

# Jens Weidmann: Macroprudential policy through the lens of Sherlock Holmes

Welcome address by Dr Jens Weidmann, President of the Deutsche Bundesbank and Chairman of the Board of Directors of the Bank for International Settlements, at the 5th Annual Macroprudential Conference, Eltville, 21 June 2016.

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## 1 Introduction

Ladies and gentlemen,

Every contact leaves a trace. That is a basic principle of forensic science. In the early decades of the 20th century, it was established by the pioneering French criminologist Edmond Locard, and thus became known as Locard's exchange principle. But Locard's approach itself may have been affected by an exchange – he developed his methods after having come into contact with detective fiction.<sup>1</sup>

Years before Locard set up his forensic laboratory in 1910, a fictional character had declared in a popular story: "As long as the criminal remains upon two legs so long must there be some indentation, some abrasion, some trifling displacement which can be detected by the scientific researcher."<sup>2</sup> You all know this fictional investigator – it was none other than Sherlock Holmes.

When Arthur Conan Doyle published his first stories about the consulting detective in Victorian times, criminal investigations usually started out from testimonies and motives. Physical evidence was sought after theories had been built. And detectives were still lacking or renouncing fundamental forensic tools. It was only in 1901 that the British police adopted fingerprinting, for example.

Sherlock Holmes' method of deduction, to reach conclusions based on observed facts, helped him to unravel mysteries virtually from the comfort of his armchair. But the master detective also had to go to crime scenes to search for tiny traces with his magnifying glass and collect the data he needed.

The analysis of risks to financial stability can resemble piecing together strands of evidence in a criminal case. Indeed, Richard Barwell, the Head of Macro Research at BNP Paribas Asset Management, once referred to the principle of evidence-based macroprudential policy as the "Sherlock Holmes approach".<sup>3</sup>

## 2 Macroprudential policy measures in Germany

Take Germany's intention to activate the countercyclical capital buffer, for instance. On 27 May, Germany's Financial Stability Committee issued a recommendation to activate a countercyclical capital buffer of 0.25%. The step was based on thorough detective work by the Bundesbank. In last year's Financial Stability Review we presented evidence pointing to cyclical systemic risks which had built up over the years. Viewed in their entirety, these risks implied that precautionary action was required, which prompted the committee to issue the recommendation.

Let's take a closer look at the evidence available.

### 2.1 The case for macroprudential policy action

Exhibit A, so to speak, in the case for macroprudential action is the danger that market participants may underestimate future credit risk whilst overestimating loss-absorbing capacity.

In the wake of the prolonged economic expansion, many market participants may no longer take sufficient account of periods of crisis and downturn in their risk assessments. And since risk provisioning is at a low level now, possible future losses could eat directly into the equity buffers of banks.

Besides, analyses by the Bundesbank as well as the IMF suggest that credit has been granted increasingly to enterprises that are comparatively weaker financially.<sup>4 5</sup> In the event of an unexpected economic downturn, the solvency of these firms could come under pressure and the level of non-performing loans may rise faster than in the past.

Exhibit B in the case for macroprudential action is developments in the housing market. The German residential property market has taken off since 2010. Within the last nine years, house prices have risen nationwide by almost 60%. While this average increase can be explained by fundamental factors, real estate prices in German cities last year were between 15% and 30% above what fundamentals would suggest, according to Bundesbank estimates. And indicators like the price-to-rent ratio paint a similar picture of overvaluation in urban areas.

In general, the residential property market can nourish major financial imbalances. After all, of the 46 systemic banking crises in various countries for which house price data are available, more than two-thirds followed boom-bust patterns in house prices.<sup>6</sup>

Now, when weighing the potential economic fallout of conceivable price corrections in the housing market, it is not just the size of the overvaluation and adjustment itself that matters. How the boom is funded is also of crucial importance. Sharp declines in asset prices can be particularly harmful to the economy when their impact is propagated and amplified through the financial system. If overvaluations of assets are driven by rapidly expanding credit, in a downturn the deteriorating balance sheets of borrowers and lenders constrict new lending.<sup>7 8</sup> This, in turn, curtails investment and so worsens the economic contraction.<sup>9 10</sup>

In the 1980s, rising bank credit also fuelled a surge in land prices in major cities in Japan. This real estate bubble is often deemed to be the origin of the Japanese financial crisis in the 1990s,<sup>11</sup> a period of time which gave rise to the term “lost decade” due to the economic stagnation it brought. Mitsuhiro Fukao will elaborate on the Japanese experience in a few minutes.

In Germany, however, credit has not been the main driver of rising house prices in recent years. Even though the growth rate of housing loans had accelerated to 4.6% year-on-year by the end of 2018, overall growth has been moderate, cumulating to 26% within the last nine years. And in its last Financial Stability Review, the Bundesbank came to the conclusion that credit standards had not been relaxed considerably. Thus, overall, the available evidence does not point to substantially heightened financial stability risks from new lending for housing.

Still, potentially overvalued property means potentially overvalued collateral. This is to say that, in an adverse scenario, if household income and house prices were to take a hit simultaneously, the share of non-performing loans could rise, while the value of the collateral could drop. In combination, this would cause bank losses to increase markedly, as housing lending makes up 45% of total bank loans to private households and enterprises.

Exhibit C in the case for macroprudential action is heightened interest rate risk, of which mortgages are a good example. At present, 47% of newly issued mortgages have an interest rate lock-in period of more than ten years, compared to 26% in 2010. If interest rates were to quickly spike higher, this would instantly drive up the costs of funding for banks. But interest income would only increase with a time lag. And because many institutions would be affected simultaneously, other banks could not cushion the impact by stepping up new lending business.

The opposite scenario, a protracted continuation of very low interest rates, would not bode well for banks' earning capacity, either. In particular, it would increasingly burden those banks which rely on traditional retail deposit-taking and lending operations as their main source of income.

So, banks find themselves in a sort of a diver's dilemma. Staying underwater for too long entails the risk of running out of oxygen. But coming up too quickly may cause decompression sickness. Hence, banks need to be resilient to both interest rate scenarios: rates that stay low for longer than expected, and rates that spike higher.

Just as many criminal cases have to be solved by piecing together small shreds of evidence, the German Financial Stability Committee here had to assess the cumulative weight of the clues they had gathered. And these clues did point to a common suspect: the possible underestimation of risks and increased vulnerabilities in the financial system. The preponderance of evidence suggests that macroprudential action is in order.

In the event of an unexpected severe economic slump, the identified risks in the financial system could materialise simultaneously, forcing many banks to cushion losses. Without sufficient buffers, banks might seek to offload assets and cut back on lending, thereby aggravating the economic downturn.

Higher capital buffers make the financial system more resilient to adverse shocks. In contrast to other regulatory capital, the buffer is not designed to be permanent. Banks can draw on this buffer in times of stress. Likewise, authorities can reduce or eliminate the buffer if the vulnerabilities in the financial system have dissipated. In this way, activating the countercyclical capital buffer now should serve as insurance against future financial turbulence.

## ***2.2 Macroeconomic conditions and the timing of macroprudential policy action***

The word already implies it: when judging whether to activate a countercyclical buffer, the question of timing is vital.

Activation bears important consequences for banks. Therefore, such a measure must be taken with legal certainty. Thorough investigations were necessary and meant observing the financial system over a longer period of time. All the available evidence needed to be gathered and carefully assessed. Its cumulative weight had to be substantial to warrant action. This is why the recommendation comes at this point in time, not earlier.

Some observers may wonder whether the window for action has already closed, given that the German economy has been cooling down markedly since the middle of last year. According to Bundesbank macroeconomic projections published two weeks ago, economic activity is likely to grow by just 0.6% this year. But our experts consider this to be a soft patch that is largely due to a slowdown in external demand, weighing on export-oriented sectors. Indeed, manufacturing has entered a downturn.

By contrast, sectors with a greater domestic focus continue to grow robustly, supported by favourable financing conditions, loosened fiscal policy and a labour market that is still in excellent shape. As long as this dichotomy within the German economy persists, the underlying cyclical trend will likely remain weak.

Going forward, our economic experts thus anticipate that the soft patch will last a little longer. But given that exports will regain traction, economic activity will pick up in the second half of the year. As a result, the economy is expected to grow at a pace of 1.2% next year and 1.3% in 2021. In this baseline scenario, the utilisation of aggregate capacities is likely to remain at a level distinctly above normal. Thus, macroeconomic conditions are still benign, while cyclical risks have been identified in the financial system. So now is the appropriate time for the banking sector to take preventive action and build up resilience.

For at least two of the researchers in the room, the recommendation to activate the countercyclical capital buffer may not have come as a surprise. After lunch, Nellie Liang will present evidence she and her co-author Rochelle Edge have found that countries with financial stability committees which have stronger governance mechanisms are more likely to use the countercyclical capital buffer.<sup>12</sup> And Germany falls into this category.

Indeed, eight other European countries already have a countercyclical capital buffer in place. The buffer has been implemented in the United Kingdom, Sweden, Denmark, the Czech Republic, Slovakia, Lithuania, Norway and Iceland, while France, Ireland, Luxembourg and Bulgaria will be implementing it in the coming months.<sup>13</sup>

### **3 Macprudential policy and monetary policy**

The preventive build-up of sufficient capital buffers is also helpful from a monetary policy perspective. Banks whose capital ratios hover barely above the regulatory thresholds and which cannot easily increase their equity through capital markets are especially prone to cut lending in a downturn. This potentially impairs an important transmission channel of monetary policy.<sup>14</sup> By upping capital ratios when times are good, macroprudential policies can help preserve monetary policy's potency in more difficult times.

A recent paper by Bundesbank researchers has shown that if macroprudential policy is too lax, this might actually create a situation akin to financial dominance.<sup>15</sup> Monetary policy may then be forced to step in by driving inflation above its price stability target and reducing the real burden of private debt. Thus, a stringent macroprudential reaction to financial stability risks is also a means to protect monetary policy.

But not only does macroprudential policy impact monetary policy: monetary policy influences financial stability and thus macroprudential policies as well. As our keynote speaker Jean Tirole has pointed out before, monetary policy can affect the risk appetite of market participants.<sup>16</sup> In line with such a risk-taking channel of monetary policy, Bundesbank economists have found survey-based evidence that low earnings on interest can induce banks to take on additional risks.<sup>17</sup>

To some, this might raise the question of whether monetary policy should be given a financial stability mandate as well, maybe even on a par with its price stability mandate. In my view, this would be a perilous proposition.

A multitude of objectives might force monetary policy into unfavourable trade-offs of the kind I have just outlined. For a central bank which has been tasked with aiming for both price stability and financial stability, time-inconsistency problems can arise. In this case, a central bank may have an incentive to deviate from the socially optimal rate of inflation ex post.<sup>18</sup> The first line of defence against financial imbalances should therefore be macroprudential policies. They allow for more targeted interventions, too.

Monetary policy in the euro area is a one-size-fits-all approach, since key interest rates, in particular, are set for the currency union as a whole, in keeping with our objective of price stability.

Given the subdued price pressures in the euro area in the aftermath of the financial and sovereign debt crises, monetary policy accommodation has certainly been warranted. But the long period of ultra-low interest rates comes with risks and side effects, some of which I have mentioned earlier.

And what might be, by pure chance, the right amount of monetary stimulus to kick-start lending in one Member State might over-rev the financial engine in another.

That's when macroprudential policies come into play. They can act on a national level, taking the state of the specific financial system into account, and can counteract the build-up of financial imbalances even in an individual sector. Moreover, macroprudential policy tools can differentiate between borrower and lender vulnerabilities, a topic Guido Lorenzoni will tackle in greater detail in session 4 of our conference.

By contrast, the impact of monetary policy on the economy is much broader. Let's dip back into the world of crime for a comparison here: of course, the police could muster strong forces to round up many suspects in order to catch a single criminal. But Sherlock Holmes may have been equally successful without arresting innocent citizens – just with the help of science, logic, and his magnifying glass.

However, since financial imbalances can jeopardise price stability, monetary policy should be aware of its ability to affect risk taking. As we have learned painfully from the financial crisis, severe problems in the financial system could eventually spill over to the real economy and to inflation.

Ideally, macroprudential policies can quell a fire before it turns into a blaze. We therefore need further research to find out how to make macroprudential tools as effective as possible.

#### **4 The state of too-big-to-fail**

More research is also required to examine one of the central promises made in the aftermath of the financial crisis – the promise that taxpayers will not be on the hook again for losses incurred by banks: the promise to end too-big-to-fail. Ending too-big-to-fail is not only a question of fairness. It is elementary for the functioning of financial markets, as it restores proper incentives.

Much has been done to remedy the issue. Higher capital requirements, resolution regimes, standards for loss-absorbing debt instruments are all important in our efforts to do away with implicit subsidies to banks. But we need to find out exactly how far we have come. Within the evaluation framework of the Financial Stability Board, Claudia Buch is chairing a working group investigating the state of play of too-big-to-fail. Input from all stakeholders, in particular academia, will be crucial for the process to be as stringent and transparent as possible, and Claudia will elaborate on this in her dinner speech this evening.

#### **5 Stablecoins and their possible implications**

Learning from the past leaves us better equipped to master the future. "History might not repeat itself, but it does rhyme." Mark Twain supposedly said. But the Bundesbank is also monitoring the possible emergence of new risks to financial stability that might not be an echo from the past.

Technological progress is rapidly transforming the way we live. This is especially true for payment systems. "Stablecoins", as they are known, are crypto-tokens or accounts whose value is pegged to existing fiat currencies – or a basket of currencies. Being a stable store of value is an important precondition for the use of crypto-tokens or accounts in everyday transactions.

The allure of stablecoins lies in their potential use for digital peer-to-peer transactions, without the volatility in value we usually observe in other crypto-tokens. But they can also create risks for consumers. In particular, there is the question of how the value of stablecoins can be guaranteed.

One approach would be to fully back stablecoins with funds stored in a trust account. But then there needs to be certainty that stablecoins are not issued in excess of these funds, and that convertibility is guaranteed and almost free of charge. Moreover, the trust funds should not invest in risky or illiquid assets as collateral. In the end, some form of regulation is needed at the global level.

If stablecoins became widely used, they would almost certainly become systemic by nature, not only because of their operational risks, but also in a more fundamental way: they could undermine the deposit-taking of banks and their business models. This might disrupt transaction banking and financial market intermediation.

Tobias Adrian, Director of the IMF's Monetary and Capital Markets Department, pointed to a specific possibility in a recent speech.<sup>19</sup> One way of addressing the risks associated with stablecoins would be to provide their suppliers with access to reserve accounts at central banks, and at the same time to entrust those central banks with the task of supervising stablecoin providers as well as wallet providers and distributors. This, Mr Adrian says, would actually create “synthetic central bank digital currency”, as users could, ultimately, hold and transact in a central bank liability.

But this would mean that the risks usually associated with digital central bank currencies might also emerge with stablecoins. In particular, there could be a danger that, in times of stress, depositors could easily shift funds out of private banks, thereby possibly triggering or accelerating bank runs.

Session 2 of our conference will explore the pros and cons of digital central bank currencies and might therefore also shed light on this aspect of stablecoins.

Of course, any evaluation very much depends on the specific characteristics a digital currency might have. A thorough analysis of the intentions, set-up and possible implications for the financial system will be essential. The G7 has therefore tasked a high-level central bank working group to report on stablecoins to the next meeting of finance ministers and central bank governors this July in Chantilly.

At all events, their emergence illustrates the need for cheap, convenient, and instantaneous cross-border means of payment. Thus, central banks and the financial sector should provide the public with modern, fast and digital payment instruments. It is about keeping our finger on the pulse, and our eye on the state of the art, in our efforts to promote the smooth functioning of payment systems without unduly endangering financial stability. In particular, real-time payment systems have to become the standard in Europe over the medium term.

## 6 Conclusion

During their very first encounter, our master detective told Watson that he had invented the “Sherlock Holmes test” for blood stains. And a few chapters later he impressed the doctor by identifying the brand of a cigar from its ashes and referring to a study he had written on the subject. Decades after the first adventure of Sherlock Holmes had been published in 1887, Edmond Locard eventually turned this fiction into reality when he issued a paper on the identification of tobacco by analysing ashes.<sup>20</sup>

Since those early days, science has been driving breakthroughs in the field of forensics at a furious pace. The possibilities created by DNA analysis are just one such example. In much the same way, we need academia to help advance financial stability analysis and policy.

When it comes to practical applications and policy advice, let me remind you of the words of the immortal Sherlock Holmes: “It is a capital mistake to theorise before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.”<sup>21</sup> By sharing insights steeped in data, I am confident that this conference will move us further ahead in the quest for a scientific underpinning of macroprudential policy.

I wish us all a rewarding and exciting conference!

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