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LOAN GROWTH IN BANKS: ORIGINS AND CONSEQUENCES

Introduction

After the costly lesson of the international financial system near-collapse between 2007–2009, the banking community has been returning to the traditional view that credit risk remains one of the most crucial risks that financial institutions have to cope with. As Quagliariello (2007) stresses, “credit risk is still the main source of instability for most banks” (p. 120).

Within credit risk, there are numerous issues that are studied in the literature, including asset quality, loan loss reserve policies and quantitative credit risk management tools. Loan growth is a crude measure of credit risk, but its role in generating subsequent non-performing loans is indisputable. Rapid lending expansion in the US mortgage sector has recently fed into the financial crisis, even if a prime role has also been played by advanced financial instruments, exploiting underlying pools of housing loans. Without the US banks’ willingness to rapidly expand loan portfolios onto new, previously unknown clients, the crisis would probably never occur. Such overaggressive growth onto new client bases is in opposition to the old-school view on credit granting, summarised by Schumpeter (1939): “the banker must not only know what the transaction is which he is asked to finance and how it is likely to turn out but he must also know the customer, his business and even his private habits and get, by frequently ‘talking things over with him’ a clear picture of the situation” (p. 116). Modern loan

growth may not rely on such detailed analyses of individual loans, however it should be studied as to its potential detrimental effect upon systemic bank risk.

This article aims to illustrate recent advances in loan growth literature, including loan growth origins and motivations, links between loan growth, risk and the business cycle and the role of loan pricing in rewarding credit risk taken by banks.

1. Origins and motivations of loan growth

Loan growth is the most natural part of every bank's activities, while remaining the most pronounced vulnerability area. This is especially the case on developed markets, where the degree of market saturation is high and relatively few (if any) good quality customers are absent from the banking system. The situation on developing markets may differ, where bank expansion onto a new clientele may boost credit quality, if bank saturation had been weak beforehand.

In general, loan portfolios may expand in two main ways, through organic growth and through mergers and acquisitions (m&a's). Both of these forms carry associated risks and benefits. Organic growth, seen as a natural expansion of the credit portfolio ("internal growth"), is slower but remains under larger control of a bank's credit risk policies and risk management tools. In addition, being aware of an increased degree of risk due to rapid loan growth, banks may decide to create some loan loss reserves *ex ante*, to account for more likely losses in the future. Boosting loans through m&a's ("external growth") implies a much accelerated process in terms of loan volumes, alongside considerably diminished credit risk control. Despite a detailed due diligence process preceding all m&a's, the final true quality of the acquired credit portfolio is revealed only after the transaction has taken place. As a result, under m&a's, all credit risk management tools may be applied *ex post* only, forcing the acquiring banks to create additional reserves after the transaction has taken place.

In contrast to credit expansion through m&a's, internal loan growth may be spurred by various factors. In their empirical analysis of loan growth effects on bank risk, Foos et al. (2010) study diverse sources of loan growth. It may be caused by macroeconomic incentives (such as economic growth or monetary policy) and bank specific factors, including new lending opportunities (e.g. new loan products, lending channels or lending segments) and new geographical markets.

Another crucial element determining loan growth ratios but frequently not considered explicitly, is the managerial drive to rapidly expand lending. This drive is in most cases spurred by the above macroeconomic or bank specific factors, but may additionally (or uniquely) be caused by other reasons. These may comprise shareholder pressure to achieve high profitability, and personal managerial goals such as: market reputation for revenue-generating abilities, boosting future job prospects, or empire-building elements, considered e.g. by Rajan (1994). Many researchers stipulate that loan growth increases risk, very few consider the underlying rationale for rapid lending growth, apart from moral hazard considerations.

Such internally-driven rationale underlying loan growth, in separation from business cycle influences, is studied by Berger and Udell (2004). Their “institutional memory hypothesis” linked to loan growth presumes that credit standards within banks ease with time that elapsed since the institution last experienced a bad loan crisis. This may result from a decreased fraction of experienced loan officers, as new officers, especially in the expansion phases, are being hired continuously. In addition, even experienced officers may loosen their credit evaluation standards, as the lessons learnt from previous credit problems fade with time and herding effects from an enthusiastic, growing market affect their behaviour. Berger and Udell (2004) confirm their institutional memory hypothesis empirically, using data from US banks from 1980–2000. Controlling for business cycle effects on loan growth and other supply and demand factors influencing it, the authors demonstrate that credit standards ease and additional loans are approved as more time passes since the last NPL crisis. As a result, loan growth should not be associated with business cycle and herding effects only, due to the fact that the banks’ internal behaviour may influence their credit cycle significantly and reinforce procyclical lending patterns.

Some authors indicate that loan growth should not depend on external conditions, such as business cycle phases, but that it should be a function of borrower quality. Rajan (1994) claims that in a rational, profit maximising world, banks should lend only to borrowers who present positive NPV projects. As a result, all loan growth should stem uniquely from changes in the situation of borrowers and not external ‘supply’ conditions, such as e.g. a desired level of credit expansion by banks. This seems to go against the usual practice observed among financial institutions, which appear to increase credit supply in concordance with their internal goals rather than as a function of improved quality of their borrowers.

Recent experiences with sub-prime mortgages in the US explicitly prove that point, as waves of new loans appeared due to aggressive growth targets of banks rather than improved quality of sub-prime clients.¹ As a result, banks are suspected by Rajan (1994) to go clearly against the rational profit-maximising rule. They fund negative NPV projects during business cycle booms and reject funding of positive NPV projects in credit contraction times. The reason for this is the short-sightedness of bank managers, who besides an earnings maximisation are also concerned about the stock and labour market perceptions of their abilities, i.e. their reputation. Bank managers may be tempted to manipulate earnings in such a way as to create a better picture of the bank's credit policy and loan portfolio, e.g. through rapid loan growth resulting in high earnings. Inevitable losses take more time to materialise. The management plans on realising these losses during the next overall banking sector downturn, as "a bank's reputation is less sensitive to poor earnings when other banks admit to poor earnings" (p. 402). In addition, Rajan suspects that banks may to a certain extent coordinate their credit policy tightening and lending booms. This may demonstrate that in fact the credit cycles, including these in loan growth, are not external conditions under which banks suffer, but in fact may be partially fuelled by their own policies.

2. Risk effects of loan growth and its business cycle relations

Expanding a loan portfolio in a fully saturated banking environment demands significant effort, but its effect on bank risk is viewed by many researchers as negative. Foos et al. (2010) indicate that if "new loans are granted to borrowers that were previously rejected, (...) unknown or non-existent, or that ask for too low loan rates or too little collateral relative to their credit quality" then as a result "loan growth may have adverse effects on bank risk" (p. 2929). A similar assumption on the relation between loan growth and risk is made by numerous authors, including Berger and Udell (2004), which – referring to the US financial institutions – state that "an increase in lending corresponds quite closely with the concept of an easing of lending standards" (p. 472). In their analysis of problem loans, Salas and Saurina (2002) include rate of credit growth as one of the

¹ The infamous NINJA clientele (No Income, No Job, No Assets) represented an important pool of new customers to US banks with weak prospects for future repayment. In Rajan's model these clients would not find their way into the banking system at all.

main drivers of problem loans, concluding from the literature that “a rapid credit expansion is considered one of the most important causes of problem loans” (p. 209–210). Similarly, according to Hardy and Pazarbasioglu (1999) cases of severe banking system distress are often preceded by especially rapid credit expansion.

The direct relation between loan growth and risk is empirically proven by Foos et al. (2010). This analysis uses a very large and diversified sample of over 16,000 individual banks in the period 1997–2005, from 16 developed countries. The authors provide strong evidence that, on an individual bank level, current loan growth leads to a peak in loan loss provisions three years later and causes a decrease in relative- and risk adjusted interest income. This implies that loan growth is strongly positively related to bank risk, but that the negative effects of this risk materialise three years later. In addition, the results prove that new loans on developed markets are granted at the expense of lower margins, although the new clients are possibly more risky than the old customer base. Last but not least, loan portfolio expansion is demonstrated to have a negative effect on bank capital ratios, boosting bank risk even further.

A link between loan growth and problem loans on developed markets is empirically verified by Salas and Saurina (2002). Determinants of problems loans are examined here from both the macroeconomic (business cycle) and microeconomic (individual bank) perspective. This dynamic panel data model demonstrates that the level of problem loans in individual banks is determined by macro- and microeconomic factors, such as loan growth. Controlling for macroeconomic environment, excessive loan growth policies bring about an increase in problem loans with a time lag of three years. In addition, more aggressive (lower) interest margins may cause an increase in problem loans in the future. Both of these results are similar to those found by Foos et al. (2010), who used a different time period and bank sample. This indicates that loan growth may be targeted at lower quality borrowers and that these risky clients are not charged enough for their higher risk levels. The negative results of such policies become visible in a three year period after loan granting.

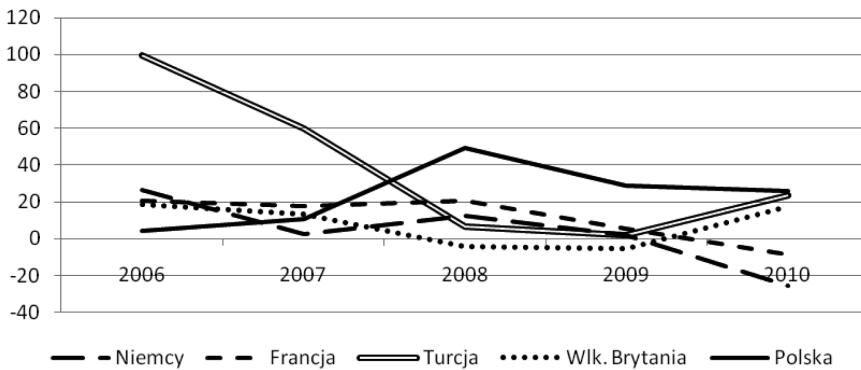
On the other hand, rapid loan growth on emerging markets, apart from the underlying macroeconomic risk, does not necessarily translate into a higher credit risk and in some cases may even diminish it. Cottarelli et al. (2005) analyse credit growth in 24 countries of Central and Eastern Europe and the Balkans in the period 1992–2002. Their main goal is to assess whether the sometimes rapid

lending expansion reflects a structural financial deepening benefitting these economies or if it constitutes a credit boom dangerous to the stability of the banking system. The main reference point is the relation between loans and GDP in industrialised countries, which defines an equilibrium point that is subsequently compared to the developments on Central and East European markets. In addition, countries with a track record of banking system crises are included to mark potential pitfalls in credit expansion levels. The analysis shows that despite seemingly high loan growth rates (up to 5% of GDP) they remain conservative in relation to macroeconomic fundamentals and are only converging towards the equilibrium derived from the analysis of mature markets. The speed of this convergence is well below levels identified in credit crises experienced in other countries.

Similar conclusions, emphasising no adverse effects of loan growth on developing markets, are reached by Kraft and Jankov (2005) in their study of Croatian lending booms. Although the first lending expansion of 1996–1998 has led to a banking crisis, no such serious symptoms have been seen after 2000, even though a connection between rapid loan growth and credit quality deterioration can be established. The authors identify main variables useful in predicting bank failures, namely the deposit interest rate, liquidity and credit growth. Credit growth turns out to be the least significant of the three and only in conjunction with weak liquidity and overpaying for deposits does it seriously influence the failure probability in the Croatian model. In addition, a rapid credit expansion in Croatia has caused a much needed financial deepening to the local financial market, which – before the boom – could not match up to credit requirements of an industrialised and continuously growing economy. Therefore, main reasons for loan growth on emerging markets can be delivered by the fundamentals of an expanding economy, rather than by the imprudent and overly aggressive credit policy witnessed on developed markets. In addition, loan growth by itself does not necessarily have to lead to a banking crisis. As a result, opposing implications of loan growth on risk may be observed depending on the particular market, with adverse consequences expected for developed countries and neutral or positive – on emerging markets.

Differences between loan growth in Polish banks and some Western European banks are shown on Graph 1. The negative effects of the financial crisis are visible in Western European loan growth, which has been subdued since 2007, as banks have been introducing more severe credit risk criteria. Slower growth

has also been experienced by banking sectors on some emerging markets, such as Turkey, although a rebound in 2010 is clearly visible. Polish banks have been expanding their loan books aggressively, in relation to Western European peers, with a peak in 2008. As a result, credit quality deterioration could be expected, when bad loans will have had time to materialise. On the other hand, the degree of bank saturation remains low in Poland and loan growth experienced in 2008–2010 may contribute to a deepening of the financial services sector.



Graph 1. Loan growth in chosen European banking sectors (in %)

Source: own calculations, based on bank financial data from BankScope.

Many authors study loan growth in a wider context than bank-specific risk effects. Links and causality between loan growth and the business cycle are frequently investigated in the literature, both on a macro- and microeconomic ground. A general view proclaims that lending increases most during economic upswings and falls considerably during subsequent downturns, which sometimes may cause a “credit crunch”. In addition, levels of non-performing loans and loan loss provisions fluctuate as well, remaining low during the expansion phase and increasing substantially in the period of economic difficulties. The lag effect in non-performing loans indicates that these surface most frequently after three years from granting, which means that most problem loans are possibly given during the economic expansions. In addition, as Kraft and Jankov (2005) put it, it is simply more difficult to indentify bad customers during business cycle upswings, as “when aggregate demand is strong, firm’s balance sheets tend to improve” (p. 115). As a result, it is always important to control for macroecono-

mic factors while assessing loan growth, in order to detect individual differences between banks that are not connected with the moment of the business cycle.

Recent business cycle studies find evidence for the described cyclical nature of bank behaviour and include e.g. Quagliariello (2007), who uses panel data of Italian banks between 1985–2002. Through estimation of static and dynamic models he finds a clear link between the business cycle, loan loss provisions and new non-performing loans, as well as some support for an income-smoothing effect of loan loss provisions. However, his results indicate that higher loan growth is not necessarily connected with higher loan loss provisions, and he concludes that “it is not necessarily true that more aggressive lending policies imply a less accurate selection of customers” (p. 127). Nonetheless, it should be noted that he uses loan growth values for t and $t-1$ only. Other authors stipulate that negative effects of excessive loan growth are most visible when lagged by three years, so this may partially explain the unusual result.

Links between macroeconomic developments and banking crises are studied by both Hardy and Pazarbasioglu (1999) and Demirguc-Kunt and Detragiache (1998). They find that factors associated with economic downturns, such as low GDP growth, excessively high real interest rates and high inflation increase the probability of serious distress in the banking system. In addition, a consumption boom and rapid loan growth in the years preceding the crisis can also be useful indicators of imminent banking system distress. On the individual bank level, a real-terms fall in deposits before the crisis contributes to liquidity problems, while credit growth displays a clear boom-and-bust pattern.

3. Loan growth and interest margins

Irrespective of the operating environment, loan growth is always spurred by potential earnings that it generates. These earnings may be strictly related to a credit product itself, but also to other lines of business that new clients may be using. The most straightforward measure of the earnings potential of new loans is the level of net interest margin achieved on them and the volumes of the extended credit lines. Banks usually face a trade-off between high margins and high volumes, especially on developed markets. The willingness to expand rapidly implies that interest margins may have to be compromised. This loss in terms of interest rate levels may be possibly offset however by a volume effect. On deve-

loping markets this link is not as obvious, as a lower level of banking competition does not put similar pricing pressures on financial institutions.

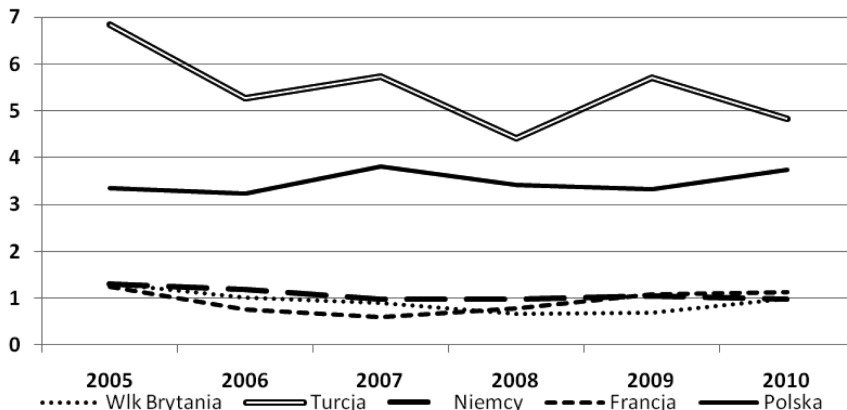
In studies of net interest margins (NIM), no consensus has been reached on its relation with risk. Some authors claim that higher net interest margins imply that loans are granted to higher risk customers, who are charged more for their elevated probability of default. As a result, banks with higher NIM would be these more exposed to credit risk, but potentially charging a risk premium for such an exposure.

The opposite view of NIM presumes that banks with higher margins take in fact *lower* risks. This is caused by the fact that these players may not be willing to expand their credit portfolios at a price of lower interest rates on new loans. This vision is coherent with the previously discussed saturation of Western banking markets, where gaining new clients and new loans is frequently associated with accepting higher credit risk levels. Due to visible competitive pressures, banks adjust their pricing policies on both deposits and loans, in order to increase market share. On the liability side, this is extensively discussed by Hellman et al. (2000), where overaggressive deposit pricing leads to excessive funding costs. Such pricing wars in lending frequently target a sub-prime clientele, which under conservative assumptions would imply charging high risk premiums. Competing institutions minimise these premiums, ending up with new loans that are risky, but also potentially underpriced and thus do not include a reserve cushion.

Empirical analyses of bank results comprising both Salas and Saurina (2002) and Foos et al. (2010) seem to confirm the second hypothesis on interest margins versus risk relation. Lower margins are probably a sign of *weaker* asset quality and may result in future repayment problems. In the recent past banks have been expanding loan portfolios at the cost of quality and not charging sufficient risk premiums that would allow to cover potential loan loss reserves in the future. These implications may also be derived from the 2007–2009 financial crisis analyses, where weak underlying asset quality was not matched by sufficient margins that would offset the risk.

Graph 2 demonstrates changes in NIM levels in the period between 2005 and 2010 in Poland and chosen Western European countries. The visible differences in the levels of net interest margins between developing Europe (Turkey and Poland) and saturated Western European markets have remained fairly stable in the analysed period. Higher interest rates charged by Turkish and Polish

banks possibly stem from higher credit risk of developing market borrowers, but partially also from smaller competitive pressures.



Graph 2. Net interest margins (NIM) in Poland and chosen European countries

Source: own calculations, based on bank financial data from BankScope.

Consistently low net interest margins in Western European banks may be explained by a higher portion of revenues generated through fee income and other operating income, but a danger of insufficient risk premia charged by these institutions on their lending business is clearly visible. If loan growth in these markets should accelerate at the cost of lowering these narrow margins further, serious consequences for future asset quality could emerge.

Conclusion

Summing up, it seems that the majority of existing bank literature associates rapid loan growth on developed markets with an increased credit risk, notwithstanding its importance to revenue generation. Empirical studies prove the relation between loan growth and risk, with rapid portfolio expansion resulting in increased repayment problems in a three year lag. On developed markets, new customers are of lower quality than the existing client base, but competitive pressures refrain banks from charging adequate risk premiums on such loans. This

may explain falling net interest margins observed in international financial institutions in recent years and indicate a growing overall risk profile.

Loan growth is demonstrated to be positively related to macroeconomic upswings and, in parallel, to be a factor in spurring banking crises. On an individual bank level, loan growth depends on inside factors such as the time that has passed since the last bad loan crisis and outside factors, such as loan growth pursued by competitors. As a result, loan growth is a crucial factor that expresses individual bank approach towards credit risk and its assessment of future performance.

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PRZYROST PORTFELA KREDYTOWEGO W BANKACH: ŹRÓDŁA I KONSEKWENCJE

Streszczenie

Artykuł ma na celu zaprezentowanie przeglądu literatury z ostatnich lat, dotyczącej źródeł i motywacji przyrostu portfela kredytowego, powiązań pomiędzy przyrostem kredytowym, ryzykiem i cyklem koniunkturalnym oraz roli wyceny ryzyka kredytowego podejmowanego przez banki. Istnieją empiryczne dowody na to, że szybki przyrost portfela kredytowego powoduje wzrost ryzyka kredytowego, który materializuje się w ciągu trzech lat od udzielenia kredytu. Pojawiają się różnice między systemami bankowymi krajów rozwiniętych i rozwijających się, jako że ekspansja kredytowa na rynkach rozwijających się może wskazywać na niezbędne pogłębienie w systemie finansowym i niekoniecznie musi skutkować pogorszeniem jakości aktywów. Analizowana jest również rola poziomu marż kredytowych, w kontekście wymagania przez banki odpowiedniej wysokości premii za ryzyko w celu pokrycia ryzyka kredytowego nowych kredytobiorców.

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