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# Lending of Last Resort in Monetary Unions: Differing Views of German Economists in the 19th and 21st Centuries

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## Abstract

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**Keywords:** monetary union, banking crises, lending of last resort, gold standard

**JEL:** B15, E58, F45, G01

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# Lending of Last Resort in Monetary Unions: Differing Views of German Economists in the 19th and 21st Centuries

Hans-Michael Trautwein<sup>1</sup>

## *Abstract*

The European Central Bank's activities as lender of last resort are especially controversial in Germany. The overriding concern of the critics is an alleged tendency of creating moral hazard on the side of public and private borrowers in the European Monetary Union. This contrasts with the predominant views among German economists in the classical gold standard era, when the newly founded German empire merged the many currency areas in its realm into monetary union. Prominent experts and policy advisors, such as Erwin Nasse, Adolph Wagner and Friedrich Bendixen, argued that in view of the costs of system failures moral hazard ought not to be a predominant consideration at times of crisis. In critical assessments of the Currency vs. Banking debates in England, German commentators questioned the credibility and sustainability of strict rules for monetary policy in banking crises. Some even developed evolutionary views, in which monetary integration is driven by financial markets and lending of last resort becomes a constitutive characteristic of central banking, in particular in the formation of a monetary union. This paper compares the older German views about lending of last resort in monetary unions with the current discourse and explores possible explanations for the differences.

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## 1 Introduction

Lending of last resort (LoLR) has been a topical issue ever since the global financial crisis first culminated in the panic after the collapse of Lehman Brothers in Autumn 2008 and then mutated into the eurozone debt crisis in Autumn 2009. When systemically important financial institutions in the United States and across Europe were found out to be on the brink of insolvency, confidence in their respective markets broke down, with strong chain reactions across the borders of national jurisdictions and supervisory authorities. The “sudden stop” in the transnationally connected interbank markets called for massive lending of last resort by the major central banks. In the euro area, rescuing systemically important banks turned out to be a particularly tricky issue. In view of the no-bail-out clause of the Maastricht treaty and a lack of consensus about the mandate of the European Central Bank (ECB), it was not clear from the outset to which extent banks could and should be saved by national rescue actions of fiscal authorities (bail-outs) or by supranational lending of last resort through the ECB. When several member states of the European Monetary Union began to look unable to bear the fiscal burdens of bailing out transnational banks in their jurisdictions, the ECB took a turn towards “unconventional policies”. Its activities were interpreted as lending of last resort to governments, rather than to the financial sector only. They became highly controversial.

The debates about the ECB’s role of the lender of last resort are still going on, and they are especially heated in Germany. Officials of the Bundesbank and the Ministry of Finance have expressed their dissent from decisions taken by the governing bodies of the ECB. Various opinion leaders and policy advisors have accused the ECB of violating and overstepping its mandate. A number of economics professors have taken joint legal action against the ECB in the Federal Constitutional Court of Germany. In their case against the ECB’s plans for outright monetary transactions (OMT), the German court transferred the matter to the European Court of Justice (ECJ), whose rulings should be binding within the union. However, sharing several concerns with the plaintiffs and the majority of the economists heard as experts, the German court reserved the final word on the compatibility of OMT with the German constitution for itself. In 2017, it ruled in favour of the ECB, but when a second case was opened against the ECB’s public sector asset purchase programme (PSPP) in the same year, the procedure was repeated all over. The European court ruled in 2018 that the ECB did not infringe on European law, but the German court reserved the final word for itself again. In May 2020, it issued a judgment that was widely seen as a potentially fatal threat to European Union law and the monetary union. The German court argued that the ECJ had acted beyond its competences (*ultra vires*) by *not* obliging the ECB to present assessments of the proportionality of PSPP measures with regard to their economic and social effects. It ruled that, if the ECB did not comply promptly, its German affiliate, the Bundesbank, would no longer be permitted to participate in

PSPP activities of the ECB. The imminent conflict was solved by circumspect transmission of ECB documents to the German parliament in circumvention of measures that could be interpreted as subjection of the ECB to German national law. Yet, the plaintiffs are not placated and have filed further complaints against other LoLR activities of the ECB.

These legal confrontations show that much more is at stake than arguing out different opinions among economists within their discipline. However, it is worthwhile to take a closer look at the basic lines of argument in the controversies about lending of last resort in the European monetary union, both in theoretical and in historical perspective.

While, in the current German debates, a few prominent economists argue in defense of the ECB's LoLR activities, most of those who take a stand in public voice harsh criticism. The overriding concern of the German critics is the ECB's alleged tendency of creating moral hazard on the side of public and private borrowers, at the cost of savers and taxpayers. Such moralist emphasis differs not only from the views prevalent among experts in the rest of the world. It contrasts also with the predominant views among German economists in the classical gold standard era, when the newly founded German empire merged the many diverse currency areas in its realm into a monetary union. Prominent experts, such as Erwin Nasse, Adolph Wagner and Friedrich Bendixen, argued explicitly that moral hazard ought not to be a predominant consideration for lending of last resort at times of crisis. The shift of debt burdens on third parties was weighed against the losses from system failures that could occur if the central bank did not swiftly provide liquidity to the system. This line of arguments was developed against the background of the controversies between the Currency and Banking schools in England, particularly in view of the negative experiences with Peel's Bank Act as compared to more flexible policies in pre-Imperial Prussia. Various German commentators questioned the credibility and sustainability of strict rules for monetary policy in banking crises. Some, such as Nasse and Bendixen, went even further. They developed evolutionary views, in which monetary integration is driven by financial markets and innovations in payment systems that make leading banks mutate into lenders of last resort. This contributes to transforming the market leader into an authority with political responsibility for the monetary system's stability. Lending of last resort was thus considered a constitutive characteristic of central banking, in particular in the formation of a monetary union.

These older German views differ markedly from the discourses preceding the construction of the European Central Bank, in which considerations of the constitutive role of a lender of last resort were conspicuously absent. They are, moreover, free from the "myths about the lender of last resort" (as criticized by Goodhart 1999) that prevail in Germany today. It is therefore worthwhile to contrast current German debates about LoLR in the European Monetary Union with contributions made in the context of the German monetary union during the classical gold standard era. This paper makes such a comparison and discusses possible explanations for the differences.

The paper is structured as follows. Section 2 contains a brief description of the matter in dispute, the financial crisis and LoLR activities of the ECB since 2008. Section 3 summarizes the German debates about violations and overstepping of the ECB mandate. Section 4 outlines the history of the German monetary union and the *Reichsbank*'s policies under the gold standard, setting the stage for an assessment of what contemporary economists had to say about banking crises and lending of last resort. Sections 5 and 6 evaluate the contributions by Adolph Wagner, Erwin Nasse, Carl Knies, Karl Helfferich and Friedrich Bendixen, taken as representatives for German thinking about LoLR between the 1850s and 1914. In the spirit of Hobsbawm's *Age of Empire* (1987), the period in question is considered as the latter part of "the long 19th century" that ended with the outbreak of the First World War. Section 7 concludes with a comparison of the majority views held in Germany in the 19th and 21st centuries on the subject of lending of last resort in monetary unions. Various explanations for the manifest differences between these views are examined. They range from the insistence on the historical incomparability of circumstances and assertions of scientific progress on the one hand, to biases that arise from international net lending positions, on the other.

## 2 Lending of last resort in the European Monetary Union

The ECB was initially a rather modest player in the management of the global financial crisis. After the dramatic collapse of the Lehman Brothers investment bank in September 2008,<sup>2</sup> the Fed, the Bank of England and other central banks outside the euro area responded to the panic in the money markets with swift and strong expansion of their balance sheets. Quickly approaching the zero lower bound for nominal interest rates, they replaced their interest-rate policies by "unconventional policies" of quantitative easing through a massive scaling-up of their open market operations. To contain the crisis that was spreading from the US subprime mortgage market in Summer 2007, monetary authorities such as the New York Fed and the Bank of England were also involved in rescuing individual financial institutions from bankruptcy.<sup>3</sup>

The ECB, by contrast, lowered its main policy rates with some delay, keeping them markedly away from the zero lower bound. It refrained from rescue operations in favour of individual institutions. In accordance with the subsidiarity principles of the European Union, such bailouts were conducted by national authorities of the EMU member states responsible for supervision of the failing banks. Germany was especially active in this regard, rescuing the minor IKB bank shortly after the outbreak of the US subprime crisis and expanding its engagements massively in the bailouts of Hypo Real Estate and further financial institutions in Autumn 2008. Many of

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<sup>2</sup> For the following account see, for example, Stoltz & Wedow (2010), Cour-Thimann & Winkler (2013), Fawley & Neely (2013), Fratzscher & Rieth (2015), Brunnermeier et al. (2016, ch. 15), Alvarez et al. (2019).

<sup>3</sup> Prominent examples were the Bank of England's liquidity support to Northern Rock in Autumn 2007 and the New York Fed's operations to rescue Bear Stearns in Spring 2008. The US authorities' refusal to bail out Lehman Brothers set off the money market panic in September 2008.

the German bailout measures were taken prior to the Paris summit of October 12, at which the governments of EMU member states decided on a “concerted European action plan”. Only then was the ECB given the official role of a coordinator of such national LoLR activities. At first that role was confined to making recommendations and drawing up guidelines for government guarantees of bank debt, for recapitalization schemes and for bank asset support measures.

Until Spring 2010, there was thus a clear division of labour in the European Monetary Union concerning LoLR activities. The ECB should focus on monetary stability alone, while the member states would safeguard financial stability in their domains. The ECB concentrated on non-standard measures to enhance the ordinary transmission of its interest-rate impulses in extraordinary times. It continued to carry out bank-centred collateralized lending, but at extraordinarily light conditions. The standard procedures of variable and multiple rate auctions were reversed into full-allotment tenders at fixed interest rates. Other non-standard measures included the extension of the maturity of longer-term refinancing operations and the eligibility of collaterals to less liquid assets. The expansion of open market operations was largely confined to covered bonds (*Pfandbriefe*), a segment in which German banks had accounted for nearly two thirds of the European market before the crisis.

While the LoLR activities of the ECB provided general liquidity support in the money markets and the covered bond market, various national governments inside EMU faced increasing demands for resolving solvency problems of individual banks. Between October 2008 and May 2010, i.e. between the Lehman panic and the outbreak of the euro area debt crisis, the German government provided capital injections, liability guarantees (excluding deposit insurance) and asset support that amounted to the equivalent of 25 % of Germany’s GDP in 2008. This was in the same range as the support to financial institutions in the USA, the United Kingdom and Spain, but far higher than in France (18 %) or Italy (4 %).<sup>4</sup> The burdens of bailing out financial institutions were significantly higher in some smaller EMU member states, such as Belgium (47 %), the Netherlands (52 %) and Ireland (319 %).

The financial crisis revealed a basic incongruity in this division of LoLR responsibilities inside the monetary union. Operating across borders in progressively integrated European markets, many of the banks and other institutions in trouble had outgrown the supervisory control and fiscal rescuing capacities of the nation states in charge. Most of these systemically important financial institutions (SIFIs) had transformed themselves into transnational business units. In a significant number of cases, their liquidity and solvency problems could no longer be dealt with single-handedly by their countries of origin.

In Autumn 2009, this became particularly clear when market sentiments changed towards self-fulfilling beliefs that several euro area members (Greece, Portugal, Ireland, Spain and Cyprus) might become unable to bail out overindebted banks under their supervision and refinance their

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<sup>4</sup> For details see table 1 in Stolz & Wedow (2010: 24).

own government debt. Prior to the Lehman panic, markets and rating agencies had judged sovereign debt risks of EMU member states as negligible, due to their newly won access to greater and more liquid markets in the same currency area. In the first decade of EMU, spreads of bond rates, CDS prices and sovereign debt ratings had been compressed to figures near zero. With hindsight, it is frequently argued that markets at that stage were over-optimistic. After the Lehman panic, and triggered by a sharp rise in the official figures for Greek public debt in October 2009, market sentiment turned the other way, shifting into strong pessimism and setting off the euro area debt crisis. It was suddenly weighed in heavily that member states of a monetary union have no autonomous control over the currency in which their debt is issued. Being implicitly assigned the role of reinsurers with regard to banks in their domain, they carried a higher default risk. The spreads for sovereign debt of the countries under suspicion soared to the extent that the latters' inability to refinance their own debt became a fact. Several of the countries that found themselves on the brink of sovereign default had been forced to these extremes by positive feedback loops of convergent expectations, not by a "fundamental" (i.e. initially given) unsustainability of their debt.<sup>5</sup>

This secondary wave of panic threatened to become contagious throughout the euro area, because the division of LoLR responsibilities between the ECB and the nation states did not cope with the increasing fragility of the transnational banking system in the union. The EMU lacked a credible mechanism of coordinated stabilization. More centralized supervision and lending of last resort was required, as well as a fiscal backstop for the latter. From Spring 2010 onwards many attempts were made to remedy this problem. In public debates and controversies, most attention was given to:

- (i) concerted programmes of the "troika", consisting of the IMF, the European Commission and the ECB, in dealing with emergency loans to EMU member states without access to financial markets,
- (ii) the introduction of the European Stability Mechanism (ESM) in 2012, which serves as a fund for bailout loans to EMU member states in financial difficulty and, hence, potentially as a supranational fiscal backstop in support of the ECB's LoLR activities, and
- (iii) the introduction of a banking union in 2014 that transferred the supervision of systemically important financial institutions (SIFIs) from national levels to the ECB.

The most spectacular action that signified the ECB's assumption of the role of a lender of last resort was "Draghi's bazooka". In July 2012, when financial markets had turned extremely nervous about a potential break-up of the monetary union, ECB president Mario Draghi made the following statement: "Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough." The three words 'whatever it takes' had

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<sup>5</sup> For a general model of this argument in terms of multiple ('good' and 'bad') equilibria see De Grauwe (2012); for empirical evidence of shifting biases in sovereign debt ratings in the EMU see Körner & Trautwein (2014).

a strong positive announcement effect on lending conditions in the euro area (Alvarez et al. 2019). While the ECB developed a large battery of instruments for stabilizing the banking system in the euro area, the ‘Draghi effect’ did most of the job.

In the context of this paper it is not necessary to describe the ECB’s activities as lender of last resort in greater detail. It suffices to note that much heat in the controversies over LoLR stems from the successive extension of collateralized lending to banks at light conditions and gradual increase of outright asset purchases, even though the latter remained proportionally smaller than those carried out by the Fed and the Bank of England. Since the ECB massively expanded the range of its LoLR instruments and the size of its balance sheet, various commenters have interpreted its engagement as bailing out governments rather than stabilizing the banking systems – a point that has aroused much principled opposition in Germany.

### 3 German debates about the policies of the ECB

Ever since the conclusion of the Maastricht treaty in 1992, there has been marked opposition to the EMU among (senior) economists in Germany, which is based on the ordoliberal principles of subsidiarity, stable money and fiscal restraint. Various anti-euro manifestos were published in the 1990s, voicing fears that the common currency would turn out to be more inflation-prone than the Deutsche Mark. Roughly two decades later – when it was not inflation, but a banking crisis that brought the euro area under financial stress – new manifestos were circulated in the media, this time opposing the plans for the ESM and the banking union.<sup>6</sup> Economics professors took leading roles in the founding of ‘Alternative für Deutschland’ (AfD), the eurosceptic right-wing party, in 2013.<sup>7</sup> Even former and current officials of the Bundesbank and the ECB – such as Otmar Issing, Jürgen Stark, Axel Weber and Jens Weidmann – criticized the ECB’s turn towards ‘unconventional monetary policies’. In the hearings at the German Federal Constitutional Court on the ECB’s programme for Outright Monetary Transactions (OMT), the majority of the economic experts argued *contra* ECB.<sup>8</sup> Ever since 2011, Hans-Werner Sinn, one of the most vocal critics, has denounced TARGET 2, the clearing system operated by the central banks in the euro area, as a concealed transfer of risks from the ‘Southern fringe’ of the union to Germany.<sup>9</sup> In addition to academic economists, a large part of the media in Germany

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<sup>6</sup> In 2011, 189 economics professors from Germany and Austria launched an appeal to scrap the plans for the European Stability Mechanism. In 2012, 277 professors signed a manifesto *contra* the introduction of a European Banking Union; this was countered by an appeal *pro* banking union, signed by 191 professors. Another round of protests against the banking union came in 2018, supported by 155 professors.

<sup>7</sup> Two prominent figures were Bernd Lucke and Joachim Starbatty, who left the AfD in 2015 when it turned (more) xenophobic.

<sup>8</sup> Clemens Fuest, Kai Konrad, Hans-Werner Sinn and Harald Uhlig argued *contra*, Marcel Fratzscher *pro* ECB, seconded outside the court by Martin Hellwig; see *Wirtschaftsdienst* (2013).

<sup>9</sup> Sinn (2014); for a counterposition see Winkler (2014) and Hellwig (2018).

has engaged in strongly critical coverage of the ECB's engagement in LoLR, to the point of demonizing Draghi.<sup>10</sup>

The criticism runs along four different lines: The ECB is accused of (a) fuelling inflation, (b) expropriating savers by low rates of interest, (c) encroaching on the fiscal sovereignty of member states, and (d) socializing losses without being democratically accountable.

Right from the beginning of post-Lehman rescue actions, German professors and journalists have sounded warnings of inevitable and strong inflation, accusing the ECB of violating its mandate to ensure price level stability. Any references to the technical manageability of an exit from quantitative easing and light lending conditions, when business would return to normal, have been countered with suspicions that the governing council would lack the political will to do so. When the expected inflation did not materialize, index changes remaining well below target for most of the decade following the crisis, the focus was shifted to warnings of asset price inflation that would bed for the next crisis. Attempts to substantiate these claims by empirical research are rare. Most of the warnings remain at the level of saying 'what goes up must come down'.

The low (and even negative) interest rates set by the ECB are seen as violating Bagehot's rule, interpreted conventionally as the prescription to 'lend freely, against good collateral, at a penalty rate'. It is argued that low levels of interest rates undermine the business models of solid finance in savings banks, insurance companies and other institutional investors. Reducing the incentives to save, the unconventional policies of the ECB are seen as a distortion of intertemporally optimizing behaviour in the economy. To put it in ordoliberal terms, they are denounced as impairing trust in the monetary order.

A major point in the professorial criticism of the LoLR activities is their alleged trespass of the dividing lines between supernational monetary policy and national fiscal policies. According to this view, OMT and other public-sector asset-purchase programmes amount to bail-outs of EMU member states that have accumulated excessive debt. They are seen as indirect state-financing of insolvent entities by the printing press. Apart from being charged with delaying insolvencies, the supernational monetary authority is accused of engaging in clientelist regional policies and of setting incentives for irresponsible finance and fiscal policies.

This criticism is further expanded into an issue of constitutional principles, when it is argued that the ECB is socializing losses without being accountable to democratically elected bodies. By accepting 'bad' collateral, the critics argue, the ECB is creating a community of transfers and liabilities contrary to the 'spirit of Maastricht'. The latter is interpreted as centering on the subsidiarity principle codified in the no-bail-out clause of the treaty. The critics suggest that the

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<sup>10</sup> "The ordoliberal school also has a dominant influence on many business journalists in Germany, the media coverage of the euro crisis, for example in newspapers like the Frankfurter Allgemeine Zeitung or the Handelsblatt, has a strong bias against the OMT and other measures taken by the ECB and euro area governments to fight and contain the crisis." (Winkler 2014: 4)

ECB acts against this principle by redistributing losses across the union. Taxpayers in Northern member states are made to provide coverage for risks run up by transnational banks and by private and public debtors in the South. All in all, the four lines of criticism converge in an overriding concern with moral hazard lurking in lending of last resort in the monetary union.

The counterarguments, made in favour of the ECB by a minority of economists and journalists in Germany, can be summarized as follows. Systemic illiquidity needs to be addressed by lending of last resort, while insolvencies should not be of concern for central banks. However, panics in financial markets have a tendency to produce ‘bad equilibria’ in which illiquidity is not reliably distinguishable from insolvency. Given the risks of downward-spiralling debt deflation, the unconventional ECB policies were indispensable for achieving price level stability when the conventional transmission mechanisms through the bank-lending channel failed to work. Effective lending of last resort requires confidence of the public in the powers of the central bank to stabilize financial markets. If the confidence is there, mere announcements of LoLR measures may suffice to stop panics – just as Draghi’s bazooka did. The supporters of the ECB caution nevertheless that the lack of a fiscal backstop, which has been only partly remedied by the introduction of the ESM, tends to overburden the ECB. It cannot safeguard macroeconomic stability of the euro area economy on its own. If more integrated fiscal policies and financial regulation are blocked by member states’ insistence on national autonomy, the ECB’s incursions into the spheres of fiscal policies spheres become both indispensable and dysfunctional. The supporters of the ECB argue that opposing LoLR for fears of moral hazard tends to produce higher social costs than a quick socialization of losses through LoLR. In this, they follow, probably unknowingly, a line of argument developed at the times of the first German monetary union which was established in the 1870s and consolidated in the golden era of the gold standard.

#### 4 Monetary integration and lending of last resort in Germany after 1871

After the constitution of the German Empire in 1871, monetary integration followed in three acts (cf. Koch 1910, Häuser 1998, Bruckhoff 2010).<sup>11</sup> The first was the Currency Act of 1871, by which the *Mark* was introduced to a unified jurisdiction where eight other currencies had circulated before.<sup>12</sup> The act regulated the creation of imperial gold coins and “forbade the further coinage of other gold as well as of all large silver coins” in the Federal States (Koch 1910: 5). The second act was the Coinage Act of 1873 which regulated the transition from the multi-currency to the uniform *Mark* system. Both acts defined Germany’s transition from a

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<sup>11</sup> The process and its historical background was more complex than the conventional division in three acts. It is well described by Koch (1910) who had been the president of the *Reichsbank* from 1890 until 1907. Helfferich (1898) contains a detailed account of the first two acts.

<sup>12</sup> This count of prior currencies includes the French *Franc* which continued to circulate in the Imperial Territory Alsace-Lorraine after its annexation in 1871 (Häuser 1998: 74 n. 13).

silver standard to a “limping gold standard”. In the new *Mark* system, both gold and silver coins were legal tender until silver coins were reduced to tokens by the Coinage Act of 1909.

The third act was the Bank Act of 1875 which installed the *Reichsbank* as the central bank of the empire. It was formed out of the Bank of Prussia (*Preußische Bank*) which had been “vested with the unlimited right of note issue in 1856, and, as a result of its services during the great crises of 1857, 1866, and 1870, … developed into a central note bank for the greater part of Germany” (Koch 1910: 2-3). The services consisted of a flexible expansion of the supply of bank notes in exchange for bills of exchange in times of crisis, and contraction in good times (Winkel 1980: 14-15). In the tradition of the Bank of Prussia, lending of last resort was considered as an essential function of the imperial central bank. As its second president formulated it with reference to the intentions behind the Bank Act of 1875, “[t]he Reichsbank forms, especially in bad times, the stronghold for the credit of the country” (Koch 1910: 19).

Even though the *Reichsbank* did not, by the Bank Act, acquire a monopoly in issuing bank notes, the number of other note-issuing banks in the empire fell immediately from 33 to 20 and further to four by 1906.<sup>13</sup> Bank notes acquired the status of legal tender only in 1909, and the share of bank notes in circulating currency (coins and notes) was on average only about 30 per cent until 1914. This does not, however, indicate a predominant demand for coins in the payment system. From the 1880s onwards Germany developed an advanced bank transfer system (*Giroverkehr*), in which the *Reichsbank* assumed the role of the central clearing agency.<sup>14</sup> This made the use of bank notes in greater transactions largely redundant (Koch 1910: 19-27; Bruckhoff 2010: 16).<sup>15</sup>

According to the Bank Act of 1875 (sec. 17), at least one third of the circulating bank notes of the *Reichsbank* was to be “secured in money of German currency, imperial treasury notes, gold in bullion or foreign coins” (Koch 1910: 41). The remaining two thirds were to be covered by bills of exchange. All banks of issue were quantitatively restricted and had to pay penalty taxes of five per cent on all issues above their quotas. This principle of *Drittdeckung* (reserve of one third) had earlier been common practice in German note-issuing banks.<sup>16</sup> While it had also

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<sup>13</sup> The four remaining banks of issue were the state banks of Bavaria, Saxonia, Wurttemberg and Baden.

<sup>14</sup> According to Koch (1910: 32 n. 57), the transactions volume in giro business rose from 17 trillion marks in 1876 (3,245 clients) to 195 trillion marks in 1904 (21,221 clients).

<sup>15</sup> While Goodhart (1988: 111) argues that “the ratio of cash to sight deposits was… high”, the textual evidence provided by him does not contradict the more general observation, made by Bruckhoff (2010) and many others, that large transactions in the business sphere were generally carried out by deposit transfers. However, until 1906 bank notes were issued only at denominations of 100 *Mark* or more (Helfferich 1923: 157), so that their usage, too, lay in the domain of large transactions.

<sup>16</sup> “The ‘Drittdeckung’ (cash reserve of one-third), which from this time [the 1840s] onwards was a common provision in the laws on German banks of issue, seems to have been the adoption by legal prescription of the conventional practice said by Horsley Palmer to have been followed by the Bank of England before the Commission of 1832 in England.” (Smith 1936: 61 fn. 8)

been laid down in the statutes of the Bank of Prussia in 1846, the latter had been granted unlimited note-issue after the financial crisis of 1857 (Smith 1936: 63-67).

When Germany went on the gold standard, the *Reichsbank* returned to *Drittdeckung*. Yet, as Ögren (2003: 7 n.14) notes, the *Reichsbank*'s apparent adherence to the gold standard's "rules of the game" did not prevent it from constructing "a system of lending of last resort that operated outside the requirements of the specie standards." By lending through the giro system, the *Reichsbank* could avoid breaching the limits of note issuance and yet keep its supply of liquidity flexible. Operating the giro system, it transferred funds that lengthened its balance sheet without violating the principle of *Drittdeckung*. The reserve rule did not apply to the liabilities that the *Reichsbank* ran up in the giro system. In analogy with the two other thirds of the note issuance business, liquidity by fund transfers was provided by discounting bills of exchange submitted by the credit banks (Koch 1910: 42). In accordance with Bagehot's rule, liquidity was thus provided rather flexibly in times of shortage. This was done frequently, but not always, at higher discount rates.

The *Reichsbank* was set up in the middle of the "founding epoch crisis" (*Gründerkrise*) which lasted from 1873 until 1878, following a boom in which the establishment of many new joint-stock companies coincided with a huge inflow of liquidity through French war-reparation payments. During the crisis, 71 banks went insolvent and the volume of bank lending shrank by almost 40 per cent (Burhop 2004: 252-55). Yet, the stability of the German banking system was not put into doubt. There were further stock market crashes and banking crises in the United Kingdom, the United States and other countries in 1884, 1890, 1893, 1901 and 1907. German banks were adversely affected by transnational transmission of these shocks, and even bigger banks failed (e.g., the *Leipziger Bank* in 1901). Yet, the *Reichsbank* did not engage in "lifeboat" activities to save individual banks. It rather "played the role of lender of last resort to the system as a whole, by purchasing prime bills on the open market and expanding its 'excess' note issue, at times of financial stress" (Goodhart 1988: 110). It was widely noted, at the time, that the system remained stable because the banks and the public trusted in "the *Reichsbank*'s unlimited guarantee of liquidity" (Bruckhoff 2010: 18).

Looking back on three decades of *Reichsbank* policy, the director of the Bavarian state bank declared in the middle of the financial crisis of 1907:

The *Reichsbank* has fulfilled its duty, from without and from within, and this both in normal and in critical times. From without, it has protected the German gold standard; within, it has drawn over the Empire a splendid network of institutions dispensing credit and performing monetary transfers. On the basis of a flexible note issue these institutions satisfy the need for credit at a rate of interest which is now higher, now lower, but which is always determined by the existing economic conditions, and is never fixed by considerations other than those pertaining to the public welfare. In the course of a generation a great nation

experiences many critical and stormy days. The Reichsbank has always been the last resort and a thoroughly reliable support...

We have had collapses of confidence and scarcity of money, but, thanks to the Reichsbank, we have not had a real money crisis for a generation.

(von Stroell [1907] 1910: 246)<sup>17</sup>

Lending of last resort appears thus to have worked well already during and immediately after the introduction of the German monetary union of the 1870s. This was certainly due to the strong position that the *Reichsbank* had inherited from the Bank of Prussia. The latter had counteracted liquidity crises by way of unrestricted note issue. With the transition to the gold standard that strategy was no longer available, because the issuance of bank notes in the new common currency, the *Mark*, was limited by principle of the “reserve of one third”. This was not a hard gold constraint in itself, though, given that imperial treasury notes and silver coins were accepted as perfect substitutes for gold.

Even so, some difficulties of monetary union were felt in control of the other note-issuing banks that kept their privileges. When the giro system evolved from the 1880s onwards, the *Reichsbank* could introduce greater degrees of flexibility by adding a market maker role to its central clearing function. It is an open question to which degree the development of the giro system was spurred by periodical needs of last-resort lending. The Swede Knut Wicksell was inspired by the German giro system which he, in his path-breaking *Geldzins und Güterpreise* (1898), considered as an advanced stage in the evolution of monetary systems towards the “pure credit economy”. In that ideal state, reserve drains would cease to limit central banks in their clearing of balances in the system, as they can stabilize the value of money by following an adaptive rule for setting their lending rates – a strategy fervently advocated in modern theory of monetary policy (Woodford 2003).

## 5 19th century economists on central banking under monetary integration

It has frequently been argued that monetary theory was not highly developed in Germany during the 19th century.<sup>18</sup> This is partly attributed to the backwardness of the German economy until the 1880s, and partly to inclinations of German thinkers towards romantic ideas or towards classificatory description, often identified as a characteristic of the Historical School.<sup>19</sup> Even

<sup>17</sup> In a similar vein, directors Nathan and Schuster of the *Dresdner Bank* attested in interviews with the US National Monetary Commission: “We had a very serious crisis here in 1901. It was a money crisis, and at that time the Reichsbank was very liberal in extending credits. The Reichsbank feels that it has a patriotic duty to preserve the credit of the Empire. It is a state institution.” (National Monetary Commission 1910: 398; also quoted by Goodhart 1988: 110).

<sup>18</sup> See, for example, Winkel (1980), Holtfrerich (1988), Häuser (1998) and Rieter (2002). Note that such verdict does not refer to the „long“ 19th century, since Georg Friedrich Knapp’s *State Theory of Money* (1905) and other writings of the years between 1900 and 1914 have been considered as important contributions to monetary theory; see, for example, Ellis (1934) and Trautwein (2003).

<sup>19</sup> See also Bendixen (1912: 4-9) who argued that German economists had a tendency to work with the methods of botany instead of political economy.

those economists who worked in an analytical style are rarely considered as contributors to the state of the art in their time. Yet, with regard to lending of last resort in a monetary union, several German authors were ahead of their time. They advanced sophisticated arguments that anticipated much of what is discussed in modern debates.

### *5.1. Banking vs. Currency: Nasse, Wagner and Knies*

Prior to the monetary union of the 1870s, German economists discussed lending of last resort mainly along the lines of the controversy between the Currency and Banking Schools in Britain.<sup>20</sup> Erwin Nasse (1829-90) and Adolph Wagner (1835-1917) were the most influential contributors to these debates. Both came later to be known as “socialists of the chair” (*Kathedersozialisten*)<sup>21</sup>, and they were leading figures in public debates about social reform, public finance and other issues from the 1870s onwards. In their younger days they were mostly known for their writings about money and credit which elevated Banking School doctrines to dominant positions in German discourse over monetary reform. Nasse and Wagner pleaded for giving the central bank discretionary powers to play freely the role of the lender of last resort in bad times; they discarded moral hazard objections against such policies. A different position was taken by Carl Knies (1821-1898), who is nowadays ranked among the founding fathers of the (older) Historical School. Knies was more critical of the Banking principle and regarded lending of last resort as a sort of “mercantilist anachronism”. He pleaded for a rule-bound policy that would reduce the problems of moral hazard in the big banks’ business. The contributions by Nasse, Wagner and Knies are discussed in greater detail in the following.

The British controversy between the Currency and Banking Schools revolved essentially around two questions: Does the volume of ‘bank credit’ determine changes in the price level, or *vice versa*? And should the issue of bank notes be subject to reserve restrictions, even if the notes are redeemable in gold? The Currency School argued, in the tradition of David Ricardo’s quantity theory of money, that the note issue ought to be strictly limited by rules in order to avoid inflation, reserve drains and crises. The Banking School, on the other hand, relied on competitive market mechanisms that would automatically prevent an overissue. An important qualification of the Banking position was made by John Stuart Mill. According to Mill (1848: III, chs. 12 and 24), the principle of bank note coverage by real bills works well in normal times, as lending accords with the needs of trade and there is a steady reflux of notes to the banks. In the course of a strong upswing, however, the rise of note issues could lead to speculative excesses and subsequently to inflation, reserve drains and liquidity crises. At the time of Mill’s

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<sup>20</sup> Cf. Smith (1936: ch. IX), Winkel (1980), Holtfrerich (1988) and Rieter (2002) for the reception of the Currency-Banking-School controversy in Germany.

<sup>21</sup> The *Kathedersozialisten* were a group of (mostly conservative) German professors who advocated Bismarckian social insurance and other reforms, aimed at forestalling the rise of the social democratic labour movement. Their institutional base was the *Verein für Socialpolitik*, founded in 1873 and until today the leading association of German economists. Many of the *Kathedersozialisten* and founding fathers of the *Verein*, such as Gustav Schmoller and Lujo Brentano, were also leading figures in the so-called Historical School. Nasse was chairman of the *Verein* from 1874 until his death in 1890.

writing, the Currency School had “won” the controversy through the introduction of Peel’s Bank Act of 1844, which gave the Bank of England an effective note-issuing monopoly and stipulated full gold-backing of the Bank’s notes (apart from a narrowly defined fiduciary issue). Yet, the Currency School “lost” the controversy insofar as the Act had to be suspended in the subsequent crises of 1847, 1857 and 1866 in order to prevent a breakdown of England’s payment system.

This was the background of the treatises of Nasse, Wagner and Knies. Nasse, a professor at the University of Bonn since 1860, is most notable for his Bonn habilitation thesis *On Bank Notes and Paper Money with Regard to the State of Prussia* (1856), a monograph on *The Bank of Prussia and the Expansion of its Business Sphere in Germany* (1866), and two articles about *The Influence of Credit on the Exchange Value of Bullion* (1865) and *The German Note-Issuing Banks during the Crisis of 1866* (1868). One year after Nasse’s first contribution, Wagner published *Contributions to Banking Theory* (1857), his doctoral thesis submitted at the University of Göttingen at the age of 22. Wagner’s most famous contribution to the subject was a monograph on *The Theory of Money and Credit behind Peel’s Bank Act* (1862), written during his time in Vienna. Two further works are particularly relevant with regard to the German monetary union. One is *The System of Note-Issuing Banks* (1873), a voluminous handbook for banking legislation, written during Wagner’s last two years at the University of Freiburg and first three years at the University of Berlin. The other is *The Bank Reform in the German Empire* (1875) – a long pamphlet in which Wagner summarized his critique of Chancellor Bismarck’s draft for the constitution of the *Reichsbank*. Finally, there are the works of Knies, first in the form of two articles with *Reflections on Credit* (1859/60) and then in two large volumes on *Credit* (1876, 1879) that completed his trilogy on money and credit.

### 5.2. Wagner

It is convenient to start with Wagner’s position on central banking and lending of last resort. In all of his above-named works, he came back to the Currency-Banking controversy, taking a clear stand on the side of the Banking School. As Vera Smith (1936: 117) points out about the 1857 dissertation:

Writing at a time when the currency doctrine was becoming very powerful on the Continent, he set out in this first book to do two things: The one was to explain the disadvantages from the economic point of view of the ruling system of privileged banks, and the other to examine the basis of Peel’s Act.

The latter was carried out even more systematically in the treatise of 1862, where Wagner criticized the Currency School for “the confusion” of bank notes with paper money (1862: 62-85). He conceded that the Currency School is correct insofar as the issuance of paper money, which derives its value from government regulation that makes it legal tender (*fiat* money), affects the price level and ought to be subject to quantitative restrictions by the state. Redeemable bank notes, on the other hand, are *voluntarily* accepted as money substitutes. They

are not currency. Their issuance should therefore be left to free competition among banks. For the case of Germany, Wagner could actually draw such sharp dividing lines, since bank notes did not acquire the status of legal tender until 1909 (see section 2 above). As Knies (1876: 252-53) remarked a few years after Wagner's book, the dividing lines were blurred in England, where the notes issued by the Bank of England had been made legal tender by the Bank Act of 1833. According to Knies, this act gave bank notes a "dual character", spurring gold exports and setting impulses towards centralized control of note issuance, as later established by Peel's Act. With reference to the 1833 Bank Act, Wagner (1862: 65-66) insisted nevertheless that redeemable bank notes, even though circulating at a "compulsory [bullion] exchange rate" (*Zwangscurs*), are not "paper money proper", let alone currency, since neither the emitting bank nor the state can force the public to *hold* the notes whenever there is a preference for redemption in gold (or silver).

On "purely economic grounds", Wagner was an adherent of free banking (*Bankfreiheit*). With increasing age, however, he would concede that "political circumstances" can make it opportune to have a system in which a central bank has a note-issuing monopoly. In the prefaces to his handbook of 1873 and the reform proposal of 1875, Wagner emphasized the importance of a "relative perspective" that considers the stage of economic development, the institutions, and other particularities of the country in question. He pointed out that his comprehensive studies of banking practice and monetary systems had brought him to the views held in the Historical School – a crowd with which he, a liberal in the tradition of his teacher Karl Heinrich Rau, would not mix otherwise (1862: V-VI, 1873: XI-XIII, 1875: 11-14).

Accepting monetary control through a central bank, Wagner nevertheless criticized Peel's Act, time and again, for curtailing the bank's potential to stabilize the value of money and the financial system in times of crisis. He accused the Currency School, whose adherents opposed to its role of a lender of last resort, of denying a principle duty of the central bank:

[A]s long as banks are equipped with extraordinary privileges and prerogatives, the public cannot be deprived of its belief in a certain right to receive support. People do think that the Bank deserves to have such privileges only if it acts accordingly in the general interest.

(Wagner 1862: 191-92)

Wagner regarded the policy rules of Peel's Act as *destabilizing*, because they forced the Bank of England to act procyclically (1862: 164-230), accommodating the note supply to demand in boom times and reducing it at times of liquidity squeezes and panic. He warned the German chancellor to plan for a central bank on the same principles (1875: 3-13). Wagner (1862: 3-5) considered the *Drittdeckung*, the system of "the reserve of one third" widely practiced in Germany, as a misleading caricature of the Banking School's principles of "bank cover" by real bills (according to the needs of trade, based on the law of reflux). He found *Drittdeckung* arbitrary, lacking any specific rationale, and an undue limitation of the capacity of the central

bank to preserve monetary and financial stability. He would accept it only as a lesser evil, compared to restrictions in the style of Peel's Act (1873: 643-45, 1875: 141-42; cf. Smith 1936: 130). Essentially, Wagner campaigned for giving the central bank all the discretionary powers to lend what is required for counter-acting liquidity squeezes in the economy. He discussed the objection that such a policy would foster excessive speculation and induce crises by creating incentives for irresponsible behaviour and moral hazard, contrasting it with his ideal of a free banking system.

In the system of central banks there is no generally effective cure for this. All that can be done is to convince the business community that the Bank will under no circumstances, insofar as it is capable of making an assessment, offer its means to save those who are in dire straits by their own fault. Instead it would help impartially only those businessmen who evidently suffer from the general lack of confidence without having contributed to it.

(Wagner 1862: 192)

The desire to install an effective lender of last resort in the newly created monetary union led Wagner (1875) to criticize the *Reichsbank* proposal made by Chancellor Bismarck's office. Wagner's campaign had evidently some influence on the outcome of the parliamentary debate; in many aspects, the *Reichsbank* Act of 1875 came close to his counter-proposal (cf. Häuser 1998: 84-85). The Bank of Prussia was elevated to the status of the empire's central bank, as demanded in the lengthy subtitle of Wagner's 1875 book. This guaranteed some continuity in the use of discretionary powers to stave off liquidity crises, as demonstrated by the Bank of Prussia in the crises of 1857 and 1866. In accordance with Wagner's free-banking tenets, bank notes were not made legal tender, and the *Reichsbank* was not given a formal monopoly of note issue. Even though it came to be subject to stronger reserve restrictions than the Bank of Prussia, the *Reichsbank* was permitted to issue the greater part of its bank notes on the base of the "needs of trade", backed by bills of exchange, while the other remaining banks of issue were more restricted. The new central bank was thus given the power to exercise monetary control through interest rate policies, with discount and lombard rates as the main instruments.

In the preface of his reform proposal, Wagner (1875:14) pointed out that he had renounced his initial opposition to central banking under the influence of Nasse's writings. It is noteworthy that Nasse, in contrast with Wagner, had developed an evolutionary theory which positively explains, "on purely economic grounds", why even a free banking system would tend to transform itself into a system with a large central bank that acts as lender of last resort. Nasse's theory was, moreover, framed in terms of monetary integration.

### 5.3. Nasse

All of Nasse's above-listed writings from the years 1856-68 set the focus on the evolution of credit and monetary integration in the German confederations that preceded the formation of the German empire. In accordance with Mill (1848, III: chs. XII and XXIV), Nasse (1856: 639-

41, 1865: 131-51) emphasized an ambiguity in the role of “credit means of payment”, and bank notes in particular. In the normal course of trade, bank notes, bills, checkable deposits and other forms of credit serve as substitutes for money proper, allowing the banks to economize on the use of their cash reserves. The supply of the credit-based means of payment is highly elastic in responding to the needs of trade. It promotes real economic activity *and stabilizes* the price level when the inelasticity of the supply of cash would make it volatile:

In all these cases it is easily observable how credit prevents strong changes in the exchange value of money by growing and shrinking simultaneously with trade and by offering its services with wonderful elasticity wherever it is needed, but contracting whenever demand for it is shrinking.

Nasse (1865: 135)

However, there are periods in which credit contributes to price level volatility. These periods form cycles, starting with speculative booms and ending in crises. In Nasse’s view, the most common impulse that triggers booms is a shock on the supply of money proper, caused by a significant decline in the cost of gold. Looking back on the Australian and Californian gold rushes of the early 1850s, Nasse noted that the price rise occasioned by the increased circulation of gold led to an expansion of credit instead of a stabilizing contraction:

This is related to the stimulus that every natural rise in the prices of commodities exerts on production and credit. As a consequence of such stimulus, which will never fail to occur when there is a significant facilitation in the production of precious metals, there is apparently a tendency in trade to make a credit-based speculation drive every price rise in important classes of commodities far above the degree that would be justified by its natural conditions.

(Nasse 1865: 136)

In this context, bank notes played a significant role, but not nearly as decisive as in Wagner’s view. Nasse (1856: 642-43) observed that the “free issue” of bank notes by competing banks has a tendency to propagate overspeculation and crises, but emphasized that there is “no qualitative difference between the misuse that can be committed with bank notes as compared to other instruments of credit”. A few pages later he argued nevertheless that payments made from deposits “are primarily based on personal mutual credit, which is not as easily distrusted in a crisis” (1856: 649), compared to bank notes which may lose their value in bank runs or be accepted at a high discount only.<sup>22</sup> As early as 1856 (and in 1865: 140), Nasse described giro systems as a superior mode of mitigating crises in credit economies.

Nasse did not specify the conditions under which credit will switch from being a moderating factor to becoming a catalyst of booms and crises. Like Mill and Wagner, he set the focus on

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<sup>22</sup> This contrasts with Wagner’s argument that „at times of credit and banking crises recourse must be taken to bank notes as primary form of the media of exchange in a credit economy” (1875: 8).

the discussion of monetary policy. Unlike Mill and Wagner, he did not take the power of the central bank as given by state privilege. Instead, he developed a theory in which a relatively large and strongly interconnected bank assumes the functions of a central bank, promoting the integration of separate currency areas by its emergence as a lender of last resort. In critique of free-banking doctrines, Nasse (1856: 643) pointed out that profit-maximizing private banks have an interest in minimizing their “sterile cash reserves”. Competition between the banks drives the evolution of credit instruments, such as bank notes, that substitute almost completely for cash in “tranquil times”. This makes banks less resilient to liquidity crises. At the outbreak of such crises, they will attempt to protect their reserves by raising discount rates dramatically, or by suspending the redeemability of their bank notes altogether. In either way they contribute to making the crisis worse (1856: 646). Nasse did not accept the claims, made by adherents of the Banking School, that the Scottish system of free banking could serve as a counter-example (1865: 649). With reference to Tooke, he pointed out that the Scottish banks were riding piggy-back on the cash reserves and last-resort lending of the Bank of England.

More generally, Nasse reflected on a moral hazard element in the evolution of commercial banking and the recurrence of banking crises.

Nobody should tell us that the own-interest of the banks... provides an incentive sufficient to prepare for such events, which look improbable to most people, by keeping redundantly large cash reserves over the years, by abstaining from large dividends etc. Not only has experience shown the contrary; it is also in the nature of things. Are the directors and shareholders menaced by any great risk when they stop making... payments? In the worst case the bank would immediately go into liquidation; the losses that might occur if this happens within short time will nevertheless be insignificant in comparison with the gains made over longer time, if the capital had been invested well by banking standards. As a rule, the interests of the debtors, the shareholders and the shocked creditors of the bank – we may even say: the public interest – will be strong enough to delay liquidation.

(Nasse 1856: 647)

Yet, there is no alternative to acting in the public interest. Rejecting moral hazard arguments as a valid objection to lending of last resort, Nasse (1866: 39) confirmed ten years later, when the crises of 1857 and 1866 had hit the continent:

There is an undeniable solidarity of interests in the system of credit and money. It manifests itself blatantly at the times when the innocent, too, are affected. This is why recourse is taken to public resources in whichever form they can be acquired.

In his habilitation thesis, Nasse (1856: 661-64) argued that it is necessary to have a big national bank that may enjoy a number of privileges in exchange for acting as a lender of last resort. He praised the Bank of England for having stabilized the “sophisticated edifice of the English credit

system” by expanding its note issue during the crises that occurred after 1825. Prior to Wagner, he criticized Peel’s Act (1856: 667-68) as an unsustainable construction that has procyclical rather than countercyclical effects and, hence, had to be suspended during the crises that occurred after 1844. Nasse (1856: 661) demanded that one of the bigger banks in Germany be equipped with the powers and privileges to act as a lender of last resort; a candidate often named in public debate was the Bank of Prussia.

Ten years later, Nasse published *The Bank of Prussia* (1866), a monograph in which he described how the market-driven expansion of this bank’s business beyond its Prussian domain made it a natural lender of last resort for the whole of Germany. In the introductory chapter, Nasse drew attention to the dense network of branches that the *Preußische Bank*, with its original state bank privileges and duties, had established in the Kingdom of Prussia. This network enabled it to lower the costs of the payments system across the country. While essentially run like a commercial bank, the Bank of Prussia provided clearing services for transfers of deposits and commercial bills within Prussia and in transactions with most of the German trading centres beyond its borders (mainly Hamburg, Bremen and Frankfurt). By the 1860s, its bank notes were accepted in most parts of Germany; their circulation and reflux were satisfactory with regard to preventing an overissue. Since the bank’s business sphere was expanding through these network externalities, Nasse saw a potential for further monetary integration of the different currency areas in Germany. This would require political support for an “enlargement of the bank”. The purpose of Nasse’s book was to discuss the economic *pros* and *cons* of an expansion beyond the official boundaries of the Prussian currency area. The envisaged expansion would give the Bank of Prussia the *economic* status of a central bank in the (North) German confederation.<sup>23</sup>

The strongest arguments in favour of expansion were (a) greater control by intensified public attention, and (b) economies of scale and scope in holding cash reserves (1866: 22-27). The leading banks are in the focus of public debates and will therefore be requested to explain the rationale of their actions. A bank with a central position such as that of the Bank of Prussia has, on the other hand, greater degrees of freedom to react (or not react) to outflows of reserves than smaller banks. It would not, or not to the same degree, run into the dilemma of protecting its reserves by raising discount rates sharply and thereby risking to lose business. Nasse (1866: 40-42) even argued that the existence of a large note-issuing bank is a precondition for well-functioning competition among local banks. Nor ought the note-issuing banks of smaller German states fear competition; they would benefit from the enhanced convertibility that the Bank of Prussia provides through its larger network.

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<sup>23</sup> Nasse (1866: 11-13) touched briefly upon the political arguments for strengthening Prussian hegemony and giving Germany a greater weight in the global system of financial markets. Such arguments were espoused by Wagner. Nasse admitted that political reasons might suffice to carry out the project, but wished to demonstrate that it was sound on economic grounds, and that the objections raised against it were unfounded.

The decisive argument for assuming the role of the lender of last resort is the standing of the bank in terms of “its credit” (1866: 33). As long as its own solvency is not in doubt, a big bank can operate a large note issue on a small reserve and thereby preserve the solvency of many firms. By borrowing in the international markets, the big bank could even stave off reserve drains and currency crises that are caused by temporary trade deficits. Apart from providing the balancing imports of capital, such foreign loans could ward off steep rises in discount rates and thereby avoid disturbances in the internal money markets (1866: 46).

In an article about *The German Note-Issuing Banks during the Crisis of 1866*, Nasse (1868: 5-6) went even further by arguing that countercyclical lending strengthens the standing of a bank in a virtuous circle. Its capacity to lean against the wind, whether based on its market position or backed by political privileges, inspires confidence and attracts deposits that consolidate its credit. Along these lines, Nasse drew attention to the large expansion of the note issue of the Bank of Prussia in the crisis of 1866 (1868: 8-13). The crisis turned out much milder than in England – despite the war between Prussia and Austria that raged in the same year, generating waves of speculation about the future of the monetary system/s in the disintegrating German confederation. Nasse took this as further evidence against reserve restrictions on the note issue of central banks. He made the argument in general terms and applied it explicitly to the situation of a currency area that expands and overlaps with other currency areas (partly on a different metallic standard), as was the case with Prussia and other German states.

Comparing the counter-cyclical lending in Prussia with the strong contractions of credit in other German states where note issues were more restricted, Nasse (1868: 13) emphasized that the 1866 episode demonstrated, “how a limitation of the note issue that is not covered by cash reserves creates a hinder for the large central banks that is most strongly felt in times of crisis and that then paralyzes their relief operations.”<sup>24</sup> Condemning Peel’s Act, Nasse (1868: 14) argued that it is more credible to leave decisions about the note issue to the discretion of the bank’s directors than to have a system with “binding rules” that need to be suspended in crises. Not only will the confidence of the public be weakened by the suspension; the rules themselves will be discredited.

In his earlier thesis, Nasse (1856: 653) had made the same argument; but he had also discussed at some length the risks connected with the discretionary powers of the directors of the central bank (1856: 669-75). He pointed out that, given the increasing complexity of money markets in a world with surging flows of capital, it is evident that the board of directors easily errs in its decisions. Furthermore, even though public attention tends to make the bank more accountable and professional, it includes pressure from lobbies and other interest groups that may influence the board’s decisions. In both cases, binding rules (such as reserve restrictions of bank notes or

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<sup>24</sup> Similarly Nasse (1856: 652) and Wagner (1873: 364-70). Nasse’s proposals for lending of last resort clearly predate Bagehot (1873), but Nasse was well read in the English literature and referred for some insights to Thornton (1802). For Thornton’s contributions see Humphrey & Kehler (2002).

deposits) would not help. They would not let the bank cope with complexity and could not be sustained in the situations for which they were designed in the first place. With reference to Tooke, Nasse pleaded for an operational independence of the central bank from the political apparatus of the state and other bodies. He also advocated the establishment of an administration that “accumulates and hands down experience by way of tradition, acting by solid principles and independent acquisition of knowledge” (1856: 675). In a similar vein, Nasse (1866: 43-49) had conceded that political abuse of the central bank as a subordinate financier of the state, by way of the printing press, cannot be entirely excluded, but insisted that it can be checked by a careful separation of the central bank’s business from the state’s finances.

#### 5.4. *Knies*

Carl Knies’ *opus magnum* on *Money and Credit*, a trilogy of about 1.200 pages, was published between 1873 and 1879. Most of it was written during the years of German monetary reform. Yet, the three volumes contain surprisingly few reflections on the monetary union and its intricacies, even though they are full of historical case studies and assessments of political debates. The trilogy has the character of a purely academic treatise, written in a very roundabout and complex language, and detached from the political issues of the day – at any rate much more so than the writings of Nasse and Wagner. In addition to the volumes on *Money and Credit*, Knies published a short monograph on *Global Currency (Weltgold und Weltmünzen)* in 1874. In that little book of 60 pages he mentioned the regional monetary unions of the day (the Latin, the Scandinavian and the German), but only in passing. His focus was all set on the standardization of *weights* for gold and silver coins required to establish a consistent global gold standard.

Knies is nevertheless noteworthy for two contributions to the issues at hand. One is his synthesis of Currency and Banking positions in terms of a refined quantity theory of money (cf. Trautwein 2002: 204-06). The other are his observations of a moral hazard problem inherent in lending of last resort.

In his thorough examination of the Currency-Banking controversy, Knies (1876: ch. VI) arrived at the conclusion that “neither the ‘banking theory’ nor the ‘currency theory’ can be endorsed”, because both schools are wrong with regard to the role of bank notes (1876: 286). Knies constructed a synthesis of both theories that preserves the quantity-theoretical framework of the Currency School, while making room for reverse causation from prices to the monetary aggregate, as postulated by the Banking School. His trick was to define the *volume* of bank notes and checkable deposits as determinants of the *velocity of circulation* of money (1876: 261-95). An increase in bank note circulation or transfers of deposits is thus equivalent to an increase in the velocity of circulation of the monetary base. The idea was not new as such; it is, for example, found in Mill (1848: III, ch. XII) and in Nasse (1865). Yet, in comparison with earlier writers, Knies (1876: 295-315, 1879: 139-42) was more systematic and precise in discussing the circumstances, under which the expansion and contraction of credit tends to

stabilize the value of money as compared to those, under which speculation leads first to inflation and then to crisis and deflation.

Knies did not generally condemn speculation, but discussed various aspects of moral hazard in business loans: If successful, borrowers reap all the profits; if they fail, they let the lenders take their share. In Knies' view, one of the effects of the evolution of credit is the facilitation of large speculative transactions that involve assets owned by other people. Thus the interdependence of enterprises may be much stronger than indicated by the degree of the "real division of labour" (1876: 302-15). Knies considered it particularly problematic that the issue of bank notes is determined by banks' profit interests. He therefore pleaded – in more legalistic terms than Nasse, and with a more principled stand than Wagner – for a state monopoly on the issue of bank notes. This would eliminate the profit motive as driver of business cycles and permit to make the stabilization of the monetary system the overriding motive, especially in times of crises (1873: ch. III.7, 1879: ch. XIV).

Knies (1879: 446-48) was nevertheless skeptical about the fairness and efficiency of the lending of last resort by central banks. In a sort of "too big to fail" argument, he argued that only the "fine and finest firms" (including banks), which have the privilege of dealing regularly with the central bank, benefit from the "extraordinary loans" provided during a "real crisis". Knies considered this as a "mercantilist anachronism" (1879: 446). In critique of Nasse and Wagner, he stated:

It remains to be proved that 'the country', 'the whole of the economy' reaps a benefit from the support that the central bank provides by its extraordinary services to a number of trading companies which by all their means had reinforced the rise of the 'tide' in the trade crisis and then, during low tide, have their high prices sustained, thereby being kept above water, even if somewhat impaired. Even those who do not see such a crisis as caused by any single businessman, should think of the doctor's warning of diseases which will develop into long illness, if there is no thorough crisis.

Knies (1879: 447-48)

In the end, it is not moral hazard (as a microeconomic incentive to risky behavior) that is of primary concern for Knies, but the relative long-term costs of permitting or avoiding a "thorough crisis". At the back of Knies's medical metaphor is the view of the crisis as cure that drives the disease out of the body of the economy. Nasse and Wagner, on the other hand, saw the crisis as a macroeconomic pathology that harms "innocent" agents, especially by eliminating a large number of firms that had acted prudently and would have stayed solvent in the normal course of business.

## 6 Early 20th century economists on rules and discretion

Nasse, Wagner and Knies were making their contributions to central banking theory between the mid-1850s and the late 1870s, essentially before or during monetary reform in the newly founded German empire. They were looking ahead on the potentials of lending of last resort by the Reichsbank. Even though the trio lived long enough to provide assessments of Reichsbank policies in crises of later decades, they never looked back.<sup>25</sup>

Did anybody else among the more prominent economists in Germany comment on lending of last resort policies of the *Reichsbank* in the classical era of the gold standard? There were, after all, five international banking crises (1884, 1890, 1893, 1901 and 1907) that also affected German banks; and there were continuous debates about the international monetary order. The gold standard was not universally accepted. Bimetallism continued to find much support in the last decades of the 19th century, and the German empire was on a “limping gold standard” with silver coins as legal tender until 1907 (see section 2). Most of the monetary economists in Germany at the time were professed metallists. This is true of Nasse and Wagner, and even more so of Knies. He was a staunch defender of the gold standard and argued that to speak of “paper money” or other state-created substitutes for the metallic base as “money” would “make just as much sense as ‘wooden iron’ or ‘trust based on distrust’” (1873: 269; cf. Trautwein 2002). Lending of last resort by a central bank backed up by state power would always find its limits in the metallic reserves at the disposal of that institution.

A great break in German thinking about money came with Georg Friedrich Knapp’s *State Theory of Money* (1905), in which money was essentially defined as a “creature of the state”. However, Knapp had next to nothing to say about banking crises and lending of last resort. His chartalism was a classificatory exercise with regard to the “social nature” of money, not an analysis of instabilities in the value of money and the financial system (cf. Ellis 1934: ch. II, Trautwein 2003). Yet, Knapp had two followers who were practically involved in banking and monetary policy and who wrote widely read treatises and articles about central banking. It is to Karl Helfferich and Friedrich Bendixen that we now turn.

### 6.1. *Helfferich*

Karl Helfferich (1872-1924) has gone down to history for a number of spectacular affairs. After a short career in the Imperial Colonial Office he had moved to Deutsche Bank in 1906 to oversee the financing of the *Bagdadbahn*, the railway that would connect Istanbul and Baghdad. During the First World War he served as secretary of the Imperial Treasury and became the driving force behind financing the war expenses through loans instead of taxes. His strategy contributed to high wartime inflation and the post-war expropriation of middle-class savers which would unsettle the monetary order in Germany for some time to come. As a leader of the nationalist

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<sup>25</sup> Nasse died in 1890, the year of the Baring crisis, Knies lived until 1898 and Wagner until 1917. Nasse and Wagner published books and articles until late in their lives, but no longer on central banking.

conservatives after the war, Helfferich ran anti-democratic propaganda, slander and undercover financing of paramilitary units, unsettling the political order of the Weimar republic. Helfferich's proposal of a "rye currency" helped, on the other hand, to implement the *Rentenmark* and thus to end German hyperinflation in late 1923.<sup>26</sup> His death in a Swiss railway crash in 1924 gave rise to conspiracy "theories".

However, before all this happened, Helfferich had already made a name for himself as expert in monetary theory and policy. His book *Das Geld*, a voluminous treatise on money, came out in six editions between 1903 and 1923. Many reviewers concluded that, while "the theoretical groundwork betrays serious shortcomings..., [a]s a source of factual information on history and technique of the monetary institution, the work is monumental" (Ellis 1934: 60 – in inverse order). Two earlier and more specific publications from which Helfferich had taken material for *Das Geld* are of greater interest here. The first was a large two-volume work on German monetary reform in the 1870s (Helfferich 1898), the second a collection of essays on money and banking (Helfferich 1900).

The volumes on monetary reform contain a meticulous documentation of the genesis and implementation of the Currency and Coinage Acts of 1871 and 1873. Helfferich (1898) paid due attention to the difficulties of creating a monetary union among the German states, starting from diverse and complex monetary systems and their legal frameworks. The differences gave rise to enormous conflicts of interest that are vividly portrayed by Helfferich. However, his 500-page long history stops short of the Bank Act. It has nothing to say about the *Reichsbank* and its lending of last resort.

Helfferich's essays on money and banking (1900), by contrast, are largely devoted to matters of central banking. Three essays – the first on convertibility within monetary unions, the second about regulatory limits of bank note issue, and the third on the 1899 amendment of the German Bank Act – are of particular interest. In the first essay, Helfferich (1900: ch. II) stressed subsidiarity as a constitutive characteristic of a monetary union. Taking the Latin Monetary Union as an example, he described a system that uses a common metallic standard for different national sorts of token coins and paper money that circulate throughout the union. In his view, the obligation of any member state towards its own citizens to convert its currency into gold or silver should be sufficient to make all other member states accept the respective currency in their domains, as long as there is free trade between them. This introduces an extra degree of elasticity into the supply of means of payment in a monetary union, as compared to a single state. It should thus also facilitate lending of last resort in the member states, but this aspect is not touched upon in the first essay.

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<sup>26</sup> The *Rentenmark* reform stabilized the economy by a new currency backed by forced mortgages on land in use by agriculture, industry and business. With some irony of fate, the *Rentenmark* plan amalgamated elements proposed by Helfferich, on the one hand, and Rudolf Hilferding, cosmopolitan social democrat and minister of finance until October 1923, on the other.

In the essay on the German quota system of bank note issue, Helfferich (1900: ch. VI) looked back on the parliamentary controversies about the banking system that raged before the enforcement of the Bank Act in 1875. As described in section 2, that act contained a compromise in restricting note issuance by the “reserve of one third” regulation, and a penalty tax of five per cent on all issues not covered by its quotas. In Helfferich’s view, uncovered bank notes increase the elasticity of the circulation of money and help stabilizing the economy in times of crisis; hence, their issue should not be restricted. Helfferich considered the quota-cum-tax system as flawed, similar to the dysfunctional Peel’s Act in Britain. He conceded that the penalty tax is more incentive-compatible than the strict limits set by Peel’s Act, but found it useless. Looking back on two decades of experience with the quota-cum-tax system, Helfferich (1900: 160-73) assessed it by posing the following questions: When and in which conditions were the quotas exceeded? Did the 5 per cent tax have the desired effect of raising discount rates above 5 per cent? Were such rises economically justified or just law-abiding? If discount rates remained below 5 per cent: what were the reasons? An interesting result of the statistical exercise, documented in the appendix to the essay (1900: 183-86) and discussed in the text, is the apparent lack of correlation between issues in excess of quotas and discount rates. There is not even evidence of an application of Bagehot’s rule, by which the central bank should lend freely, but at high discount rates, in times of crisis. Excessive issues of bank notes were frequent and almost regular, not confined to times of crisis. During the Baring crisis in 1890, discount rates moved briefly from five to 5.5 per cent, but remained at five during the crisis of 1893, and did not even exceed four per cent during the crisis of 1884. The ratio of metallic reserves to *Reichsbank* liabilities fell more strongly than at any other time. The penalty tax had apparently no effect. Helfferich (1900: 173-76) concluded that the *Reichsbank* had functioned well as a lender of last resort, in spite of the quotas and penalties, which it duly disregarded. Yet, he acknowledged that the quota-cum-tax system was justified in application to those state banks and private banks that had kept their privilege of note issue in parallel to the *Reichsbank*. It prevented them from acting in a procyclical fashion. Its functionality was thus confined to dealing with relics from the transition to the German monetary union.

The third essay is a comment on the 1899 amendment of the Bank Act of 1875. Here, Helfferich (1900: ch. VIII) repeated his critique of the restrictions of note issuance insofar as the *Reichsbank* is concerned. He conceded that the new quotas might be sufficient to fulfill the needs of an elastic money supply in times of liquidity strains in the system. However, chiding the official praise for the flexibility of the discount rate policy of the central bank, which compensates for the rigidities of the quota system, Helfferich (1900: 215) remarked: “It is a strong sign of clinging to the past, when the objective is to retain a system that is harmless only because its intentions are not followed.”

## 6.2. Bendixen

Friedrich Bendixen (1864-1920) was director of the *Hypothekenbank*, a large mortgage bank in Hamburg, from 1895 until his death. He was a prolific writer of widely read articles and books on money and banking, and an expert frequently consulted by government commissions, e.g. in the Bank Enquête of 2008 that followed up on the loss of gold reserves in the wake of the American panic of 1907. His main publications during the classical gold standard era were *Das Wesen des Geldes* (1908), a short monograph on the credit-bound creation of money under the gold standard, and *Geld und Kapital* (1912), a collection of essays most of which set the focus on the constitution and policies of the *Reichsbank*.

As a professed follower of Knapp's *State Theory of Money*, Bendixen (1908: chs. 4, 5 and 11; 1912: chs. 1 and 2) put great emphasis on the conventional character of money. It is not characterized by intrinsic value (*contra* Wagner) nor by legal definition (*contra* Knapp), but by its economic functions as a unit of account and means of payment: "Geld ist, was wie Geld funktioniert" (1912: 17) – money is what money does. Along these lines, Bendixen stressed the "economic equivalence" of gold-convertible bank notes and non-convertible bank deposits. He regarded bank deposits as an endogenous component of the money supply, determined by bank lending for commodity production. They give the monetary system the required elasticity to adjust to the needs of trade and real economic growth.

Despite such flexibility of the giro system, Bendixen considered the legal restrictions of bank note issue (under the principle of the reserve of one third) as a threat to monetary stability. Applying a simple quantity-theoretical argument, he argued that such reserve rules form an obstacle to the "parallelism" in the supplies of commodities and money that keeps the value of money stable. He had high hopes and expectations that, at times when a lack of gold reserves would forbid the central bank to issue bank notes, "a wise and brave president of the Reichsbank would certainly know how to abide with the law and yet prevent the horrible crisis that a cessation of the note issue were certain to provoke" (1912: 14). In other words, economic stability needs to be secured by the flexibility of central bankers who do not hesitate to break the rules and to conduct unorthodox policies in times of need (1912: chs. 10 and 11).

Bendixen left it open how such unorthodox monetary policies should be designed, but argued fervently against the use of interest rates to stave off external reserve drains and domestic liquidity crises (1912: chs. 11-15). The basic reason why Bendixen went against the British (and German) orthodoxy of protecting the central bank's gold reserves by way of discount rate policy was his suspicion that this would distort capital formation. In Bendixen's view, economists in his time failed to distinguish clearly between money and (financial) capital. Interest rates should first and foremost be considered as prices that coordinate private saving and investment, and they ought not to be affected by the needs of commercial banks to stock up liquidity nor by the needs of central banks to manage their gold reserves. A reserve restriction introduces an element of capital lending into discount rate policy. It makes the central bank

surrender its freedom to act in accordance with the needs of trade and is thus alien to the task of stabilizing the value of money (1908: 53).

Bendixen (1912: ch.8) did consequently *not* subscribe to all parts of Bagehot's rule for lending of last resort in banking crises (in the standard formulation: 'lend freely, against good collateral, at a penalty rate'). He argued in favour of lending freely, was silent on collateral, but opposed increases in discount and lombard rates, as observed in periods of crisis between 1906 and 1908. Bendixen stood the conventional penalty-rate argument of punishing and preventing excesses of borrowers' risk taking on its head, diagnosing moral hazard on the lender side. He considered the seigniorage from issuing bank notes at increased interest rates as a tax on liquidity needs that leads to unjustified profits of the central bank and its private shareholders (1908: 53-54; 1912: 68-75).<sup>27</sup>

Those who in private life benefit from a predicament of their fellows will hardly escape the suspicion that they welcome the plight of others. But the Reichsbank is in exactly this situation, following the intention of the law – even though its directors most evidently act in the public interest.

Bendixen (1912: 70)

To correct such dysfunctions in lending of last resort, Bendixen pleaded for a fourfold change in the constitutional framework for the *Reichsbank*'s policies. Bank notes should be made legal tender, so as to inspire trust in their general acceptance even at times of crisis (1908: 55; 1912: 103). The restrictions of bank note issues by gold reserves should be abolished, or at least suspended for the quarterly peaks of reserve requirements for commercial banks (1912: chs. 10-15). Dividends for private shareholders and payouts of profits to the financial ministry should be limited to fixed amounts (1908: 57-59; 1912: chs. 8 and 9). Finally, the gains made by way of discount and lombard policy should be used for efficiency gains in the monetary system (1912: 71-75, 87-91):

To make the monetary system a source of fiscal revenue, is questionable, but unavoidable in emergencies when state credit fails, and therefore excusable... [S]uch profits, that are certainly not taken from the borrowers of the Reichsbank for purposes of taxation, should not vanish into the coffers of the empire, but ought to serve the improvement of the monetary and financial system; be it by an increase in gold reserves or purchase of foreign exchange, or be it that they are used for the expansion of the bank transfer system on the pattern of Hamburg.

(Bendixen 1908: 57-58)

It should be noted, though, that Bendixen's arguments suffer from some ambiguity, most clearly revealed by the final résumé in his book on "the nature of money" (1908). After criticizing the

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<sup>27</sup> Throughout the era of the classical gold standard, the *Reichsbank* had the hybrid status of a privately owned institute under public law. It had several thousand shareholders and was run by civil servants, appointed for lifetime and formally independent from the government (cf. Bendixen 1912: ch. 8).

legal restrictions of note issue under the gold standard for their destabilizing effects, and insisting that the leading principle for monetary policy “should be absolute stability of the value of money”, Bendixen (1908: 59) admitted in the next sentence “to the conviction that adherence to the gold standard is a political necessity and will so remain for a long time.”

Finally, three observations are in order with respect to Bendixen’s place in the context of this paper. First, his descriptions of structural change in the payments system and requirements of its further development through the central bank can be read as a continuation of Nasse’s evolutionary ideas about monetary integration. However, even though Bendixen repeatedly draws attention to differences between the giro system in Hamburg and financially less developed parts of the empire, he treats German monetary union as an accomplished fact, an achievement of the past that does not require further discussion – at least not with regard to lending of last resort.

Second, Bendixen was a strong advocate of central bank independence in both constitutional and operational aspects. He praised the hybrid status of the *Reichsbank* as a corporation under public law, but in private ownership with widely diffused shareholding, as the best protection against both private and fiscal greed, given that the directors of the *Reichsbank* were civil servants who had the capacity, willingness and discretionary powers to act in the public interest. He objected fervently to plans for nationalization of the *Reichsbank*, deeming this to carry great risks of distortionary interest-rate policies and inflationary use of the printing press. His objections read like early warnings of what was to come with the wartime practices of Helfferich and helpers.

Third, with his quantity-theoretical praise of the giro system as a structure that facilitates the stabilization of the value of money in accordance with the needs of trade Bendixen came close to the arguments that Wicksell had made in the framework of a “pure credit economy” in his *Interest and Prices* (1898). It is hard to say whether Bendixen knew about Wicksell’s ideas, since he never cited anyone (with the exception of Knapp). It is unlikely, though. Wicksell’s monetary treatise largely remained unread in Germany until the 1920s, even though it was written in German language and published by the renowned Gustav Fischer Verlag – and even though Wicksell referred to Nasse and Wagner quite frequently. The only major economist in the German language area who at that time reacted to Wicksell’s theory of cumulative inflation in a pure credit economy was the Austrian Ludwig von Mises in his *Theory of Money and Credit* (1912). However, that enormously long treatise contains nothing of interest about lending of last resort, let alone in monetary unions.

## 7 Comparison and Conclusion

Comparing the positions taken by influential German economists on lending of last resort in monetary unions leads to the conclusion that the majority view in the past was distinctly more

in favour of LoLR than at present.<sup>28</sup> Nasse and Bendixen, in particular, considered LoLR as a key function of a central bank that would ‘naturally’ evolve in the development of modern banking systems. They, as well as Wagner and Helfferich, favoured discretionary policies for averting systemic illiquidity, arguing that standard reserve rules would tend to lose credibility if strictly adhered to in times of crisis. The economists of the past understood that LoLR is prone to moral hazard problems; Bendixen even located such problems as originating from the lenders’ side. Unlike the present majority among German economists, they did not see moral hazard as an overriding concern. They pointed out that, at decisive stages in a financial crisis, it is difficult for central banks to distinguish illiquidity from insolvency. Hence, they argued, collateral damage would raise the social costs of letting the crisis punish the imprudent and fraudulent significantly far beyond the social costs from moral hazard.

What explains these differences in the views of German economists in the classical gold standard era on the one hand, and in the present era of European monetary integration on the other? It might be claimed that the historical context of the German monetary union under the gold standard is so different from the context of the European Monetary Union that the LoLR-friendly arguments of the older German economists cannot in any way be recycled from the present to the past. Such claims to incomparability would normally take recourse to one or more of the following three lines of reasoning. The first is based on a contrast between single-nation monetary unions and multi-nation monetary unions. The German monetary union of the 19th century is seen as a coronation procedure in the formation of a single nation state, whereas EMU is characterized a joint enterprise of sovereign nation states to promote their cooperation. The argument implies that the degree of real, financial and political integration is considerably higher in a single-nation monetary union than in the typical multi-nation case. The second claim to incomparability refers to the lower complexity of banking business and monetary policies before the First World War. Financial industries were still in their infancy and the functioning of the gold standard largely protected central banks from requests to finance public debt. The bitter lessons of post-war hyperinflation and the Great Depression had not yet been given. In this view, the older Germans underestimated the downsides of LoLR simply because they had not materialized in their time. The third claim to incomparability also refers to those historical pathologies, but this time as lessons learnt by modern economics. It is largely based on the view that discretionary monetary policies inevitably suffer from dynamic inconsistency problems that lead to systemic overborrowing and moral hazard. This is a message at the core of both ordoliberal thinking and neoclassical macroeconomics.

The claims to incomparability merit closer historical examination, more detailed than what can be done in this paper. Here follow, nevertheless, a few considerations that caution against unreflected adoption of reasoning along these three lines.

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<sup>28</sup> As shown above, Knies held a skeptical minority view, but was far less influential than Nasse, Wagner, Helfferich and Bendixen.

It is obvious that Prussia played a more hegemonic role in the formation of the German empire and its monetary union than Germany did on the way to EMU. The political pressure towards unification of the monetary system was high, since Prussia under Bismarck rushed the ‘Little German Solution’, i.e. the re-establishment of a German Empire, this time not ‘Holy Roman’ but predominantly Protestant, and excluding Austria which had been in favour of the ‘Greater German Solution’. Stabilizing the economy and newly established monetary order in the *Griinderkrise* (the founding epoch crisis) required safeguarding the financial system. However, compared to European integration in the context of EMU, the degrees of integration in terms of production, trade, finance and governance were clearly lower in the Bismarckian empire, at least until the end of the 19th century. Shortly before the foundation of the empire in 1871, its states had been at war with each other in the Austro-Prussian war of 1866, in which the southern parts of Germany plus the kingdom of Hanover sided with Austria, not Prussia. When ‘Little Germany’ was unified after the Franco-Prussian war five years later, the new empire was a patchwork collection of heterogenous systems of law, governance and currencies with multitudes of flexible exchange rates – certainly more of a hotchpotch than the European Union and its *acquis communautaire* in force at the start of EMU. In retrospective, the German empire is frequently described as a monolithic nation state, unified by “iron chancellor” Bismarck and united in clear hierarchy under Prussian rule. In the contemporary perspective of Germany’s monetary economists from the 1850s to the 1910s, there was no clear contrast between a multi-nation and a single-nation monetary union. In their historical landscape the former was evolving into the latter. Their appeals to the traditions of the Bank of Prussia for creating an institutional culture for the Reichsbank have much in common with later German economists’ appeals to using the Bundesbank as role model for the ECB.

Nor was the backwardness of the German monetary and financial system necessarily a drawback for theorizing about lending of last resort in financial crises. Simpler structures tend to make it easier to grasp matters more clearly. Scientific progress takes occasionally methodological turns that blind the academic discipline in its common view on a certain matter. Lending of last resort in monetary unions is a case in point. Standard macroeconomics and ordoliberal thinking make it harder to think about unconventional policies in critical times than it seems to have been in the long 19th century.

The (nowadays) canonical methodology of modelling in terms of dynamic-stochastic general equilibrium is based on intertemporal optimization calculus that obfuscates the analysis of interlocking violations of budget constraints as they typically happen in financial crises (Trautwein 2020). It tends to view discretionary action by monetary authorities as a distorting rather than a stabilizing factor. This creates a bias towards underestimating the benefits of lending of last resort and towards exaggerating moral hazard problems.

Ordoliberal thinking, on the other hand, emerged from historical experience with systemic failures of the interaction of the markets and the state. It is strongly focused on preventing crises by establishing an economic order based on rules that limit market power, ensure fiscal restraint

and minimize inflation. The underlying principle of subsidiarity (self-responsibility) is based on a close correspondence of risk-taking and liability in order to avoid moral hazard. Most ordoliberalists tend to believe that financial crises can happen only because of a prior breach of rules and can be remedied only by strict adherence to the rules. Lending of last resort is seen as a deviation from the subsidiarity principle and from the rules for orderly business. If ordoliberalists accept LoLR at all, then only in its “mythical” version of Bagehot’s rule according to which the borrowers have to be punished with penalty rates of interest (Goodhart 1999).

Compared to the older German economists’ insights that (a) penalty rates do not reduce but rather increase moral hazard problems, and (b) there are grave difficulties to distinguish between temporary illiquidity and permanent insolvency at times of crisis, opinionmakers in modern economics appear to have made historical regress rather than progress – at least in Germany.

In the context of European monetary union, the German use (or misuse) of ordoliberal ideas appears to have been particularly obstructive to developing an appropriate framework for LoLR. A reason for this could be its embedding in the export-led growth strategies on which the (West) German economy has thrived since the 1950s. Over the years, Germany has kept the position of a net exporter of goods and capital vis-à-vis the rest of the world, including many of the other EMU member states. This has led to the build-up of a strong net lending position and it has contributed to the spread of two varieties of normative model thinking (Trautwein & Körner 2017). The first is ordoliberalism, functioning as a policy model or theoretical mindset for political discourse in official and academic contexts. The second is neo-mercantilism, a business model or pragmatic mindset of policymakers, business executives and other stakeholders in German industries. In both mindsets, pride of the competitiveness of German enterprises goes together with the insistence that all others, too, play by the rules for fear of borrower countries’ moral hazard. The no-bail-out clause and the denial of a LoLR mandate for the ECB in the Maastricht treaty were born out of this spirit. Nasse, Bendixen, perhaps also Wagner and other economists at the time of the first German monetary union would probably have considered such principled opposition to lending of last resort by the central bank of the union as ‘morality hazard’.

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