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Low Interest Rates – A Real Threat to German Banks or First-Class Whining?!

1. Introductory overview

German banks occupy a leading position in complaining about the low interest rate environment and the regulatory tsunami (Frühauf, 2019, 14). Both the low interest rates and the increasing regulation are noticeably changing the environment for German banks. A change that poses difficult challenges for credit institutions (Waschbusch et al., 2018a, 916; Schuster, Hastenteufel, 2019, 19–21; Hastenteufel, Kiszka, 2020a, 64). In addition, other issues such as the ongoing digitization and the market entry of new competitors such as fintechs, as well as changing customer requirements and customer behaviour, also challenge banks. Overall, this leads to predicting difficult times for German credit institutions (Dombret, 2017d; Schuster, Hastenteufel, 2019, 19–21). In addition, there is the ongoing corona pandemic that is characterised by great uncertainty and affects all economic sectors – including the banking industry.

However, the subject of this paper is the current interest rate situation and its effects on German credit institutions. The expansive, sometimes unconventional monetary policy pursued by the European Central Bank to stabilize the precarious situation following the financial crisis starting in 2007 and the currently historically low interest rates have repeatedly been criticized (Peters, 2020, 385). In this context, the focus is on the effects on a banks' interest income, which suffers a significant slump because of the low interest rates and thus has a direct impact on the profitability of credit institutions (Waschbusch et al., 2018a, 916; Schenck, 2020, 77–78). Above all, German banks are particularly severely affected

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by this due to their high dependency on their interest income (Hastenteufel/ Kiszka, 2020b, 5).

Regarding the fact that an end to the low interest rate phase cannot be foreseen now, the question is whether the persistently low interest rates do pose a real threat to banks (Waschbusch et al., 2018b, 418) or whether this is just whining on a very high level.

Therefore, we will first consider the effects of low interest rates on bank profitability. Furthermore, we will explain what influence low interest rates have on the procurement of equity and the resilience of credit institutions. Subsequently, we will present selected possibilities on how banks can act in this situation, and finally draw some conclusions.

2. Low interest rates – A challenge for banks

2.1. The effects on earnings

2.1.1. The situation of German banks

Among others, the interest margin, the cost-income ratio, and the return on equity can be used as indicators to assess the economic situation and the performance of banks (Schuster, Hastenteufel, 2019, 33).

The interest margin results from the ratio of the net interest income to the balance sheet total and thus corresponds to the relative net interest income of the respective period (Deutsche Bundesbank, 2014, 61–65). This key figure is an indicator of a bank's profitability, especially for those with a focus on deposit banking and lending business (Fr re et al., 2008, 9). In recent years the interest margin of German banks has been relatively stable (Buchholz et al., 2019, 16). However, in the long term a sustained downward trend can be determined (Schuster, Hastenteufel, 2019, 36). Although the factors influencing the interest income are diverse, the low interest rate phase contributes to this in particular (Schuster, Hastenteufel, 2019, 36–37).

The cost-income ratio regards the administrative expenses in relation to the gross profit or to the operating income, which is an indicator of cost efficiency (Richter et al., 2018, 30). It describes the administrative effort that a bank incurs in order to generate one euro (Renker, 2018, 15; Waschbusch et al., 2018a, 919). There is a trend towards increasing expenses and stagnating or decreasing income (Koch et al., 2019, 14). For the former, the regulation of banks is particularly important (Sleegers, 2018, 6). This key figure indicates the weak points of German banks, whose cost-income ratio is more than 70% in recent years (Kent et al., 2020, 6). This value is above the internationally comparative value of 60–65%

(Schuster, Hastenteufel, 2019, 40). Compared with banks from other countries, the German credit institutions bring up the rear with these results (Hastenteufel, Kiszka, 2020b, 5–6). The effects on income associated with the low interest rates and the flattening of the yield curve have contributed to an increase in this key figure in recent years (Schuster, Hastenteufel, 2019, 40–42).

The return on equity represents the ratio of profit (e.g. annual surplus) to balance sheet equity (Bieg et al., 2016, 6). It is used to assess a bank's profitability. The return on equity can be important in terms of risk provisioning and in terms of interest of potential investors in a bank (Schuster, Hastenteufel, 2019, 34–35). In recent years, the return on equity of German banks has been relatively volatile. However, it has decreased particularly in recent years. The return on equity for all banking groups was around 4% in 2017 and it fell to 2.4% in 2018 (Deutsche Bundesbank, 2019a, 84). In 2019, the average return on equity was only 1% (Oberhuber, 2020, 98). Here, too, the German banks show weaknesses in an international comparison (Rocholl, 2018, 4; Lakhani et al., 2019, 5). Many banks in this country are currently unable to earn their equity costs of around 5–10% (Schuster, Hastenteufel, 2019, 51–52) which is definitely problematic (n. u., 2014). This weakness in earning power is due, among other things, to the high level of dependency on interest-bearing business, the effects of the persistently low interest rate level, the rigid cost structures and the general structure of the German banking market. The low return on equity can also have negative effects on a bank's equity procurement (Schuster, Hastenteufel, 2019, 50–54).

The development of these key figures shows how the economic situation of German banks has changed in recent years and raises the question of the future viability of traditional business models in banks.

2.1.2. Low interest rates causing income problems

It is not surprising that low interest rates are a considerable challenge for many German banks (Dombret, 2017a) as the net interest income is their most important source of income (Bontrup, 2018, 29–39; Rocholl, 2018, 5). Moreover, the negative interest rates on the credit institutions' deposits in the euro system are also considered an influencing factor for their reduced net interest income and their lower profitability (Stadtmann et al., 2020, 208). In addition to their structurally-related weak earnings (Deutsche Bundesbank, 2017a, 77–78), extremely low or even negative interest rates present banks with additional challenges that affect both the assets and liabilities side of their balance sheet (Koch et al., 2019, 13). For this reason, the earnings prospects of German banks are increasingly declining in the wake of the ongoing low interest rate environment (Dahmen, Kurrent, 2017, 30). It can therefore be assumed that the longer the period of low interest rates lasts, the bigger the problems for the institutions (Menhart, 2019, 16).

For German banks, the effects on net interest income can be observed since 2015, because this key figure has fallen continuously and a downward trend has been discernible for all banking groups since then (BaFin, 2019, 81). The net interest income, which results directly from the interest-bearing business, fell for all banking groups in 2017 from € 76.4 billion to € 71.1 billion (Deutsche Bundesbank, 2017b, 54). This was due, among other things, to the expiry of past transactions with a higher interest rate and the reluctance of banks to pass interest on in deposit banking. The interest income fell to a greater extent than the interest expenses in relation to the balance sheet total (Deutsche Bundesbank, 2018a, 34–57). In some cases, however, slightly increasing interest expenses offset the falling interest income.

Moreover, the negative interest-bearing deposit facility and the negative interest-bearing excess reserve also play a role in the falling net interest income, since banks mostly have high excess liquidity (Stadtmann et al., 2020, 208). The negative interest paid by German banks for excess liquidity held at the Bundesbank amounted to € 2.17 billion in 2017, € 2.45 billion in 2018 and € 2.37 billion in 2019. (Deutsche Bundesbank, 2017c, 68; Deutsche Bundesbank, 2018b, 68; Deutsche Bundesbank, 2019b, 67). This challenges the profitability of banks (Stadtmann et al., 2020, 208).

The net interest income is influenced by low interest rates in different ways (Hasten-teufel, Kiszka, 2020b, 4). Therefore, the effects of low interest rates on the conditions contribution and on the structural contribution need to be examined.

On the one hand, the low interest rate environment affects customer business on the assets side of a bank's balance sheet (Waschbusch et al., 2018a, 916). The development of the credit volume and the condition margin are important for changes in the active conditional contribution (Waschbusch et al., 2018b, 420). The demand for loans has risen continuously over the last few years (Deutsche Bundesbank, 2020a), with an increase mainly in retail banking. In the past, the increase in the loan volume always played an important role in achieving a stable active conditional contribution (Waschbusch et al., 2018b, 420–421). With the active condition margin, it is therefore fundamental to consider that there is a positive relationship between the margin and the absolute level of the market interest rate (Klein, 2020, 10). With regard to the amount of the active condition margin, the interest that a bank can enforce in lending business is important and the increasing regulatory requirements when setting the lower price limit must be considered. Moreover, growing competition is important (Perli, Thieme, 2020, 14). The competitive pressure in the interplay with an oversupply of loans in recent years was expressed through a reduction in the margins on new loan commitments (Altrock, Mosebach, 2016, 189). This means that, in this context, pricing based solely on costs and risks is hardly possible for banks (Waschbusch et al., 2018b, 421). In some cases, the effects of the low interest rates did not take full effect, as long-term, higher-interest transactions from the past have in some cases not yet expired (Hastenteufel, Kiszka, 2020b, 4). However, this will happen in the coming years and these transactions will then have to be replaced by lower-interest transactions (Perli, Thieme, 2020, 14–15). As the higher-interest loans collapse, they are gradually being assimilated to the low interest rate level, which means that the income that was still supportive will become obsolete over time (Klein, 2020 11). Thus, the active condition margin is under pressure due to the low or negative interest rates (Lucas et al., 2017, 33). So far, the active condition contribution remained constant (Boka, 2018, 25–26) and is expected to remain relatively stable in the future (Waschbusch et al., 2018b, 421).

On the other hand, low interest rates also affect the liabilities side of a bank's balance sheet (Waschbusch et al., 2018a, 916). Both the deposit volume and the passive condition margin are important for the condition contribution on the liabilities side. With regard to the deposit volume, despite the low interest rate level, there have been no slumps in the past few years, but often increases in short-term deposits (Deutsche Bundesbank, 2020b, Deutsche Bundesbank, 2020c, 62–63). For the passive condition margin, it is particularly important that the room for manoeuvre is increasingly limited (Mitschele, Schmid, 2016, 317). In deposit banking, many banks do not pass negative interest rates on to their customers (Bindseil, Kamin, 2018, 8; Buchholz et al., 2019, 3). Considering the strong and continuously intensifying competition in banking, the majority of credit institutions are currently unable to lower the interest rates on the liabilities side any further (Dombret, 2017b, 518). However, from an economic point of view this would be necessary in the prevailing low interest rate environment and with regard to net interest income (Waschbusch et al., 2018b, 422). Therefore, some banks have already switched to paying negative interest on customer deposits (Pertl, 2019, 63–64). This provides banks with an opportunity for stabilization (Deutsche Bundesbank, 2018a, 39). While negative interest rates were initially only passed on to corporate customers (Heider et al., 2018, 15), this now also affects retail customers, especially those with high demand deposits (n.u., 2020a). If the institutions cannot or do not want to pass the negative interest on to their customers, the passive condition margin decreases (Stadtmann et al., 2020, 213). Such a development is also forecast for the future (Deutsche Bundesbank, 2018a, 39). This means that banks can benefit less or no longer from an interest rate advantage of deposit financing over those on the money and capital markets (Waschbusch et al., 2018b, 422). This mainly affects the short period. For those banks that do not want to pass on negative interest rates to their customers, it is therefore becoming increasingly difficult to generate a passive condition margin (Hölscher et al., 2016, 177). The rising total deposit does not help. On the contrary, the increased pressure on the interest rate margin, in this context, results primarily from the problem of deposit interest, which due to the competitive situation cannot be fully adjusted to the interest rate environment (Klein, 2020, 3).

In addition to the customer business, the components of the structural contribution – i.e. the profit contribution from non-customer business – are also influenced by low interest rates (Waschbusch et al., 2018b, 419–420). With regard to maturity transformation contribution as part of the structural contribution, it has been important in recent years that the fall in short-term interest rates initially resulted in a steeper interest structure curve (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2015, 180) from which German banks benefited (Reuse, 2019, 23). While active transactions were tied to higher interest rates due to their longer-term orientation, the refinancing expenses decreased due to lower short-term interest rates (Hagemann, Wohlmann, 2017, 216). The gap between short-term and long-term interest rates widened and higher contributions could be generated from maturity transformation, from which the net interest income benefited (Deutsche Bundesbank, 2014, 58). Since long-term transactions have expired or will expire over time, new investments have to be made. However, the current lower interest rate environment and the effects of the monetary policy of the European Central Bank on long-term interest rates influence this (Hagemann, Wohlmann, 2017, 216). By flattening the yield curve because of the expansionary monetary policy, using the positive effects of the maturity transformation contribution is sometimes considerably difficult (Hastenteufel, Kiszka, 2020b, 4). The short- and long-term interest rates have therefore gradually converged, whereby the contributions from the maturity transformation decrease (Lister, 2018, 6; Buschmann, 2020), which influences the structural contribution (Waschbusch et al., 2018b, 419–422; Perli, Thieme, 2020, 14). This reduces the interest income and ultimately also the interest surplus. A yield curve with a slight slope is particularly important for those institutions who mainly generate their income from maturity transformation (Michels, 2019, 4–5). Their profitability is particularly affected by this development, which is even more difficult in a long-lasting low interest rate environment (Hönsch et al., 2016, 24). If the yield curve continues to decline, this can leave a lasting damage to the economic situation of banks (Koch et al., 2016, 28). In addition, effects on the structural contribution from the return on investments are observed. Above all, the falling income from government bonds in the context of low interest rates is important (Freiberger, 2013). In the past, this income has made an important contribution to the interest result (Deutsche Bundesbank, 2017d). However, there is the problem of substituting expiring and high-interest rates in the current low-interest environment (Flesch, Gebauer, 2015, 604–605). Due to a lack of adequate investment opportunities, a decline in contributions has been recorded (n.u., 2020b, 42).

It should be noted that a burden on net interest income results from a persistent low or negative interest rate environment and thus the banks' main source of income is being permanently attacked (Waschbusch et al., 2018a, 916). This particularly affects the passive condition contribution as well as the structural contribution (Hastenteufel, Kiszka, 2020b, 4). This also goes hand in hand with an impact on the profitability of banks and the pressure on their earnings situation is continuously increasing (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2019, 37–38). All of this will affect the banks' business models (Waschbusch et al., 2018a, 916). A low-for-long scenario definitely leads to the erosion of profitability (Deutsche Bundesbank, 2018c, 49).

Overall, with regard to future developments, it can be assumed that both the persistent environment of low interest rates but also the increasing expenditure due to regulation and the effects of advancing digitization will lead to challenges for many banks (Pertl, 2019, 45). In the following, we will analyse to what extend these developments – especially low interest rates – will have negative effects on the procurement of equity for German banks.

2.2. Difficulties in raising equity

Equity is extremely important for German banks, as it ensures their functionality and serves as a risk buffer (Guindos, 2019, 1–2). It is therefore of outstanding importance for the security and solidity of the whole banking sector (Lakhani et al., 2019, 3), on the one hand, and the entire economy on the other hand (Schäuble, 2017, 3). However, the current earnings situation makes it difficult for banks to build up equity capital by means of retained earnings (Altavilla et al., 2018, 533–534). One consequence of this obstacle to building up equity can be the increased susceptibility to shocks or economic problems (Altavilla et al., 2018, 534).

In recent years, the favourable valuation results and the low risk provisioning have had a beneficial effect in this context (Brei et al., 2019, 11). However, it should be noted that, for example, in the context of an economic downturn, there will be an increase in loan defaults and thus increased individual or general bad debt allowances (Weidmann, 2017). For this reason, the capital buffers accumulated should not be reduced, and the existing risks should not be underestimated (Deutsche Bundesbank, 2017a, 68; Deutsche Bundesbank, 2018d, 64–83). It is therefore expected that risk provisioning will continue to increase in the future (Flögel, Gärtner, 2020, 4–5). Moreover, it is not surprising that the banks in the euro zone were able to strengthen their capital position in 2019, both through retained profits and by means of external capital procurement (ECB, 2020, 26). Finally, yet importantly, the institutions have significantly strengthened their equity base for regulatory reasons since the financial crisis of 2007 (n.u., 2020d, 375).

Overall, it will be more difficult for banks to build up capital both now and in the near future. This becomes even more serious the longer the environment of low interest rates persists, since the build-up of excess capital is then only possible to a lesser extent (Deutsche Bundesbank, BaFin, 2019a). Nonetheless, the current capital resources of German banks are (still) good (n.u., 2020c 320).

The decline in profitability and problems in raising equity make banks more vulnerable to shocks (Guindos, 2019, 1). Depending on the individual situation of a bank, its risk-bearing capacity can be impaired (Wolberg, 2014, 1000). As a result, profitability is important with regard to the solidness of banks and its financial stability (Guindos, 2019, 1). In this context, Dombret sees the German banks lagging behind and expresses a need for action due to the long-term low interest rate phase and it's not foreseeable end (Dombret, 2015).

However, when it comes to absorbing losses, the equity base plays a major role in the resilience of banks (Deutsche Bundesbank, 2019a, 85; Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2019, 218). The core capital tier 1 ratio can be seen as the most important key figure in this context (BaFin, 2020, 30). Due to the strengthening of core capital tier 1, the equity base of German credit institutions can generally be described as solid (n.u., 2020d, 375). It contributes to the institutions' risk-bearing capacity and thus promotes the stability of the entire financial system (Thiele, 2017). However, it should be noted that in the course of the persistent low interest rate environment (in the future) difficulties might arise in the procurement of equity, which in turn would adversely affect the resilience of banks (Waschbusch et al., 2018b, 423). The increase in the core capital tier 1 ratio asked for in the last LSI stress test was quantified by the participating institutions at an average of 0.3 percentage points up to the year 2023 (Deutsche Bundesbank, BaFin, 2019a). The stress test to determine the regulatory target capital ratio showed that the German small and medium-sized institutions have a solid capital base despite the stress scenario (BaFin, 2020, 30).

Overall, an increased risk-bearing capacity and resilience can be attested, whereby especially the effects of the low interest rates must always be viewed critically (Deutscher Bundestag, 2019, 2). The German Bundestag assumes that the good capital resources, especially with regard to the core capital ratio, will benefit the German banks in mitigating the effects of the low interest rate phase (Deutscher Bundestag, 2019, 6). The BaFin states that German banks have sufficient capital resources to survive in this phase (BaFin, 2016, 16; BaFin, 2017, 19). Thus, the resilience of the German banks is given (Dombret et al., 2017, 18; n.u., 2020d, 375).

3. Recommendations for banks

Banks generally have the option of making changes in interest-based business and/or realigning their business model in order to tap new sources of income. On the one hand, negative interest rates could be passed on to customers, maturity transformations could be adjusted, lending could be expanded, or investments could be diversified. On the other hand, expanding commission business, reducing costs, actively using opportunities from digitization, and further concentrations on the banking market could generate (new) sources of income and new business models could be developed.

3.1. Passing on negative interest rates to customers

With regard to the options for action within the interest-based business model, negative interest in deposit banking could be passed on to the customers (Perli, Thieme, 2020, 16). As already mentioned, some credit institutions are already passing on negative interest rates to their customers to stabilize their financial situation (Siejka, 2017, 199). By now, negative interest rates are only applied to large-volume deposits only (Bouazza, Schad, 2020, 61).

In the first quarter of 2020, biallo.de investigated 1,300 institution of which 211 charge their customers negative interest, 113 of them also in retail banking (Biallo, 2020a). In the second quarter of 2020, they found around 250 banks passing on negative interest to their customer (150 in retail banking) (Biallo, 2020b). Usually, exemptions apply, which, however, vary greatly according to the deposit amount (Schwendrat, Stolbrink, 2020, 217–218). With corporate customers in particular, many banks from all banking groups pass on negative interest rates (Altavilla et al., 2019, 3). A persistent environment of negative interest rates will make it more and more difficult for the banks not to pass on the negative interest rate to their customers, so it can be assumed that this cannot be avoided in the long term (Suendorf-Bischof, 2019, 279). However, the acceptance of negative interest rates by customers is extremely low (Perli, Thieme, 2020, 16; Tietz, 2020). There is a risk that customers will switch to another bank that has not (yet) introduced negative interest rates for its customers (Hainz et al., 2017, 40). In addition, customers might prefer to store their money at home instead of accepting negative interest rates (Dombret, 2016, 3; Drescher et al., 2016, 2).

Overall, the number of institutions that charge negative interest rates on sight deposits is increasing continuously (n.u., 2020f). Thus, the volume of the deposits affected by this is also increasing (Deutsche Bundesbank, 2018a, 39). In September 2019, 58% of the credit institutions included in the MFI interest rate statistics reported a negative volume-weighted average interest rate for sight deposits from companies (23% for private customers) (Deutsche Bundesbank, 2019c, 32). The MFI interest rate statistics for June 2020 revealed that in Germany the interest rate for deposits of new private customers is 0% and for non-financial corporations -0.08% (ECB, 2020, 16).

So far, the passing on of negative interest rates has not yet prevented banks from a falling net interest income (Sinn, Schmundt, 2018, 10–17). Thus, the willingness to pass on negative interest is increasing (Deutsche Bundesbank/BaFin, 2019b, 9; Biallo, 2020a), so that it can be expected that the number of credit institutions that will pass on negative interest rates to their customers will increase in the future (Schwendrat, Stolbrink, 2020, 218). However, the negative interest on customer deposits is a decision that banks must consider very carefully, as this poses a great risk to the stability and durability of customer relationships. There are also individual institutions that not only pass on the negative interest rate of the European Central Bank to their customers but charge even higher negative interest on deposits in order to generate additional income from this. Although banks have to generate income and, in this context have to develop new sources of income in order to remain profitable, this is an extremely dangerous undertaking.

3.2. Expand maturity transformation

Furthermore, an expansion of the maturity transformation is possible (Jansen, Portisch, 2019, 161). An expansion of the maturity transformation can help to support the interest result. Especially small and medium-sized banks have followed this strategy in the past (Claußen et al., 2017, 86–87). On the one hand, there is an increased amount of short-term deposits and, on the other hand, fixed interest rates on the assets are expanded. There is also an increase in the number of long-term loans in the non-bank sector (Deutsche Bundesbank, 2018d, 52–81).

The maturity transformation, however, is associated with the interest rate risk. With the expansion of the maturity transformation, this risk also increases (Jansen, Portisch, 2019, 161), making banks more vulnerable to an abrupt rise in interest rates (Dombret, 2017b, 519). If such a rise in interest rates occurs as a surprise, deficits in the interest rate business and negative effects on market-valued assets are to be expected (AFS, 2018, 2). Many German banks have high interest rate risks due to an extended maturity transformation (Deutsche Bundesbank, 2019d, 57). With a view to the Basel interest rate risk coefficient, this particularly affects small and medium-sized credit institutions (Deutsche Bundesbank, 2019d, 68). In this context, the Basel interest rate risk coefficient is used as a risk measure (Deutsche Bundesbank, 2017a, 75). It has increased noticeably in recent years, especially at savings banks and cooperative banks (Deutsche Bundesbank, 2019d, 68–69).

In addition, the Net Stable Funding Ratio (structural liquidity ratio) must be considered in this context, which limits the possibility of maturity transformation and thus in particular its expansion (Claußen et al., 2016, 51). This ensures stable and sustainable refinancing and thus a resilient liquidity risk profile. A minimum rate of 100% is considered over a 12-months period, which must be present in relation to the amount of stable refinancing available and the amount of secure refinancing required. If a bank fulfils this requirement, the liquidity is sufficient for the one-year period (Krämer, 2020, 1461–1462).

The banks can, however, come up against their limits, as the potential is often already largely exhausted and the scope is limited by legal requirements (Dombret, 2017b, 519). Only a considerable extension of the term would still have a positive impact on the return, which in turn would, however, go hand in hand with increasing interest rate risks. It must be recognized that extending the maturity transformation cannot be viewed as a permanent solution, but merely represents a measure to gain time (Dombret, 2017a).

3.3. Expansion of lending

An expansion of lending and the volume has already been initiated by the institutes or can be considered by them in order to fight the falling interest income with a view to the active conditional contribution. In connection with an expansion of lending, however, an increased risk can arise (Klein, 2020, 2–14); if for example, banks grant riskier loans (Claußen et al., 2016, 62). If there is an economic downturn, the risk of rising risk costs are also important in this context (Wolberg, 2020, 65).

In general, the lending business of German banks has grown in recent years (n.u., 2020e, 11). In addition, it should be noted that with the expansion of lending, more and more loans were granted in higher-risk segments (EBA, 2020, 20). In mid of 2020, however, the German banks reported for the first time since the end of 2017 a decline in demand for private real estate finance (Deutsche Bundesbank, 2020d, 22). In contrast, the demand for loans in corporate finance has increased significantly (Deutsche Bundesbank, 2020d, 10). In times of the corona pandemic, lending is being expanded primarily in the context of short-term loans to secure liquidity (Osman, 2020b). Loans are granted to support the economy and to bridge the crisis (Atzler, 2020; Flögel, Gärtner, 2020, 4; Schneider et al., 2020). The institutes' current willingness to take risks is limited (Osman, 2020a; Osman 2020b). In the context of the Corona crisis, banks must also increasingly expect loan defaults and thus deductions on their receivables and make provisions for contingent loan losses (Theurer, 2020). Moreover, banks have expanded their riskier commitments in recent years and have granted loans in sectors that are now particularly economically affected by the pandemic (Flögel, Gärtner, 2020, 4–5).

Credit growth cannot fully compensate for the effects of low interest rates (Jobst, Lin, 2016, 25; Klein, 2020, 14). The main limitations of this are the prevailing competitive pressure and a limited demand (Stuska, Ritter, 2019, 3). Nonetheless, the growth in loan volume is helping to ensure that banks are not fully affected by the negative effects of the low interest rate phase (Koch et al., 2019, 13; n.u., 2020e, 11).

3.4. Investment diversification

With capital investments, there may be room for manoeuvre to stabilize the structural contribution, whereby a change in the structure of the capital investment or further diversification may be considered (Schuster, Hastenteufel, 2019, 55). Sustainability, for example, is a topic that is becoming increasingly important in many different areas of life (Niedermüller, Röder, 2020, 69) and is important in this context (Müller, 2020, 572–574; Rosenthal, Stickling, 2020, 14). For many customers, the sustainability of their bank is important, so that the improved image due to a sustainable orientation can be an advantage when acquiring new customers (Hastenteufel, Kiszka, 2020c, 261–264). As a result, in view of the earnings problem, it is necessary for banks to consider investments with a higher risk and thus mostly with a higher return (Dombret, 2017b, 519). Following the principle of no, risk/no return, in the area of investments it should be checked whether additional income opportunities could be used by consciously taking higher risks (Ihring, 2016, 115). In doing so, however, the banks must always consider their risk strategy and risk capacity (Waschbusch et al., 2018b, 420), so that it should avoid taking higher and inappropriate risks when looking for new return opportunities (Dombret, 2017b, 519). Even if higher returns can be generated in the short term, in the long term this can result in dangers from increasing risk costs (Waschbusch et al., 2018b, 424).

Overall, banks can very well succeed in stabilizing their structural contribution and their earnings position if they embark on further diversification and always keep an eye on possible risks and their risk strategy (Ihring, 2016, 115).

3.5. Adjusting the business model and developing new sources of income

The increase in income from fees and commissions is directly linked to the development of new sources of income (Waschbusch et al., 2018a, 919). With regard to the problem of the low interest rate phase and its effects, there is an opportunity to compensate for the falling income and to stabilize profitability through further diversification and the expansion of (non-interest-related) sources of income (Dombret, 2014, 1181). This is also intended to reduce the dependency on interest rates, with increasing importance being attached to commission income in particular (Deutsche Bundesbank, 2016, 76) especially in the areas of current accounts, payment transactions, securities and insurance contracts (Waschbusch et al., 2018a, 919).

In the past, German banks often offered many banking services free of charge (Pertl, 2019, 62). It is understandable that this still corresponds to the expectations and ideas of customers who got used to this so-called free culture over the years (Schuster, Hastenteufel, 2019, 56). While this was only possible through cross-subsidization through the interest-bearing business (Funk, 2017, 2), this possibility is no longer available during this current low interest rate (Fohrer, 2016, 64). Another reason for this was the increasing competition for customers and market shares with more and more free services such as current accounts, credit cards or advice (Koch et al., 2019, 13). It should be borne in mind, however, that all banking services incur costs for banks (Köhler, 2015, 32). For this reason, it should be normal for them to be able to price their services appropriately (Krüger, 2017, 8). This must be conveyed to the customers in order to detach them from the imprinted free culture (Pertl, 2019, 62). If banks had always priced their services appropriately and not rested on the high interest income in the past, they would currently have no problems in enforcing a normal and service-appropriate pricing of their products.

Options for introducing fees that have already been used by some banks relate, for example, to withdrawing money at the counter or ATM (Schiereck et al., 2020, 550–554). In addition, there is significant potential with debit cards, which have so far been often offered free of charge, as well as paper-based bank transfers. In addition, banks can expand their product range and offer additional services for their customers (Hagenow, Klenk, 2019, 34–36). In order to increase the commission result, the quality of customer advisory service is also of great importance (Hastenteufel, Kiszka, 2020b, 13). In this context, genuinely holistic advice geared towards customers and their needs will play an important role in the future. The quality of advice has an impact on customer satisfaction and loyalty and thus also on their earnings situation (Schuster, Hastenteufel, 2019, 65; Hastenteufel, Kiszka, 2020b, 13). The topic of sustainability can also be important in this context. Many customers are interested in sustainable investments and related advice. Thus, it would be conceivable, for example, to offer suitable banking transactions related to the energy transition as well as advice that e.g. includes funding programs for this purpose. There may well be opportunities for banks to strengthen their commission income as well as increasing customer satisfaction and loyalty. With a consciously sustainable financial investment and advice, there is a large, so far (almost) untapped income potential for credit institutions (Hastenteufel, Kiszka, 2020c, 263–264).

All in all, it must be taken into account that there are limitations with regard to increasing the commission income, such as growing competition or customer needs (Göbel, 2018, 19), but there is still potential to grow. However, this can only partially compensate for the lower interest results in the future (Pertl, 2019, 90).

In addition to the above-mentioned reactions for increasing earnings, there are also opportunities for savings or an optimization of expenses (Pertl, 2019, 64). One possible starting point for potential savings is the closure of branches (Waschbusch et al., 2018a, 919). Even though a trend towards closures can be observed (Mihm, Frank, 2016, 35), the branches remain fundamentally important for some customers (Fischer et al., 2019; Schuster, Hastenteufel, 2019, 83). Thus, it is also important to modernize existing branches and to further develop their concepts (Waschbusch et al., 2018a, 919). However, experts expect that branch closings alone will not be enough to handle the existing cost pressure (Siedenbiedel, 2015). In addition, the potential for savings in branch closings should mostly be limited to the savings banks and cooperative banks as those still have the most extensive branch network (Mausbach, 2020, 13). At the same time, however, the corporate philosophy of these banks is based on regionality and customer proximity (Grandke, 2019, 495). A reduction in staff can also be considered (Waschbusch et al., 2018a, 919), which, among other things, goes hand in hand with branch reduction (Pertl, 2019, 64–71). Moreover, the bundling of functions and/or the outsourcing of certain tasks and processes to external providers could also be considered (Ermrich, 2019, 493).

It usually takes a longer period for such measures to take effect (Dombret, 2017b, 520). In addition, when realizing potential savings, it should be kept in mind that negative effects can also occur, which is why pros and cons should always be considered (Koch et al., 2019, 42; Schuster, Hastenteufel, 2019, 55). Overall, the cost savings alone cannot help overcome the problem of low interest rates (Hirdina et al., 2020, 207). Nevertheless, it is important to establish an active and sustainable cost management and understand it as an ongoing process (Judt, Klausegger, 2020, 229).

In addition, digitization plays an important role in securing the future viability of banks (Walter, 2016, 34). Despite the fact that digitization also poses challenges for the banks, this is also a great opportunity (Schuster, Hastenteufel, 2019, 76). On the one hand, digitization goes hand in hand with potential savings in expenses through automation and standardisation (Pommerening, 2020, 9). On the other hand, there are also opportunities on the earnings side (Flötotto, Koch, 2016, 14).

Ever-advancing digitization means that the technology associated with it is becoming more and more part of everyday life (Pommerening, 2020, 6), and thus, spatial and temporal boundaries can be overcome (Grabher et al., 2017, 6). This also has an impact on banking (Hastenteufel, Hagmann, 2020, 4). For many people, the flexible use of banking services that is independent from space or time has become extremely important (Thiele, 2017). However, this also results in an increase or adjustment of customer expectations (Grandke, 2019, 495). It is therefore important to accelerate automation and further expand and develop digital channels and offers. Currently, around 70% of banking transactions are already carried out digitally (Hastenteufel, Kiszka, 2020b, 11). This shows how important the topic of digitization is (Ermrich, 2019, 493). Digitization enables a new type of customer proximity, which, in addition to personal contact, now also relates to technical aspects (Hastenteufel, Kiszka, 2020b, 7). Further trends such as platform economy, mobile payment, blockchain technology, robo-advisors, cloud computing or artificial intelligence can also represent points of contact for the banks to take action (Hastenteufel, Hagmann, 2020, 5–13). New technologies, for example, help to make tailor-made, personalized services easier and better (Hastenteufel, Kiszka, 2020b, 22). In addition, it is precisely these types of services that customers want (zeb, 2019, 6). In this context, the data collected by the banks play an important role, which customers are willing to share for a personalized range of services (Schäfer, 2020, 216). The demand-oriented and specifically adapted offer can lead to a competitive advantage. Furthermore, there are opportunities for banks from cooperating with fintechs (Praeg, Schmidt, 2016, 44), who for this reason should not only be viewed as a threat (Jonietz et al., 2018, 379).

Regarding the corona pandemic and the associated (compulsory) increase in the use of digitized products, both customer behaviour and customer expectations could change permanently (Kröner, 2020). This situation can also provide the credit institutions with information about the areas in which customers are accepting digital offers. The banks can use these empirical values for the future (Jue, 2020, 392). In addition, inadequacies in the use of bank offers can be identified (Messenböck, Schwarz, 2020, 27).

If the banks ignore digitization or react to late, customers and, as a result, important income will be lost to digital competitors (Waschbusch et al., 2018a, 917). It will therefore be necessary to continue investing in this area (Pommerening, 2020, 214). Thus, for banks the digital transformation is no longer an option, it is essential for their survival (Stollarz, 2018, B5).

There is also the option of market consolidation (Dombret, 2017a). This can occur e.g. in the form of banks leaving the market, mergers or downsizing (Dombret, 2017b, 520). In the German banking market in particular, there is still potential due to the large number of credit institutions and bank branches (Dombret, 2014, 1181). Consolidation projects can lead to an increase in profitability and productivity (Grabher, Schettler, 2016, 35). In the future, some banks will not be able to implement the adjustments required due to their changing environmental conditions on their own, thus, that the possibility of consolidation can or even must be considered (Sinn, Schmundt, 2017, 18).

There has been an increase in consolidations in recent years. In 2019, the number of credit institutions in Germany decreased to 1,717 institutions. This corresponds to a reduction of 66 banks. In comparison: In 1994, there were still 3,872 banks in Germany (Deutsche Bundesbank, 2020e). Experts assume that there will be about 1,200 banks in Germany by 2025 (Sinn, Schmundt, 2016, 28). The number of branches is also steadily declining (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2019, 208). In 2019, 1,220 branches were closed permanently (Deutsche Bundesbank, 2020e). Many banks are also open to a merger in the future or are already in this process (Dombret, 2017c, 21). However, a bank does not always only benefit from its size (Stuska, Ritter, 2019, 2). The important thing is to ensure a merger makes strategic sense, because mergers alone do not help to overcome the problems resulting from the low interest rate phase (Mausbach, 2016, 37).

To sum up, the implementation of various measures helps banks to meet the challenges of the low interest rate phase (n.u., 2020d, 376). However, the challenges associated with the low interest rate environment do not end with the end of low interest rates (Rocholl, 2018, 10). Because although an exit from the low interest rate policy is repeatedly called for (n.u., 2018, 7), it would be a fallacy to assume that such an exit would only have positive effects (Deutsche Bundesbank, 2018a, 38).

4. Final conclusion

After a phase of low interest rates that has now lasted for several years due to the expansionary monetary policy of the European Central Bank as a reaction to the upheavals resulting from the financial crisis of 2007 (Deutsche Bundesbank, 2019e, 46), there is still no end in sight (n.u., 2020d, 376). This issue poses enormous challenges for German banks.

Net interest income, the banks' most important source of income, is negatively impacted by the low interest rates, which also affects the profitability of credit institutions. As a result, the pressure on a bank's earnings situation constantly increases (Waschbusch et al., 2018a, 916; Waschbusch et al., 2018b, 423). These developments are particularly important for a large number of German banks due to their weak earnings and the associated high level of dependency on the interest result as well as their frequent focus on traditional deposit banking and lending business (Thiele, 2017). Even if their earnings weakness is not exclusively caused by low interest rates (Dombret, 2017a; Weidmann, 2017), it is undisputed that the net interest income in particular and the income in general are negatively affected by low interest rates (Bikker, Vervliet, 2018, 3). The longer this phase lasts, the greater the potential dangers for banks (Thiele, 2017). In other words, both a persistence and a further decline in the interest rate level will harm credit institutions (Deutsche Bundesbank, BaFin, 2019b, 8). In the future, this will also have an impact on the procurement of equity. However, most German banks currently have a good and solid capital base, which has a positive effect on their resilience (n.u., 2020c, 320). Thus, the robustness and the capital resources of most German banks are still considered sufficient (n.u., 2020d, 375).

The challenges resulting from the low interest rate environment will have a lasting impact on the income and asset of banks, especially in the next years. Therefore, the risk of harmful effects of permanently low interest rates on German banks are obvious (Bräuer, 2013, 43). Most institutes can cope with these challenges (Dombret et al., 2017, 17–18), if they take appropriate countermeasures (Koch et al., 2016, 33–47). The banks must take advantage of the opportunities that arise on both the income and expense side and must have the necessary courage to go new or unknown paths (Waschbusch et al., 2018b, 426). There are various starting points for tackling the necessary change (Waschbusch et al., 2018a, 921). However, each bank must consider its individual circumstances and use them to decide which steps to take to overcome its challenges (Schuster/ Hastenteufel, 2019, 225). However, if the credit institutions do not take action, this will have serious consequences for them (Waschbusch et al., 2018a, 921).

A glimpse into practice shows that German banks have been able to limit the negative effects resulting from the phase of low interest rates at least to some extent (n.u., 2020e, 11). While many banks have already taken necessary measures to succeed in a constantly changing environment (Thiele, 2017), not all of them did (Kröner, Osman, 2020, 30).

Despite the possibility of countermeasures, the phase of low interest rates is and remains a huge challenge for German banks (Perli, Thieme, 2020, 14–18). In some cases, however, it is a matter of whining at a high level, and the banks themselves need to find the right answers to the challenges that arise in the context of the changing external conditions (Hastenteufel, Kiszka, 2020b, 23). For this reason, banks should not constantly complain about the low level of interest rates, but rather think about and implement effective adjustments with the focus on usefulness. Therefore, the banks are by no means faced with an insoluble challenge and the prospects are by no means hopeless, provided they are willing and ready to make the necessary changes (Bindseil, Kamin, 2018, 47). Because in every challenge there is at least an equal opportunity. It is therefore up to the banks themselves to initiate the necessary changes, break out of their outdated structures, and leave their comfort zone. Because as John F. Kennedy once said: "Change is the law of life. And those who look only to the past or the present are certain to miss the future" (Kennedy, 1963, 16).

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