pressure on the banks via the negative rate on certificates of deposits remains. This proposes a challenge above the standard for the banks, which in the long-term may have a negative effect on the ability to support economic growth and jobs – and ensuring the future welfare.

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The Determinants of Bank Profitability in Slovenia, 1999–2014

Biswaik Banerjee, Meta Ahtik and John E. Schipper*

The issue of bank profitability is receiving renewed attention from researchers, practitioners and policy makers since the onset of the financial crises. The interest in the issue arises because a healthy banking system is key to financial stability. Bank profitability was negatively impacted in all countries by the financial crisis and there are concerns that it may remain muted in the prevailing low interest environment. It is feared that persistent weak profitability may prompt banks to take undue risks in financial intermediation, with consequent negative implications for financial stability.

Introduction

The empirical literature on the determinants of bank profitability is vast, and consists of country-specific as well as cross-country studies. Most of these studies deal with the period prior to the onset of the global financial crisis. However, a limited but growing number of studies have examined profitability during a time interval that includes the crisis period (Cărpraru and Ilnatov, 2015; Dietrich and Wanzenried, 2011; Kok et al., 2015; Petria et al., 2015; Rachdi, 2013; and van Ommeren, 2011). Some of these studies have looked at the determinants of profitability separately for the pre-crisis and crisis periods, and have found that many profitability determinants change in magnitude and significance during the crisis period.

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In general, the findings of empirical studies on bank profitability vary considerably on account of differences in sample periods, country and bank coverage, macroeconomic environment and estimation methodology.

In this paper, we examine the determinants of bank profitability in Slovenia using unbalanced panel data for the period 1999-2014, using the methodology that is now standard in the literature. A main contribution of the paper is that we assess the differences in the impact of the various determinants of bank profitability during the pre-crisis and crisis periods.

The paper is organized as follows. The next section lays out some stylized facts about the evolution of bank profitability in Slovenia over time. The section after that reviews the findings of recent studies on the determinants of bank profitability. The subsequent section describes the data and methodology. The next following section presents the main results of the econometric analysis, and the final section concludes.

**Stylized facts on bank profitability in Slovenia**

Bank profitability in Slovenia, measured by the return on average assets (ROAA), fluctuated narrowly around an average of 1% during 1998-2007. However, following the onset of the financial crisis in 2008, ROAA began a downward slide and moved into negative territory in 2010. The indicator bottomed out at -7.5% in 2013 but still remained negative in 2014. The pattern for the return on average equity (ROAE) was similar to that for ROAA. However, developments in net interest margin (NIM) followed a strikingly different pattern (Figure 1).

The evolution of ROAA and ROAE reflects mainly the combined impact of three different factors: net interest margin, cost-to-income ratio, and loan impairment and provisioning costs. During 1998-2007, NIM was on a declining trend, mainly owing to falling nominal interest rates and strong competition among banks. However, banks offset the progressive fall in NIM by restraining costs relative to income growth, as evidenced in a steady decrease in the cost-to-income ratio. During this period, impairment and provisioning costs were broadly stable (Figure 2). The decrease in ROAA and ROAE during 2008-2013 primarily reflects a sharp increase in loan impairment and provisioning costs as the quality of loan portfolio of banks deteriorated following the onset of
the financial crisis. These costs fell sharply in 2014 as a significant volume of non-performing loans of banks were transferred to the Bank Asset Management Company, and two profitability indicators turned around consequently. There also was a reversal of the trend improvement in the cost-to-income ratio after 2012, but this reflected negative developments in revenues rather than in operating costs per se. NIM flattened out during the crisis period notwithstanding deleveraging and decrease in lending activity by banks.

**Literature review**

The empirical studies have typically measured bank performance by returns on average assets (ROAA), return on average equity (ROAE) and net interest margin (NIM). The determinants of profitability are grouped under bank-specific, industry-specific and macroeconomic factors. Bank-specific factors are mainly influenced by a bank’s management decisions and policy objectives. The common bank-specific factors include capitalization, risk management, operational efficiency, business strategy, ownership structure and bank size. Industry-specific factor includes market concentration, while macroeconomic determinants typically include real GDP growth, inflation, and structure of interest rates. Theoretical considerations do not always point to an unambiguous relationship between a particular variable and bank profitability. As a result, it is not surprising that the empirical findings are often inconclusive. We review below the theoretical considerations and the findings of recent empirical studies on the role of different factors influencing bank profitability.

**Bank-specific determinants**

**Capitalization.** The impact of capitalization on bank profitability is ambiguous. Lower capitalization implies higher leverage which is generally associated with greater risk taking and higher expected return. However, it can be argued that well capitalized banks have a greater cushion to take risks and explore profit opportunities. Calem and Robb (1999) argue that there is a U-shaped relationship between bank capital and risk-taking, and that both very low and very high levels of capital induce banks to take on more risk. It is also likely that funding costs are lower for banks with higher capital as they are deemed to be more credit worthy, with positive implications for profitability.

The findings in recent studies on the influence of capital-asset ratio on bank performance are mixed. All the studies under review specified capital-asset ratio in the regression equation in linear form. A positive and statistically significant relationship between capital-asset ratio and ROAA was obtained by Kok et al. (2015) for a sample of 98 banks in 19 European countries for the period 1994–2014, Petria et al. (2015) for a sample of 1,098 banks in EU-27 countries for the period 2004–2011, and van Ommeren (2011) for a sample of 354 banks in 12 European countries for the period 2000–2009. However, the relationship was not statistically significant in the study by Căpraru and Iññatov (2015) for a sample of 386 banks in EU-15 countries for the period 2001–2011. van Ommeren (2011) obtained a positive significant coefficient on capital-asset ratio during both the pre-crisis and crisis periods, with the size of the coefficient being higher for the crisis period. In contrast, the relationship switched signs from positive in the pre-crisis period to negative during the crisis period in the studies of Dietrich and Wanzenried (2011) on Switzerland and Rachdi (2013) on Tunisia. However, the positive coefficient on capital-asset ratio for the pre-crisis period was not statistically significant in the study by Dietrich and Wanzenried.

**Credit risk.** Theory suggests that increased exposure to credit risk is normally associated with decreased bank profitability. The most common indicator of credit risk is the quality of a loan portfolio. It is typically measured as the share of nonperforming loans in total loans or as the...
ratio of loan loss provisions to total loans. A higher ratio involves larger foregone interest and set-asides of bank funds, which translates into lower profits.

Căpraru and Ihnatov (2015), Kok et al. (2015), Petria et al. (2015), and van Ommeren (2011) all found a negative and statistically significant relationship between credit risk and bank profitability as measured by ROAA. van Ommeren found that the coefficient on the loan loss provision variable was more negative during the crisis period than during the pre-crisis period. Broadly consistent with this result, Dietrich and Wanzenried (2011) found that in Swiss banks loan loss provisions did not have a statistically significant effect on bank profitability during the pre-crisis period but had a significant negative impact during the crisis period. Rachdi (2013) did not include a measure of credit risk in his study.

Liquidity risk. Theoretical considerations suggest a positive association between liquidity risk and bank profitability. Such a risk is higher if banks do not hold adequate liquid assets to sustain day-to-day operations and tackle the vulnerability from large deposit withdrawals. However, holding liquid assets imposes an opportunity cost on banks as liquid assets generally have a relatively low return. Liquidity risk is typically measured by the ratio of liquid assets to customer deposits and other short-term funding. A higher ratio implies lower liquidity risk and the likelihood of lower bank profitability.

Only a few studies have examined the impact of liquidity risk on bank profitability, and their results are mixed. Petria et al. (2015) found that the ratio of loans to customer deposits has a negative and significant impact on ROAA, as expected. However, Căpraru and Ihnatov (2015) and van Ommeren (2011) did not find any statistically significant relationship between liquidity risk and ROAA.

Kok et al. (2015) and Rachdi (2013) measured liquidity differently as the ratio of loans to total assets, and found that this indicator affected positively the performance of the European and the Tunisian banking sectors. Operational efficiency. Higher operational efficiency typically leads to larger bank profitability. In the literature, operational efficiency is usually measured by cost-to-income or cost-to-assets ratios. As low costs and high income result in a smaller ratio, it is expected that this indicator negatively affects profitability.

The findings of Căpraru and Ihnatov (2015), Dietrich and Wanzenried (2011), Petria et al. (2015), Rachdi (2013) and van Ommeren (2011) confirm a negative statistically significant influence of cost-to-income ratio on ROAA. In three of these studies that examined the relationship separately for the pre-crisis and crisis periods, the size of the coefficient on cost-to-income ratio was broadly similar in the two periods. However, Kok et al. (2015) obtained a negative statistically significant relationship only in the specification limited to bank-specific determinants of profitability. In the extend specifications that included macroeconomic and/or structural determinants, cost-to-income ratio did not have any significant influence on ROAA.

Business (loan) growth. The impact of loan growth rate on bank profitability is uncertain. In general, additional business should lead to higher net interest income, and hence higher profits. However, as Foos et al. (2010) argue, if quest for market share induce banks to grant loans at lower rates, loan growth could be associated with lower profitability. Also, if rapid loan growth is generated at the expense of dilution of credit standards there is a risk of higher loan loss and, thereby, lower profitability.

Dietrich and Wanzenried (2011) and Kok et al. (2015) found that loan growth had a positive significant impact on profitability. Notably, Dietrich and Wanzenried also found the impact during the pre-crisis and crisis periods to be similar. However, van Ommeren (2011) did not find any significant relationship between loan growth and bank profitability.

Funding structure. The impact of different funding structure is not clear cut and depends on market conditions and perceptions. A higher ratio of customer deposits to total funding is likely to have opposite influence during crisis and non-crisis periods. Reliance on customer deposits is likely to be a relatively more expensive option during the non-crisis period when wholesale funding is abundant, and is expected to be negatively related to bank profitability. However, funding from financial markets become relatively more expensive during a crisis, and banks that are more reliant on customer deposits for funding is expected to be more profitable.

In the study by van Ommeren (2011), the impact of funding structure was not statistically significant during both the pre-crisis and crisis periods. According to van Ommeren,
this is likely reflects that banks are using a mark-up pricing strategy to pass on funding costs to their customers.

**Business model.** In the empirical literature, business model is usually portrayed by the reliance on non-interest income (measured by the non-interest income to gross revenue ratio or non-interest income to average asset ratio). Dietrich and Wanzenried (2011) and van Ommeren (2011) argue that profitability is greater for banks with a more diversified income source since margins in fee and commission income and trading operations are generally higher than in interest operations. However, Stiroh (2010) argues that non-interest income tends to be more volatile than interest income and that greater reliance on non-interest income is likely to be associated with weaker bank profitability. Gambacorta et al. (2014) hypothesizes a non-linear relationship between income diversification and bank profitability. Kok et al. (2005) obtained a weak negative relationship between non-interest income share and bank profitability. They argue that this finding may be contaminated by the inclusion in the sample of the global financial crisis years, which had a historically strong negative impact on trading income. However, Căpraru and Ihnatov (2015), Dietrich and Wanzenried (2011), Petria et al. (2015) and van Ommeren (2011) found that banks with higher share of non-interest income were more profitable, contrary to the claim by Altunbas et al. (2011) that in periods of financial stress the decline in revenue from fees and brokerage services tends to decline by a larger extent than traditional sources of bank income. Dietrich and Wanzenried (2011) and van Ommeren (2011) found that the impact of non-interest income share on bank profitability was broadly similar during the pre-crisis and crisis period.

Bank size. Theoretical considerations suggest a non-linear relationship between bank size and profitability. Larger banks may be able to generate higher profits through more transactions, greater marketing power, and a higher degree of product and loan diversification than smaller banks. Size is also likely to be associated with economies of scale up to a point. However, once a bank grows beyond a certain threshold, financial organizations may become too complex to manage and diseconomies of scale could set in. The empirical findings on impact of bank size and profitability are mixed. van Ommeren (2011) found no evidence of significant impact for the total sample period as well as for the pre-crisis and crisis periods. Dietrich and Wanzenried (2011) obtained a non-linear relationship for the pre-crisis period: larger and smaller banks were more profitable than medium-sized banks. However, during the crisis period large banks were less profitable than small and medium-sized banks, which is indicative of a negative relationship. Kok et al. (2015) and Rachdi (2013) also found a negative significant relationship between bank size and ROAA. In Rachdi’s study the negative impact was stronger during the pre-crisis period than during the crisis period. However, Căpraru and Ihnatov (2015) and Petria et al. (2015) found the relationship to be positive and statistically significant.

**Industry-specific determinant**

Concentration. Concentration is likely to have a positive effect on bank profitability. One hypothesis is that more concentrated markets permit higher returns through collusive behaviour and non-competitive pricing. Another hypothesis is that concentration may be the result of more efficient banks gaining market shares over time. A common measure of the degree of concentration is the Herfindahl-Hirschman Index (HHI), defined as the sum of the squares of market shares of all the banks. Rachdi (2013) found a positive significant relationship between HHI and ROAA during both the pre-crisis and crisis periods, but the impact was smaller during the crisis period. Broadly in line with this result, Dietrich and Wanzenried (2011) and van Ommeren (2011) found a positive and significant on HHI for the pre-crisis period and a statistically insignificant coefficient during the crisis period. Noting that the banking sector in his sample was more concentrated during the crisis period, van Ommeren explains his finding in terms of concentration having a positive impact on profitability only up to a certain level. Kok et al. (2015) found a positive significant relationship between HHI and ROAA for the entire sample period. However, Căpraru and Ihnatov (2015) and Petria et al. (2015) obtained an opposite result of a significant negative relationship but did not provide any explanation for the finding.

**Macroeconomic determinants**

GDP growth. This variable controls for the effects of the business cycle on bank profitability. The earnings of banks are typically higher during periods of higher economic growth.
because of an increase in demand for bank intermediation services and the scope for marking up loan margins. In periods of weaker economic activity profitability is likely to be smaller on account of a slowdown in the volume of business, deterioration in asset quality and higher loan loss provisioning.

Consistent with expectations, all the studies being reviewed in this section found a significant positive impact of GDP growth on profitability. However, there were notable differences between the studies on the findings with regard to the impact during the pre-crisis and crisis periods. In the studies by Dietrich and Wanzenried (2011) and Rachdi (2013) there was a change in the sign of the coefficient on GDP growth from positive during the pre-crisis period to negative during the crisis-period. Whereas Dietrich and Wanzenried found the coefficient to be statistically insignificant for both periods, Rachdi obtained statistically significant coefficients. The authors do not provide a persuasive explanation for the counterintuitive result of a switch in sign. van Ommeren (2011) obtained a positive significant relationship between GDP growth and bank profitability in both the pre-crisis and crisis periods, but the coefficient was higher for the crisis period. van Ommeren interprets this finding as negative real GDP growth during the crisis period having a larger impact on bank profitability that positive real GDP growth during the pre-crisis period.

Interest rate. It is generally expected that profitability will be lower in a low interest rate environment. The yield curve tends to flatten when interest rates are low. This will have a negative impact on profitability of banks that rely on a wide spread between long-and short-maturity yields to generate earnings. The degree of impact will depend on how quickly banks’ assets and liabilities turnover and are repriced. The impact will be greater if assets and liabilities are repriced to market interest rates at different intervals. However, there is a risk that higher interest rate could lead to lower profitability. Low interest rates enable banks to have higher levels of forbearance than in a high interest rate environment. Hence, the volume of non-performing loans could potentially increase if interest rates were to rise, leading to lower profitability. Interest rate also has an indirect impact on profitability via its impact on economic activity. Dietrich and Wanzenried (2011) found that the term structure of interest rates had no significant impact on bank profitability in Switzerland during the pre-crisis period but had a positive and significant impact during the crisis period. He attributes the latter finding to the steeper yield curve that prevailed in the country during the financial crisis years. However, in his cross-country study, van Ommeren (2011) found no significant relationship between term structure of interest rates on bank profitability during both pre-crisis and crisis periods. In a recent study for the United States, Genay and Pdjasek (2014) found that the effect of interest rate changes on bank profits was small and that changes in economic conditions mattered relatively much more.

The impact of loan growth rate on bank profitability is uncertain.

Data and methodology

Data

Using the Bankscope data base, we constructed a panel data set for 23 banks in Slovenia encompassing the period 1999–2014. The panel is unbalanced since some banks entered the market after 1999 while some ceased to exist during the sample period because of merger and acquisition or exit. We follow the standard approach in the literature, as elaborated in Hernando and Martínez-Pagés (2001), in treating the cases of mergers and acquisitions. Another constraint is the incomplete coverage of banks in the Bankscope data base. It does not include information on all banks that are currently present in the Slovenian market. Thus, in all, between 10 and 18 banks are included in our sample for each individual year. The bank-specific data obtained from Bankscope were supplemented with industry-specific and macro-economic data obtained from the European Central Bank (ECB) and Eurostat database.

To reduce the influence of possibly spurious outliers, the data has been winsorised at the 1st and 99th percentile. That is, all data below the 1st percentile were set to the 1st percentile value, and all data above the 99th percentile were replaced with the 99th percentile value. Table 1 describes the dependent variables, the explanatory variables and their expected effect on bank profitability, and provides the summary descriptive statistics.

The empirical analysis is carried out for the entire sample and two subsamples comprising the period when the financial sector in Slovenia was negatively impacted by the financial crisis (2009–2013) and the non-crisis period. An important objective is to find out whether the determinants of bank profitability changed in magnitude and, possibly, direction during the crisis period.
**Methodology**

In line with the literature we estimate the following equation:

\[ \pi_{it} = \pi_{it-1} + X_{it}' \beta + \epsilon_{it} \]

The dependent variable, \( \pi_{it} \), is a measure of bank profitability for bank \( i \) at time \( t \). \( X_{it} \) is a vector of explanatory variables comprising of bank-specific, industry-specific, and macroeconomic factors described in Table 1. A lagged dependent variable for each individual bank \( i \) at time \( t \), \( \pi_{it-1} \), is included in the list of explanatory variables to account for profit persistence. \( \epsilon_{it} \) is the bank-specific error term.

To avoid the problem of biased and inconsistent estimates owing to correlation between the lagged dependent variable and the error term, we follow the linear dynamic panel-data estimation method based on a generalized method of moments (GMM) developed by Arellano and Bover (1995) and Blundell and Bond (1999). We calculate robust standard errors to correct for heteroscedasticity. We also test for serial correlation in the first-differenced residuals at order one and order two. The test results indicate that we cannot reject the null hypothesis of no serial correlation at order two, thereby implying that the moment conditions are valid. However, we cannot rule out the possibility of significant size distortions in the estimates because \( N \) and \( T \) are of almost equal size in our sample (see Hsiao, 2014). In general, because of its asymptotic properties, the GMM technique is more suitable for panels that exhibit large \( N \) and small \( T \).

**Empirical results**

We examine the determinants of three alternative measures of profitability: rate of return on average assets (ROAA), rate of return on average equity (ROAE) and net interest margin (NIM). One drawback of the ROAA measure is that it may have an upward bias. This is because total assets measure is not necessary reflects the size of the bank.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected sign</th>
<th>Description</th>
<th>Source</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROAA</td>
<td></td>
<td>Net income over average total assets, in %</td>
<td>Bankscope</td>
<td>-0.00</td>
<td>3.79</td>
<td>-43.53</td>
<td>5.34</td>
</tr>
<tr>
<td>ROAE</td>
<td></td>
<td>Net income over average equity, in %</td>
<td>Bankscope</td>
<td>-5.36</td>
<td>69.56</td>
<td>-766.27</td>
<td>26.73</td>
</tr>
<tr>
<td>NIM</td>
<td></td>
<td>Net interest revenue over total earning assets, in %</td>
<td>Bankscope</td>
<td>2.80</td>
<td>1.37</td>
<td>0.27</td>
<td>9.86</td>
</tr>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQUITY_TA</td>
<td>+/-</td>
<td>Total equity over total assets, in %</td>
<td>Bankscope</td>
<td>8.88</td>
<td>3.73</td>
<td>0.43</td>
<td>24.37</td>
</tr>
<tr>
<td>LLR_SHARE</td>
<td>-</td>
<td>Loan loss reserves over gross loans, in %</td>
<td>Bankscope</td>
<td>7.55</td>
<td>7.10</td>
<td>0.20</td>
<td>53.72</td>
</tr>
<tr>
<td>LIQ_ASSETS_SHARE</td>
<td>-</td>
<td>Liquid assets over total deposits and borrowing, in %</td>
<td>Bankscope</td>
<td>24.35</td>
<td>20.66</td>
<td>1.02</td>
<td>91.12</td>
</tr>
<tr>
<td>CIR</td>
<td>-</td>
<td>Total non-interest expenses over other operating income and net interest revenue, in %</td>
<td>Bankscope</td>
<td>66.85</td>
<td>51.88</td>
<td>5.49</td>
<td>656.76</td>
</tr>
<tr>
<td>LOAN_GROWTH_DIF</td>
<td>+/-</td>
<td>Difference between percentage change in gross loans of individual bank and percentage change in gross loans for the banking system, in %-age pts</td>
<td>Bankscope</td>
<td>14.88</td>
<td>27.27</td>
<td>-52.23</td>
<td>286.83</td>
</tr>
<tr>
<td>DEPOSIT_FUNDING</td>
<td>+/-</td>
<td>Customer deposits over total funding minus derivatives, %</td>
<td>Bankscope</td>
<td>65.65</td>
<td>18.71</td>
<td>20.13</td>
<td>100.00</td>
</tr>
<tr>
<td>NON_INT_REV_SHARE</td>
<td>+/-</td>
<td>Non-interest income over gross revenues, %</td>
<td>Bankscope</td>
<td>31.62</td>
<td>33.80</td>
<td>-328.34</td>
<td>172.08</td>
</tr>
<tr>
<td>SIZE</td>
<td>+</td>
<td>Logarithm of total assets of a bank</td>
<td>Bankscope</td>
<td>14.03</td>
<td>1.08</td>
<td>10.84</td>
<td>16.79</td>
</tr>
<tr>
<td>HHI</td>
<td>+</td>
<td>Herfindahl-Hirschman Index; sum of the squares of the market shares of all banks in the market</td>
<td>ECB</td>
<td>0.13</td>
<td>0.02</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>RGDP</td>
<td>+</td>
<td>Real GDP growth, in %</td>
<td>Eurostat</td>
<td>2.36</td>
<td>3.45</td>
<td>-7.90</td>
<td>7.00</td>
</tr>
<tr>
<td>INT_RATE_CB</td>
<td>+/-</td>
<td>Central bank interest rate, in %</td>
<td>ECB, Bank of Slovenia</td>
<td>5.25</td>
<td>4.03</td>
<td>0.17</td>
<td>11.75</td>
</tr>
</tbody>
</table>
off-balance sheet activities, but those activities are reflected in the numerator through income. ROAE incorporates the results of off-balance sheet activities of banks, but does not take into account financial leveraging. Banks with lower leverage (higher equity) will generally report higher ROAA, but lower ROAE. NIM is only a partial measure of bank's profitability since banks earn their income also through fees and other types of non-interest income and they encounter costs also through non-interest earning type of activities. Since NIM is a partial measure and an analysis of ROAE disregards the greater risks associated with high leverage and financial leverage is often determined by regulation, researchers typically treat ROAA as the key ratio for the evaluation of bank profitability. One specification of the regression equation includes only bank-specific determinants and a second specification is extended to additionally include industry-specific and macroeconomic determinants. Separate regressions are estimated for the entire sample period, non-crisis period (1999—2008 and 2014) and crisis period (2009—2013).

### Determinants of the rate of return on average assets (ROAA)

We focus on the results of the extended specification where explanatory variables include bank-specific, industry-specific and macroeconomic variables (Table 2, columns 2, 4 and 6). The signs and significance of the bank-specific variables are broadly

### Table 2. GMM Estimates of Determinants of Return on Average Assets (ROAA)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAA_t-1</td>
<td>-0.444*** (-0.166)</td>
<td>-0.078 (0.0706)</td>
<td>0.224 (0.258)</td>
</tr>
<tr>
<td>EQUITY_TA</td>
<td>0.374*** (0.0815)</td>
<td>0.198*** (0.0586)</td>
<td>-0.227*** (0.0931)</td>
</tr>
<tr>
<td>LLR_SHARE</td>
<td>-0.908*** (-0.0729)</td>
<td>-0.158 (0.138)</td>
<td>-1.050*** (0.0680)</td>
</tr>
<tr>
<td>LIQ_ASSETS_SHARE</td>
<td>0.269*** (0.0703)</td>
<td>0.0754** (0.0301)</td>
<td>-0.025 (0.262)</td>
</tr>
<tr>
<td>CIR</td>
<td>-0.732*** (-0.0792)</td>
<td>-0.806*** (0.264)</td>
<td>-0.792*** (0.240)</td>
</tr>
<tr>
<td>DIF_LOANS_GROWTH</td>
<td>-0.183*** (0.0792)</td>
<td>0.023 (0.0245)</td>
<td>-0.079 (0.133)</td>
</tr>
<tr>
<td>DEPOSIT_FUNDING</td>
<td>0.149 (0.109)</td>
<td>0.052 (0.0600)</td>
<td>0.323*** (0.110)</td>
</tr>
<tr>
<td>NON-INT_REV_SHARE</td>
<td>-0.071 (0.0680)</td>
<td>-0.057 (0.0587)</td>
<td>-0.185 (0.128)</td>
</tr>
<tr>
<td>NON-INT_REV_SHARE_SQ</td>
<td>0.031 (0.0295)</td>
<td>-0.0310** (0.0148)</td>
<td>0.128* (0.0767)</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.056 (0.0295)</td>
<td>-0.006 (0.0148)</td>
<td>0.212*** (0.0796)</td>
</tr>
<tr>
<td>HHI</td>
<td>0.262*** (0.0703)</td>
<td>0.047 (0.0397)</td>
<td>0.869 (0.591)</td>
</tr>
<tr>
<td>RGDP</td>
<td>0.128*** (0.0240)</td>
<td>0.199*** (0.0486)</td>
<td>0.233** (0.115)</td>
</tr>
<tr>
<td>INT_RATE_CB</td>
<td>-0.113 (0.0931)</td>
<td>-0.011 (0.0979)</td>
<td>0.277 (1.031)</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>0.002 (0.0712)</td>
<td>0.261*** (0.0691)</td>
<td>-0.585*** (0.173)</td>
</tr>
<tr>
<td>No. of observations</td>
<td>188</td>
<td>93</td>
<td>67</td>
</tr>
<tr>
<td>No. of banks</td>
<td>23</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>AB test AR(1) (p-value)</td>
<td>(0.0200) (0.0712)</td>
<td>(0.0192) (0.0691)</td>
<td>(0.1529) (0.4399)</td>
</tr>
<tr>
<td>AB test AR(2) (p-value)</td>
<td>(0.7927) (0.0397)</td>
<td>(0.7165) (0.6243)</td>
<td>(0.4399) (0.5915)</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

AB test AR(1) and AR(2) refer to the Arellano-Bond test that average autocovariance in residuals of order 1 and order 2 is 0 (H0: no autocorrelation), p-values in parentheses.
similar in both specifications, barring a few exceptions. The regression results do not indicate the persistence of bank profitability over time. The lagged dependent variable is not a statistically significant regressor for the non-crisis and crisis periods. This finding is similar to that of van Ommeren (2011) but contrary to that of Dietrich and Wanzenried (2011) and Rachdi (2013). For the sample period as a whole, the coefficient on the lagged dependent variable is negative and significant, suggesting fluctuation of ROAA around its “normal” value. For the entire sample period and the non-crisis period, a higher capital-asset ratio is positively and significantly associated with higher profitability. This is indicative of well-capitalized banks having more room to manoeuvre to take risk and generate higher returns. However, similar to the findings of Dietrich and Wanzenried (2011) and Rachdi (2013), the relationship between capitalization and profitability switches signs from positive in the non-crisis period to negative (albeit insignificant in the extended specification) during the crisis period. This suggests that well-capitalized banks had become more cautious about risk taking during the crisis period.

The impact of credit risk (proxied by ratio of loan loss reserves to total loans) on bank profitability is negative and significant for the entire sample period and the crisis period. The more pronounced impact during the crisis period than the non-crisis period reflects the surge in non-performing loans that occurred as liquidity shortage and credit crunch associated with the financial crisis put a strain on corporate operations. The finding on the liquidity risk variable (measured as the ratio of liquid assets to customer deposits) is contrary to expectation. The coefficient on this variable is positive and significant for the entire sample period though not for the non-crisis and crisis periods. This is perhaps indicative of Slovene banks earning a comparatively high return on liquid assets. Operational inefficiency (proxied by cost to income ratio) has a significant negative impact on bank profitability for the entire sample period and for the non-crisis and crisis periods. The extended specification of the regression equation indicates that the negative impact on profitability weakened somewhat in Slovenia during the crisis period. It is notable that Dietrich and Wanzenried (2011) and van Ommeren (2011) did not find any evidence of this tendency in their studies.

For the sample period as a whole, banks with higher loan growth rates (in comparison to the market) were less profitable than slowly growing banks, suggesting that they were charging lower margins in order to capture market shares. However, the positive significant relationship for the non-crisis period and an insignificant relationship for the crisis period are difficult to explain together given the finding for the entire sample period. Reliance on deposit funding has a positive significant relationship with ROAA only for the crisis period. This indicates that as access to funding from financial markets shrank during the financial crisis and such funding become more expensive, the relative profitability of banks that were more reliant on deposit funding increased. The regression results show a non-linear relationship between income diversification and bank profitability. The pattern of the relationship changes between the non-crisis and crisis periods. During the non-crisis period, profitability becomes increasingly smaller as the reliance on non-interest income becomes greater. However, the relationship during the crisis period is U-shaped: greater reliance on non-interest income improved profitability after a point. This suggests that differential margins in fee and commission income and trading operations were applied by banks during the crisis period depending on the volume of such business.

The pattern of relationship between bank size (proxied by the logarithm of total assets) and ROAA also changes between the non-crisis and crisis periods. During the non-crisis period, bank size is not significantly related to profitability and its coefficient has a negative sign. However, large banks were more profitable during the crisis period, suggesting that they adjusted better to the crisis environment than small banks. This is the opposite of the result found by Dietrich and Wanzenried (2011) for Switzerland and Rachdi (2013) for Tunisia.

There is a positive significant relationship between HHI and ROAA only for the entire sample period. Although statistically insignificant, the coefficient is larger for the crisis period than the non-crisis period. This suggests that large banks gained market shares during the crisis period through relatively greater improvement in efficiency. Our finding is contrary to the result obtained by Dietrich and Wanzenried (2011), van Ommeren (2011) and Rachdi (2013) that the impact of HHI on profitability is smaller during the crisis period. Real GDP growth is positively and significantly related to ROAA of banks for the entire sample period and the non-crisis period. However, similar to Dietrich and Wanzenried (2011), we get a counter-intuitive negative and significant coefficient on GDP growth for the crisis period. Interest rate, proxied by the central bank policy rate, has little impact on the profitability of Slovene banks during the entire sample period and the non-crisis and crisis periods. This
could be a reflection of Slovene banks repricing their assets and liabilities to changes in policy rates at similar time intervals.

Determinants of rate of return on average equity (ROAE)
The regression results for the determinants of ROAE are presented in Table 3. The results are similar (in sign and significance of the coefficients during the various periods) to those for ROAA with regard to the impact of the lagged dependent variable, credit risk, cost inefficiency, loan growth rate, funding structure, reliance on non-interest income, market concentration and real GDP growth. However, differences exist with regard to the impact of equity capital, liquidity risk, and bank size. In contrast to the results obtained in the case of ROAA, equity-to-asset ratio, liquidity risk (proxied by ratio of liquid assets to total deposits) and bank size have little impact on bank profitability when measured by the ROAE. Căpraru and Ihnatov (2015), Petria et al. (2015) and Rachdi (2013) too found no impact of bank size on ROAE. These differential impacts are not surprising, given the biases in the characteristics of ROAA and ROAE discussed at the beginning of this section.

Determinants of net interest margin (NIM)
The results for the determinants of net interest margin are reported in Table 4. The results are different from those for ROAA (in terms of sign and...
significance of the coefficients during the various time periods) with respect to the lagged value of the dependent variable, equity-asset ratio, credit risk, loan growth, bank size, real GDP growth and interest rate. Unlike in the case of ROAA and ROAE, the lagged dependent variable is positive and statistically significant for the entire sample period and the non-crisis and crisis periods, indicating a high degree of persistence of bank net interest margin. That is, when a bank is able to generate a positive NIM in the previous year it is likely that it will be able to generate a positive NIM this year. The persistence is stronger during the crisis period compared to the non-crisis period. In contrast to our finding, Dietrich and Wanzenried (2011) found persistence of NIM during the pre-crisis and crisis periods to be similar, while Rachdi (2013) found the persistence to be smaller during the crisis period.

Capitalization has no significant influence on NIM, which is similar to the result obtained by Dietrich and Wanzenried (2011) but different from the findings of Rachdi (2013). The coefficient on the credit risk variable (proxied by the ratio of loan loss reserves to gross loans) has a significant impact on NIM only during the non-crisis period but has an unexpected positive sign, whereas this variable has no significant impact on ROAA during the non-crisis period and has a negative significant impact during the crisis period. This suggests that banks whose asset

### Table 4. GMM Estimates of Determinants of Net Interest Margin (NIM)

<table>
<thead>
<tr>
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<tr>
<td>NIM_t-1</td>
<td>0.595*** 0.636***</td>
<td>0.415*** 0.459***</td>
<td>0.506*** 0.708***</td>
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<tr>
<td></td>
<td>(0.0517) (0.0580)</td>
<td>(0.0548) (0.0599)</td>
<td>(0.128) (0.0969)</td>
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<td>EQUITY_TA</td>
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<td>-0.0102 -0.0120</td>
<td>-0.0123 0.00665</td>
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<td>(0.0592) (0.0451)</td>
<td>(0.112) (0.0743)</td>
<td>(0.0381) (0.0349)</td>
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<tr>
<td>LLR_SHARE</td>
<td>0.0449 0.00313</td>
<td>0.332*** 0.380***</td>
<td>-0.147*** -0.06680</td>
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<tr>
<td></td>
<td>(0.0349) (0.0371)</td>
<td>(0.127) (0.134)</td>
<td>(0.0398) (0.0364)</td>
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<tr>
<td>LIQ_ASSETS_SHARE</td>
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<td>0.325*** 0.217</td>
<td>-0.0223 -0.146</td>
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<td>(0.0815) (0.123)</td>
<td>(0.106) (0.142)</td>
<td>(0.174) (0.133)</td>
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<tr>
<td>CIR</td>
<td>-0.219*** -0.198***</td>
<td>-0.739*** -0.630**</td>
<td>-0.182* 0.0520</td>
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<tr>
<td></td>
<td>(0.0567) (0.0494)</td>
<td>(0.283) (0.258)</td>
<td>(0.0955) (0.0944)</td>
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<tr>
<td>DIF_LOANS_GROWTH</td>
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<td>0.0623*** 0.0670**</td>
<td>-0.0438 0.0993*</td>
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<tr>
<td></td>
<td>(0.0286) (0.0255)</td>
<td>(0.0301) (0.0313)</td>
<td>(0.0524) (0.0583)</td>
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<td>DEPOSIT_FUNDING</td>
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<td>0.112 0.0439</td>
<td>0.143*** 0.0517</td>
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<td>(0.0327) (0.0302)</td>
<td>(0.0842) (0.0692)</td>
<td>(0.0469) (0.0466)</td>
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<td>NON-INT_REV_SHARE</td>
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<td>-0.409*** -0.378***</td>
<td>-0.0631 -0.0588</td>
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<td></td>
<td>(0.0318) (0.0340)</td>
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<td>NON-INT_REV_SHARE SQ</td>
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<td>(0.0168) (0.0135)</td>
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<td>(0.0302) (0.0322)</td>
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<td>(0.0756) (0.0605)</td>
<td>(0.0665) (0.0497)</td>
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<td>HHI</td>
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<td>-0.292*** -0.638***</td>
<td>0.213*** (0.170)</td>
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<tr>
<td></td>
<td>(0.0657) (0.0749)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RGDP</td>
<td>0.0359** 0.115*</td>
<td>0.0115 (0.0589)</td>
<td>0.213*** (0.0594)</td>
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<tr>
<td></td>
<td>(0.0169)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INT_RATE_CB</td>
<td>0.263** 0.373***</td>
<td>0.203** 0.186**</td>
<td>-2.019*** (0.629)</td>
</tr>
<tr>
<td></td>
<td>(0.108)</td>
<td>(0.0813) (0.0923)</td>
<td></td>
</tr>
<tr>
<td>CONSTANT</td>
<td>0.0151 0.0520</td>
<td>0.203** 0.186**</td>
<td>-0.235 -1.675***</td>
</tr>
<tr>
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<td>(0.0407) (0.0334)</td>
<td>(0.0813) (0.0923)</td>
<td>(0.159) (0.605)</td>
</tr>
<tr>
<td>No. of observations</td>
<td>190 190</td>
<td>93 93</td>
<td>68 68</td>
</tr>
<tr>
<td>No. of banks</td>
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<td>22 22</td>
<td>18 18</td>
</tr>
<tr>
<td>AB test AR(1) (p-value)</td>
<td>(0.1302) (0.1535)</td>
<td>(0.2175) (0.1471)</td>
<td>(0.0780) (0.0044)</td>
</tr>
<tr>
<td>AB test AR(2) (p-value)</td>
<td>(0.9696) (0.8772)</td>
<td>(0.4829) (0.3439)</td>
<td>(0.1964) (0.7044)</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 and order 2 is 0 (H0: no autocorrelation). P-values in parentheses.
quality has deteriorated might be trying to offset the lower earnings arising from loan losses by charging additional premium from their non-delinquent clients.

The findings on the impact of loan growth, real GDP growth and interest rate on NIM are often inconclusive and as a whole, bank profitability as measured by ROAA is positively and significantly associated with equity-asset ratio, liquid assets to deposits ratio, share of customer deposits in total funding, market concentration and real GDP growth. ROAA also is negatively associated with low asset quality and operational inefficiency, and has a U-shaped relationship with non-interest income share.

The paper finds differential impact of several determinants of ROAA during the non-crisis and crisis periods. The relationship of ROAA with capitalization and real GDP growth switches sign from positive during the non-crisis period to negative during the crisis period. Compared to the non-crisis period, the impact of liquidity risk and operational inefficiency on ROAA is weaker during the crisis period while the impact of credit risk, reliance on deposit funding and market concentration is stronger. The importance of the determinants varies across the different profitability measures. Thus, NIM exhibits a high degree of persistence but not ROAA. Unlike in the case of ROAA, capitalization and bank size do not significantly impact NIM. Whereas interest rate is not a significant regressor for ROAA, the impact of interest rate on NIM is positive during the non-crisis period and negative during the crisis period. This latter finding is likely evidence of sluggishness in repricing during the crisis period and of the competition among banks to attract additional deposits.

Conclusions

This paper examines the effects of bank-specific, industry-specific, and macroeconomic factors on three alternative measures of bank profitability in Slovenia over the period 1999-2014. In order to evaluate the impact of the financial crisis, we estimate separate regressions for the non-crisis and crisis periods. The regression results for several determinants are different from the findings of recent cross-country and country-specific studies. This is not surprising as the findings in the empirical literature are often inconclusive and are sample-specific.

In this paper, for the sample period as a whole, bank profitability as measured by ROAA is positively and significantly associated with equity-asset ratio, liquid assets to deposits ratio, share of customer deposits in total funding, market concentration and real GDP growth. ROAA also is negatively associated with low asset quality and operational inefficiency, and has a U-shaped relationship with non-interest income share.

The paper finds differential impact of several determinants of ROAA during the non-crisis and crisis periods. The relationship of ROAA with capitalization and real GDP growth switches sign from positive during the non-crisis period to negative during the crisis period. Compared to the non-crisis period, the impact of liquidity risk and operational inefficiency on ROAA is weaker during the crisis period while the impact of credit risk, reliance on deposit funding and market concentration is stronger. The importance of the determinants varies across the different profitability measures. Thus, NIM exhibits a high degree of persistence but not ROAA. Unlike in the case of ROAA, capitalization and bank size do not significantly impact NIM. Whereas interest rate is not a significant regressor for ROAA, the impact of interest rate on NIM is positive during the non-crisis period and negative during the crisis period. This latter finding is likely evidence of sluggishness in repricing during the crisis period and of the competition among banks to attract additional deposits.

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Prudential Supervision and Bank Financing of Enterprises

Jukka Vesala*

Lack of access to bank credit by non-financial borrowers has often been cited as an important impediment to the euro area’s recovery from the severe macroeconomic slump experienced in recent years, particularly affecting the peripheral economies that suffered the deepest recessions (e.g. IMF 2014; OECD 2014). Small and medium-sized enterprises (SMEs), which typically don’t have access to capital markets and thus strongly rely on bank credit as a source of finance, are especially sensitive to tightening bank lending conditions. Given their important role for euro area output and employment, their resulting financial difficulties have posed a particular concern (ECB 2014a; EIB 2014).

Introduction

Restoring banks’ ability to grant credit has thus been a key policy objective for the euro area over the last years (Cœuré 2014; Draghi 2014). In this context, measures undertaken in the remits of monetary policy and banking supervision are to be seen as complementary. This text focusses on the latter, drawing on recent experience from the euro area to discuss channels through which supervisory actions can contribute to removing constraints on banks’ lending capacity and thus exert a positive influence on the banking sector’s ability to finance the real economy.

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Key constraints on banks’ lending capacity

There is a significant body of empirical literature on supply-side constraints on bank lending. Three major factors, whose negative effects on credit growth have been examined in a number of studies covering different regions and time periods (e.g. Bonaccorsi di Patti & Sette 2012; Gambacorta & Marques 2011; Hempell & Kok 2010; IMF 2012; Kapan & Minoiu 2013; Klein 2013), seem to have played a particularly important role in the recent euro area experience:

- Sustained uncertainty related to asset quality in conjunction with high levels of non-performing exposures (NPEs);
- Weak capital levels, whose adequacy has come under increased scrutiny by supervisors/regulators and markets alike;
- Fragmented funding markets, which have continued to exhibit significant correlation between the funding costs of banks and those of the respective sovereigns.

Asset Quality

Since 2007, impaired loan ratios of banks across the euro area showed a steady upward trend, culminating in very high levels of aggregate NPE stocks in several Member States (ECB 2014b). Major challenges in their resolution severely hampered the capacity of banks in those Member States to engage in new lending. Even as the general macroeconomic environment started to show signs of recovery around 2013, significant uncertainty related to the quality of banks’ assets remained, fuelled by a lack of transparency on the characteristics of their portfolios (IMF 2013b). This intransparency was aggravated by differences in reporting and accounting standards, which strongly complicated comparisons across banks, and especially across countries. The resulting uncertainty was reflected in spreads on bank debt and subdued equity valuations, thus constraining banks’ ability to fund the origination of new loans. While average costs of debt exhibited positive developments starting around 2013, bank equities continued trading at low prices compared to both their pre-crisis levels and international peers throughout 2014, with median price-to-book ratios remaining significantly below 1 (ECB 2013; ECB 2014b).

Small and medium-sized enterprises are especially sensitive to tightening bank lending conditions.

Capitalisation

By 2013, numerous euro area banks were also still perceived as weakly capitalised against the background of the crisis experience (IMF 2013a). The latter without a doubt altered general views on the levels of bank capital required to absorb losses in going and gone concern scenarios. It also enhanced concerns about the quality of capital reflected in regulatory ratios, in particular the inclusion of items of doubtful loss absorbing capacity in their numerator (capital) and possibilities for banks to manipulate calculations of the denominator (risk weighted assets). Both the ensuing regulatory changes (implementation of the Basel III framework) and market expectations thus created significant pressure on a number of institutions to increase their capital ratios (both risk-weighted and non-risk-weighted). Facing the need to deleverage, achieving this via reductions on the asset side rather than issuance of new capital appeared as the more attractive and feasible option to many, dampening their appetite for new lending (IMF 2013b).

Funding

Finally, the often-cited link between banks and sovereigns in the euro area manifested itself in the cost of bank debt between 2010 and 2014, with banks in peripheral countries facing significantly higher funding costs (Al-Eyd and Berkmen 2013; Thiel 2014). Wholesale funding markets in particular continued to price in substantial country risk premia, thus making it more difficult for banks to finance new lending precisely in those countries where credit growth (or lack thereof) constituted the biggest concern from a policy perspective.

Effects of supervisory actions

While supervisory measures are not a panacea for the abovementioned challenges, they can make important contributions to addressing their causes. In the following, examples of measures recently undertaken in the euro area are discussed in relation to their effects on the major lending constraints described above.

Asset Quality

Regulation and supervision can act as a driving force in enhancing transparency and thereby reducing uncertainty concerning asset valuations. The Asset Quality Review (AQR) run...
by the ECB in 2014 as part of a comprehensive assessment of the banks that were going to fall under its direct supervisory responsibility as of 4 November of the same year is an important example, as this exercise covered three crucial elements:

- Establishment of a uniform methodology for assessing asset quality at a granular level, based on harmonised definitions;
- Review of bank’s portfolios on the basis of this methodology, carried out by independent teams of examiners;
- Public disclosure of the full methodology and detailed results of the review.

The AQR benefitted from regulatory work carried out by the European Banking Authority (EBA), which established uniform definitions of key concepts such as non-performing exposure and forbearance, to be used by banks across the EU in their regulatory reporting starting in 2014. Making use of simplified versions of these concepts for the first time, the AQR methodology included a review of the performing/non-performing status of debtors and the adequacy of specific and collective provision levels. The assessment of provisions incorporated a review of collateral valuations, including revaluations by independent third parties. Finally, the AQR also covered banks’ processes, policies and accounting practices, the calculation of credit valuation adjustments (CVA) on derivatives, and level 3 fair value exposures. The exercise was conducted for 130 banks from all euro area Member States. Overall, some 119,000 credit files and 170,000 collateral items were examined individually. The AQR identified €136 billion in additional NPEs, which represents an 18% increase on the previous stock. €55 billion of this increase resulted purely from the application of a harmonised NPE definition. Additional provisioning needs were quantified at an aggregate €43 billion (ECB 2014c). These figures are testimony to the material impact of the exercise, which, when broken down to the bank level, reveals the significance of divergences in banks’ asset valuations and the related practices at the outset.

By disclosing the AQR results in a granular data template for each individual bank, market participants and the general public were provided with an unprecedented amount of information on the characteristics of the portfolios reviewed. This constituted a major step in terms of enhancing transparency and reducing uncertainty. While prudential exercises such as the AQR can thus play an important role in tackling the uncertainty aspect of asset quality as a lending constraint by identifying NPEs and provisioning needs in a stringent and consistent manner, this by itself does not go all the way in addressing the overall problem: the resolution of the large NPE stocks thus identified poses a separate, albeit related, challenge of a different nature, and for the euro area, the AQR results certainly underlined the imperative of dealing with it.

Accordingly, monitoring and supporting NPE resolution efforts to the extent possible was included as an important item on the agenda of the SSM for the following periods and a dedicated project analysing the matter across banks and Member States and developing best-practice approaches to relevant supervisory action was launched. However, it must be noted that the supervisory authority constitutes only one out of a number of key stakeholders in this context, which, apart from the banks themselves typically include, inter alia, ministries and consumer protection authorities. Adding the idiosyncrasies of asset, collateral and debtor characteristics, banks’ operational capacities and countries’ legal frameworks and fiscal situations, NPE resolution is a massively complex challenge characterised by a distinct lack of “one-size-fits-all” solutions. Accordingly, there is no uniform recipe for relevant supervisory measures and appropriate action must be assessed on a bank-by-bank basis.

Ensuring adequate capitalisation is a core role of banking regulation and supervision.

**Ensuring adequate capitalisation**

Ensuring adequate capitalisation is a core role of banking regulation and supervision and the latest amendments of the regulatory framework for European banks, implementing the Basel III reform in the CRDIV/CRR package, constituted a shift towards more stringent capital requirements. However, this by itself did not constitute a major push for swift and material increases in the capital levels of euro area banks on a broad scale, thus not addressing concerns about their ability to withstand financial shocks over the extended time horizon granted for the phase-in of the new rules.

The stress test conducted by the Federal Reserve in the US in 2009 had demonstrated how prudential exercises can be used to provide such push by assessing the adequacy of

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**Ensuring adequate capitalisation is a core role of banking regulation and supervision.**
The primary mandate of prudential supervision is to ensure the safety and soundness of banking systems.

Creating a level playing field for banks across Member States is now a common theme of several key initiatives on the agenda of the SSM during the first years of its existence. One important example is a project aimed at a total of more than 150 options and national discretions in the CRDIV/CRR package, which have given rise to significant cross-country divergences on a variety of regulatory aspects. Resulting from leeway for decisions granted to national authorities prior to the creation of the SSM, several of those options and discretions have had a material impact on banks’ regulatory and supervisory treatment on diverse aspects ranging from capital and liquidity requirements to supervisory sanctions and reporting obligations. Eliminating such national divergences to the extent possible is essential for ensuring that banks under the SSM are subject to consistent high supervisory standards independent of the location of their headquarters. The ECB’s project thus aims at harmonising the exercise of those options and discretions that now fall under its competence as supervisory authority in a rigorous and prudent way.

The mentioned example is just one of numerous projects underway within the SSM pursuing the same overall goal of harmonising supervisory practices. Acting as a driving force in establishing a true level playing field across euro area banks and building a track record of independent, intrusive supervision unaffected by national interests, the SSM can make a major contribution to the Banking Union’s declared goal of breaking the link between banks and sovereigns. This should ultimately start to be reflected in bank funding markets, reducing their fragmentation across national lines and thus the lending constraints faced by banks located in countries perceived as vulnerable.

Conclusion

The primary mandate of prudential supervision is to ensure the safety and soundness of banking systems. Broadly speaking, supervisory authorities are tasked with monitoring risks to individual institutions and the system as a whole and taking appropriate measures to mitigate them, thus preventing those risks from threatening financial stability and imposing economic costs on governments and taxpayers. Their mandates do usually not include broader
macroeconomic policy objectives beyond financial stability. However, the supervisory actions discussed in this text provide examples of how, even focussing on purely prudential considerations, banking supervision can indeed make important contributions towards such objectives, thus complementing monetary policy. This is of particular relevance with a view to the recent experience in the euro area, where the establishment of the SSM has offered important opportunities for addressing constraints on bank lending to the real economy.

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Development and progress of the restructuring process in Slovenia

Janez Fabijan and Franci Tušek*

Corporate restructuring and consequently the restructuring of the economy as a whole are proceeding slowly in Slovenia, which is to be expected given the experience of the past crises (McKinsey, 2010), although the dynamics are to a great extent slowing economic growth. In light of the dimensions of the financial and economic crisis, there are various reasons that the process is taking so long, although they are primarily related to the actions of all the stakeholders that should be working together in the restructuring process in a more coordinated, decisive and responsible style. Given the political instability in the second wave of the crisis (the last three years), the Bank of Slovenia has been endeavouring through numerous initiatives and measures to create an environment for the fastest possible successful deleveraging and restructuring of both the financial sector and the non-financial (corporate) sector.

Introduction

The restructuring process is dependent on two groups of stakeholders: those who create the institutional and legal framework (the Bank of Slovenia, the Bank Association of Slovenia [BAS], the ministries and other national and European institutions, interest associations, etc.), and those who actually carry out the restructuring (banks, firms, investors, the Bank Asset Management Company [BAMC], etc.).

* Janez Fabijan, PhD, Initiator and supervisor of the Bank of Slovenia’s restructuring activities.
Franci Tušek, MSc, Project manager of the Bank of Slovenia’s restructuring activities.
Owners often have a dual role, as in Slovenia the government has a relatively strong ownership presence in both the financial and non-financial sectors.

Coordinated action on the part of all stakeholders (particularly those under government ownership), quick decision-making and the choice and effectiveness of the toolkit are of key importance to a fast, successful restructuring process. The proportion of non-performing claims (more than 90 days in arrears) stood at more than 14% at the end of 2012, for which reason it was vital to begin activities to increase cooperation between all stakeholders to embark on the restructuring process, thereby preserving firms with a viable business model that were nevertheless over-leveraged for a variety of reasons. It was vital to restore confidence between banks, management and owners, which had been destroyed by certain cases of fraud, and stigmatisation by the media and politicians. The most important activities of the Bank of Slovenia and the BAS are outlined below. These activities have made a significant contribution to making progress in restructuring faster and more effective, and include:

I. The Corporate Restructuring Project
II. Direct communications with companies
III. The restructuring principles
IV. Bank reporting on restructuring
V. The guidelines for the restructuring of micro, small and medium-size enterprises
VI. Other Bank of Slovenia supervisory measures

I Corporate Restructuring Project

In formal terms, the Corporate Restructuring Project ran from mid-October 2012 to the end of June 2013. Acting on its own initiative, and at the initiative of the BAS and the corporate sector, the Bank of Slovenia conducted analysis of firms on the basis of balance sheet data for the 2006 to 2011 period obtained from the AJPES database. Within the framework of this analysis a total of 257 larger firms were identified on the basis of approximately 40 different items of balance sheet data. A shortlist of 31 firms for which restructuring was economically justifiable was then compiled on the basis of two criteria functions (absolute and average thresholds in eight indicators). The Bank of Slovenia invited the aforementioned firms (each separately), their management and owners to a joint meeting with banks, in the presence of representatives of the BAS, the Chamber of Commerce and Industry, and the relevant ministries in certain cases, and assumed the role of coordinator of negotiations and agreements.

On the basis of model discussions in 31 meetings it tried to conduct analysis and draw up proposed measures...
to speed up activity for the deleveraging and restructuring of overleveraged firms that nevertheless had good long-term prospects, irrespective of sector. In so doing it also tried to raise awareness of the urgency and importance of restructuring on the part of the most important stakeholders in the process (see Figure 1), which is the key to economic policy aimed at emergence from the crisis, and at the revival of economic growth and the improvement of the stability of the financial system.

On the basis of certain key indicators (average number of employees, EBITDA margin, ROIC, interest coverage, equity-to-assets ratio, ratio of net sales revenue to operating receivables, cash flow from operating activities, classified claims), the Bank of Slovenia in particular has identified the firms that generate sufficient cash flow from their core business activities (EBITDA) but are burdened by high indebtedness and consequently high financing costs. Generally, these were firms with an average credit rating C. The classified claims on 257 debtors stood at EUR 6.2 billion as at 31 August 2012, equivalent to 12.8% of the banking system’s total classified claims. Of this figure, EUR 4.9 billion or 78.8% of the classified claims related to domestic banks.

Discussions were held with the 31 selected firms and the creditor banks between December 2012 and March 2013, in which the creditor banks and the representatives of the firms presented concrete options for the restructuring of the firms, and the difficulties that they face. The Bank of Slovenia kept minutes of the discussions, which were sent to all those attending the meetings for their information. The minutes contained binding resolutions for the creditor banks, of whom the Bank of Slovenia required the realisation of particular activities by certain deadlines, when all the banks voluntarily assessed the restructuring of a particular firm to be justified, and the provision of regular information about the activities carried out and the submission of the requisite documentation.

The following key issues were successfully addressed within the framework of the project:

1. The identification of key problems in restructuring processes, which was a good basis for the Bank of Slovenia’s ongoing supervisory activities in this area.
2. The updating of secondary legislation, namely the Regulation on risk management and the implementation of the internal capital adequacy assessment process for banks and savings banks (formulation of a forbearance plan for corporate exposure) and the Regulation on the reporting of individual facts and circumstances of banks and savings banks (reporting on restructuring: POR-195/5 and DEN TOK forms).
3. The Bank of Slovenia also began detailed monitoring of the implementation of the agreed activities.
between firms and the creditor banks, which significantly accelerated the processes and raised all stakeholders’ awareness of the importance of this process. This was exceptionally important, as it helped to stop the domino effect that the ill-considered bankruptcies of large enterprises had on micro, small and medium-size enterprises.

II Direct communications with companies: Bank of Slovenia’s open doors for business

The Bank of Slovenia embarked on direct meetings with firms in October 2013, to obtain high-quality feedback and to ensure a completely level playing field for all firms, particularly in the area of deleveraging and restructuring. In this way it became acquainted in greater detail with individual problems in restructuring processes and other problems in business, and was able to actively participate in their resolution within the scope of its competence. The Bank of Slovenia’s assessment was that the banks’ activities agreed in early 2013 were not bringing satisfactory results, owing to poor coordination and a lack of understanding of the process. On the basis of the information obtained, the Bank of Slovenia adjusted the legislative framework for banking activities, thereby helping to improve all operational processes within the banks. By the end of August 2015, when the Bank of Slovenia ceased these activities, 83 different cases had been discussed, 51 of which related to deleveraging and restructuring. The other cases related to the issue of bank guarantees, the business conditions of the banks undergoing orderly wind-down, subordinated bonds and deposits, alleged breaches of regulations and the failure to comply with contractual obligations on the part of banks.

III The restructuring principles

In light of the banks’ inadequate involvement in the corporate restructuring process, and the short-term partial solutions, in early 2014 the largest banks suggested to the Bank of Slovenia that it would be reasonable to draw up guidelines or principles of how the restructuring process should be undertaken to maximise value for all stakeholders. In conjunction with the BAS, the Bank of Slovenia then drew up the restructuring principles, which are based on the principles outlined by the Managers’ Association of Slovenia in 2011. The principles were adopted by the BAS’s supervisory board on 31st March 2014, and were then approved in a final version on 11th June 2014 together with all the appendices (the standstill agreement, agreement to appoint a coordinator, agreement on further steps). The Bank of Slovenia included the essential elements into second-
ary legislation (the risk management regulation), thereby making them slightly more binding. This resulted in increased awareness of the importance and urgency of restructuring even at the small banks, which given their lower exposure had often hindered the process, thereby potentially reducing value for all stakeholders. The principles sent a message to senior management and owners that it was necessary to work with the banks actively and honestly, or else bankruptcy would follow.

It should be noted that the principles primarily deal with the course of the restructuring process when creditors have decided to take such a step, but do not take a position with regard to the details and type of the solution. This is solely the responsibility of banks and firms. In addition to an assessment of good prospects for the debtor in the long run, the following are the essential focus of the principles:

• they are aimed at addressing cases where the process involves a large number of creditors, which primarily means medium-size and large enterprises;
• cooperation between the creditors and the firm should be agreed upon, without unilateral actions;
• they primarily define the methods and course of financial restructuring;
• the active involvement of the management of the creditors is required, in order to prevent agreements from being altered at the last moment and to ensure compliance with the agreed timetable;
• any burden from restructuring should be distributed fairly, having regard for the priorities set out mutatis mutandis by the principle of absolute priority;
• new financing should be given super senior status over other repayments and other claims;
• all decisions should be made by each creditor in timely fashion, i.e. in accordance with the agreed timetable, allowing the debtor to focus on the core business line at the earliest possible juncture (see Figure 3).

**IV Bank reporting on restructuring**

The banks had until September 2015 (pursuant to the reporting regulation) to report to the Bank of Slovenia on progress in restructuring the 59 firms and groups with which master restructuring agreements (MRAs) had been signed. They were asked to report accordingly starting in May 2013. In 11 cases, there was a repeat of the restructuring (in three cases the creditors opted for bankruptcy in the end), or the agreed restructuring was revised, the original restructuring having lacked sufficient foundation, primarily owing to inadequate cooperation between the banks, a lack of good banking practice (solutions that were merely short-term and partial), and the fact that the principles had not yet entered into force at the time of the majority of the negotiations. The classified claims in the reported cases amounted to EUR 2 billion in July 2015, although the amount from the end of November 2013 of EUR 3.4 billion is of greater relevance, some of the claims having been transferred to the BAMC in the interim, while some of the claims were converted into equity (EUR 320 million) and others were repaid. The aforementioned firms employed almost 31,000 people at the end of 2014, and generated almost EUR 5 billion of revenue in 2014. Many MRAs are based on additional collateral requirements, insofar as there were unencumbered assets before the beginning of the process, on the sale of assets not vital to the business (mostly real estate and financial assets), on a principal repayment moratorium and on cuts in the interest rate. There are few cases where the creditors decided to first ensure the firm’s financial stability through a new amortisation schedule and additional financing (and sometimes partly through a debt-to-equity swap, when necessary), then to carry out operational restructuring with the help of a new or existing management team and to sell the firm transparently. The Bank of Slovenia’s assessment is that 41% of the agreements had been successfully implemented by the middle of 2015, 32% had been partly implemented (often there was a failure to sell assets not vital to the business, or performance that was worse than forecast), while 27% were not being implemented in accordance with the agreement (of which 6% consisted of bankruptcies). Insofar as performance is measured by claims, the rate of unsuccessful agreements was approximately 36%. The problems in the majority of cases arise with firms where the owners and senior management are not involved in the restructuring to a sufficient degree, and the creditors are over-tolerant of this situation and hold off from using more aggressive tools such as the termination of the agreement and, in consequence, insolvency proceedings. Creditor are insufficiently aware that in three to five years it will be difficult
to sell such a large quantity of assets not vital to the business (real estate in particular) as that which firms have purchased or built in the last 10 or 15 years. The practice with unfinished residential real estate projects suggests that the sole sensible solution is to finish them and later to sell them by means of a favourable lending offer, as the selling price in most cases barely reaches a third of the claims of the lien creditors. In the case of land covered by building permits in a favourable location that has been earmarked for residential construction, it is necessary to begin with project development, as there is virtually no demand for such real estate.

The establishment of the BAMC brought new approaches to the restructuring process, as the BAMC largely carries out fundamental restructuring (financial, operational and ownership), given that it has greater knowledge and experience of this area, it has fewer regulatory restrictions with regard to investments and it is less subject to the influence of interest groups. It is evident from certain cases that with the right, decisive approach, restructuring can be successfully carried out, which creditors (primarily banks) have long denied.

V Guidelines for the restructuring of micro, small and medium-size enterprises

In the first phase of restructuring (2012 to 2014), the banks primarily focused on the restructuring of large enterprises, having been compelled to do so because of their poor financial situation. The deleveraging and financial restructuring of the large concerns in the second wave of the economic crisis initially hurt their suppliers, i.e. primarily SMEs, but on the other hand the stabilisation of large enterprises to a certain extent had a beneficial impact on SMEs (including micro enterprises) in the long run via supplier chains or significantly shorter payment terms on trade credits, albeit not enough of an impact. Numerous SMEs have their own over-leveraging problems, particularly in sectors such as construction, trade, accommodation and food service activities, and manufacturing. In this segment the banks have to date only dealt with the most critical cases, which was primarily the result of a shortage of human resources, deficient internal organisation and a lack of knowledge in the restructuring of this segment. The approach to and methods for the restructuring of SMEs have to differ from the approach taken to large enterprises, because:

- a smaller number of creditors are involved in the process, while the number of firms is very large (in June 2015, the segment encompassed claims on 4,347 micro enterprises, 364 small enterprises and 108 medium-size enterprises);
- the use of specific tools (e.g. debt-equity swap) is less effective because of the small size of the firms and the concentration of the ownership structure (e.g. family firms);
- the costs of external consultants and administration are relatively high compared with SMEs’ revenues, irrespective of the type of restructuring procedure (voluntary or judicial);
- with regard to external financing, SMEs are highly dependent on banks, as they are mostly unattractive to the capital markets owing to their small size;
- many SMEs are not required to audit in accordance with Article 57 of the ZGD-1 (Official Gazette of the Republic of Slovenia, No. 55/15), for which reason their financial statements are less reliable, and credible analysis of their performance is consequently hindered;
- the owners, who in the majority of cases are also the managers of the firms, lack the requisite knowledge and understanding of restructuring (both financial and operational), while the performance and fate of the firm depend entirely on one key person;
- personal guarantees for financial liabilities are significantly more common at SMEs than at large enterprises;
- the structure of the business model is often pitched more at individual deals than at continual business with a large number of customers, and short-term activities often prevail over long-term activities;
- volatility in performance (positive or negative) is significantly larger at SMEs than at large enterprises (Banerjee and Jesenko, 2015).

Having analysed the results of a survey that it conducted of 12 banks and the information that it obtained via supervisory activity, the Bank of Slovenia drew up guidelines for the restructuring of SMEs. The guidelines address three segments: the allocation and segmentation of debtors within individual units at a bank and the organisation of processes, diagnostics for the purpose of quickly...
determining the viability of business models, and solutions and restructuring methods. The main focus of the guidelines is as follows:

• In light of the more personal nature of the relationships, it is advisable for the bank to have clear, objective criteria for handing over a debtor to the workout unit, and for the assessment of whether restructuring is justified to be drawn up by staff who were previously uninvolved in the credit approval process.

• When the bank makes a quick assessment of whether restructuring is justified, it should segment and allocate debtors within workout unit with regard to the method of treatment (restructuring, recovery, bankruptcy, sale of the exposure), size (large exposures) and complexity (type of problem, corporate structure, type of collateral, type of exposure, etc.). A competent restructuring manager has to be assigned to each debtor, with reasonable consideration given to limits on the number of debtors assigned to each restructuring manager.

• The role of coordinator has been strengthened: it is involved in the assessment of the need to conclude a standstill agreement, the assessment of the need to extend the coordinator’s mandate, the assessment of the need for an external consultant (financial or legal) and the formulation of a proposed solution for the restructuring of the debtor.

• External consultants should only be engaged for medium-size enterprises (and only under certain conditions – i.e. where at least three banks are involved), where a similar process to that used for large enterprises should be used.

• In smaller cases, a standardised approach to diagnostics is more convenient, which entails the use of a list of key indicators and facts. In this way, the bank is faster in diagnosing the firm’s existing operations and its prospects.

• The following solutions are available to the creditors (banks), the use of which should be based on the diagnosis:
  - disposal of assets not vital to the business to a new firm (Special Purpose Vehicle);
  - write-off of part of the debt under specific conditions, such as recapitalisation, better core performance, and higher achieved prices in the sale of assets;
  - unconditional write-off of part of the debt when the owner has demonstrably lost all the assets and is worthy of trust;
  - partial swap of claims into equity, which is to be used at medium-size enterprises under specific conditions (specialist product/services, significant know-how or market share, etc.);
  - use of a debt to asset swap in the case of real estates which have the ability to be sold in short time for a reasonable price.

The guidelines will aid the management of banks in making faster decisions, which will lead to the comprehensive restructuring of SMEs, and not to the continuation of the existing (often inviable) situation. They instruct the management and owners of the firms that successful restructuring requires them to act fairly and honestly, which includes the disclosure of all relevant information, that the banks’ requirements and conditions should be accepted, and the additional financial engagement is required from the owner, either in the form of personal guarantees or in the form or recapitalisation.

VI Other Bank of Slovenia supervisory measures

At the end of 2014, the Bank of Slovenia further strengthened its activities in the area of restructuring, and adopted numerous supervisory measures to reduce non-performing exposures (claims), including:

1. The formulation of guidelines for the gradual reduction of impairments for exposures for which banks have signed an MRA: The guidelines allow banks to reduce their impairments for credit exposures when a successful restructuring process has been begun and is being carried out on the basis of an approved plan.

2. The formulation of guidelines for the effective management of non-performing exposures: The guidelines prescribe for banks how (organisationally and technically) the systems for the early identification (warning), monitoring and management of exposures to debtors requiring detailed monitoring are to be put in place.

3. Each bank is required to draw up an individual plan to reduce its non-performing exposures: Banks had to submit targets for selected performance indicators for the management of non-performing exposures across individual portfolios, and a detailed description
of the measures by which they will meet the planned targets over the next three years.

4. Banks were required to outline an approach to reducing non-performing exposures in the SMEs portfolio. Banks have to submit a detailed description of the reasons for the situation in this corporate segment, a presentation of the approaches and tools that they will use in restructuring, and a timetable for the implementation of the measures.

5. Banks were required to draw up operational plans for eliminating certain non-performing exposures from their balance sheets: The Bank of Slovenia gave the initiative and carried out all the procedures within its power to establish a special purpose vehicle (SPV) within the framework of one of the banks undergoing orderly wind-down for the purposes of utilising taxpayers’ money in the most efficient manner possible, of speeding up the reduction in non-performing exposures, of putting in place a competitive environment for trading in financial claims, and of introducing new knowledge and approaches to restructuring into the environment.

6. For the purpose of more effective monitoring the progress of the restructuring process, reporting was overhauled; the overhaul encompasses the technical changes that were required to make data processing more efficient, to improve the quality of the data and consequently to improve supervision of the performance of obligations set out in the MRA, and banks were warned of the changes within the framework of the Bank of Slovenia’s supervisory powers. Regular monthly reporting by the BAMC on the stock of claims and the credit portfolio was put in place, as the sheer size of its claims (EUR 4.9 billion) means that its activities can have an impact on financial stability.

VII Progress in the deleveraging of the Slovenian economy and its consequences

At the outbreak of the crisis, Slovenia very quickly and sharply adjusted and balanced its current account (the current account deficit was 6.2% and 0.7% of GDP in 2008 and 2009, respectively). It was found (Fabijan, 2015; p 129) that the first sudden stop in the net inflow of foreign private capital into Slovenia occurred in mid-2009. The experience of other countries in this case suggests very serious consequences (Edwards, 2004; p 34), particularly for economic growth and the investment outlook for the individual economy. For example, Calvo et al (2004; pp 38-39) emphasise the impact of a fall in aggregate demand on the rapid balancing of the current account, and, via changes in demand for tradable goods, on an even greater fall in prices of non-tradable goods or on the performance of firms in these sectors. As a consequence their performance is poor, and the banks therefore face difficulties with non-performing loans (e.g. real estate collateral). Corporate bankruptcies have an extremely adverse impact on the economy’s human capital. It is therefore vital that when such phenomena occur, economic policy reacts in a fast, com-
prehensive and coordinated fashion. As a member of the monetary union, Slovenia is of course unable to react by devaluing its own currency. In the case of Slovenia, until the occurrence of the second potential sudden stop in the inflow of foreign private capital in 2012 (a balance of payments crisis in a member of the euro area), there were actually no discernible coordinated reactions from economic policy, if the conclusions are to be drawn from the greater depth of this signal relative to the previous one in 2009 (Fabijan, 2015; p 129). Under these circumstances, it is necessary in both the macro and micro decision-making systems to focus on the relationship between the financial sector and the real sector. In the examination of the relationship between debt and growth, there should also be an awareness of the diminishing opportunities for growth in developed economies in general (Mencinger, 2012). On the basis of laws for the relationship between debt and growth, and the potential scenarios of emergence from the crisis put forward by various studies covering almost a hundred years of major financial and economic crises (McKinsey, 2010 and 2012), in Figure 4 we are trying to determine Slovenia’s position in the middle of 2012 by means of a graphical illustration. After this time, the deleveraging process begins for the Slovenian economy as a whole (S.1) vis-à-vis the rest of the world (S.2). We have provided a points-based assessment of Slovenia’s position with regard to the debt-to-GDP ratio in mid-2012. If the technical recession (two consecutive quarters of negative quarterly growth) began in mid-2009, then the second phase of addressing the problem of debt and economic growth, in light of the long-term empirical experience around the world, was just over a year too long in Slovenia. The interval assessment for the second (blue) interval in Figure 4 fluctuates between further growth in debt and a gradual stagnation or the onset of deleveraging. Because the blue interval in Figure 4 extends almost into 2013 for Slovenia, and is thus longer than the average by just over a year, this can be interpreted as erroneous economic policy on the part of the government. The economy as a whole nevertheless begins deleveraging in late 2012, in the correct order as far as economic history goes, beginning first in the private sector, with banks and firms. Alternative practice, in addition to the exceptional case of Greece, is seen for example in Hungary, where there was first a sharp fiscal consolidation, which has been reflected in a sharp contraction in lending (BIS, 2014) in the context of the independent monetary policy of the Hungarian central bank. Strong bank recovery and recapitalisation measures are carried out in Slovenia in the second half of 2013. International flows of capital are released, and the government is able to borrow at sharply falling premiums. Basic confidence is attained at macro level. Weak economic growth appears. The points-based assessment of Slovenia’s position is therefore accelerated, in our assessment partly as a result of the simultaneous corporate deleveraging and restructuring process, and in Figure 4 is shifted towards the end of the third period. However, experience indicates that there is no easy emergence from a crisis of these dimensions. In practice, belt-tightening strategies are prevailing. The proper order, combination and intensity of measures are required. Emergence from the crisis generally begins with growth in private-sector investment (McKinsey 2010), and there is therefore a need for high-quality microanalysis of the macro causes of the crisis. In this situation, we should primarily be interested in the recovery of the functioning of the transmission mechanism, and in the case of Slovenia as a profoundly bank-based financial system, the functioning of the credit channel for the monetary policy transmission mechanism. In the situation of a liquidity trap, only an expansionary fiscal policy can be effective, but it faces the limitations of final consolidation. In practice, we find in 2015 that with the ECB’s extremely expansionary monetary policy, in the wake of the previous recovery of the banking system in Slovenia there has been a major fall in asset interest rates, which is only slowly stopping the decline in the banks’ lending activity. At the same time, the banks’ income risk is rising sharply in the zone of zero interest rates. The corporate deleveraging and restructuring project promoted and headed since mid-2012 by the Bank of Slovenia in conjunction with the __________

Each bank is required to draw up an individual plan to reduce non-performing exposures.

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Note: The six conditions (Roxburgh et al, 2012; p 410) for moving into the second phase of the deleveraging process (end of the recession) for the beginning of economic recovery are (in the order for Slovenia): i) growth in exports, ii) stabilisation (recovery, consolidation) of the banking sector and revival of credit growth, iii) structural reforms to unburden the economy (corporate restructuring), iv) introduction of a credible long-term fiscal consolidation plan by the government, v) the return of private investment, vi) stabilisation of real estate prices and new-build prices.
BAS, represents one of six key factors for emergence from the double-dip crisis in which Slovenia found itself within the global dimensions of the financial and economic crisis, with all of its fundamental problems of the transition to a market economy. Within the six factors (Roxburgh et al, 2012; p 40), it is of extreme importance that fiscal consolidation takes place after the deleveraging and restructuring of banks and firms, when the two processes are already bringing positive effects in slowing the decline or raising economic growth. Slovenia has thus been a textbook case of the emergence from a double-dip recession since the second half of 2012. Here it should be noted for the assessment of the position in mid-2015 that the process is not yet complete, as there is not yet genuine investment in the private sector, the credit crunch is only gradually waning, and the fiscal consolidation process has only just begun. The fall in prices on the real estate market is gradually slowing. The response to this situation is the public/private investment brought by the Juncker programme. The points-based assessment in the middle of the final period in Figure 4 is therefore at the intersection of the two curves.

**Conclusion**

Decision-making in the restructuring process is one of the most important activities both for banks and for the companies. The content of the decisions must allow each firm to continue as a going concern insofar as it has a viable business model and insofar as the management is worthy of trust. All stakeholders should be aware that for an establishment and managing of a good performing company several items are required like time and sufficient financial and human resources which is the same as in case of successful restructuring. This means that decisions for bankruptcy has to be carefully thought out. Many firms have found themselves in difficulties that were not solely the result of erroneous decisions by the management and owners, but could also be attributed to the changes that were outside their influence (adverse circumstances).

Despite the numerous options and tools available for both voluntary and judicial restructuring, the relevant stakeholders are not using them to a sufficient degree based on a various reasons. One of the reasons is the stigmatisation of banks and firms by politicians and the media, which is largely damaging the restructuring process; out of fear of potential litigation, decisions are being made that do not address the problems in their entirety, but largely postpone them. Other reasons are a lack of knowledge on the part of all stakeholders, inadequate organisational structures at banks, management’s fear of having to assume responsibility, and the influence of interest groups. All of this is making for a significantly slower economic recovery. Restructuring principles, SMEs restructuring guidelines and Bank of Slovenia various activities are trying to address these issues, and to improve the decision-making process both at banks and at firms.

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Resolution regimes as the (sub)pillar of the Banking Union

Mejra Festić*

Bank resolution and restructuring are important issues for the future regarding the Banking Union. The role of the banking supervisors is to assess recovery/resolution plans and implement measures needed for them. The goal of recovery/resolution schemes is that ordinary customers do not notice any difference in day-to-day banking business even when their bank becomes distressed. The resolution scheme gives an alternative to compulsory liquidation, which proceedings take many years, during which creditors do not have access to their funds.

1. Introduction

The restructuring and resolution of an international bank with subsidiaries, branches and representative offices in different countries does differentiate from a bank organised nationally. Resolution authority is allowed to decide together with the competent authorities about the separation of high risk trading activities in the context of a resolution planning.

In this context, the question of bank insolvency and bank restructuring has to differentiate.

In Slovenia, the implementation of the Bank Recovery and Resolution Directive (BRRD) and Deposits Guarantee Schemes Directive (DSGS) aims at transposing both directives into legislation and practise. Manuals on recovery/resolution, covering aspects of early warning, cooperation/coordination between supervision/resolution were prepared in Phase 1.

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In Phase 2 of the project the legislation in alignment with both directives and implementation of new standards are going to be established (the existing resolution regime in Slovenia is already partially compliant with the BRRD requirements).

2. Recovery versus Resolution

The recovery and resolution are both ex-ante crisis management measures. The recovery plan goal is to lessen the probability of resolution, while the resolution plan goal is to lessen the impact on the society at large scale. The basic pillars for the recovery plan are capital and liquidity planning, while the basic pillars for resolution planning is enabling the authority sufficient information for effective decision making process. The purpose of a recovery plan is to assure business continuity. The EBA requires that a recovery plan includes scenarios for a systemic-wide event (the shortfall from public bonds impact on capital and liquidity, the business model impact on profitability etc.), idiosyncratic event (impact of a severe write-off in a certain asset class, the leveraged buyout market effect etc.) and a combination of systemic-wide and idiosyncratic events. The most important part of recovery plan is a description of potential crisis situation and the actual actions against the simulated crisis scenarios. The reliability of a recovery plan is determined by negotiations with relevant stakeholders and truthfulness of the potential crisis scenarios. The competent authority takes into account capital and funding structure, organisational structure and risk profile of the institution (focused on the specific balance sheet items) etc. in order to require the institution to submit a revised plan, effects of deficiencies that needed to be addressed (against a set of predefined criteria) and measures needed to address obstacles for recovery plan implementation. The institution itself is responsible for recovery plan, while the resolution authority is responsible for resolution plan and its implementation. Early intervention – as a preventive measure - tries to avoid resolution.1 The competent authority orders measures (in the context of European Central Bank Single Supervisory Mechanism), while the Single Resolution Board is responsible for resolution measures (the requirement of business strategy changing, the introduction of legal and institutional measures, calling of a shareholders assembly, the update of recovery plan etc.). The purpose of resolution plan is to ensure systemic protection on the basis of sufficient information for decision-making process.

3. Resolution regimes

The resolution means that bank is liquidated or it continues its business with contributions by shareholders and creditors or their claims and assets are sold. Shareholders and creditors do not get full repayment. They share the burden of restructuring.2 The institution could prolong its business partially with a support of creditors and their contributions. The new bank resolution system addresses the regulatory gap of ordinary insolvency regimes (which do not offer the tools that are specific enough to fit the complexity of banking institutions). We could divide resolution tools into four tools:

- sale of business (which allows for the total or partial disposal of the entity in a financial transaction, the approach compares to some extent to the bridge bank due to the combination of continuation and insolvency),
- a bridge bank (all or part of the business is transferred to a temporary entity partially or totally publicly owned; certain liabilities are left behind at the remaining institution; remaining bank entity could be put after a certain period of time into ordinary insolvency proceedings; the new bridge bank is up for continuation),
- bail-in (where debt or equity could be written down or converted, burdens are placed to shareholders and creditors of the bank rather than on the public; bail-in does not lead to an insolvency process of any part of the bank; it is applied if the bank can be rescued by an injections of equity; creditors are converted into shareholders; this conversion force the creditors to participate in the restructuring process and to clean up the banks’ balance sheet),
- assets separation tool (whose liquidations could cause market disruption and assets could be transferred to an asset management company, partially or totally owned by the public; the approach compares to some extent to the bridge bank due to combination of continuation and insolvency).

Resolution has the impact on shareholders losing equity and creditors losing the value of their claims.3 In the case of dissolution of an entity, the traditional distribution applies to proceeds generated when assets are liquidated (more in, Schelo 2015). Holders of subordinated debt notes participate in annual losses and the

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1 Relevant indicators are signalling early distress related to a stadium where the institution is likely to fail.
2 The cascade of the liabilities in order of loss bearing: common equity Tier 1, additional Tier 1 and Tier 2 instruments, claims from senior executives, other subordinated creditors, unsecured non-preferred claims.
3 Creditors get paid before the shareholders receive their equity back.
issuing capital can be restored. Contractual loss sharing can be triggered earlier before the institution is likely to fail. The capital could be provided by decreasing the liabilities of institution by converting debt into equity or by partial transfer to a bridge bank. The principle that no creditor is worse-off than it would be in normal insolvency proceedings must be followed. The principle of assessment of the position under normal insolvency proceedings - as compared to the position after bail-in – is the subject of a detailed evaluation. According to the Bank Recovery and Resolution Directive, creditors of the same class are intended to be treated in an equitable manner. The resolution authority must be able to exclude partially/total liabilities from writing down or conversion, where there is a necessity to avoid a widespread contagion and systemic financial instability, in the cases when exclusion enables continuity of core business lines and the ability of the institution under resolution to continue basic services and transactions. Covered deposits (defined in Art. 2 (1), point 5 of Directive 2014/49/EU) are protected by statutory deposit guarantee scheme (up to the coverage ratio of 100,000 euro). Article 44 excludes the covered deposits from the bail-in tool. The part of eligible deposits from natural persons and micro, small and medium-sized enterprises that exceeds the coverage ratio has a higher priority ranking provided for the claims of ordinary unsecured and non-preferred creditors. In principle, these deposits are not of the quality of covered deposits. Their subjection to a bail-in is restricted due to the no creditor worse-off principle.

3.1 Failure or likely to fail
If institution is likely to incur losses and deplete the regulatory capital, the withdrawal of the authorisation by the competent authority would be justified. If the assets are less than its liabilities, we talk about over-indebtedness or balance-sheet insolvency. The important question is whether the assets of institution are valued with going concern value of with a liquidation value (the liquidation value is measured upon the assumption that all the assets would be sold). Assets that can be liquidated only within a longer period of time cannot be accounted for setting liabilities that are immediately due.

Over-indebtedness serves as a trigger point according to BRRD. Inability to pay debts in many corporate insolvency laws refers to the cash-flow insolvency as illiquidity. We have to mention the concept of impending illiquidity (referred to Article 32 (4) of BRRD), where bank is likely to become unable to pay its debts when they fall due. In some countries there exists the concept of temporary illiquidity (if there are less than 10% of liabilities overdue, there is no illiquidity).

To cover liquidity gaps, the central banks may provide emergency liquidity lines usually if the availability of bankable securities is sufficient.

3.2 Resolution regimes
Bail-in tool will always be accompanied with a business reorganisation plan, which should confirm that the institution will become viable after the application of this resolution tool aiming a recapitalisation in order to achieve financial soundness and long-run viability (Article 43 of BRRD). Liabilities that are subject to bail-in (according to the Article 44 of the Directive) are not the following items: deposits up to coverage ratio in the DGSD, namely 100,000 euro, secured liabilities and covered bonds, liabilities held by the institution as a trustee, liabilities to other banks and investment firms with original maturity, liabilities to system operators with remaining maturity of less than seven days, liabilities to employees, liabilities related to client money and client assets, liabilities to trade creditors - if they relate to activities that are essential to daily functioning of the business, tax and social security liabilities and liabilities to deposit guarantee schemes. It is possible that senior ranking liabilities to another bank are excluded because of the fact that this institution also would then fail in a potential cascade effect. The resolution authority might decide to call upon financing arrangements, if liabilities are excluded (according to the Article 44 of BRRD) and outstanding losses could not be absorbed by the bailed-in creditors. The exclusion is necessary to avoid giving rise to widespread contagion that could cause a serious disturbance to the economy.

The maximum and minimum thresholds must be taken into account before the financing arrangements can be triggered in order to reduce the external funds needed: (i) the rule eight percent means, that shareholders and other creditors subject to bail-in must contribute to loss absorption and recapitalisation in a minimum threshold, in the sense of being converted or written down in the amount of 8% of

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4 The criterion for a decision of some creditors of the same class are transferred to the bridge bank, while some other creditors staying behind in the failing institution, was of a systemic relevance in some former regimes, where the authorities had a free discretion.

5 This concerns are the drivers for TLAC (Total Loss Absorbing Capital), GLAC (Gone Concern Loss Absorbing Capital).


7 Secured liabilities and covered bonds are "bailin safe" insofar the value of the security covers its liability. Above the value of the pool covering of bonds and above the values of the securities, the bail-in is possible.
total liabilities including own funds. If this contribution is not enough for a sufficient restore of viability of the failing institution, once the 8% threshold has been met, financing arrangements may be included in the resolution. The resolution funds might only contribute with an amount not higher than 5% of the total liabilities including own funds (the 5% quota is measured at the time of resolution planning). All unsecured, non-preferred liabilities (other than eligible deposits) must have been fully written down or converted into equity. If shareholders and other creditors have contributed to loss absorption and recapitalisation at the amount of not less than 20% of the risk-weighted assets, financing arrangement can be applied. The financing can be drawn from ex-ante contributions made to National Resolution Funds. The assets from the resolution funds could be used if 8% loss absorption capacity has been made by converting eligible liabilities into equity and writing down own funds. In order to minimise the amount of “bail-in-able” liabilities and reduce the exposure of investors, the Minimum Requirements for Own Funds and Eligible Liabilities (MREL) was introduced. MREL is assessed on a case-by-case basis. Conditions for including eligible liabilities in the MREL quota: (i) the remaining maturity of at least one year, (ii) the liability does not arrive from derivative, (iii) the liability does not arise from a deposit which benefits from the preference in the national insolvency hierarchy, (iv) the instrument is fully paid up, (v) the liability is not guaranteed by the institution itself, (vi) the purchase of the instrument was not funded by the institution.

TLAC – Total Loss Absorbing Capital (that should be subordinated to senior debt) is supposed to have very similar role as MREL, i.e. to oblige institutions to create buffers for bail-in. This purpose could be reached contractually or by setting holding structure. The conditions for contractual “bail-in” instruments have to be fulfilled: (i) binding subordinated agreement, which cannot be repaid until other eligible liabilities outstanding have been settled at the time, (ii) the instrument must be written down or converted on the contractual basis to the needed extent required before other eligible liabilities are written down or converted by decision of resolution authority. The bail-in tool differentiates from the write-down tool. The write down tool applies to capital instruments included into Additional Tier 1 and Tier 2 (debts positions, equity by virtue of contractual design). The bail-in is always accompanied with a business reorganisation plan implemented to make the institution viable. Only the core equity has the meaning of statutory capital. Write-off can be used as ancillary tool prior to actual resolution tool. Converting regulatory (core equity composed of common equity Tier 1, Additional Tier 1 and Tier 2) equity into equity means converting Additional Tier 1 and Tier 2 instruments into statutory equity. This is legally possible because those instruments are debt positions. The write-down and conversion tool can make the institution ready for a step-in by an investor. The write-down could be applied in entity within a banking group, if the whole group is likely to fail. Bearing losses means writing-down or diluting equity to allow for new equity, cancel debt or convert into equity. Write-down starts with the common equity Tier 1. A write-down of debt must always go along with a partial conversion of debt into equity. These two instruments are linked together. Resolution authority has the power to transfer to a bridge bank: (i) shares and other instruments of ownership issued by one or more institutions under resolution, (ii) any assets, rights or liabilities of one or more institutions under resolution, which is likely to fail or is failing. The losses are bearable by shareholders first and followed by the further ranking of regulatory capital down to subordinated and senior liabilities. The actual business is transferred, while the toxic assets and certain amount of liabilities are excluded. The amount of liabilities left behind usually corresponds to the amount needed for a bail-in. The institution left behind will undergo liquidation process usually through bankruptcy. The new entity is usually interesting for a new start and potential investors. The creditors and shareholders which stay behind in the failing institution should not receive less than they would have receive in the case of ordinary insolvency of the institution, which complies with the no creditor worse-off principle.

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The role of recovery plan is a sound risk management of an institution.

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8 The resolution authorities will assess the applicable MREL amount in parallel to reviewing resolution plan.
The BRRD requires that: (i) any security attached to a transferred liability is transferred together, (ii) netting rights may not be changed when liabilities tied to netting agreement with counter claims are transferred, (iii) there is a protection for structured finance arrangements, (iv) certain trading clearing and settlement systems shall be protected. The idea of sale of business tool is that old institution is reshaped by partial transfer for making it attractive for investors. It is possible to transfers certain assets and liabilities of systemic relevance and in the public interest. There are specific requirements on the sale of business tool: (i) distinction to a bridge bank is that the acquirer is an external investor, (ii) the acquirer entity may need to get the permission by the competent authority to take over the bank business, iii) the purchase price may be paid in shares in fewer circumstances in distinction to the bridge bank tool. Asset separation tool is used always in conjunction with other tools. The intention is to sell the assets which have suffered losses at fair value in order to minimise the losses (any value lower than the book value triggers a loss and depletes banks equity). A large institution might have a certain portfolio of Non-Performing Loans and their value is steadily decreasing but these loans might have some recovery potential later on. There are options in resolution scenarios for management to sell, to write-off in order to avoid potentially further depreciation. Toxic assets continue to exist, either in the bailed-in institution, or bridge bank or institution under insolvency. Toxic assets are separated into a legal entity held by resolution authority or public authority; external investors are invited to invest in this vehicle.

There are some conditions that have to be fulfilled for asset separation tool: i) the liquidation of toxic assets under normal insolvency proceedings might have an adverse effect on more financial markets, (ii) a transfer is necessary to ensure the proper functioning of the institution under resolution, (iii) a transfer is necessary in order to maximise liquidation proceeds; iv) it is possible to get an attractive price (for these assets) in the market if haircuts are applied.

4. Challenges for the future

National financial arrangements contained in the Bank Recovery and Resolution Directive and Single Resolution Fund contained in Single Resolution Mechanism are tied together. National financing arrangements transfer their resources into the Single Resolution Fund. This transfer occurs with respect to contributions relating to the institution supervised by European Central Bank. National funds are responsible for annual contributions from all national banks. The contributions have two components, fixed rate and variable rate (mirror risk exposure, strategy and size of the institution, structure of finance, management organisation). National Funds are responsible for collecting ex-ante (regular) and ex-post (extraordinary) contributions from the banking sector. Total target is going to be fulfilled by 2024 in the amount of 1% of all covered deposits. Contributions are raised by National Resolution Funds and transferred to the Single Resolution Fund.

Deposit guarantee schemes are effectively saved, when resolution tools are applied. Covered deposits are not eligible in bail-in scenario, deposits may be transferred in the case of bridge bank scenario and not undergo an insolvency procedure. The Bank Recovery and Resolution Directive and Single Resolution Mechanism have a countermeasure; and both legal instruments foresee that the Deposit guarantee scheme shall inject cash in the amount needed in the case of an insolvency procedure of the institution. This amount as an injection supports the financing of the resolution and it is capped on the level of 50% of the target level of the respective deposit guarantee scheme.

REFERENCES:

[12] Potential equity cushions have to be increased in order to enable the banks ongoing operations.
[13] Payment could be done also in debt instruments.
[15] Ex-post contributions are limited to an amount of three times the annual contribution. And ex-ante contributions can be drawn by national financial arrangements.
[16] In the amount of 0,8 % of all covered deposits until 2024.
Influence of regulatory changes on adjustments of bank business models

Stanislava Zadravec Caprirolo*

The crisis revealed that credit creation, liquidity and maturity transformation that took place before the crisis were excessive. This was underpinned by huge cross-border financial system leverage and build-up of private sector debt in advanced countries. This and the proliferation of financial products and instruments lead to booming prices and price bubbles in different sectors especially real estate, construction. At the same time the technological development and globalisation together with rapid growth of financial innovation resulted in an environment of ample global liquidity, in increasing interconnectedness of financial, especially banking systems in the world. The speed and number of transactions together with financial innovation resulted in liquidity multiplication, seemingly assuring almost limitless global liquidity and access to cross-border financial flows, which was blurring the process of risk accumulation. These developments took place in environment of overall global growth and low inflation which further fuelled by the developments in the financial sector.

The crisis uncovered lack of supervisory tools and powers that would have reduced vulnerabilities if in place before crisis. The inadequacy of regulation and supervisory tools was reflected in the lack of instruments for addressing the risk accumulation at the level of individual entities but particularly at the level of the systems and broader systemic spillover effects.

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The amplitude of imbalances that were accumulating in the cross-border financial flows were not identified, measured and addressed at the right time to enable to prevent the crisis or at least to decrease the amplitude of the negative impacts of the crisis in terms of costs to the economy. Even more, the pre-crisis regulatory and supervisory framework as well as economic policy framework and tools were inadequate to promptly address the risk at the burst of the crisis.

Pre-crisis weak regulatory framework compounded with implicit government guarantees, limited liability, weak corporate governance and consequently weak risk management resulted in risk overtaking manifested in excessive credit creation, liquidity and maturity transformation. In response to the financial crisis and revealed weaknesses the regulatory and institutional framework is been overhauled. The result is the emergence of a new institutional and regulatory framework which renovates and enhances supervisory as well as resolution powers. Its design and implementation (still ongoing) is taking place in two stages. The key aims of the new framework are to:

• reduce the risk that entity would be unable to meet its claims,
• reduce the losses suffered by consumers and/or taxpayers in the event that a firm is unable to meet all claims fully,
• provide early warning to supervisors enabling them to intervene promptly if capital falls below the required level and promote confidence in the financial stability by preventing systemic risk accumulation that would put at risk financial stability taking into account macroeconomic developments, and,
• reduce tax payers exposure in the event of crisis management and resolution

The regulatory framework, tools and powers are renovated and strengthened. This is taking place in a post crisis period in which the impact of the crisis in the balance sheet of institutions is still been felt and where important changes in the interbank market have occurred. Not least important is that the changes are phased in an environment of low interest rates and weak credit demand. The new regulatory framework imposes requirements that will importantly influence and shape future of business models of banking system. At the same time banking sectors are exposed to legacy issues that will in medium term also impact the future of banking business. In addition to these developments the crisis lead to massive fiscal interventions and nationalization of banking institutions to protect overall financial stability.

The gradual reversal of ownership and failure of some entities will also affect the future of the business models. Last but not the least the external factors such as reduced cross border financing conditions, redefinition of parent-subsidiary relationship and overall macroeconomic developments are influencing the future of banking business.

The aim of the new regulation is to address the pre-crisis risks with aim to prevent a new accumulation of risks leading to a similar crisis and eventually if not preventing new crisis at least to protect the public finance and taxpayers’ from bearing overwhelming cost of maintaining financial stability in the future. It is important the differentiate the nature of the changes in regulatory system among those aiming at addressing externalities (macro prudential), those aiming at addressing bank risk taking (micro prudential) and those that aim at addressing risks that ensue at the moment when an entity is going to fail or likely to fail (resolution). While micro and macro prudential regulation are primarily of a preventive nature the resolution regulations encompasses curative measures.

What is new and different concerning the regulatory requirements?

Within the part of regulation of preventive nature, the new regulation broadly addresses two key drivers of the recent financial crisis: excessive credit creation and leverage of financial entities. The changes in the regulatory requirements developed

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1 On the basis of the European Commission decision from 2009 new European regulatory and supervisory framework for supervision of the financial system was designed. It encompasses European system of financial supervisors including three European supervisory authorities and in addition also European systemic risk board was established with responsibility for macro prudential supervision. In the second step the EU institutions agreed to establish a Banking Union consisting of three pillars: centralised bank supervision, harmonised system for restructuring or closing down troubled banks and deposit guarantee scheme for protection of small depositors.

2 Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (CRD IV)

The Single Rulebook provides a single set of harmonised prudential rules which have to be respected by EU institutions.
as a response to financial and economic crisis have brought, through Basel III rules adopted by the Basel Committee on Banking Supervision and within European Union landscape applied supervisory rules of CRD IV including regulation of Single Rule Book. These are the biggest regulatory changes that the banking industry has seen in decades. Notice that these changes are very recent and are still being implemented. CRD IV prudential rules which apply to banks, building societies and investment firms have brought among others new requirements for:

- the quality and quantity of capital,
- new liquidity and leverage requirements,
- new rules for counterparty risk,
- new rules for corporate governance, including remuneration,
- standardised EU regulatory reporting (own funds, large exposures, financial information),
- new macro prudential standards (countercyclical capital buffer and capital buffers for SIs).

Before the crisis the incentive structure imbedded in capital requirements facilitated excessive credit, risk taking and maturity transformation. This incentive structure interacts with strong financial integration in Europe and with weak corporate governance structures. One of the biggest problems was that banks with strong cross-border leverage position entered the global financial crisis with weak capital bases, despite of years of economic boom. That failure to retain a certain share of profits in “good times” and build up reserves for “bad times” is what new regulation aims to correct.

Basle III/CRD IV changed the regulatory incentive structure by changing the capital requirements and the computation of risk-weighted asset. New capital requirements compound increased minimum capital requirements, enhanced quality of the structure of capital and higher capital ratios. Minimum capital requirements are set forth to cover credit risk, credit valuation adjustment risk, market risk, operational risk and settlement risk. In addition capital buffers are introduced to cater for additional risks. Structure of capital has been enhanced in favour of higher quality of capital as it is presented in the table.

Now capital ratios requirements besides Tier 1 and Tier 2 include additional capital buffers requirements that are allowed to be built up gradually over medium term which include capital conservation buffer and countercyclical capital buffer starting from 2016 onwards. The new capital conservation buffer requirement is designed to ensure that banks build up capital buffers in the periods of “good time” with the purpose of providing capital capacity to withstand the pressures of increased provisioning needs to cover for realization of credit risk in the periods of stress and can therefore be drawn down as losses are incurred. The conservation buffer applies to all banks and should gradually reach size of 2.5%. The countercyclical capital buffer rate is introduced to provide a countercyclical safeguard for the period of economic downturn. The rate is based on credit-to-GDP ratio. Its size varies in a range between 0 to 2.5%. Its size is left to the discretion of national authorities and depends upon national specifics. During the “good times” banks should hold buffers of capital above the regulatory minimum. Banks have different options to generate such buffers. This could include reducing dividend payments, share buy-backs and staff bonus payments. Banks may also decide to raise new capital from the private sector as an alternative to conserving internally generated capital. The balance between these options should be discussed with supervisors as part of the capital planning process. When buffers have been drawn down, one way banks should look at their rebuilding is through reducing discretionary distributions of earnings. It is clear that greater efforts should be made to rebuild buffers the more they have been depleted.

The renovated capital requirements will result at the end of adjustment period in capital requirements of at

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<th>Total Capital</th>
<th>Tier 1 Capital</th>
<th>Tier 2 Capital</th>
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<tr>
<td>Common Equity Tier 1 Capital</td>
<td>Additional Tier 1 Capital</td>
<td>Share premium</td>
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<td>Share premium</td>
<td>Share premium</td>
<td>Share premium</td>
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<tr>
<td>Retained earnings, disclosed reserves</td>
<td>Minority interest</td>
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<td>Regulatory adjustment CET 1</td>
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The regulatory framework, tools and powers are renovated and strengthened.
least 10.5%. Notice, however that European banking systems already hold ratios well above the new minimum which reflect imbedded risks in their respective balance sheets. The deeper the banking crisis and legacy risks the more are reflected in the capital ratios which underpinned the confidence not only in single the institutions but on banking systems and sovereigns themselves. The crisis has also revealed accumulation of excessive exposure to funding and refinancing risk. The crisis was manifested in a sudden stop of financial flows in a very integrated cross border interbank system. The shock and the funding and refinancing risks accumulated in the pre-crisis period lead to a massive deleveraging process of financial institutions in a relatively short period of time which additionally tightened already tight liquidity conditions in the corporate sector, thus further amplifying the burden of debt and economic cost with implications for the strength of the economic recovery. The pre-crisis regulatory framework imposed relatively loose constraints on funding long-term assets with short-term liabilities, which fuelled credit expansion and proved as a critical dimension under stress.

With the aim to limit the excessive liquidity transformation that took place before the crisis the Basle III/CRD IV introduced the liquidity coverage requirement (LCR). More specific, to improve short term resilience of the liquidity risk profile of banks the LCR requires banks to hold a buffer of high quality liquid assets. It measures whether banks hold the available liquid assets against net cash outflows arising in the 30-day stress scenario period. Banks shall provide high quality liquid assets at least for full coverage of projected liquidity outflows minus projected liquidity inflows under stressed conditions. This is to ensure that institutions maintain adequate levels of liquidity buffers to face any possible imbalance between liquidity inflows and outflows under heavily stressed conditions. The definition of high liquid assets in the context of LCR requires that assets are legally and practically readily available at any time during the next 30 days. To further diminish the liquidity risk they are also subject of diversification requirements as well as to specific valuation rules. The assets are valued at market value including also certain haircuts of minimum 15%. Similar to the capital requirements the LCR requirement has to be fulfilled gradually starting with 60% in 2015 and reaching 100% fulfilment of requirement in 2018. To address the event of adverse price developments of assets held by banks for liquidity purpose and the magnitude of accumulated refinancing risk exposure which was revealed during the crisis the new regulation has introduced additional funding requirements on financial institutions. Before the crisis banks relied on high share of short-term interbank or repo funding to finance exposure to long-maturity loans and securities which before the crisis seemed or were regarded as being liquid, which during the crisis proved to be illiquid due to the increased sovereign credit risk and credit risk of other type of assets as well as strong drop in prices of those assets. To address this risks, renovated regulatory introduces beside LCR also the so-called net stable funding ratio (NSFR). The NSFR is defined in a way to ensure that a bank has sufficient amount of stable funding to support its assets and activities over the period of one-year time. The NSFR is aimed at controlling the level of maturity transformation by maintaining a stable funding profile of banks in relation to the composition of their assets and off-balance sheet activities. It is to be set forth in a way that would limit reliance in short-term wholesale funding and incentivise better assessing funding risks built in on and off balance sheet items. While the CRR[^4] contains requirements (including reporting) on stable funding it does not include important provisions relating to the NSFR. The European Commission is developing the NSFR to introduce it from 1 January 2018.

To address the excessive leverage of financial institutions, which was a key driver of the crisis, the beginning of 2018 is set up as a date for the full implementation of new leverage ratio (LR) requirements. In general leverage ratios of different kind help to identify the weak areas of the company internally and also externally since they help investors to judge the financial soundness of entity into which they invest. CRD IV defines the LR as Tier 1 capital divided by a measure of non-risk weighted assets which serves as a backstop to the risk weight requirements. There are some basic principles adopted that guide the calculation of

[^4]: Regulation [EU] No 575/2013 on prudential requirements for credit institutions and investment firms (CRR)
the LR among which one is that on-balance sheet items are included net of specific provisions and valuation adjustments and other that netting of deposits and loans is not allowed and that instruments that would usually reduce exposures like guarantees or collateral, are in this case not allowed to reduce this exposures.

One very important principle that underpins the nature of the instrument which is to assure adequate information with respect to the risk profile of the bank is the detailed disclosure requirement that will have to be public. Public disclosure will also have to include information of description of the processes used to manage the risk of excessive leverage as well as a description of the factors that had an impact on the leverage ratio during the period of reference.

Besides the LR the CRR, CRD IV also require banks to have in place policies and procedures for the identification, management and monitoring of leverage risk which is not only going to put a constraint on balance sheet size, but is also obliging banks to make difficult decisions over how to allocate assets and which business lines to maintain.

Alongside the micro prudential requirements and macro prudential elements (buffers) included in the CRD IV and CRR, regulatory and institutional response to the identified pre-crisis weaknesses brings also new macro prudential framework which aims at mitigating the risk of the financial system as a whole - systemic risk including cyclical as well as structural dimension. A framework of a set of additional macro prudential tools that may and shall be used against excessive risk accumulation during the booming periods and to safeguard financial stability in the period of stress are defined. They encompass very complex set of instruments, namely instruments defined under CRR that shall be applied equally to all systems, instruments defined under CRR that allow for national flexibility measures and also additional “other” national measures.

All new micro and macro prudential supervisory requirements will influence the future business model of the banking sector. They will influence its risk taking behaviour, decisions on size and structure of business lines, decision making processes through renovated set of regulation that address identified pre-crisis weaknesses of corporate governance, reporting requirements, related operating cost as well as cost of financing a very complex new institutional supervisory framework that had to be renewed at the national levels as well as newly established at the EU level including the banking union with established Single Supervisory Mechanism (SSM).

While SSM is the supervisory pillar of the banking union, the second pillar of the banking union, the Single Resolution Mechanism (SRM) is established with the aim to prevent that in the future the resolution of failing or likely to fail banks and related cost of safeguarding the financial stability would not overburden taxpayers and the real economy. This is a response to pre-crisis explicit and implicit state guarantees to finance the safeguarding of financial stability in the case that failure of bank would put it to danger. During the recent financial crisis the level of state support was unprecedented. While this was necessary to prevent the collapse of the financial markets and real economy, it resulted at the same time in significant worsening of the public finance and fiscal position or even in the fiscal crisis of states.

The new regulation aiming at orderly entry and exit of firms, combined with an appropriate relationship between risk and return, means that risk takers that stand to profit also stand to lose, so that government bail-outs are not needed.

The regulation sets forth additional reporting requirements to the banks as well as operational preparation of ex ante resolution plans. It applies to all SSM banks and it will be financed by the banking sector, while the burden of the cost will also be shifted from the public finance to state aid measures in the form of recapitalisation and asset relief measures between October 2008 and December 2012 amount to €591.9 billion or 4.6% of EU 2012 GDP (Commission). If we include guarantees, this figure would amount to €1.6 trillion or 13% of EU GDP (Commission) for the period 2008-2010 only.

different stakeholders including not only shareholders and subordinated debt holders but also senior debt holders and categories of depositors in accordance with the rules of Bank Recovery and Resolution Directive (BRRD).

**Legacy issues**

The implementation of new regulatory framework is taking place in the context of banking systems that were adversely but unequally impacted during the crisis. As a result, banks’ balance sheets still reflect the impact of the crisis while there has been a cross-border disintegration of the interbank market. The risk to banks’ balance sheets in terms of non-performing loans (NPLs) mirrors the leveraged position of corporate and household balance sheets. In turn the negative interaction hinges on cross-border financing and higher funding costs affecting profit margins.

Retrenchment of cross-border flows while reflecting still existing confidence issues also indicates changes in banks business model. In particular, the relation between parent and subsidiary in many cases changed and resulted in lowering parent exposure and thus reducing overall credit supply and thus lower potential funding for credit recovery. In countries that suffered banking crisis there are also noticeable shifts in deposit and credit among banks which in short-run puts pressure on business and changes relative market shares. State ownership of banks is another feature of the post-crisis period in some countries. Given the overarching importance of capital in the new regulatory framework, it is of critical importance to maintain high standards of corporate governance in the period of transition to private owners and beyond. In particular, strategic and reliable owners to appropriately manage banks and meet capital regulatory standards. Delinking state ownership from banks may help to facilitate compliance with new capital regulation and avoid procrastination of meeting regulatory standards that were part of the crisis. In this regard the banking union plays an important role to comply with standards.

The crisis has affected the non-financial corporate sector unevenly and thus impacted funding strategies which also might put pressure on bank business model. In particular, there is a shift in funding of high rated corporate sector from banking credit to bond issuance limiting business possibilities for banks which at the same time adversely exposes banks to risk of crediting lower rated corporate sector. Another important legacy of the banking crisis is that the corporate sector tend to rely on own funds to finance activities. In this regard it is possible to observe not only relative high current account surpluses but also increase in corporate sector deposits with the banking system. In particular, prior...
to the crisis, the corporate sector was a net borrower to the world and this position has shifted in its aftermath. This points out to reduction in credit demand affecting business opportunities for banks. The crisis has shown ones more that well-capitalised banks do not only face low funding costs and enjoy market confidence, but also are those that lend as well-capitalised banks support new lending and not the opposite (Schoenmaker and Peek, 2014). The challenge ahead for banks still facing the legacy of the crisis is to efficiently handle NPLs while keeping earnings and adequate capital requirement. This is even more challenging taking into account the relatively low interest environment over the medium term.

**Macroeconomic developments**

The evolution of the economic environment determines banking business opportunities, as it impacts the level as well as the quality of demand for credit. A gradual economic recovery at very low but stable rates, can be observed after 2013. This gradual recovery is also foreseen by the EC forecast for this and next year.

**The cost of financial intermediation will increase.**

The positive developments are also visible in the data pertaining to economic and credit cycles for the non-financial corporate sector of the euro area as well as on encouraging developments concerning investment in equipment and capacity utilisation. All of them point at a gradual picking up in economic activity though at a level far below the pre-crisis period. The positive trends although from still subdued levels point at a potential for some gradual credit demand growth at least on the side of the corporate sector that is not over indebted, while other corporates continue with the deleveraging process. On the other hand, the levels of the forecasted economic growth indicate that the strength of corporate sector credit demand growth may still be weak in the short to medium run.

Similar trends can be observed also with respect to the factors that underline the potential for household confidence recovery which could result in gradual translation of very high saving rates to investment demand and consumption growth. One of very important elements underlying household credit demand is labour market development. Employment growth and decline in the unemployment rate in the EU Member States show stabilisation of the labour market conditions in line with the gradual recovery of the overall EU economic activity. This also contributes to halt the decline in private consumption and generates potential for further gradual recovery over the medium term.

EU financial market conditions have also started to stabilise from 2013 onwards and while Greek political and economic crisis in summer of 2015 did affect negatively the levels of the euro sovereign debt yields and other asset prices, the magnitude of negative impact as well as the duration of the period of increased volatility was far lower comparing the 2012 and 2013 eurozone crisis period. This was result of various factors: the still weak but yet positive economic activity developments in
the EU; the implementation of the eurozone supervisory regulatory and institutional changes which included the comprehensive assessment and stress testing in the run to the SSM establishment resulting in sizable preemptive capital increases that took place during 2014 which strengthen the confidence in the European banking system through decrease of the risk of potential spillover effects to the public finance; and the ECB quantitative easing measures, which provided eurozone financial market with ample liquidity and, therefore, decreasing the risk of sudden liquidity drain.

The strengthened capital and liquidity position of the European banking system and the low interest rates environment protected Europe from risk of a new cycle of decrease in confidence exposure, but on the other hand, the ample liquidity provision at historically low interest rate levels has not yet translated into the rebuilding of interbank market flows or overall financial market liquidity in terms of frequency and price stability of market transaction for different type of financial assets. The fact that interest rates are likely to remain low in the medium term also poses a challenge to the banking business model including tight interest margin adding pressure on cost rationalisation and on own capital generation capacity.

While positive macroeconomic and financial market developments may justify some cautious positive expectations for medium term credit demand generation, by taking into account also the legacy issues arising from the crisis, they do not really yet result in a major credit risk exposure decline. The same applies to the banking sector market liquidity risk exposure despite the ample liquidity position of the banking sector. The low interest rate environment also poses interest rate and interest income risk exposure at the time of also high exchange rate risk and, in general, high volatility of different financial market and also macroeconomic aggregates.

How will new regulation, legacy issues and macroeconomic developments influence bank business models?

The new regulatory framework for the banking system brings in the medium term a gradual but sustained and substantial raising of capital requirements. It will contribute together with new European supervisory institutional framework to protecting the stability of the banking and overall financial and economic systems by strengthening the level and quality of the bank capital structure of. The same applies to the new regulatory liquidity requirements as well as to the leverage ratio requirements.

On one hand, this will contribute to reducing funding cost as a result of enhanced confidence in the banking sector since the implementation of the Basel III/CRD IV framework will increase investor confidence in the solvency and liquidity of banks, both in normal times and in periods of stress, but it will, on the other hand,
also increase the cost of financial intermediation. The cost of financial intermediation will also increase as a result of enhanced reporting requirement and increased operational complexity due to additional recovery and resolution requirements. This will contribute to economic stability resulting from reducing government exposures to the potential worsening of the health of the banking sector but on the other hand it may, through widening of the potential loss bearing base from shareholders and subordinated debt holders to senior debtors and certain categories of depositors in accordance with the BRRD regulation, increase the cost of funding. It will also result in the need to revise and eventually change the existing businness models. In addition, the enhanced governance requirements may, while strengthening risk management capacity, further add to the complexity of the internal decision-making processes, thus also putting pressure on the operating cost of the banking sector. The new institutional framework of the EU banking union will enhance the resilience of the banking sector and decrease the exposure of the public finance and tax payers losses in the case of financial crisis but the banking supervision mechanism, bank recovery and resolution mechanism and banking deposit guarantee scheme will have to be financed by the banking sector contributions, thus further increasing operating cost. In the medium run, many banks also still have to work through their large stock of non-performing loans, which further weighs on their earnings prospects and puts a premium on capital, cost efficiency and, above all, good corporate governance. At the same time, banks are faced with profound structural changes as a consequence of fast technological developments. As evolving customer preferences interact with new technology, for instance in the growth of internet and mobile banking, barriers to other providers of services to enter banking business are falling. The increased cost of banking business operation due to increased regulatory requirements is widely opening the doors to the shadow banking system and increasing competition for the customer base. Last but not the least, the currently observed trend towards more capital market-based financing in Europe, supported by the new initiative on Capital Markets Union, will inevitably weaken banks’ market power, especially for higher risk quality firms that can easily substitute bank and market finance. While the medium term macroeconomic outlook provides prospects of stabilisation and gradual but weak economic growth, it does not still decrease credit risk exposure and does not significantly increases the credit demand in the environment of high competition for clients. The low interest rate environment keeps the exposure to the interest rate risk as well as market liquidity risk remains high including also high foreign currency risk and high volatility of different macroeconomic and market indicators. Low interest rates also put pressure on banks interest margin and profitability limiting capital self-generation capacity.

 Conclusion

 The crisis has had a strong impact on the economy and societies and the recovery is still weak. The regulatory and supervisory framework and powers are far different from those prior to the crisis. These needed changes are being implemented to avoid or mitigate a similar crisis in the future. These changes are overhauling the conditions upon which banking business is are conducted making it more challenging in particular with regard to increasing operating costs due to the renovated regulatory requirements on capital, liquidity and governance, increasing operational complexity and reporting requirements. But the challenges go beyond regulatory changes and are related to the legacy of the crisis, competition from other financial intermediaries and weak credit demand including high credit risk and low interest rates. Banking business models are at the cross roads amidst constrained business growth possibilities, low yield investment opportunities and high risks environment. Nevertheless, over the medium to long run it is possible to foresee recovery of banking sector profitability, return on equity and on assets, but this might entail consolidation and increase in market share or search for niche business models. The success of such endeavour might require sound owner and high quality corporate governance.

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Handelsbanken - personalised banking in the digital era

Martin Blåvarg*

Handelsbanken has not only escaped unscathed from the 2007-08 crisis, but it has capitalised on it. The total return on its shares has been more than 200% since 2007, while the average major European bank has lost half of its value.

Introduction

The bank has not needed to use any government or central bank financial support, nor has it asked its shareholders for new capital. And its earnings have been very stable with a return on equity above 12% every single year throughout the crisis. At the same time, the bank has achieved the highest rating level of all European banks and has one of the strongest capital positions, with the common equity tier 1 ratio of 21.3%. Since no other major European bank has matched this performance during the crisis, there is a general interest in what distinguishes Handelsbanken from other banks. This article briefly tries to explain the factors behind Handelsbanken’s success. It also looks ahead into one of the major focus areas for European banks today – digitalisation – and explores how Handelsbanken is tackling the challenges of digitalisation in its branch-oriented business model.

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A few words about Handelsbanken’s background

Handelsbanken was founded in 1871 and is the oldest stock still quoted on the Stockholm Stock Exchange. It is based in Sweden, which accounts roughly 60% of the Group’s earnings. Since the early 1990s, Handelsbanken has slowly expanded into other countries, mainly through organic growth. Its expansion started in other Nordic countries, with the first country – Norway – now contributing about 13% of aggregate earnings. Finland and Denmark followed, and they now contribute about 5% each. In the early 2000s, when most European banks focused on expanding in Eastern and Central Europe, Handelsbanken started retail banking in the UK. The UK business has grown at a very steady pace, and now contributes almost 10% of earnings. The fact that the UK business already has more branches than Norway, Finland and Denmark combined indicates that the UK in the not-too-distant future will become the second largest market for Handelsbanken in terms of business volume and earnings. In 2013, Handelsbanken made the Netherlands its sixth “home market”, and although the operations are still very small, the prospects for future growth look promising. Handelsbanken focuses on providing banking services (including asset management) to corporate and household customers through a decentralised branch-oriented business model. The bank offers investment bank services on a limited scale, in order to support its corporate and household customer base, but it manages customer flows in this business rather than taking any proprietary risk.

The branch is the bank – decentralisation is the cornerstone of the Handelsbanken business model

The Handelsbanken business model is based on ideas that basically were developed more than 40 years ago. The starting point is a simple corporate goal of profitability – that the bank should be more profitable than its peers, based on return on equity. This goal has been achieved for the past 43 years running.

Handelsbanken has a business model that differs from many banks of today.

To achieve this goal, Handelsbanken’s primary focus is to have more satisfied customers than its competitors, and to have lower costs. The focus on customer satisfaction and costs stems from the realisation that banking services are basically commodities. A loan, a deposit or a credit card are very similar products, regardless of which bank is providing them. This means that it is hard for a bank to distinguish itself through its product line and to provide more valuable products to its customers than its peers do. However, it is possible to deliver different levels of service and trust to your customers, and doing this is a major area of focus for Handelsbanken. Good service in banking, in general, and for Handelsbanken in particular, contains a much wider range of aspects than may normally be perceived as customer service. It means that customers need to gain a thorough understanding of their financial situation from their bank, so that the bank can provide them with the products that they actually need. Customers also need to meet actual decision-makers, so they are able to explain their situation and understand why they have been granted a loan or not. They need help with simple things – possibly a minor issue for the bank, but important for that particular customer. And they want to avoid unnecessary red tape and bureaucracy.

To be able to provide this high quality, broad-based service, Handelsbanken believes that personal contacts are extremely important. This is one of the main reasons why Handelsbanken focuses on local branches. A branch of Handelsbanken can be viewed as a separate bank. The branch manager has full responsibility for which customers will be acquired, what products the bank will offer in each individual case, the staff to be recruited and how much they will be paid, the office location and furnishings, as well as local marketing activities. Full local responsibility ensures that customer needs are understood in the local context and that customers will be treated in a highly personalised way. The branch-oriented decentralised organisation is also of key importance to the other focus area for Handelsbanken alongside customer satisfaction – having lower costs. Branches compete with each other based on their cost to income ratio. A league table is published internally every month, and all branches within a region can see where they are positioned. For those at the lower end, it’s apparent that they will have to work on their costs, or their income for that
On the Group level, Handelsbanken has consistently managed over many years to keep its cost to income ratio lower than its peers, at a level around 45%, and in the largest operation in Sweden, the cost to income ratio has been stable at around 35%. These numbers include investments and for the mature branches, the cost to income ratio is at around 30%. Low operating costs have been a hallmark for Handelsbanken for a principle”, based on the notion that branches should only lend to customers that can be seen from the top of the church spire in the town where the branch is based. Handelsbanken’s lending is based on a qualitative assessment of the customers’ repayment capacity, where a deep understanding of the financials of a borrower is one factor, but where a holistic view of the credit risk is taken, rather than the use of mathematical scoring techniques. Local knowledge is not only important in making the correct credit assessment. Proximity to customers also makes credit management and detection of deteriorating credit quality much more efficient. In Handelsbanken’s experience, this continuous credit management is at least as important as the initial credit decision when it comes to keeping loan losses low. If problems are detected at an early stage, the bank can discuss with the customer and take action such as demanding more equity, more collateral, limiting revolving credits, and ultimately trying to end the relationship. The latter is normally only possible if action is taken at an early stage before the problems get out of hand.

The branches have the discretion to approve credits up to a certain amount. The level of this approval limit is set individually and it is essentially based on the branch manager’s experience. Larger credits have to be approved by the regional bank, and the largest ones are decided on by a committee of the Central Board. When a credit is processed within the hierarchy, there’s a consensus rule, meaning that everybody involved in the credit process has to say ‘yes’ to the credit in order for it to be approved. Regardless of size, the branch has to approve all credits and a ‘no’ at the branch is final, in the sense that it cannot be overruled at a higher level.

long time, but what is probably even better known is its track record of very low loan losses. For decades, Handelsbanken has had a loan loss level of around one quarter of its competitors’ loan losses. Once again, the decentralised structure, together with a very strict cash-flow-oriented credit policy, has been the key.

All branches have a specified geographical area for which they are responsible. They are only allowed to extend credit to customers within that area. This means that the branches have a thorough understanding of the local conditions for borrowing by corporates and individuals. This is referred to as the “church spire matter. Because of the decentralised organisational structure and the full responsibility for the branches, they have the option of making changes that are well suited to their local circumstances. Handelsbanken does not use budgets, which means that the bargaining that goes on around the budget process in other large organisations, and the incentives to spend the resources gained, do not exist. The branches are induced to think carefully about every crown (or euro or pound) spent. The decentralised organisational structure is also important for the costs in the organisation outside the branches. Since Handelsbanken focuses its resources on the branches, many central functions that exist at other banks are absent at Handelsbanken. For instance, there’s no central marketing department – all marketing is done locally – and basically, word-of-mouth is the primary marketing channel. There are no call centres, as the branches take calls from their own customers. Naturally, some central functions exist at Handelsbanken as well, such as the design and development of products, and the whole IT infrastructure. But while at other banks, products are developed centrally and the branches’ role is to push them out to customers as a sales organisation, at Handelsbanken, it works the other way around. The branches are regarded as ordering the products from the central developers, which is a key factor in ensuring that products match customer needs and that money is only spent on product or IT development that is perceived as valuable from the branch perspective. The decentralised organisation allows Handelsbanken to have a very flat structure, with only three levels; the branches, the regional banks and the central head office. This makes it possible to minimise expensive middle management.
There is an obvious risk with a decentralised decision-making process when it comes to risk-taking. Handelsbanken manages this risk in a number of ways. Firstly, credit decisions taken at the branch level are always reviewed afterwards by the regional credit department. Not only is the decision reviewed, but the documentation, the collateral assessment and the internal rating are also assessed. Although this is done after the credit has been disbursed, it leads to a learning process in the organisation, which ensures that the credit policy is interpreted in the same way throughout the bank.

Secondly, there is no incentive for the branches to take high credit risk. Handelsbanken does not pay bonuses to any employees in the commercial bank, only flat salaries. There is a profit-sharing scheme, Oktogonen, but this works with a very long-term perspective. Each year that Handelsbanken meets its target of being more profitable than its peers, part of the annual profit is allocated to the Oktogonen Foundation. The bank devotes large resources to internal auditing and all branches are evaluated annually. If a branch gets a bad review, this is regarded very seriously in the evaluation of the branch manager.

Handelsbanken is happy to take on the ultimate credit risk that stems from lending to its corporate and individual customers, but tries to avoid all other risks. The investment bank within Handelsbanken is not allowed to take any proprietary risk and financial risks are generally kept to a minimum. Liquidity risk is minimised through a conservative funding strategy exercised by the Central Treasury, where long-term assets are matched with long-term bond borrowing and where a very large liquidity reserve is kept in order to weather turbulent markets, ensuring that the bank does not have to access markets if conditions are difficult. The bank also limits the risks involved in growing by focusing its growth on organic branch openings. Growth has mainly taken place in the UK, where the bank has been operating retail banking for about 15 years and which now includes around 200 branches. Despite the bank’s continuous investment in new branches in the UK, by the second half of 2015, the UK was already the Handelsbanken’s most profitable home market. More recently, Handelsbanken has also expanded its retail operations into the Netherlands, with the intent of exploring the same organic growth strategy as in the UK.

Combining a personalised, local service with modern technology

When it comes to the future of banking, the hottest topic at present is probably digitalisation. The digital revolution is having a major impact on more or less all sectors, and banking is no exception. Handelsbanken’s focus on branches and personal relationships with customers may look challenging in the future landscape of banking. In the following, we discuss how Handelsbanken intends to meet this challenge.

The very brief answer is that Handelsbanken does not see a contradiction between the development of digital services and the personal relationship with the customer. From Handelsbanken’s perspective, it’s not digital services OR branches, the answer is digital services AND branches. Handelsbanken is far from being alone in having the perspective that the best customer value can be created through a combination of local personal relationships and digital services. It has been realised more
and more that it is very difficult to pursue an outright digital strategy in retail services. On the contrary, it is particularly necessary in retail industries to combine physical and digital channels to maximise customer value.\(^1\)

There is a lot of talk about digitalisation today, but the challenge has been around for almost twenty years. Online banking was developed early in Sweden – in the late 1990s. The infrastructure was quickly developed, Sweden was early adopters and by the late 1990s, the majority of transactions were initiated over the Internet. For Handelsbanken, the Internet was just another way of visiting the branch. Thus, the bank has improved the sector’s competitiveness, especially in relation to non-traditional providers of financial services. One trend that is important in the more recent development of digital banking services is that screens are becoming smaller and smaller. The personal computer is being replaced by tablets and smartphones, and more recently by watches. One effect of the smaller screens is that the opportunities to communicate with the customer become more limited. When the customer enters the website on a PC to make a payment, the large screen makes it possible to communicate with the customer and, for example, to advertise certain products or customer events, but that opportunity vanishes when you have a small screen mobile app. It is becoming more and more difficult for banks to differentiate themselves in this context; they have to find other ways of doing this. For Handelsbanken, the personal meeting and the local connection are key to this differentiation.

Regardless of size, the branch has to approve all credits.

Another aspect of digital development is that technical development is much quicker than customer adoption. It has not been self-evident which services will be most welcomed by customers, so it may be costly to be an early mover, as there is a risk that investments will be made in services that are not appreciated or used by customers. For a bank, the most valuable asset is its customer relationships. From Handelsbanken’s perspective, it’s very important to provide the products and services that the customers really need. But it’s not necessary to develop and push for new services of questionable value for customers. Moreover, there may sometimes be a cost disadvantage in being the first mover when it comes to digital development, since investments may be done in less cost effective solutions or in services that later proves to be useless to customers. Handelsbanken aims to strike a balance between being in the forefront of digital development while at the same time securing a cost efficient IT investment programme.

Handelsbanken also believes that over time, and especially for young people, digital services are a “must-have” for bank customers, but not a distinguishing feature between banks. As a customer, you will demand all the digital services, but they will not determine which bank you choose, because everybody’s services will look similar. And if differences appear by one bank creating some attractive feature, the gaps will quickly be closed by the other banks. Since bank relationships tend to be long-term and based on trust in the institution, it will be difficult to compete on better digital services. Personal relationships, on the other hand, tend to be fewer and fewer in our digital society, which means that a strong personal relationship with an account manager will be...
perceived as more valuable in the future than in the past. Handelsbanken already sees in internal surveys that young people value the branches more than middle-aged people, and are at about the same level as elderly people.

The biggest challenge in Handelsbanken’s ambition to prioritise both branches and digitalisation is to make sure that this strategy does not lead to excessive costs. It has already been mentioned that development costs for being a follower rather than a leader should limit costs for digitalisation. When it comes to the costs for branches, it is very important to explore two major conditions. The first is that in the digital age, branches are not in any important way a place where customers execute their transactions. In Handelsbanken’s Swedish operations, the average customer visits the branch less than once a year. More or less all payments and other transactions are done online, on mobile devices or by phone. The branch is the place for the customer’s personal contact with the bank. But it doesn’t have to look like a traditional bank branch, with tellers and a pre-defined design. In the areas where Handelsbanken’s branch network is growing the most – the UK and the Netherlands – Handelsbanken’s branches normally look like ordinary offices, and they are often located on the second floor, and not necessarily in shopping districts. This makes it much cheaper to set up branches, both in terms of rents and furnishing costs. And in the Handelsbanken branches in the UK and the Netherlands, the branches do not carry cash; ATMs are used for that. Technology also means that branches become cheaper. They can be wireless and IP telephony can be used to direct calls efficiently to branches that have available capacity and that are close to the calling customer.

To summarise, the Handelsbanken path to the banking market of the future goes through ambitious development of digital banking services, while keeping a strong personal relationship with the customer through a local presence. The way branches look and operate will change, but personal relationships will still be key in attracting the most attractive customers, creating customer satisfaction and managing credit risk.

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je sistem za zgodnje odkrivanje tveganja v kreditnem portfelju, še preden pride do neplačila. Podpira celoten potek dela in komunikacijo med vpletenimi organizacijskimi enotami.

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- Sodelovanje vseh organizacijskih področij (vsi udeleženci delajo v istem sistemu in imajo enake informacije)
- Zgodnje odkrivanje tveganj
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- Nenahno izboljševanje kakovosti portfelja
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The Future of Banking: The Role of Information Technology

Marko Jakšič and Matej Marinč*

Information technology is rapidly entering the traditional banking business. Recent survey among US bank managers reveals that 47% of them discuss technology at every board meeting. Three-quarters of them worry about competition from unregulated non-bank companies. They see Apple, Walmart, peer-to-peer lenders, Google, PayPal, Amazon, and Facebook as a formidable threat among nonbank competitors (Bank Director, 2015). The future for banks is largely unknown. Are banks ready to defend their turf, and what are their competitive advantages?

1. Introduction

To at least vaguely predict a road ahead for banks, we first revisit the economics of banking. We argue that the rationale for banking has not changed. Banks act as information agents with the main purpose of mitigating information problems among bank customers. Bank regulation ensues due to banks’ special importance for the real economy. What has changed, however, is bank customers. A generational shift is taking place. Bank customers increasingly wish to be empowered, continuously connected, and entertained.

IT developments will drastically change the way banking business is done. Banks may be lured into investing in IT technologies that create cost efficiencies. We argue that relationship banking may still be the right path ahead. Human decision-making still has an advantage over computers in an uncertain environment weakened by information problems.

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There, bankers might still prevail in a struggle with artificially intelligent systems. In this view, IT should be used to increase relationship banking. Banks can use new technology to acquire additional information about their clients and to empower their customers.

The banking industry is also changing. New competitors arise in the form of FinTech startups as well as established IT companies. The core banking business is expected to remain highly regulated, giving banks at least a temporary competitive advantage against new players. This article is organized as follows. Section 2 reviews the economics of banking in the current banking environment. Section 3 discusses the impact of IT developments on an individual bank. Section 4 analyzes the changes that IT has brought to the banking industry. Section 5 concludes the article.

2. Economics of banking and the current banking environment
2.1. Raison d’être of banks
In order to analyze the impact that information technology might have on banking, it is important to understand the basic economics of banking. Abstracting from the detailed overview (see, e.g., Greenbaum, Thakor, and Boot, 2015), contemporary financial intermediation theory sees banks as information agents and, as such, intermediators among providers and users of financial capital. Banks alleviate information problems through two main functions. In a brokerage function, a bank matches counterparties with complementary needs. For example, an investment bank matches investors with firms that issue securities in an IPO. Whereas each investor could search for the perfect investment alone, hiring an investment bank removes the duplication of search efforts across investors, generating economies of scale. A brokerage function may be employed especially in transaction-oriented banking, which focuses on a single transaction with a customer being repeated across multiple customers (see Boot, 2000).

In a qualitative asset transformation function, a bank goes further. A bank directly contracts with counterparties and exposes itself to risks (e.g., credit and liquidity risk) that stem from maturity, liquidity, and size transformation. A prime example of qualitative asset transformation is a traditional commercial bank that collects deposits and lends to companies. Deposits are typically liquid and safe instruments with short maturities and in small denominations, whereas loans are typically risky, illiquid, and have long maturities and larger denominations. Banks engage in qualitative asset transformation to serve customers and their needs. Banks manage and absorb the risks and alleviate information problems among firms and investors. More specifically, banks lower adverse selection and moral hazard problems by carefully screening and monitoring firms. The competitive advantage of banks in mitigating information problems mainly stems from relationship banking (Boot, 2000). Relationship banking is a process in which banks acquire proprietary information about their borrowers through repeated interaction with the same borrower across time, across many different bank products and services that the borrower uses, and across different access channels through which the borrower transacts with the bank. Such information might be soft and difficult to quantify, especially if it is based on evaluation of borrowers’ incentives. For example, a local banker may estimate with high precision the thinking of a long-term client, his sincerity, his reputation, and his probable future actions and future risks; such assessment, however, may be difficult to quantify.

2.2. Bank regulation
Banks are crucial for smooth operation of the real economy. The global financial crisis presents a prime example of how important stability in banking is and, in particular, how broad the negative externalities of bank failure are. Bank failures may contagiously spread across the financial system, resulting in a systemic banking crisis with huge costs for the real economy. Without banks, small firms, riddled with information asymmetries and unable to tap financial markets, may not obtain funds to pursue their projects. Savers might postpone investments if the option of safe deposits is no longer on the table. Even the payment system may be at threat, leading to suffocation of the real economy, as the recent example of Greece indicates.

Negative externalities of bank failures call for an extensive safety net in banking, ranging from deposit insurance, central bank intervention policies, and government support, or even bailout, to outright nationalization of failed banks. The recent regulatory overhaul upgraded the capital regulation framework and established a new liquidity regula-
tion framework, but also resulted in further focus on structural reforms in banking. Policymakers acknowledged that certain bank business (e.g., payment system operations, deposit-taking activity, and retail lending) is so important that it needs to be saved in times of crisis and therefore needs to be insulated from riskier bank activities (e.g., investment banking, trading, and bank activities on capital markets).

2.3. Changing customer preferences
Despite the enormously complex regulatory framework, banks are aware that their primary role is to serve their customers and that they need to adapt to the digital society. Bank customers are changing quickly. They want inexpensive service that is tailor-made to their needs and accessible anywhere and at any time. They want a perfect multichannel experience. Bank customers want to be empowered to make their own decisions. Interaction is important. The quality of bank products and services still matters, but experience is also important. Banks are aware that they need to become an attractive place. The upshot of these arguments is that banks acquire their competitive advantage in mitigating information problems, partially through brokerage but mostly through qualitative asset transformation and relationship banking. Banking will remain a heavily regulated business at its core. The question then is how to adapt to the new preferences of customers and how to embrace innovations that stem from information technology developments.

3. Transformational effects of information technology on a bank
Information technology developments have resulted in unprecedented changes. Large-scale transfer through the internet allows for permanent connectivity. Vast data make possible low-cost data mining potentially through cloud computing and based on open-source software. Fast algorithms are becoming smarter due to strong improvements in artificial intelligence.

3.1. Communication
Online banking is starting to disrupt bank branch networks. In the euro area, the number of branches of credit institutions fell from 182,478 in 2010 to 159,397 in 2014 (ECB, 2015). A new generation of bank customers is proud to avoid visiting the branch network. When surveying 10,000 US “millennials” (i.e., the generation born between 1981 and 2000), 68% said that “in five years, the way we access our money will be totally different.” Seventy-one percent would “rather go to the dentist than listen to what banks are saying.”

This is not to say that the branch network is becoming obsolete. Instead, internet banking may transform the role of traditional bank access channels. Campbell and Frei (2010) found that online banking acts as a complement and increases the importance of a branch network, but reduces the importance of other less personalized delivery channels, such as the ATM network (see also Xue, Hitt, and Chen, 2011). Gilje, Loutskina, and Strahan (2013) found that the bank branch network integrates US lending markets. The branch network mitigates contracting frictions, especially on information-intensive markets. One can conclude that the branch network needs to be reconfigured towards highly information-driven and personalized bank products and services, the ones present mostly in relationship banking.

3.2. Automation
Evidence shows that IT developments create substantial cost savings, especially in several areas of transaction banking. A bank can achieve economies of scale in payment processing (Beijnen and Bolt, 2009) and clearing and settlement systems (Schmiedel, Maltamäki, and Tarkka, 2006). Electronic payments, such as credit and debit cards, e-money purchases, and mobile payments, are replacing paper-based payments. Online access channels create further cost savings. To build on economies of scale, banks may be lured into scalable transaction banking rather than focusing on building long-term relationships with their clients. Boot and Thakor (2001) point to the problem of this strategy. Competition in transaction banking is more intensely eroding bank rents. Therefore, turning to relationship banking may still be an optimal route for banks.

3.3. Decision-making
IT developments have also led to automated decision-making in bank lending. Several transaction lending techniques, such as financial statement lending, small business credit...
scoring, asset-based lending, factoring, and fixed-asset lending, allow banks to gather, combine, and use a vast array of quantitative information about their clients (Berger and Udell, 2007). One may worry that artificially intelligent computer programs may surpass humans in credit assessment of bank customers. Can automated decision-making in transaction lending techniques make human decision-making based on the soft information present in relationship banking obsolete?

Long ago, computers surpassed humans at chess. The developments in IT have been enormous since then. In 2011, the IBM program Watson continually outperformed the best human competitors in the US open-question quiz show Jeopardy! Computers seem to be fortifying their presence in financial markets. Computer programs currently perform more than half of all trades on the US Treasury market.²

Ben Bernanke, the former chairman of the Federal Reserve, claimed that bankers still have an edge. “The largest banks typically rely heavily on statistical models to assess borrowers’ capital, collateral, and capacity to repay, and those approaches can add value, but banks whose headquarters and key decision-makers are hundreds or thousands of miles away inevitably lack the in-depth local knowledge that community banks use to assess character and conditions when making credit decisions. . . . The IBM computer program Watson may play a mean game of Jeopardy, but I would not trust it to judge the creditworthiness of a fledgling local business or to build longstanding personal relationships with customers and borrowers.”³

Although Citigroup partially refuted Bernanke by hiring Watson to redesign products in its retail operations, locally present banks building on relationship banking may continue to have an edge. They need to focus on segments where information problems are the most pronounced. Parkes and Wellman (2013) argue that artificially intelligent computer programs might grasp the concept of Homo economicus—a mythical, completely rational, and self-interested agent. However, that might be quite distinct from how humans behave. For example, a game of incomplete information such as a poker game is much more difficult for computers to master compared to chess. Only in 2014 did computers learn to play a standard two-player poker game perfectly according to the Nash equilibrium. That is, the computer could match a flawless opponent without giving him any profits on the long run. Computers, however, would follow the same strategy regardless of who the opponent was. That is, they could not improve their strategy when competing with an error-prone human player.

Artificial intelligence is still grasping with dealing with incentives, information problems, and irrational human behavior. In addition, the vast data on the internet are mainly built on a cross-sectional basis. Finding a time dimension seems to be more difficult. Relationship banking that builds on long-term and informationally intense cooperation with bank customers continues to be important (e.g., information problems are pervasive in SME lending, and consequently data are hard to quantify).

IT solutions also support fast but risky expansion tactics. The Icelandic bank Landsbanki offered Icesave online savings accounts with high interest rates. It gathered €1.7 billion in its five-month presence in the Netherlands and failed shortly afterwards. Whereas banks cannot disregard IT developments and IT-generated cost savings, focusing only on cost efficiency is not enough. Banks need to use IT to increase the relationship component of their services (see Marinč, 2013).

3.4. Empowering bank customers

Bank customers increasingly want tailor-made services that suit their needs. They want to make decisions and not just follow the bank norms. Entertainment matters. Bank branches feature digital messaging, cash recyclers, or video conferencing with bank officers. The banking platforms are becoming highly interactive, offering advices through different media channels (e.g., through online video interaction with a personal banker or with artificial intelligent assistants such as Siri by Apple or Echo by Amazon). Mobile banking can offer not only balance check and account history, but also photo bill paying, discounts with merchants, or voice assistance. For example, Barclays is pursuing technology to enable customers to talk to a robot computer system to make financial transactions.

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4. Challenges for the banking industry

IT developments have expanded the markets, increased competition in banking, and resulted in several new competitors. FinTech startups are emerging, but already-established IT companies are also entering the traditional banking businesses. Peer-to-peer lenders employ IT platforms for lending in a similar way as Uber does for cars and Airbnb for accommodation. Peer-to-peer lenders such as Lending Club, Prosper, and SoFi match borrowers and lenders together. Although the sector is tiny in comparison to bank lending, it is growing quickly and doubling its size every nine months.4 Peer-to-peer lenders collect the arrangement fees and do the credit-scoring analysis primarily based on available consumer data from credit bureaus (e.g., FICO or Experian) or from the internet. Some peer-to-peer lenders are developing innovative techniques for credit scoring such as analyzing the online behavior of potential borrowers (e.g., how fast they move the mouse, how many clicks they make, etc.). The contractual features differ across peer-to-peer lenders. Some of them allow lenders to pick the borrowers, and others feature protection funds to offer some compensation for defaulted loans.

Crowdfunding startups such as Kickstarter bundle funding with selling goods that are otherwise difficult to trade (Agrawal, Catalini, and Goldfarb, 2014). Crowdfunding uses the wisdom of crowds for raising funds. Information about the demand for a product is a valuable signal of the future success of the company. Crowdfunding platforms may even exploit behavioral biases of humans, such as herding. For example, evidence shows that investors are much more eager to invest in projects that already have a high level of accumulated capital. Payments have traditionally been a lucrative business for banks. Lately, the payment landscape has been drastically reshaped, challenging traditional players: banks and credit-card providers (Visa and MasterCard). In the US, peer-to-peer money transfer is booming. Venmo, part of the PayPal company, allows for easy transfer of small amounts of cash.

Online access channels create further cost savings.

Major IT companies are joining the battle. Facebook has entered the money-transfer market. Apple Pay, Android Pay, and Google Wallet are boosting mobile payments. FinTech startups are mushrooming in mobile payments. Banks compete for their turf not only with established IT companies such as PayPal, but also with new providers such as Stripe or Square. Square provides mobile payment processing for in-person payments. Stripe, now valued at $5 billion, focuses on internet payments and has partnered with Visa. Established companies in the payment system are already raising concerns about the new competition, calling for more regulation of alternative payment providers (The Clearing House, 2015). Innovative solutions also decentralize the notion of trust. Historically, trust has been built by centralization either in banks or central banks and supported by the regulatory, supervisory, and legal system, and by government funds. Blockchain technology allows for decentralization. It uses cryptology and peer-to-peer verification to enable issuance of crypto-currencies such as Bitcoins. Although Bitcoins have suffered recently due to substantial volatility in their value and weaknesses on the sensitive points of the infrastructure (e.g., Bitcoin exchanges), the notion that trust can be established in a decentralized way is astounding. Large US banks and other financial firms are working on using blockchain technology to transfer assets other than Bitcoins without the need for the intermediary in the transaction (e.g., for cross-border money transfer and trading shares for closely held companies).

5. The road ahead for banks

It has been seen that IT developments are drastically reshaping the notion of what banks are and what they do. IT platforms for matching such as peer-to-peer lending have provided a substitute for the brokerage function of banks, particularly important in transaction banking. Automation and algorithmic decision-making based on artificial intelligence have brought further competition in transaction banking. Where should traditional banks seek their competitive advantage? Traditional banks might retain a competitive advantage in relationship banking; that is, when dealing with soft and proprietary information about their clients. Such information is gathered through long-term cooperation with clients through various products and access channels. Relationship banking alleviates information problems and deals with human incentives. In this area, banks may have (partially) retained an

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advantage over automatic IT-driven decision-making. Banks should boost their IT systems to enhance customer experience. The process of information gathering has changed and banks should put their customers to the fore.

Another area where banks have an edge is banking business with a large systemic component. Regulators and policymakers are aware that certain parts of banks are crucial for smooth operations of the real economy. Certain bank activities, such as deposit taking, cannot be left to market participants without regulation and supervision (see the structural changes promoted by the Vickers report, the Liikanen report, and the Volcker rule). Here, banks might retain their competitive advantage. Banks have better knowledge and understanding of the insurmountable regulatory framework.

Banks might still be more trusted with money and sensitive proprietary business information than the IT or FinTech companies. FinTech companies might be great innovators, but the failure rate among them is high. IT solutions allow for fast changes and pronounced risk-taking. If technology companies become further involved in banking, regulators will need to intervene to control systemic risk. Burdening regulation is the last thing that FinTech startups or companies like Google, Facebook, or Apple want. This is not to say that banks should avoid IT developments. Banks should leverage on their relationship banking business and systemically important business using novel approaches. In this respect, they should embrace IT developments. How to do so is a challenging question. The road ahead for banks is not easy, but it is certainly interesting.

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Slovenia was one of the European countries that were hit the most by the recent financial and economic crisis. It lost more than 9% of GDP between 2008 and 2013.

1. Introduction

After downturn in 2009, economy temporarily grew in 2010 and 2011, but afterwards Slovenia entered second recession, which ended only in 2014. The banks that have participated with excessive growth, after the turn down of the economy were subject to simultaneous negative effect of crisis. The economy was retracting, the share of NPL was consequently increasing rapidly, and the regulator’s requirements on capital were set higher.

2. Financial and economic crisis and Slovenian banks business model development

In 2004, Slovenia entered EU and in 2007 it adopted euro. Slovenian economy at that time was flooded with liquidity from abroad and following the model of economy of scale, the Slovenian banks propelled loan business with non-financial institutions. With debt-to-equity ratio 95% in 2008 in Slovenia, it was considerably higher than 47% - 60% in countries like Poland, Slovakia, Estonia and Czech Republic – similar economies though, but with completely different bank ownership. Economy of scale to grow lending and to acquire as much as possible market share to earn enough income also influenced the business model based on low margins.
So already during the crisis it was obvious that one could not count on margins when healing of the banking system is going to take place. In 2009, 2010 and 2011, the Slovenian banks faced first significant increase of non-performing loans (NPL), especially home-owned banks. As shown in Graph 1 above, a group of foreign-owned banks had much lower NPL ratio than average on the market although this group was heavily affected by the crises too. Also if measured in absolute terms the contribution of foreign owned banks to the volume of NPL is very small (Graph 2 above). Rise of NPLs started in financial institutions and large corporate segment, later it was transferred also to the SME (small and medium-sized enterprises) segment. At the same time, unemployment rate practically doubled from 4.7 at the end of 2008 to over 9% in 2011 (SURS 2013), therefore it was very clear that increase of NPL can be expected also in private individuals segment. Moreover, high volumes and low margins created a very high leverage of debt in companies and making them very vulnerable. With its level of development, also the capital market could not serve for raising new capital for corporates. In addition to that, there were number of companies where management started with management buyout. For many of them at that time, this seemed to be a reasonable decision because some banks were willing to finance these management buyouts. And the peak of all this was just one year before the global crises (Jemenšek 2014).

During the crisis, Slovenian banks slowly started to lose deposits as their most important source of funding. To mitigate larger run of deposits to foreign banks, home-owned banks (especially smaller ones) increased their interest rates on deposits. Consequently, that significantly increased their funding costs and the costs for all banks, although foreign banks did not follow the market with an immediate increase of liability interest rates. Suddenly the price for maintaining deposits for all banks in Slovenia was very high. Foreign owned banks at that time still had access to liquidity but also for them average price of funding increased significantly. The situation on the market started to improve after liquidation of two small local banks Probanka and Factor banka. It is important to understand that banks in Slovenia at that time could not increase interest rates on asset side as fast as increase happened on liability side. This led to additional impact on margins, which were anyhow already low in affected banks profitability and with that, their resistance to crises. In 2014 and 2015, Slovenian economy recovered achieving growth rates close to 3% annually, but there are still a lot of maco-economic imbalances, which are reflected, also in the banking sector. Slovenian banking is after economic crises again operating on quite low
levels of margins. In the situation the margins should not only enable cost coverage but should also comfort the risk, which no doubt is still going to be a challenge. Here it must be stated that the prevailing business model in Slovenian banks in last years after financial and economic crisis struck was also subject to extensive deleveraging process (Košak and Košak 2012). Although it was corresponding to typical level in industrial EU countries, if compared with other CEE countries this process in Slovenia was by far the most extensive. As described above with debt-to-equity ratio Slovenia was considerably higher than countries like Poland, Slovakia, Estonia and Czech Republic. It has been carried out in the environment of severe regulator’s capital requirements and unfavourable choice. The dilemma present with the management and paralyzing their business decisions plus their seeking for more modern business models resulted from strong public and political pressure. Public condemnation of banks and their deficient risk management clearly established the climate, where rejection of new loans was the safest tactic. On the other hand, there has been open political pressure for the banks to provide the companies with new loans. This surely can be considered as an unfavourable environment for studying and implementing of new and modern business models.

It remains a matter of academic discussion to which extent the arrears in practice in Slovenian banks is related to gradualist approach adopted with the transition in Slovenia. In the short run, such approach has proved to be less costly, but at the same time did not stimulate change in a wider sense as well in business practice, thus bringing higher costs also in the middle run. It should be wrong not to stress that the top bank management and professionals understood the message that for instance introduction of Euro would bring to further business practice in Slovenian banks. Only if we check the national central forum of banking Bančni vestnik (Journal of Banking) numerous contributions have on stressed possible consequences of common currency for Slovenian banking (Žauhar 1990, Grenko 1998, Lah and Drofenik 1998, Štiblar 1998, Svetina and Voljč 2000 and other). Their advice and warnings have been, however, only reluctantly introduced in the bank management practice. Typically, the attempt to modernise the information systems at the national level should not only enable cost margins but should also comfort the risk. That was somewhere in between the taxpayers. The taxpayers.

The project called Sigma ended with the taxpayers. The taxpayers.

There are of course several differences between business practises between home and foreign owned banks in Slovenia. Looking from a very general perception, one could also say that in foreign owned banks there was within the bank more centralised approach with more steering and approval authority on the risk side while in domestic owned banks it was more decentralised approach with more approval authority on sales side. Of course there have been also exceptions and several banks exercise business practice which was somewhere in between

Rise of NPLs started in financial institutions and large corporate segment.

biggest bank Nova Ljubljanska banka. In the second half of the 1990s, the project called Sigma ended with the collapse due to misunderstanding of the importance of this action by politics but also by the actors. It has to be stressed that the (biggest) Slovenian banks have been established through political decision trying to offer a financial spine to the Slovenian economy and to better position Slovenia as a regional economy. When in the 1990s, technologies, facts and markets became more and more complex it clearly showed that the political founders of the banks and their descendants could no more understand paths and needs of modern banking. At the same time, however, they have not been willing to loosen their control in the state owned banks.

In this respect, it is no wonder that the business model in the Slovenian banks could hardly follow the practice even of the foreign-owned banks in Slovenia, the biggest issue being risk management, which at the last financial and economic crisis corrupted the Slovenian banks’ financial statements.

The Graph 3 above depicts the ownership share by nationality in Slovenian banks. Also here, a vivid discussion about foreign acquisitions has been present for almost two decades. Being traditionally hostile to opening the public does not value better results that foreign owned entities achieve if compared to Slovenian (state) owned banks. Here historical experience of advantages that nationally owned companies would bring to the population does not give a room for the facts such as better services for the economy and population or absence of permanent costly recapitalisations now paid by the taxpayers.

3. Risk management as the most striking difference to western banking model

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and combined both models. Probably most striking are differences in managing credit risk, which might be the main reason for differences in performance of banks during the crises. First main difference before the crises between domestic owned banks and foreign owned banks we can notice already in the governance structure of risk management units and credit committees. In domestic owned banks, usually there was no clear segregation between risk management and sales units. Function of risk credit management was usually limited to analyses and rating of clients (credit). Risk management (rating department) did not have directly votes on the credit committee or could be easily over voted. By doing analyses and recommendations, they were only providing recommendations to credit committee. In foreign owned banks already before the crises, risk management had an active role and voting rights in credit committees. Even more, usually sales department alone did not have any or very had limited approval authority.

Next difference is that in foreign owned banks risk management has also had very important strategic function. Through preparation of credit policies, risk management can actively steer the bank and influence overall to banks portfolio of loans. Such credit policy normally contains:
- Client rating models with 5 to more than 20 grades with a clear definition up to which grade bank can be exposed to the client on unsecured, partially secured, secured bases or exposure is not possible;
- Targeted industries where bank wants to be exposed and which industries are not preferable
- A clear set of limits on the client, product and on portfolio level;
- Maximum rate for deviation to credit policy rules.

In addition to credit policies for the Retail segment, usually also scoring models were developed by risk management units. Although these models were not easy to develop especially because of relative small samples of retail portfolios in Slovenia, they still served its purpose and were offering at least general guidelines for loan approvals and possibilities for steering portfolios. Exceptions to policy and models were possible but were still subject to approval on credit committee where again risk management and sales had both voting rights.

In contrary to this practise in foreign owned banks in domestic owned banks much more authority with credit approval was given to sales. It started already with approval authority on the branch level and went up to the highest level credit committees where again risk management and sales had both voting rights.

Graph 3: Comparative share of foreign-owned banks in CEE countries* **

Graph 4: Coverage ratios by type of bank

* excluding OTP, ** % of total assets
Source: Raiffeisen 2014

Q4 14 contains data until November 2014.
Source: Bank of Slovenia.
it comes to the credit committee this responsibility is already shared and can easily happen that in the times of expansion, when everybody is keen to expand the business, very dangerous if there is nobody there to step on the brake.

Still high level of non-performing loans and low credit demand from creditworthy firms may have implications for the viability of the banking sector. Although confidence in the banking sector has somehow returned, credit growth remains negative and the banks’ profitability and viability can be further enhanced. Non-performing loans to non-financial corporations are still higher than before the crisis. Continued weakness in the cash flow capacity of the firms constrains lending opportunities and poses further risks to the asset quality and profitability of the banking sector (European commission 2015).

**4. Concluding remarks – what changes in environment would support business model development?**

A high level of state involvement combined with weak corporate governance distorts resource allocation, and hampers investment and growth. The state is the largest employer, asset manager and corporate debtor in Slovenia. The state involvement in the economy has had significant fiscal and economic implications for Slovenia since the onset of the crisis. State-owned entities have underperformed compared to their privately owned peers in terms of productivity and profitability at both national and regional level. Further disentangling the complex network of state-owned enterprises would help mitigate future risks to public finances. Slovenia could take advantage from the current positive market momentum to disinvest in selected state-owned enterprises. Transparent readiness to do this would assist in attracting foreign direct investment and improving the economic outlook. Sound management and enhanced corporate governance policies for state-owned assets can help mitigate the risks of future state support (European Commission 2015).

Although capital increase and selling of non-performing assets are very effective way to strengthen balance sheets, both can be achieved very difficult in time of crisis. For selling of non-performing assets banks have to have a coverage ratio, which is high enough to cover loses or high discounts which usually appear at NPL sale.

As seen in the Graph 4 above in 2013 state owned banks received a lot of capital which enabled them to book additional provisions and to improve coverage ratio. Apart from that, just capital buffers alone will not improve bank business model. When bank starts with the process of restructuring and implementation of a new business model, risk-weighted asset optimisation naturally is the first to look at to use the capital efficiently. RWA optimization are steps to improve the coverage and granularity in risk models, the quality of data entered into models, the eligibility of collateral, and improvements in RWA-relevant processes (Babel et al., 2012). Because equity capital is the most expensive source of financing for banks, main goal is to set risk weights with the purpose of reducing the quantity of capital that is needed to support a given level and structure of total assets (Beltratti and Paladino, 2013).

It is important to create and implement a strategy of a new business model, which will be successful in the future. Main pillars of solid business model have to be stability, effectiveness and profitability. The most important measures the bank has to make to achieve these goals are to reach solid profitability with adequate pricing, optimization of risk-weighted assets (RWA), optimization of liquidity, management of bad assets and cost optimisation.

The difference in the future might be again; on how strong these investors will be from the equity and liquidity investments in the country and how much risk they will be willing to take on the books of their banks. Today all banks (also with a big influence of regulators) are more or less going in the same direction toward modern risk management practices:

- more precise rating models with PDs and LGDs attached to the ratings are in place;
- there is a lot of attention on RWA consumption and ROE;
- risk based pricing is more and more important;
- loan portfolios are steered and actively managed according to strategies and economic developments;
- there is a lot of modelling, KPI tracking, forecasting, and risk diversification and volatility tracking of portfolios.

All banks in Slovenia should reduce their dependence from the interest income. Non-interest income growth
and cost reduction should be a driver for substantial P&L improvement. Home owned banks have here still a competitive advantage because of their large base of private individual clients. Lower risk in this segment and a potential for non-interest income proved to be a very good during the crises years but also a very good potential for the future.

Optimisation of branch network and a shift toward modern sales channels is needed to reduce costs and increase efficiency. Challenge for all banks in the future will be also how to compete with other providers of financial services. There are number of services, which don’t require banking licence and can be provided by non-banking institutions, which are not under supervision of banking authorities. While collecting deposits will probably always require a banking licence, almost all other services already today can be done without it. Banks are facing higher and higher requirements from regulators along with more pressure of capital requirements, while other providers of financial services are here out of the scope. Of course, after a severe crisis it is welcomed that banks with now much higher equity ratios are much more resilient to the crises but on the other hand, this makes banks much less attractive for investor because of much lower potential return on equity, which is required.

At the same time, one can expect profound changes in ownership of Slovenian banks in the future. On one hand there are a lot of investors/banks especially from neighbouring countries which were present in Slovenia for the last ten or fifteen years which did or would like to withdraw from the market, after suffering losses out of economic crises. On the other hand, there are new investors especially from non-banking sector/funds, which already did or are interested to enter the market by acquisition of existing banks. These changes could lead to big changes like consolidation of the market changes of the strategies or business models of these banks ...

It is after the crises therefore even more important that banks reach higher interest margins and higher non-interest income to improve their profitability. Consolidation and cost reduction will also help but without sustainable improvement on income on longer term, banks will not be able to generate enough profit. Moreover, in the times when banks are not the most attractive investment opportunity retained profits are a very important generator of capital.

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CHALLENGE FOR SLOVENIAN BANKS: ARE STRATEGIC GOALS ACHIEVABLE AND HOW?

We have prepared a number of simulations that enable us to define a sustainable set of conditions under which the strategic goals of the Slovenian banks can be achieved. The results obtained by our stochastic simulation model (SloBankMod) show that the goals are achievable under the scenario of a favourable interest rate environment and moderate gross loans growth. Furthermore, the quality of the bank portfolios plays a crucial role. As these assumptions might be difficult to meet, the results can be interpreted as a warning signal to the Slovenian banks that to provide sustainable returns for the investors, addressing income risk exposure by thinking beyond traditional banking activities and reinvigorating existing business models might be necessary.

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1. Introduction

By applying our stochastic simulation model (SloBankMod), we have prepared a number of simulations of bank balance sheets and income statements. The results of our analysis show that in order to meet the target RoE values in the upcoming years, high volumes of new financing should be provided to the top rated clients. These assumptions might be difficult to meet, especially in the case of a less favourable macroeconomic environment. Therefore, in order to generate sufficient returns to repay the taxpayers, banks need to grasp the scope of the looming changes that will shape the future industry trends in order to be able to respond accordingly. As trust and good reputation are the strongest advantages of banks over other financial services providers – even though this might sound controversial in the light of the recent events – they are expected to become the central parts of the bank’s value.
To regain stakeholder trust, strong ethical standards are a necessary precondition to enable the banks to communicate integrity, security, and quality of service.

We start the paper with an overview of the EU state aid crisis rules for banks and their application in the case of the Slovenian banking system. Then we present SloBankMod - a stochastic model that can be used for a simulation of a bank’s operations with the purpose to define a sustainable set of conditions and constraints under which a bank can achieve its medium-term goals and the results obtained in our analysis. We conclude the paper with an overview of the megatrends that will profoundly affect the future of the banking industry, suggesting that in order to provide sustainable returns for investors, addressing income risk exposure by thinking beyond traditional banking activities and reinvigorating business models of the Slovenian banks, might be necessary.

2. EU state aid crisis rules for banks

Since the beginning of the latest financial crisis, around 25% of the European banking sector has received financial aid subject to the EU State aid rules. 112 banking institutions in different EU Member States have received a total of 1959 billion euros in financial support from their governments (Adamczyk and Windisch, 2015, p. 1). In December 2013, the European Commission approved restructuring plans for two Slovenian banks: Nova Ljubljanska Banka and Nova Kreditna Banka Maribor. In August 2014, also the restructuring plan for the third Slovenian bank, Abanka Vipa, was approved, followed by Banka Celje restructuring plan approval in December 2014. The measures for assessing the viability of the restructuring plans of the Slovenian banks were in line with the new requirements for state aid crisis rules for banks adopted by the European Commission in August 2013 (European Commission, 2013a). Stricter rules have been put in place years after the beginning of the financial crisis that leave Member States with far less flexibility in banking stabilisation than before. The new rules can be summarised in the following points (European Commission, 2013b):

• As the bank that requires state aid needs to be able to ensure that it will become profitable in the long term, a convincing restructuring plan that shows that the bank’s viability can be restored needs to be prepared.

• Distribution of the burden of bank losses is necessary. Shareholders and subordinated debtholders are to participate in bank losses and recapitalisation process, before public funds are used.

• Measures to prevent distortion of competition need to be taken.

The overarching goal in assessing bank restructuring plan is financial stability. The key element of the new state aid crisis rules for banks is therefore the restructuring plan that demonstrates that the bank is viable in the long-term and that it will not need additional state aid in the future. The bank is expected to become profitable in five years’ time after the approval of the state aid and as profitability needs to be sustainable also the reduction of risk exposure is necessary. In addition to the restructuring plan, the new business strategy that ensures bank long-term profitability is captured in the form of binding commitments. As well as achieving long-term viability of the bank that will not require further assistance, a restructuring plan and the binding commitments are put in place in order to ensure a burden-sharing agreement minimising taxpayer handout and to prevent distortion in competition. Monitoring trustees, approved and appointed by the European Commission, monitor compliance with the conditions and obligations laid down in the restructuring plan.

3. Analysis: Can the target RoE values be met?

As today the binding commitments are an important element that daily influences the operations of an important part of the Slovenian banking sector, we have prepared a number of simulations of bank balance sheets for the period 2015-2018 in order to test under which conditions the binding commitments can be met. In our analysis we focus on the profitability goals that are one of the core elements of the restructuring plans of Slovenian banks, assuming that RoE targets for the period 2015-2018 are 7%, 8%, 9% and 10% respectively. Our analysis shows that meeting the agreed RoE targets in the following years is possible, provided that the
following conditions are met:

- the average growth of gross loans to the non-banking sector of 2.7% (with average growth of gross loans to large corporations and SMEs of 5.1% and 8.7% respectively and average decrease in gross loans to foreigner borrowers of 20%);
- the average effective asset interest rate does not fall below 2.9%;
- the average effective liability interest rate is not higher than 1.0%;
- the interest margin (net interest over assets) during the entire observed period is not lower than 2.1%;
- the average value (for every year in the observed period) of the non-performing exposures remaining on the balance sheet is not lower than 15%.

In the graph in Graph 1 the expected values of the RoE in the upcoming years under the above described scenario, including one and two standard error intervals around the mean value, are presented. As presented in the graph, the mean expected RoE value in 2015 is 4.8% and is expected to steadily increase to 10% in 2018. Still, there is a 33% chance that RoE value in 2018 is 8% or less and a 5% chance that it is no greater than 6.7%.

Table 1: The average rating structure of new lending 2015-2018

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<tr>
<td>A</td>
<td>62%</td>
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<tr>
<td>B</td>
<td>77%</td>
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<td>C</td>
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Source: Own calculations

Although the assumptions in our analysis seem reasonable and realistic, a closer look at the structure of new financing reveals that the average structure of the new loans in the period between 2015 and 2018 is to be strictly limited to the high rated customers. The average structure of new lending according to the rating class is presented in Table 1. The interpretation of the data in Table 1 is that one million euro higher gross loans in the bank balance-sheet structure means that the bank will give 1.55 million euro in new loans and resolve 0.55 million euro of non-performing assets. And even if all the assumptions are fulfilled, the share of the NPLs in the bank’s total assets will remain almost unchanged during the period 2015-2018 due to the migration of rating classes. As the current level of NPLs is in the long run unsustainable, banks would need to be more aggressive in offering new loans to top rated clients which makes this scenario more demanding. It remains questionable if there are enough A- and B-rated clients, willing to finance investments with new borrowing from the Slovenian banks. Especially, taking into account that the corporate leverage in Slovenia, measured as the debt-to-equity ratio, is already relatively high. Therefore, the target RoE ratios might be difficult to meet.

High RoE targets in banking in the pre-crisis years were achieved as the banks were operating with historical-
ly low levels of equity. As extremely thin equity cushions are one of the triggers of the latest financial crisis\(^8\), the post-crisis regulation demands higher equity levels. Therefore, single digit numbers of RoE in the coming years are more likely, as a return to RoE in the mid-teens is unrealistic and unjustified (PWC, 2012, p. 4).

Also the data show that the RoE values of the European banks are still far from pre-crisis levels. A comparison of the RoE values from the binding commitments of the Slovenian banks to the average RoE values in the EU banking sector shows that the target values are set relatively high. The average RoE value of the EU banks in 2014 was 3.6%, which is the highest value since the beginning of the crisis. Furthermore, size seems to play an important role, as the biggest 15 banks in the EU performed better than other banks. The average value of RoE for the biggest EU banks was 4.7%, while the other banks had an average value of RoE 2.9%. The vast majority (84.7%) of the EU banks had RoE below 8% in 2014 (EBA, 2015, p. 55-56).

The average return on equity of Slovenian banks in 2014 was negative (-1.6%) and is expected to stay at low levels in this and in the forthcoming years - 1.3% in 2015 and 3.7% in 2016 (Dellolitte, 2014, p. 13).

As the RoE of EU banks is in many cases insufficient to cover the cost of equity (CoE), it remains questionable if the existing business models are sustainable. Although the banking industry is optimistic about expected return on equity, its values are still a long way from covering the cost of capital (Ernst&Young, 2015) – even though the EU average CoE has decreased from 14.6% in 2011 to 9.15% in 2015 (EBA, 2015, p. 57).

In order to manage their income risk exposures, banks need to focus on what they should be doing in order to provide sufficient returns to repay taxpayers and generate sustainable returns for future investors. It is, therefore, necessary that banks face the challenge and rethink their business models.

4. Solution: reinvigoration of the existing business models

In the recent years, a large part of the Slovenian banking sector has received state aid.

Aside from dealing with the legacy of the recent financial crisis in the form of the remaining high values of non-performing loans, while adapting to the recent changes in the regulation, the European banks today are faced with megatrends that will profoundly affect the future of the banking industry (Mersch, 2015). Banks need to do more than adapt to the changes in monetary policy and regulation framework - they need to be able to understand the forthcoming changes that will shape the future industry trends and be able to respond accordingly.

Due to the current and expected changes in technology and customer behaviour, the current business models are most likely unsuitable for the future. Today, aside from the insured deposits, all traditionally exclusive banking activities can also be performed by other (financial) companies. As the barriers to entry into the industry are lower, digital technology enables other institutions to perform the same functions. Less regulated shadowbanking institutions and peer-to-peer lending is becoming increasingly important and with an evolving era of digital technology in the field of internet and mobile banking, the new competition is entering traditionally banking markets. For example, in 2015, Atom, the first digital bank in the UK is to start its operations.

Common response in the industry is a focus on cost reduction. This is also one of the main drivers of the consolidation of the banking sector in Europe that is widely supported and expected to increase cost efficiency. But as by 2025 the economy is expected to easily function without traditional banks (PWC, 2012), it is crucial that – apart from cost efficiency – banks adapt to the changing environment, think beyond the traditional banking activities (liquidity transformation, financial intermediation in payment systems) and invest in the long-term development. Investing to keep up with the technology development and to keep the core employees might be costly, but ensures a possibility of long-term survival.

Challenges seem even more difficult to solve in the case of the Slovenian banks. Small regional banks have to accept that the competition today is not only coming from the branches of the big banking groups, but that the shadow banking and other alternative sources of financing are growing stronger all around the world. Therefore, it is necessary to clearly communicate advantages over competition - flexibility and responsiveness in comparison to big banks and safety and trust towards less

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\(^8\) As the former Chairman of the Federal Reserve, Alan Greenspan, puts it: “If average bank capital in 2008 had been, say, 20 or even 30 per cent of assets (instead of the recent levels of 10 to 11 per cent), serial debt default contagion would arguably never have been triggered” (Greenspan, 2015).
Box 1. SloBankMod - Model for the Slovenian banking system balance-sheet simulation

SloBankMod is a stochastic simulation model, which captures the basic interactions between bank’s balance sheet and income statement (Graph 1). The model is a powerful tool for a bank’s policy decisions as it stimulates sustainable convergence and determines a reasonable time horizon to achieve the bank’s strategic goals.

The objective of the SloBankMod model is a simulation of a bank’s operations with a purpose to define sustainable set of conditions/constraints under which a bank can achieve its medium-term goals (usually expressed in terms of ROE).

Estimation of interest income in SloBankMod is based upon interest rate and gross loans growth assumptions where both variables (i.e. interest rate and gross loans growth) are stochastic variables with normal and triangular distribution. For the calculation of impairments the quality of the bank’s credit portfolio is taken into account, enabling user to follow dynamics of the portfolio’s rating structure dynamics. All these means that SloBankMod is a very useful advanced tool for estimation and management of income risk.

The model enables us to build different scenarios and to test under which assumptions and constrains (including a time path for the consolidation of the bank) the strategic goals can be met. To obtain the above-mentioned results, virtually every important element of the balance sheet and income statement is calculated or estimated including:

- Loans to retail customers (households, sole proprietors),
- Loans to non-financial corporations (large corporations, SMEs),
- Financial assets / securities,
- Liabilities to retail customers (households, sole proprietors),
- Liabilities to non-financial corporations (large corporations, SMEs),
- Equity,
- Interest and non-interest income,
- Net impairments and provisioning, and
- Different bank performance indicators.

Graph 2: Stochastic simulation model SloBankMod

We have used the model to perform simulations of the balance sheets and income statements of Slovenian banking system for the period 2015–2018. The data for the base year (2014) are derived from the Financial Stability Review (Bank of Slovenia, 2015). The assumptions on which the simulations are based were designed to enable as to find a set of conditions that would enable banks to meet target RoE values as defined in Chapter 3. Therefore, the goal of our research was to find conditions under which the binding commitments can be met and not to forecast the future development of banks’ financial statements.
regulated financial institutions – to the bank investors and customers. Trust and good reputation are expected to become the central parts of the bank’s value, as they are the strongest advantage of the banks over other financial services providers and could help them keep at least a part of their market share. Establishing trust as a core bank value may seem difficult, as today – after the events of the latest financial crisis – only 30% of the Europeans trust their banks (Menon, 2015). But the challenge needs to be addressed and to ensure the future of banking, it is crucial to restore a culture of trust. To regain stakeholder trust, strong ethical standards are necessary to enable banks to communicate integrity, security and quality of service. Even though the new regulatory framework introduces new rules on bank governance and remuneration put in place with the aim to curb excessive risk-taking, the commitment to developing and maintaining a culture of trust and ethics needs to come from the industry. And the industry has already started to do so. The Deutsche Bank defined their culture that ensures that they are “a responsible partner that serves the wider interests of society” as one of the five key elements of its Strategy 2015+ (The Deutsche Bank, 2015). In the UK the Banking Standards Review Council, an independent body that promotes “high standards of behaviour and competence across the UK banking industry” has been established. It aims to restore public trust in this vitally important sector of the economy and UK’s biggest banks have already joined to support the initiative (Banking standards board, 2015). Also the Association of Banks in Singapore has issued the industry guidelines. With this self-regulatory approach, the member banks commit to treating their customers “fairly and reasonably” (The Association of Banks in Singapore, 2015).

As social accountability has become a new norm, it is not sufficient to act in accordance with regulations and provide shareholder returns. Wider goals need to be faced. Supplementary to the maximisation of shareholder value also meeting the needs of other stakeholders needs to be made explicit (Walker, 2014). By providing social accountability and meeting stakeholder needs, the long-term shareholder value can ultimately be built.

Banks would need to be more aggressive in offering new loans to top rated clients.

5. Conclusion

In the paper, we have presented the results of the stochastic simulation model (SloBankMod) that captures the interactions between a bank’s balance sheet and income statement. The objective of the simulations was to define a sustainable set of conditions/constrains under which a bank can achieve its medium-term goals, expressed as the target value of Return on Equity (RoE).

We show that the target RoE values for the Slovenian banks are achievable under a scenario of a favourable interest rate environment and moderate gross loans growth. Furthermore, the quality of the bank portfolio plays a crucial role. To ensure that the target returns are met, large part of new financing has to be provided to customers with a high credit rating. As these assumptions might be difficult to meet, especially in the case of a less favourable macroeconomic environment, the modelling results can also be understood as a warning signal to the Slovenian banks that to provide sustainable returns for the investors, addressing their income risk exposure by thinking beyond traditional banking activities and re-thinking their business models might be necessary.

The task seems more difficult as at the same time the banks have to adapt to the regulatory changes, deal with the legacy of the recent financial crisis in the form of non- and underperforming assets, keep the pace in innovation with their competitors and provide expected returns to their shareholders. But as trust and good reputation are expected to become the core elements of a bank’s value, as they are the strongest advantage of banks over other financial service providers and could help them keep at least a part of their market share, this challenge needs to be addressed to ensure the future of banking.

REFERENCES


SELECTED MACROECONOMIC INDICATORS

Luka Žakelj*

**Figure 1: Recovery clock – GDP**

![GDP recovery clock](image1)

Source: Eurostat, Bank of Slovenia estimates and calculations.

**Figure 2: Recovery clock – exports of goods and services**

![Exports recovery clock](image2)

Source: Eurostat, Bank of Slovenia estimates and calculations.

**Figure 3: Recovery clock – final consumption of households and NPISH**

![Final Consumption recovery clock](image3)

Source: Eurostat, Bank of Slovenia estimates and calculations.

**Figure 4: Recovery clock – final consumption of general government**

![General Government recovery clock](image4)

Source: Eurostat, Bank of Slovenia estimates and calculations.

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*Luka Žakelj, Analysis and research department, Bank of Slovenia*
Figure 5: Recovery clock – gross fixed capital formation

Seasonally and working days adjusted volume indices, Q2 2008 = 100

Source: Eurostat, Bank of Slovenia estimates and calculations.

Figure 6: Recovery clock – total employment

Seasonally and working days adjusted indices, Q2 2008 = 100

Source: Eurostat, Bank of Slovenia estimates and calculations.

Figure 7: Recovery clock – total wage bill

Seasonally and working days adjusted nominal indices, Q2 2008 = 100

Source: Eurostat, Bank of Slovenia estimates and calculations.

Figure 8: Recovery clock – general government debt

% of GDP

Source: Eurostat, SORS, Bank of Slovenia estimates and calculations.
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BANKING SECTOR INDICATORS

Franc Remšak*

Figure 1: Credit to nonfinancial enterprises and households (annual growth in %)

Source: ECB Statistical Data Warehouse (http://sdw.ecb.europa.eu)

Figure 2: Comparison of the EURIBOR and ECB refinancing rate (in %)

Source: ECB, Bank of Slovenia

Figure 3: Lending interest rates for corporates in Slovenia and in the euro area for loans of up to EUR 1 million (in %)

Source: ECB, Bank of Slovenia

Figure 4: Bank Nonperforming Loans to Total Loans (in %)

Source: IMF, Financial Soundness Indicators, April 2015 http://fsi.imf.org/fsitables.aspx (See Notes under “Table 3. Bank Nonperforming Loans to Total Loans”. See also actual numbers in Table 3.)

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STATISTICAL APPENDIX

Figure 5: Non-performing claims (more than 90 days in arrears), Slovenian banking system

Source: Bank of Slovenia

Figure 6: Breakdown of the Slovenian banking system’s funding (in %)

Source: Bank of Slovenia

Figure 7: Interest rates on household deposits of more than 1 year in Slovenia and in Euro area (in %)

Source: ECB, Bank of Slovenia

Figure 8: Ratio of loans to non-banking sectors to deposits by non-banking sectors (in %)

Source: ECB Statistical Data Warehouse (SDW)
Figure 9: Capital adequacy ratio in Slovenia compared with the EU, figures by bank group on a consolidated basis (in %).

Source: ECB (SDW), Bank of Slovenia; Note: The last available data for EU is Jun. 2014. The figures for the small domestic banks do not include the two banks undergoing the orderly wind-down process.

Figure 10: Tier 1 capital ratio in Slovenia compared with the EU, figures by bank group on a consolidated basis (in %).

Source: ECB, Source: ECB (SDW), Bank of Slovenia, The last available data for EU is Jun. 2014. The figures for the small domestic banks do not include the two banks undergoing the orderly wind-down process.

Figure 11: Net interest margin in EU member states (in %).

Source: Bank of Slovenia, ECB, Statistics on Consolidated Banking Data (Domestic banking groups and stand alone banks, foreign (EU and non-EU) controlled subsidiaries and foreign (EU and non-EU) controlled branches), October 2015

Figure 12: Return on equity in EMU member states (in %).

Source: Bank of Slovenia, ECB, Statistics on Consolidated Banking Data (Domestic banking groups and stand alone banks, foreign (EU and non-EU) controlled subsidiaries and foreign (EU and non-EU) controlled branches), October 2015

Note: ROE for SI banking system in August 2015 is calculated on solo basis.
Figure 1: Total pre-tax profit and loss of non-financial corporation in Slovenia in EUR billion

<table>
<thead>
<tr>
<th>Year</th>
<th>Total profit-loss</th>
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<tr>
<td>2014</td>
<td>3.3</td>
<td>2.2</td>
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</table>

Source: AJPES, Bank of Slovenia calculation

Figure 2: Number of bankruptcy proceedings initiated against firms in Slovenia

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<th>Non-financial corporations</th>
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<td>2008</td>
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<td>199</td>
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<tr>
<td>2009</td>
<td>242</td>
<td>436</td>
</tr>
<tr>
<td>2010</td>
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<td>587</td>
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<tr>
<td>2011</td>
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<tr>
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</tr>
<tr>
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<td>1314</td>
<td>874</td>
</tr>
<tr>
<td>2014</td>
<td>1122</td>
<td>444</td>
</tr>
</tbody>
</table>

Source: AJPES, Bank of Slovenia, Supreme Court

Figure 3: Leverage by sector in Slovenia (in %)

Source: AJPES, Bank of Slovenia calculation

Figure 4: Ratio of net financial liabilities to EBITDA by sector in Slovenia (in number of years)

Source: AJPES, Bank of Slovenia calculation

Note: Leverage is calculated as percentage debt-to-equity ratio

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