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# Power Politics and Princely Debts: Why Germany's Common Currency Failed, 1549-1556

Oliver Volckart  
London School of Economics

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Currency Failed, 1549-1556

Oliver Volckart

London School of Economics

[o.j.volckart@lse.ac.uk](mailto:o.j.volckart@lse.ac.uk)

**Abstract**

The article argues that in the first half of the sixteenth century the need to avoid rounds of competitive debasements was the primary motive for the creation of a common currency valid in the whole Holy Roman Empire. In the years 1549 to 1551, the estates came close to achieving this. In contrast to what is suggested in the literature, their attempt did not fail because the Empire was economically poorly integrated or the will to co-operate was lacking. Rather, it failed because during the talks, the estates lost sight of the original motive, the princes favouring a bimetallic system that they hoped would allow them deflating the real value of their debts, and Charles V undervaluing the *taler* in the hope that this would weaken political opponents. These decisions antagonised important actors; when it proved impossible to enforce them, the Empire's common currency failed.

**Keywords:** Monetary history, currency union, early modern Germany

**JEL codes:** E42, E52, N13, N23, N43

## I.

Toward the end of the sixteenth century Bartholomäus Sastrow, former legal advisor of the dukes of Pomerania and mayor of Stralsund, wrote the story of his life. In this lively and detailed account, he described how in 1542 his brother Johannes, a master at Wittenberg University, was travelling home from Rostock where he had taken care of some publications.<sup>1</sup> For the last leg of the journey Johannes hitched a ride on a cart accompanied by a ‘young genteel fellow’ who had taken Pomeranian *schillings* and other coins to the mint at Gadebusch in Mecklenburg. Now he was bringing back money amounting to several hundred guildens, which had been minted there. Sastrow tells the story because some footpads got wind of the transport and his brother was seriously wounded in the ensuing hold-up. The incident shows how dangerous travelling in mid-sixteenth century Germany could be. It also suggests that no-one saw anything unusual in the ‘trade in coinage’ – as contemporaries called it – and that people engaged in it in a remarkably open fashion.<sup>2</sup>

Trade in coinage was, at any rate, profitable. In Sastrow’s case, the young fellow met by his brother supplied a mint with raw material in the form of coins, to the benefit of both himself and of the owner of the mint. In return for the money he delivered to Gadebusch, he received newly minted coins that contained altogether less bullion, but whose total face value was so much higher that the difference did not only cover his travelling expenses and transport costs but allowed him to make a profit. In fact, the difference also covered the costs

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<sup>1</sup> Bartholomäus Sastrow and Gottlieb Mohnike, *Bartholomäi Sastrowen Herkommen, Geburt und Lauff seines gantzen Lebens auch was sich in dem Denckwerdiges zugetragen, so er mehrentheils selbst gesehen und gegenwärtig mit angehört hat*, vol. 1 (Greifswald, 1823), 195 f.

<sup>2</sup> Trade in coinage (*‘kauffmanschafft in der muntz’*): e.g. Staatsarchiv Würzburg (hereafter: StArchWü), MRA Münze K 137/2, fol. 42 v. The name Germany is here often used in place of ‘Holy Roman Empire’. This is done for the sake of brevity and not in order to imply that the Empire was a modern ‘nation state’.

of melting and re-minting the coins – of ‘breaking’ them, as it was called –,<sup>3</sup> so that the owners of the mint, the dukes of Mecklenburg, were able to share in the profit. What we are here observing are the workings of Gresham’s law, which in its most widely quoted form states that bad money drives out good. This happened because, as a coinage committee convoked at the imperial diet of Worms in Summer 1545 put it, the ‘common man’ would always be willing to accept ‘bad, inferior gold- or silver-coins for his hard and bitter labour, thinking one was as good as the other and that he had received the gulden due to him’.<sup>4</sup> As long as there were good and bad coins and poorly informed consumers who treated both alike, mints like Gadebusch and smart young fellows like the one Johannes Sastrow met would continue to thrive.<sup>5</sup>

Unsurprisingly, there were frequent complaints of authorities who looked on helplessly as their own relatively good money disappeared in their neighbours’ melting pots. In 1539, for example, the council of the city of Hamburg claimed that many burghers were importing sacks and barrels full of underweight 3- and 6-*pfennigs*-pieces that came presumably from Holstein and Denmark. They exchanged them for the city’s own full-bodied coins, which they sent abroad, ‘thus seeking their own illegitimate self-interest and advantage, to the ruin of all good money’.<sup>6</sup> Ten years later, at a conference the imperial diet had called to deal with (among other things) this problem, the delegates of the Austrian Habsburgs and the

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<sup>3</sup> Breaking (*‘brechen’*) coins: E.g. StArchWü, MRA Münze K 137/2, fol. 8 r.; cf. Johann Christoph Hirsch, *Eröffnetes Geheimnis der practischen Münz-Wissenschaft samt beygefügter Tariffa, über Gold und Silber* (Nürnberg, 1762), 123.

<sup>4</sup> Rosemarie Aulinger, ed. *Deutsche Reichstagsakten unter Kaiser Karl V.: Der Reichstag zu Worms 1545* vol. 2 (München, 2003), no. 86, p. 951.

<sup>5</sup> François R. Velde, Warren E. Weber, and Randall Wright, "A Model of Commodity Money, with Applications to Gresham’s Law and the Debasement Puzzle", *Review of Economic Dynamics* 2 (1999), hypothesised that the functioning of Gresham’s Law requires the existence of informational asymmetries among the consumers. Early modern primary sources contain ample evidence supporting this view. For informational asymmetries among users of money c. 1500 see Oliver Volckart, "Regeln, Willkür und der gute Ruf: Geldpolitik und Finanzmarkteffizienz in Deutschland, 14. bis 16. Jahrhundert", *Jahrbuch für Wirtschaftsgeschichte* 2 (2009), 106.

<sup>6</sup> Jürgen Bollandt, ed. *Hamburgische Burspraken 1346 bis 1594 mit Nachträgen bis 1699* vol. 2: Bursprakentexte (Hamburg, 1960), 322.

archbishop of Salzburg claimed that ‘for many years their own and their predecessors’ and ancestors’ praiseworthy heavy coins had been exported, sent to the crucible and broken, and instead a large number of uneven, poor and foreign coins by and by been imported, to the great damage and disadvantage of the German nation and the common man’.<sup>7</sup> In 1559 the archbishop claimed that less than one twentieth of the value of all purchases in his principality was paid in domestic coin. The greater part of the output of his mint was exported, all the more so because he could not afford enough troops to patrol the border: ‘The world is wide, the people many, the mountains are high, and it will never be possible to plug each and every hole’.<sup>8</sup>

As the archbishop realised, stricter controls were impracticable. There were only two solutions to the problem, and only one that went to its root. First, authorities could reduce the bullion content of their coins, hoping thereby to prevent their export. The danger was that this might trigger similar policies among their neighbours, leading to rounds of competitive debasements – as was indeed the case where this approach was tried.<sup>9</sup> The other, more fundamental solution was creating a common currency that would not only leave no scope for the trade in coinage at least within the Empire, but would also help legitimate commerce.

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<sup>7</sup> Johann Georg von Lori, *Sammlung des baierischen Münzrechts*, vol. 1 (o.O., 1768), no. CXCVI, p. 226. For the socio-economic consequences of the spread of underweight coins see Philipp Robinson Rössner, *Deflation - Devaluation - Rebellion: Geld im Zeitalter der Reformation* (Stuttgart, 2012), 485 ff.; "Monetary Instability, Lack of Integration, and the Curse of a Commodity Money Standard: The German Lands, c.1400–1900 A.D.", *Credit and Capital Markets – Kredit und Kapital* 47, no. 2 (2014), 329-333.

<sup>8</sup> Josef Leeb, ed. *Reichsversammlungen 1556-1662: Der Kurfürstentag zu Frankfurt 1558 und der Reichstag zu Augsburg 1559* vol. 3 (Göttingen, 1999) no. 661, pp. 1721 f. The archbishop’s claim is of course not reliable in quantitative terms, and data on the volume of the trade in coinage do not exist. However, according to Joachim Schüttenhelm, "Zur Münzprägung und Silberversorgung süddeutscher Münzstätten im frühen 16. Jahrhundert," in *Der Anschnitt: Zeitschrift für Kunst und Kultur im Bergbau. Beiheft 2: Montanwirtschaft Mitteleuropas vom 12. bis 17. Jahrhundert. Stand, Wege und Aufgaben der Forschung*, ed. Werner Kroker (Bochum, 1984), 165, this trade was at least as important for the metal supply of mints as the purchase of raw silver from merchants and mines..

<sup>9</sup> This explains the spread of *batzens* in South Germany and *mariengroschens* in Lower Saxony in the years after 1500. Cf. Hans-Ulrich Geiger, "Entstehung und Ausbreitung des Batzens", *Schweizerische Numismatische Rundschau* 51 (1972); Heinrich Rüthing, "Zur Geschichte des Mariengroschens," in *Mundus in imagine: Bildersprache und Lebenswelten im Mittelalter. Festgabe für Klaus Schreiner*, ed. Andrea Löther, Ulrich Meier, and Norbert Schnitzler (München, 1996).

Political actors were aware of the burden which the multiplicity of currencies imposed on trade, the councillors of the elector of Brandenburg, for example, arguing that without monetary unification ‘little of the large damage suffered by merchants and all who trade, travel and journey from one country to another ... will be removed or healed’.<sup>10</sup> However, compared to the harm the trade in coinage did this was a rarely mentioned side issue that mostly fell under the general heading of ‘furthering the common good’.<sup>11</sup> As the concluding document of the conference where Austria and Salzburg complained about the export of their money put it: ‘Through a stable and common currency the common weal should be advanced and all unseemly profit eliminated’.<sup>12</sup>

The present article analyses how Charles V and the imperial estates tried to achieve this aim, with the focus being on the imperial currency bill of 1551. Giving due consideration the institutional idiosyncrasies of the Holy Roman Empire that shaped decision making processes and affected their outcomes, it explains how and why the relevant political actors got distracted by other ends, which they believed to be also able to reach through monetary policies. The article also analyses how this contributed to the failure of the so far most promising attempt to create a common German currency. Its next section (II) presents a review of its sources, the section thereafter (III) an overview of monetary conditions in the Holy Roman Empire. Section IV introduces the currency bill published in 1551. The drafting of the bill is analysed, with the focus being on the question of whose interests prevailed in this process. Section V discusses why the new common currency failed, and section VI summarises the main hypotheses of the article.

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<sup>10</sup> Geheimes Staatsarchiv Preußischer Kulturbesitz, I. Hauptabteilung, Repositur 15, no. 1 (,Fragmenta des Münztages zu Speier 1549‘) (hereafter: GStAPK, I. HA, Rep. 15, no. 1), E, fol. 3 r.

<sup>11</sup> Research tends to imply that it was the dominant motive: Fritz Blauch, *Die Wirtschaftspolitik des Reichstags im Heiligen Römischen Reich: Ein Beitrag zur Problemgeschichte wirtschaftlichen Gestaltens* (Stuttgart, 1970), 15; Günther Probszt, *Österreichische Münz- und Geldgeschichte von den Anfängen bis 1918* (Wien, Köln, Graz, 1973), 397.

<sup>12</sup> Staatsarchiv Ludwigsburg (hereafter: StArchLu), B 113 I Bü 1794, fol. 4 r.

## II.

Much of the research on the history of pre-modern currency unions implicitly or explicitly refers to economic hypotheses about the emergence and consequences of modern unions. From an economic perspective these issues are still under dispute. Some authors argue that monetary integration requires the prior integration of trade; others emphasize that commerce grows in consequence of monetary integration, implying that currency unions can be imposed by an act of political will.<sup>13</sup> *En nuce*, Schrötter's seminal work on the attempts to create a common currency in the Holy Roman Empire of the sixteenth century already contained these views;<sup>14</sup> meanwhile, they have been developed more fully. On the one hand, monetary unification is said to have failed because the political will was lacking: The emperors were unable to prevail among the many political actors whom they faced. This view was advanced some years ago by Vorel.<sup>15</sup> On the other hand, it is claimed that Germany was economically too poorly integrated to allow a common currency. Usually estates who controlled their own silver mines are contrasted with others who had to purchase the metal on the open market: Silver prices diverged so far that agreeing on a common standard was impossible. This was stressed for example by Blaich.<sup>16</sup> For analytical purposes distinguishing

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<sup>13</sup> The relevant literature is quoted by Nikolaus Wolf and Albrecht Ritschl, "Endogeneity of Currency Areas and Trade Blocs: Evidence from a Natural Experiment", *Kyklos* 64, no. 2 (2011). Lars Boerner and Oliver Volckart, "The Utility of a Common Coinage: Currency Unions and the Integration of Money Markets in Late Medieval Central Europe", *Explorations in Economic History* 48 (2011), found that while the formation of pre-modern currency unions did require well-integrated markets, trade advanced quicker once a union had been established.

<sup>14</sup> Friedrich Frhr. von Schrötter, "Das Münzwesen des deutschen Reichs von 1500-1566, Teil I", *Schmollers Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft* 35, no. 4 (1911); "Das Münzwesen des deutschen Reichs von 1500-1566, Teil II", *Schmollers Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft* 36, no. 1 (1912).

<sup>15</sup> Petr Vorel, *Monetary Circulation in Central Europe at the Beginning of the Early Modern Age: Attempts to Establish a Shared Currency as an Aspect of the Political Culture of the 16<sup>th</sup> Century (1524-1573)* (Pardubice, 2006), 133; cf. Schrötter, "Münzwesen, Teil I", 142; Probszt, *Münz- und Geldgeschichte*, 397.

<sup>16</sup> Blaich, *Wirtschaftspolitik des Reichstags*, 17 ff., 258; cf. Thomas Christmann, *Das Bemühen von Kaiser und Reich um die Vereinheitlichung des Münzwesens: zugleich ein Beitrag zum Rechtssetzungsverfahren im Heiligen Römischen Reich nach dem Westfälischen Frieden* (Berlin, 1988), 46 f.; Michael North, "Geld- und Ordnungspolitik im Alten Reich," in *Geld, Handel, Wirtschaft: Höchste Gerichte im Alten Reich als*

these propositions is useful, but apart from being closely linked they are of course not mutually exclusive: As Volckart points out, the will to co-operate may have been weak because the German economy lacked integration.<sup>17</sup>

While these hypotheses concern the general failure of sixteenth-century Germany to create a common currency, the scant literature on the bill of 1551 claims that the main reason why it did not succeed was that it did not try to permanently integrate one of Germany's most popular coins, i.e. the *taler*: It gave *talers* a value in new money that their producers found unacceptably low.<sup>18</sup> The present article examines both more general hypotheses and develops an alternative explanation of why Germany's common currency failed. In this process, it also addresses the question of why political actors valued traditional monetary units – among them the *taler* – in the way they did. It does so by going beyond the documentary evidence that prior research has used and that, unlike numismatic evidence, had not grown much above what was available to Schrötter more than a hundred years ago.<sup>19</sup>

This is possible because in recent years a large number of so far poorly known sources have become available. Today much more information about the imperial diets most important in the present context – i.e. those of Worms (1545) and Augsburg (1547/48 and 1550/01) – than ever before is easily accessible.<sup>20</sup> Often, though, when complex problems

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*Spruchkörper und Institution*, ed. Anja Amend-Traut, Albrecht Cordes, and Wolfgang Sellert (Berlin, Boston, 2013), 94.

<sup>17</sup> Oliver Volckart, "Die Reichsmünzordnung von 1559: Das Scheitern reichseinheitlichen Geldes," in *Schlüsselereignisse der deutschen Bankengeschichte*, ed. Dieter Lindenlaub, Carsten Burhop, and Joachim Scholtzseck (Stuttgart, 2013), 33 f. Silver price data are too fragmentary to allow a quantitative analysis.

<sup>18</sup> Herbert Rittmann, *Deutsche Geldgeschichte 1484-1914* (München, 1975), 198; Christmann, *Vereinheitlichung des Münzwesens*, 71; Michael North, "Von der atlantischen Handelsexpansion bis zu den Agrarreformen 1450-1815," in *Deutsche Wirtschaftsgeschichte: Ein Jahrtausend im Überblick*, ed. Michael North (München, 2001), 173; Vorel, *Monetary Circulation*, 92.

<sup>19</sup> Much new numismatic evidence was used by *Monetary Circulation*.

<sup>20</sup> Rosemarie Aulinger, ed. *Deutsche Reichstagsakten unter Kaiser Karl V.: Der Reichstag zu Worms 1545* vol. 1 (München, 2003); *Der Reichstag zu Worms 1545*, vol. 2; Ursula Machoczek, ed. *Deutsche Reichstagsakten unter Kaiser Karl V.: Der Reichstag zu Augsburg 1547/48* vol. 1 (München, 2006); *ibid.*, 3.; Erwein Eltz, ed. *Deutsche Reichstagsakten unter Kaiser Karl V.: Der Reichstag zu Augsburg 1550/51* vol. 2 (München,



had to be solved, the diets convoked conferences to deal with these matters. Where monetary policies were concerned, so-called *münztage* were called, i.e. coinage conferences where delegates sent by the estates of the Empire met to develop solutions which would be submitted to the next diet.<sup>21</sup> One such conference took place in Speyer between 10 September and 5 November 1549. It played a crucial role in preparing the common German currency adopted by the diet of Augsburg in 1551, and is at the focus of the present article.

Research has largely passed over this conference,<sup>22</sup> but a hitherto unknown source sheds so much light on it that its importance can no longer be overlooked. The Würzburg State Archive, whose core is the archive of the prince-bishopric of that name, holds the minutes of the meeting.<sup>23</sup> This is a highly unusual source. The imperial diets and the conferences called by them are often quite well documented, but minutes are still rare and probably unique where the Empire's economic policies are concerned. The record of the conference was kept by the chancellery of the elector of Mainz,<sup>24</sup> but as far as we know only the copy now in Würzburg has survived. This copy frequently refers to additional material, for example to memoranda or concepts, and of course to the recess, i.e. the concluding document that summarised the results of the discussions. None of these sources are preserved in Würzburg. However, some have been kept in the archive of the electors of Brandenburg in Berlin, while

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2005); *Deutsche Reichstagsakten unter Kaiser Karl V.: Der Reichstag zu Augsburg 1550/51* vol. 1 (München, 2005).

<sup>21</sup> Cf. Helmut Neuhaus, *Reichsständische Repräsentationsformen im sechzehnten Jahrhundert: Reichstag - Reichskreistag - Reichsdeputationstag* (Berlin, 1982), 360-372.

<sup>22</sup> But see Schrötter, "Münzwesen, Teil II", 101 f. Neuhaus, *Repräsentationsformen*, 367 with FN 30, Christmann, *Vereinheitlichung des Münzwesens*, 64, and Vorel, *Monetary Circulation*, 88 f., mention the conference.

<sup>23</sup> StArchWü, MRA Münze K 137/2: 'Prothocollum müntzweßns belangendt anno 1549, zu Speyer zwischen gesambten reichsständen vorgangen', 108 fols.

<sup>24</sup> Cf. Gerhard Oestreich, "Zur parlamentarischen Arbeitsweise der deutschen Reichstage unter Karl V. (1519-1556)," in *Die geschichtlichen Grundlagen der modernen Volksvertretung*, ed. Heinz Rausch (Darmstadt, 1971/74), 252.

Ludwigsburg Archive in Württemberg holds much of the rest of the missing material.<sup>25</sup> Taken together, these sources allow drawing a uniquely comprehensive picture of how monetary policies were formulated at the level of the Empire in the middle of the sixteenth century.

### III.

In early April 1551, experts in coinage and metallurgy from all over Germany gathered in Nuremberg to assay and evaluate the money circulating in the Empire. The report they submitted to Charles V at the end of May listed 133 types of gold coins issued by 66 minting authorities within the Empire, 55 types of gold coins minted by 29 foreign authorities, 130 types of silver coins from 76 German authorities, and 28 types of silver coins struck by 13 authorities abroad.<sup>26</sup> The document – to which we will return because it gained considerable importance for monetary policies – gives a good first impression of how diverse the money was that one would encounter on markets in mid-sixteenth century Germany. In fact, though, the diversity was still larger: In the 1540s about 125 authorities within the Empire alone were issuing coins.<sup>27</sup> Some of these coins, in particular those with a small purchasing power, circulated only locally; others were used all over the Empire and beyond. The golden rhinegulden for example, jointly minted by the electors of Mainz, Trier, Cologne and the Palatinate, was hugely popular in long-distance trade. So was the silver *taler*, the most

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<sup>25</sup> The sources from Berlin were used by Schrötter, "Münzwesen, Teil II", 101. For the sources see GStAPK, I. HA, Rep. 15, Nr. 1 D-G, and StArchLu, B 113 I Bü 1794.

<sup>26</sup> See table 2 in the appendix. The assay had been convoked by the diet of Augsburg for 5 Apr. 1551. Eltz, *Der Reichstag zu Augsburg 1550/51*, vol. 2, no. 305, p. 1589.

<sup>27</sup> Based on data in Bernhard Prokisch, *Grunddaten zur europäischen Münzprägung der Neuzeit ca. 1500-1990* (Wien, 1993), *passim*.

prestigious product of the mints of the dukes and electors of Saxony, widely imitated by German and foreign rulers and to be found on markets all over the Empire.<sup>28</sup>

Despite their diversity, the German currencies had one thing in common. Like elsewhere in Europe, they were based on bullion: on gold, silver or both. Bimetallic currencies, consisting of both gold and silver coins, have often been described as particularly sensitive to changes in the relative prices of these metals: Once the ratio between the values of the coins minted from both metals has been defined by law, a rise in the market price of one metal creates incentives to withdraw coins made of it from circulation and sell them as bullion. Such currencies therefore tend to revert to monometallism. As culling coins, melting them and selling the metal is not costless, things do not quite work like that. Monetary arbitrage is profitable only if the market ratio diverges so far from the legal ratio that the difference covers the costs the arbitrageur has to bear. For this reason nineteenth-century bimetalism, for example, was more stable than the common view would lead one to expect.<sup>29</sup> In any case, there is a third possible outcome apart from precarious stability and the return to monometallism: The coins whose value is rising may circulate at a premium.<sup>30</sup> Further down, we will revisit the questions of which of these outcomes came about in mid-sixteenth-century Germany and for what reason.

As the Empire did not produce gold in any remarkable quantity, authorities planning to issue gold coins had to find other sources of supply. The electors on the Rhine solved this problem by exploiting their geographical position. In the fifteenth century, the Rhine had developed into the most important artery of trans-continental trade that linked the two

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<sup>28</sup> The name *taler* was first used for the imitation minted since 1520 in Jáchymov/Joachimsthal in Bohemia. The Saxon original had been called *guldengroschen*. Cf. Karel Castelin, "Zur Entstehung der ältesten 'Joachimstaler'", *Numismatische Zeitschrift* 80 (1963).

<sup>29</sup> Cf. Marc Flandreau, "'Water Seeks Level': Modelling Bimetallic Exchange Rates and the Bimetallic Band", *Journal of Money, Credit and Banking* 34, no. 2 (2002), who quotes the relevant literature.

<sup>30</sup> Cf. Angela Redish, *Bimetallism: An Economic and Historical Analysis* (Cambridge, New York, 2000), 30.

economically most advanced parts of Europe, i.e. Italy and the Netherlands.<sup>31</sup> The customs posts that the electors maintained along the river demanded payments in gold, and this allowed supplying their mints with raw material and minting rhinegulden.<sup>32</sup>

Silver, by contrast, was to a large extent a domestic product, though deposits were of course distributed unevenly, with some estates benefiting while others had no access to mines of their own. The Saxon Ore Mountains, Schwaz in Tirol and Jáchymov/Joachimsthal in Bohemia were the most important centres of production.<sup>33</sup> The estates controlling them, collectively often called the ‘mountain lords’, were interested in selling raw silver rather than in their coins being exported and broken in their neighbours’ mints. In the lengthy discussions about a common German currency that took place e.g. during the diet of Worms in 1545 they therefore consistently advocated a relatively high mint equivalent: They demanded, in other words, that the nominal sum minted from a given quantity of fine silver should be so large – or, conversely, the bullion content of the individual coins so low – that exporting and melting the money would no longer pay.<sup>34</sup> This demand betrayed their lack of confidence in the viability of a common currency. They evidently expected any agreement to be violated by free-riders trying to benefit from breaking the new coins. As the estates

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<sup>31</sup> David Chiosi and Oliver Volckart, "Money, States and Empire: Financial Integration and Institutional Change in Central Europe, 1400-1520", *Journal of Economic History* 71, no. 3 (2011), 784.

<sup>32</sup> Karl Weisenstein, *Das Kurtriersche Münz- und Geldwesen vom Beginn des 14. bis zum Ende des 16. Jahrhunderts: Auch ein Beitrag zur Geschichte des Rheinischen Münzvereins* (Koblenz, 1995), 171.

<sup>33</sup> Ekkehard Westermann, "Zur Silber- und Kupferproduktion Mitteleuropas vom 15. bis zum frühen 17. Jahrhundert: Über Bedeutung und Rangfolge der Reviere von Schwaz, Mansfeld und Neusohl", *Der Anschnitt* 5/6 (1986), 199.

<sup>34</sup> The mountain lords tended to argue that growing production costs of silver required a high mint equivalent. Cf. e.g. Aulinger, *Der Reichstag zu Worms 1545*, vol. 2, no. 71, pp. 907 f. As this solution would have worked, if at all, only until prices adjusted to the debased coinage, the argument appears specious. On occasion the mountain lords did argue that a high mint equivalent was needed because their coins were broken by other estates: Lori, *Sammlung*, vol. 1, no. CXCVI, p. 226.

without access to silver mines favoured a lower mint equivalent – probably because this would have helped to repress nominal inflation – all negotiations failed.<sup>35</sup>

However, the second half of the 1540s saw a momentous increase in the power of the emperor that would change the picture. While the diet of Worms was still arguing about the currency, Charles V began forging the alliance he needed to proceed against the Protestant estates united in the Schmalkaldic League. One of his main supporters was Duke Maurice of Saxony, who was a Protestant himself and the cousin of the Saxon Elector John Frederick ‘the magnanimous’. The war, once begun, quickly turned in the emperor’s favour. John Frederick was defeated and taken prisoner in April 1547; he lost the electorship and most of his lands, both of which Charles granted to Maurice. The other leader of the Schmalkaldic League, the landgrave of Hesse, submitted voluntarily; like John Frederick he spent years as Charles’ captive. In late 1547, when the emperor convened the ‘diet-in-arms’ in Augsburg, he seemed the undisputed master of Germany. In Augsburg, it was decided to call a conference to once and for all solve the currency problems besetting the Empire.<sup>36</sup> This conference was to meet in Speyer in February 1549, but was soon postponed to September of that year.

#### IV.

To represent him, Charles chose two commissioners: Philip von Flersheim, who was bishop of Speyer, and Count Reinhard von Solms.<sup>37</sup> Flersheim had studied the law and gained a doctorate. He had years of experience as princely and imperial councillor, had attended many imperial diets and had his residence in Speyer, which despite his age (he was born in 1481) and poor health made him an obvious choice as commissioner. Solms had earned his spurs as one of Charles’ captains in the Schmalkaldic War. He did not have any further

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<sup>35</sup> Cf. Schrötter, "Münzwesen, Teil II", 103.

<sup>36</sup> Machoczek, *Der Reichstag zu Augsburg 1547/48*, vol. 3, no. 226, p. 2021.

<sup>37</sup> Charles’ instructions for his commissioners: GStAPK, I. HA, Rep. 15, Nr. 1 D, fol. 3 v - 5 v.

experience in politics, but his bare presence would remind the delegates of who dominated the Empire in military terms.<sup>38</sup>

Many, but by no means all imperial estates sent representatives to Speyer. All electors except Saxony,<sup>39</sup> 22 of the almost 300 princes, counts and barons and 10 of ca. 80 free and imperial cities did so.<sup>40</sup> North-German estates were not entirely absent, but the south and west of the country were on the whole better covered. This was doubtless a result of the higher costs North-German princes and cities faced when sending their councillors so far south. Some saved costs by letting the lawyers they maintained at the imperial chamber court in Speyer represent them at the conference, too (this is how Bartholomäus Sastrow came to attend),<sup>41</sup> but estates not involved in law suits had to pay or reimburse their delegates to the tune of sometimes thousands of *talers*.<sup>42</sup> Understandably, some commissioned joint representatives, though other estates sent several. Apart from the two imperial commissioners 40 delegates took part in the discussions: lawyers, mint- and other officials, members of urban councils and some whose position cannot be ascertained.<sup>43</sup> Thus, there were far fewer participants than at an imperial diet, and reaching an agreement was correspondingly easier.

Proceedings at Speyer mirrored those of an imperial diet, though the ceremonial issues and questions of hierarchy whose importance recent research is stressing played a smaller

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<sup>38</sup> Hans Ammerich, "Philipp Freiherr von Flersheim," in *Neue Deutsche Biographie*, ed. Historische Kommission bei der Bayerischen Akademie der Wissenschaften (Berlin, 2001); B. Poten, "Reinhart der Aeltere Graf zu S. und Herr zu Müntzenberg," in *Allgemeine deutsche Biographie*, ed. Historische Kommission bei der Königlichen Akademie der Wissenschaften (Leipzig, 1892). Solms developed an interest in mechanised minting. Paul Bamberg, "Weitere Nachrichten zum maschinellen Münzbetrieb des Grafen Reinhard zu Solms", *Deutsche Münzblätter* 55 (1935).

<sup>39</sup> The king of Bohemia never attended the electoral college. Barbara Stollberg-Rilinger, *Des Kaisers alte Kleider: Verfassungsgeschichte und Symbolsprache des Alten Reiches* (München, 2008), 125.

<sup>40</sup> Cf. the imperial register of 1521. Adolf Wrede, ed. *Deutsche Reichstagsakten unter Kaiser Karl V.* vol. 2 (Gotha, 1896), no. 56, pp. 427-442. Cf. table 4 in the appendix.

<sup>41</sup> GStAPK, I. HA, Rep. 15, Nr. 1 D, fol. 32 v.

<sup>42</sup> After another coinage conference in 1557 the delegate of Brandenburg claimed 4,000 *talers* (part of which, though, he had spent on his master's business elsewhere). GStAPK, I. HA, Rep. 15, or. 1 D, no. 11.

<sup>43</sup> Cf. table 4 in the appendix.

role.<sup>44</sup> Early in the conference there was an extended tussle between the delegates of the dukes of Württemberg and Pomerania about who should sit nearer the top of the table (the Pomeranians, as it turned out),<sup>45</sup> but then everybody got down to business. Like an imperial diet, the delegates in Speyer formed three colleges: an electoral, a princely and an urban one. Within the colleges, decisions were reached by asking the members for their opinion in their order of rank.<sup>46</sup> In the electors' college, for example, the delegate of the elector of Mainz, who ranked highest, would propose the question to be discussed. Then the councillors of the electors of Trier, Cologne, the Palatinate and Brandenburg stated their views and arguments (in that order), and Mainz summed up the result, adding his own opinion.<sup>47</sup> The highest ranking member – in the princes' college Austria who often made joint statements with Bavaria, among the cities Nuremberg – thus had the strongest influence. The questioning process would be repeated until unanimity was reached or, if the delegates felt that this was not possible, it was decided to apply the majority principle.<sup>48</sup>

In all this the cities' college played a subsidiary role. However, whereas at imperial diets the urban representatives were often left in the dark, receiving for example no written records of the decisions made by the other colleges,<sup>49</sup> in Speyer the other councillors at least kept them regularly informed (anything else would have been difficult as one delegate sat in both the electors' and cities' and another in all three colleges).<sup>50</sup> After about three weeks of discussions, the Austrian and Bavarian delegates suggested a more regular approach: The

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<sup>44</sup> Stollberg-Rilinger, *Des Kaisers alte Kleider*, 49 f.; cf. Oestreich, "Zur parlamentarischen Arbeitsweise".

<sup>45</sup> StArchWü, MRA Münze K 137/2, fol. 22 r.

<sup>46</sup> Stollberg-Rilinger, *Des Kaisers alte Kleider*, 50.

<sup>47</sup> See e.g. the proceedings on 4 Oct.: StArchiv-WÜ, MRA Münze K 137/2, fols. 53 v. – 54 r.

<sup>48</sup> As the princely delegates remarked at one point, it was 'not very common to go against the majority'. GStAPK, I. HA, Rep. 15, Nr. D, fol. 17 r. Presumably a majority of the delegates was enough to decide that the majority principle should apply.

<sup>49</sup> Albrecht Luttenberger, "Reichspolitik und Reichstag unter Karl V.: Formen zentralen politischen Handelns," in *Aus der Arbeit an den Reichstagen unter Kaiser Karl V.: 7 Beiträge zu Fragen der Forschung und Edition*, ed. Heinrich Lutz and Alfred Kohler (Göttingen, 1986), 29 ff.

<sup>50</sup> E.g. StArchWü, MRA Münze K 137/2, fols. 29 r., 32 r., 46 r. Cf. table 4 in the appendix.

disputed points were to be discussed first in the princely college, ‘and once they had finished and come to a conclusion, this should be submitted to the perusal of the electoral councillors. When this had been done and both parties were content, they’ – the Austrians and Bavarians – ‘would be happy enough if the results were presented and made known to the urban councillors. Then a common committee of all three colleges might be formed and one might proceed to other matters’.<sup>51</sup> In fact, some days later not one but two intercollegial committees were established to consider particularly difficult questions, and such committees continued to play an important role.<sup>52</sup>

In Speyer, the standard of the new common currency was determined. The relation between gold and silver was discussed, too, though an agreement was reached only on the following imperial diet that took place from July 1550 to February 1551 in Augsburg. The diet also agreed that the currency bill should be published only once it had been decided what to do with the money in circulation. A re-coinage where the estates minted and held back so many coins that the old money could be withdrawn and replaced within a relatively short period of time would financially and organisationally have overtaxed the estates. The diet therefore convoked the expert meeting in Nuremberg mentioned above. There, the bullion content of the money in circulation was to be determined; on this basis, the rates were to be fixed at which it should continue in circulation until enough new money had been minted. The assay ended in May, and in July 1551 Charles V published the currency bill, the ‘Augsburg Imperial Monetary Ordinance’.<sup>53</sup>

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<sup>51</sup> StArchWü, MRA Münze K 137/2, fol. 51 r.

<sup>52</sup> StArchWü, MRA Münze K 137/2, fol. 57 r. Another intercollegial committee was formed on 15 Oct. Ibid, fol. 72 v.

<sup>53</sup> *Kaiser Karl des fünfften Neue Müntzordnung, Sampt Valuierung der Gulden vnd Silberin Müntzen, Vnd darauff eruolgttem Kaiserlichen Edict, zu Augspurg alles im Jar M.D.LI. aufgericht und außgangen*, (Augsburg, 1551) (unpaginated); cf. Johann Christoph Hirsch, *Des Teutschen Reichs Münz-Archiv*, vol. 1 (Nürnberg, 1756), no. CCXIII, pp. 365-372.



The most striking feature of the ordinance was that all coins mentioned in it were valued in Austria's traditional coin, the *kreuzer*. The largest silver piece was a 72-*kreuzers*-coin called *guldiner*, which jointly with the *kreuzers* and their other multiples formed the Empire's common currency.<sup>54</sup> The ordinance also recognised the golden rhinegulden which it gave the same value as the *guldiner*, thus establishing a fully-fledged bimetallic currency comparable to those of France and England. Concerning the old money, the bill specified that 'next to our new imperial coins described above, the *talers* so far issued in the Empire of the German nation are to be taken and given for 68 *kreuzers*'.<sup>55</sup> This applied to full-bodied *talers* only – light versions whose rates were lower were listed, too. The bill closed with a long catalogue of other domestic and foreign coins also valued in *kreuzers*. This money was to be used freely for four months, and for another twelve months at the rates given in the bill. From then on, it was 'entirely prohibited and done away with, and should be neither taken nor given in any payment'.<sup>56</sup>

With regard to the standard of the silver coinage, the Speyer conference started out from a proposition Charles V's brother King Ferdinand had made during the 'diet-in-arms': He had suggested a 60-*kreuzers*-piece whose bullion content, while being lower than that of the current Austrian coin of that value and much lower than what the estates without silver mines of their own had hoped for, was higher than what the mountain lords had so far demanded.<sup>57</sup> Flersheim and Solms soon convinced the delegates that this was a practicable compromise.<sup>58</sup> The ease with which they were able to do so suggests that now, for the first time, there was

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<sup>54</sup> See fig. 1 in the appendix. The bill also recognised 5 regional silver currencies and 8 regional types of *pfennigs* that were linked to the *guldiner*. For *hellers* ( $\frac{1}{2}$ -*pfennigs*), it merely defined a maximum mint equivalent. *Kaiser Karl des fünften Neue Müntzordnung*, 9-18.

<sup>55</sup> *ibid.*, 20.

<sup>56</sup> *ibid.*, 26.

<sup>57</sup> Machoczek, *Der Reichstag zu Augsburg 1547/48*, vol. 3, no. 221a, p. 2010; no. 221b, pp. 2011 f.

<sup>58</sup> 28 Sept., i.e. after 2½ weeks of discussions which had mostly concerned the question of whether the largest coin should be a 72- or a 24-*kreuzers*-piece. StArchWü, MRA Münze K 137/2, fol. 33 v.-34 r.

widespread belief in the viability of the planned currency. Apparently, the mountain lords were willing to agree to a relatively low mint equivalent because they assumed that since the Schmalkaldic War the emperor was powerful enough to prevent free-riders from breaking the common coins. This suggests that their previous failure to agree on a common currency had not been due to a fundamental lack of economic integration. Put differently, once the main obstacle to harmonisation – the fear of one’s coins being broken in neighbouring mints – had been removed, it became obvious that the Empire’s bullion markets were in principle well-integrated enough to allow an agreement.<sup>59</sup>

In Speyer, the delegates abandoned Ferdinand’s original idea of a 60-*kreuzers*-piece, but the new 72-*kreuzers*-piece was to have a proportional bullion content. 72 *kreuzers* were chosen on account of conditions in Bohemia and South Germany. In 1544, the Bohemian estates had fixed the exchange rate of the rhinegulden at that value; in 1547, the city of Augsburg had done the same.<sup>60</sup> In 1549, the delegates in Speyer decided to apply this rate to the new silver *guldiner*, too.<sup>61</sup>

The question of whether this silver coin and the golden rhinegulden should be perfectly fungible took up more of the delegates’ time and energy than any other issue. The imperial commissioners and the councillors of the princes enthusiastically advocated such a system. They invoked the ‘common man’ who, they said, was often required to pay gold that he had

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<sup>59</sup> Chilosi and Volckart, "Money, States and Empire", found that currency, and by implication bullion markets experienced strong integration between the early fifteenth and sixteenth centuries.

<sup>60</sup> Johann Newald, *Das österreichische Münzwesen unter Ferdinand I.: Eine münzgeschichtliche Studie* (Wien, 1883), 113; Friedrich Blendinger, ed. *Zwei Augsburger Unterkaufbücher aus den Jahren 1551 bis 1558: Älteste Aufzeichnungen zur Vor- und Frühgeschichte der Augsburger Börse* (Stuttgart, 1994), 33.

<sup>61</sup> There is no evidence in support of Vorel’s hypothesis that 72 *kreuzers* were chosen to bring the Empire’s currency in line with that of Spain, which was based on multiples of 8. Vorel, *Monetary Circulation*, 89 f. The Spanish currency was never mentioned in the negotiations. The Nuremberg assay of spring 1551 treated the Spanish *reales* in exactly the same way as all other foreign coins – something the assayers would hardly have done if Charles V had aimed at harmonising the Spanish and German currencies. Cf. Hirsch, *Münz-Archiv*, vol. 1, no. CCXI, p. 341.

to purchase at constantly increasing rates.<sup>62</sup> Austria's and Bavaria's reference to the duke of Jülich, who had 'taken pity' and ordered his custom posts to accept silver instead, indicates that they were thinking of commerce: The 'common man' was the merchant who carried a weight of custom duties that grew as long as gold was appreciating. Laying down the gold-silver ratio in imperial law would therefore help trade.<sup>63</sup>

Since the 1520s, gold was indeed appreciating on many markets. On average, the bimetallic ratio grew from 1:11.27 between 1525 and 1529 to 1:13.09 between 1545 and 1549: an increase of more than 16 per cent.<sup>64</sup> Under these conditions merchants doubtless did find it harder to pay toll charges for example on the Rhine. Still, this was not the only reason why Charles' commissioners and the delegates of the princes favoured a system where the bimetallic ratio was determined by law. As with the common currency as a whole, other objectives apart from the desire to support trade played a role. Flersheim pointed this out: He argued that as bishop of Speyer he had to purchase the gold he needed to repay his debts from merchants, and this with growing difficulties, high costs and insufferable fees: 'It is intolerable that it should not be allowed to pay with the silver piece instead'.<sup>65</sup>

Flersheim was not alone in facing this problem. There is no comprehensive analysis of the debts the German estates of the mid-sixteenth century had incurred, and given the unsystematic fiscal organisation of many principalities and cities such an analysis is probably impossible in any case. However, some examples suffice to demonstrate the importance of

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<sup>62</sup> StArchWü, MRA Münze K 137/2, fol. 34 v.

<sup>63</sup> StArchWü, MRA Münze K 137/2, fol. 37 v.

<sup>64</sup> For the bimetallic ratio see Chilosi and Volckart, "Money, States and Empire". Its rise seems primarily to have been the consequence of the increasing imports of silver from Spanish-America, which caused a growth of the European stock of silver relatively to that of gold. Renate Pieper, "American Silver Production and West European Monetary Supply in the Sixteenth and Seventeenth Century," in *Economic effects of the European expansion: 1492 - 1824*, ed. José Casas Pardo (Stuttgart, 1992), esp. 90; Fernand Braudel and Frank Spooner, "Prices in Europe from 1450 to 1750," in *The Cambridge Economic History of Europe*, ed. E.E. Rich and C.H. Wilson (Cambridge, London, New York, Melbourne, 1967), 444 f.

<sup>65</sup> StArchWü, MRA Münze K 137/2, fol. 47 v.

the issue. The Habsburg debts in particular were notorious: For the 1560s and 1570s, those of the Austrian branch alone have been estimated at between 10 and 12 million guildens. The Elector Joachim II of Brandenburg had by the time of his death in 1571 amassed almost 5 million guildens of debts. Other princes were in a similar position. In 1550, the elector of Saxony, for example, owed his creditors more than 800,000 guildens. In the 1530s, the landgrave of Hesse borrowed on average 45,000 guildens per year. This equalled about a quarter of his total revenues. The dukes of Württemberg, Mecklenburg and Bavaria, the margrave of Baden and the count-palatine of Neuburg were heavily indebted, too.<sup>66</sup>

In many parts of Germany, ‘gulden’ was a term used for units of account based on silver as well as for the gold coin; hence, debts valued in gulden were not necessarily denominated in gold. How large the gold-share in the princely liabilities was is a question research has not addressed. Still, the structure of the debts of Duke Ernest ‘the confessor’ of Brunswick-Lüneburg, which Otto von Estorff, one his vassals, guaranteed in the years after 1529, may be typical of the liabilities of the middling princes of the Empire. Estorff listed 41 loans the duke had taken up with 40 creditors. 15 of these were denominated in gold guildens; they amounted to more than a quarter of the total.<sup>67</sup> When Duke Ernest (or, if he defaulted, Estorff) wanted

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<sup>66</sup> Reinhard Hildebrandt, "Der Kaiser und seine Bankiers: ein Beitrag zum kaiserlichen Finanzwesen des 16. Jahrhunderts," in *Finanzen und Herrschaft: materielle Grundlagen fürstlicher Politik in den habsburgischen Ländern und im Heiligen Römischen Reich im 16. Jahrhundert*, ed. Friedrich Edelmayer (Wien, München, 2003), 237; Franz Schneider, *Geschichte der formellen Staatswirtschaft von Brandenburg-Preussen* (Berlin, 1952), 27; Uwe Schirmer, *Kursächsische Staatsfinanzen (1456-1656): Strukturen - Verfassung - Funktionseliten* (Stuttgart, 2006), 581; Kersten Krüger, "Public Finance and Modernisation: The Change from Domain State to Tax State in Hesse in the Sixteenth and Seventeenth Centuries. A Case Study," in *Formung der frühen Moderne: ausgewählte Aufsätze*, ed. Kersten Krüger (Münster, 1987/2005), 51; Paul Steinmann, "Die Geschichte der mecklenburgischen Landessteuern und der Landstände bis zu der Neuordnung des Jahres 1555", *Jahrbücher des Vereins für Mecklenburgische Geschichte und Altertumskunde* 88 (1924), 8; Ernst Klein, *Geschichte der öffentlichen Finanzen in Deutschland (1500-1870)* (Stuttgart, 1974), 18 f.; Volker Press, "Formen des Ständewesens in den deutschen Territorien des 16. und 17. Jahrhunderts," in *Ständetum und Staatsbildung in Brandenburg-Preußen: Ergebnisse einer internationalen Fachtagung*, ed. Peter Baumgart (Berlin, New York, 1983), 292.

<sup>67</sup> Another 24 loans were denominated in ‘*florins*’ (i.e. the *mariengulden*, a unit of account based on the silver *mariengroschen*), and 2 further loans in ‘*mark*’ (i.e. the *mark lübisch* used in Lüneburg). If we assume that, like the Austrian gulden of account (= 60 *kreuzers*) in about 1530, the *mariengulden* was about 0.9 rhinegulden and 1 rhinegulden 1.8 *marks* (cf. table 3 in the appendix), the total value of the debts Estorff

to repay them, he faced the same problem as Flersheim: The gold he needed kept appreciating. However, once the ratio between gold and silver had been legally fixed, creditors would have to accept being repaid in silver at the rate determined in 1549, even if the metal had meanwhile depreciated. The indebted princes of the Empire must have found this argument far more compelling than the idea that bimetallism might help struggling merchants. Whether the imperial commissioners consciously used it to rally support for the planned new currency is not known, but two things should be noted: First, the argument apparently helped reaching an agreement at least among the princely delegates whose will to co-operate was evident, and second, it seems clear that from this point, the project of creating a common currency began to come off its rails. So far, all had agreed that the aim was preventing the trade in coinage; now a group of estates emerged who realised that monetary policies could be used for other purposes, too.

The electors' delegates opposed the fungibility of *guldiner* and rhinegulden vigorously. As Brandenburg – the lowest-ranking electorate – carried little weight and Saxony had not sent a representative to Speyer, the interests of the electors of Mainz, Trier, Cologne and the Palatinate prevailed. Their councillors argued that if it was to be permitted to use silver to repay debts denominated in gold the result would be serious confusion, disputes and other hardship, particularly where securities and the payment of interest were at issue; moreover, creditors would not allow themselves to be forced to ignore the letter of their contracts and accept silver coins in place of gold.<sup>68</sup> The argument is plausible and the electors' delegates

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guaranteed was c. 126,000 rhinegulden. The sum denominated in gold was 34,700 gulden. [Cammerjunker] von Estorff, "Beitrag zur Finanzgeschichte des welfischen Fürstenhauses in der ersten Hälfte des 16. Jahrhunderts mit besonderer Beziehung auf die Familien von Estorff", *Vaterländisches Archiv des historischen Vereins für Niedersachsen*, no. 4 (1836), 402-409. The loans taken up by the duke of Württemberg were of a similar order of magnitude. Rudolf Bütterlin, "Der Württembergische Staatshaushalt in der Zeit zwischen 1483 und 1648" (Universität Tübingen, 1977), 172-225.

<sup>68</sup> StArchWü, MRA Münze K 137/2, fol. 40 v.; cf. GStAPK, I. HA, Rep. 15, Nr. 1 D, fol. 15 v.

may indeed have expected such consequences. However, for them, too, other motives that they mentioned less often played a role.

One argument they only advanced in passing was that if the rhinegulden was treated as equivalent of a 72 *kreuzers* silver coin, ‘gold ... will in its entirety be exported from the German nation’.<sup>69</sup> The electoral councillors did not explain why they anticipated this, but their concern was well-founded. When Bohemia and Augsburg valued the rhinegulden at 72 *kreuzers*, this applied to coins of the Austrian standard of 1535. The 72-*kreuzers*-piece planned at Speyer was to be struck at a higher mint equivalent, that is, with a proportionally lower content of fine silver. If the rhinegulden was equated with such a coin, this meant that the official value of gold was depressed far below its rate in neighbouring countries.<sup>70</sup> As long as this difference was large enough to cover the costs of transport and re-minting, everybody experienced in the trade in coinage would face incentives to purchase gold in e.g. Frankfurt, Augsburg or Hamburg and to sell it in Paris or some other place where its official value was higher. Bimetallism would indeed revert to monometallism.

The mountain lords did not object. As early as in 1545 the Saxon Elector John Frederick ‘the magnanimous’ had declared that ‘thank God, the German nation can do very well without gold’,<sup>71</sup> and his cousin and successor Maurice doubtlessly agreed with him at least in this point. Austria’s interests matched those of Saxony: Without any formal decision having been made, the main role in the new currency would devolve on the metal they were

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<sup>69</sup> StArchWü, MRA Münze K 137/2, fol. 40 r.

<sup>70</sup> The relevant gold-silver ratios are:

1 rhinegulden = 72 Austrian <i>kreuzers</i> (ordinance of 1535):	1:11.84.
1 rhinegulden = 1.2 Austrian <i>guldiners</i> (à 60 <i>kreuzers</i> ) (ordinance of 1535):	1:12.24.
1 rhinegulden = 72 <i>kreuzers</i> (as planned in Speyer):	1:10.64.
1 rhinegulden = 1 <i>guldiner</i> (à 72 <i>kreuzers</i> , as planned in Speyer):	1:10.88.

At the same time, the ratio at the Paris mint was:

1 gold <i>écu effigie</i> (à 540 <i>deniers</i> ) = 4.1 silver <i>testons</i> (à 132 <i>deniers</i> ) (ordinance of 1549):	1:11.65.
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The French data from A. Blanchet and A. Dieudonné, *Manuel de numismatique Française*, vol. 2: Monnaies royales Françaises depuis Hugues Capet jusqu’à la Révolution (Paris, 1916), 323.

<sup>71</sup> Aulinger, *Der Reichstag zu Worms 1545*, vol. 2, no. 77, p. 921.

producing.<sup>72</sup> The Rhenish electors, by contrast, would be seriously harmed: After all, up to 60 per cent of their revenues were generated at their custom posts, most of which were located on the Rhine and demanded gold.<sup>73</sup> The electoral delegates at Speyer roundly rejected a bimetallic currency.

After three weeks of rather repetitive discussions, Flersheim presented a new argument. He warned the electoral councillors that ‘it had been found how dangerous it was to damage his Majesty’s reputation, grandeur etc., as had become quite evident during the late war, when his Majesty had not set himself so strongly against Saxony and Hesse because of reasons of religion, but because of their lack of obedience’.<sup>74</sup> Even if the electoral delegates did not expect Charles V to go to war over the rhinegulden, the emperor’s displeasure was not to be taken lightly: He used it strategically and often with success to discipline the estates. He would, for example, demonstrate his explicit preference for some while he ignored others, thereby unsettling them and generating compliance.<sup>75</sup> In Speyer, nerves frayed further when it became known that Solms had left for Charles’ court in Brussels ‘to obtain an imperial resolution’. The electoral councillors became very upset about this – they had never requested such a resolution – did not need one, either –,<sup>76</sup> and sure enough, when after about two weeks Solms brought back Charles V’s letter, it turned out that the emperor backed the delegates of the princes. He had got hold of a copy of a memorandum where they had summarised their

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<sup>72</sup> They evidently did not expect the outflow of gold to depress the price of silver. Even in the eighteenth century, respected monetary theoreticians who were also crucially involved in monetary politics did not realise that bimetallic ratios reflected the supply and demand of gold and silver. Cf. e.g. Johann Philipp Graumann, *Gesammlete Briefe von dem Gelde* (Berlin, 1762), 24.

<sup>73</sup> For the fifteenth century Georg Droege, "Die finanziellen Grundlagen des Territorialstaats in West- und Ostdeutschland an der Wende vom Mittelalter zur Neuzeit", *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 53 (1966), 149. This matches the share of custom revenues in the total income of the elector Palatine at the start of the seventeenth century: Anton Chroust, "Ein Beitrag zur Geschichte der kurpfälzischen Finanzen am Anfang des XVII. Jahrhunderts", *Zeitschrift für die Geschicht des Oberrheins N.F.* 10 (1895), 33.

<sup>74</sup> StArchWü, MRA Münze K 137/2, fol. 89 v.

<sup>75</sup> Luttenberger, "Reichspolitik", 24, 46.

<sup>76</sup> StArchWü, MRA Münze K 137/2, fol. 78 v.

point of view and in which he had taken 'gracious pleasure'. Now he ordered his commissioners, specifically Flersheim, to make sure that all delegates voted accordingly – not at some future diet but 'now, at the current coinage conference'.<sup>77</sup> This Flersheim failed to do. The delegates of the electors dug in their heels, claiming that their lords had not expected this dispute and had given them no pertinent instructions. On 5 November the conference ended without an agreement on the point of bimetallism.<sup>78</sup>

In the following months the Rhenish electors tried to approach the emperor directly; they moreover sought support among their peers in Saxony and Brandenburg.<sup>79</sup> Flersheim and Solms, who in view of their failure to engineer an agreement in Speyer lived themselves under the shadow of the emperor's displeasure, now tightened the screws. Just before the next diet opened in Augsburg in July 1550, they required the delegates of Mainz, Trier, Cologne and the Palatinate to appear in their lodgings, forbade them to seek further advice in monetary matters, set them a time limit and then ordered them out of the room – all this in a tone that before Charles' victory in the Schmalkaldic War would have been unimaginable between representatives of the emperor and the highest-ranking estates of the Empire.<sup>80</sup> Once the diet had begun, the electors did find some support: The cities' college submitted a memorandum that repeated the arguments of the electoral councillors at Speyer.<sup>81</sup> The urban delegates at Augsburg were clearly unconvinced of the idea that bimetallism would help trade; moreover, while many cities were themselves heavily indebted, many members of the urban councils depended financially on rents they received in gold.<sup>82</sup> Their memorandum was to no avail.

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<sup>77</sup> Charles' resolution was dated Brussels, 24 Oct. 1549; it arrived at Speyer on 1 Nov. StArchWü, MRA Münze K 137/2, fol. 100 r.; the resolution: StArchLu, B 113 I Bü 1794, no. 5, fol. 27 r.-30 v.

<sup>78</sup> StArchWü, MRA Münze K 137/2, fol. 90 v. – 91 r.; cf. GStAPK, I. HA, Rep. 15, Nr. 1 D, fol. 30 r.

<sup>79</sup> Eltz, *Der Reichstag zu Augsburg 1550/51*, vol. 2, no. 117, p. 860.

<sup>80</sup> *ibid.*, no. 118, pp. 861 f.

<sup>81</sup> *ibid.*, no. 120, pp. 865 ff.

<sup>82</sup> Bernd Fuhrmann, "'Öffentliches" Kreditwesen in deutschen Städten des 15. und 16. Jahrhunderts", *Scripta Mercaturae* 37 (2003), *passim*; Robert W. Scribner, "Communities and the Nature of Power," in *Germany: A*



The diet drafted the currency bill in accordance with what had been discussed in Speyer, including the valuation of both rhinegulden and *guldiner* as *72-kreuzers*-pieces, and when the recess summarising the bill's main points was brought forward on 14 February 1551, the Rhenish electors signed.<sup>83</sup>

In Augsburg the estates decided that each of the ten circles into which the Empire was divided should send a group of representatives to the assay at Nuremberg where the value of the money in circulation was to be determined. Most circles did so, but not the Upper Saxon one, of which Saxony was a part. While the assay was taking place, the councillors of the Saxon elector Maurice, who had other business in Nuremberg, repeatedly wrote him, warning that the absence of a Saxon coinage expert might harm him, but he did not react.<sup>84</sup> Maurice's representatives had signed the recess of Augsburg.<sup>85</sup> They had thereby endorsed both the currency bill and the decision to hold a general assay. Their master, however, had held back from the discussions about the new common currency – first because he was still occupied with military matters, but later, apparently, because he realised that the enmity he had excited among the Protestant estates dangerously weakened his position as elector of Saxony. To strengthen it, he decided to join a group of princes who had formed a new anti-imperial league. In May 1551, – that is, while the assayers were still at work in Nuremberg – Maurice concluded a pact with these 'war princes', whose leader he became.<sup>86</sup> Charles learnt of this

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*New Social and Economic History*, ed. Robert W. Scribner (London, New York, Sydney, Auckland, 1996), 311; Tom Scott, *Society and Economy in Germany, 1300-1600* (Basingstoke, New York, 2002), 36.

<sup>83</sup> Eltz, *Der Reichstag zu Augsburg 1550/51*, vol. 2, no. 125, esp. pp. 875, 880, no. 305, pp. 1588, 1606.

<sup>84</sup> Johannes Herrmann, Günther Wartenberg, and Christian Winter, eds., *Politische Korrespondenz des Herzogs und Kurfürsten Moritz von Sachsen* vol. 5: 9. Januar 1551 – 1. Mai 1552 (Leipzig, 1998), no. 61, p. 147, no. 70, p. 158.

<sup>85</sup> Eltz, *Der Reichstag zu Augsburg 1550/51*, vol. 2, no. 305, p. 1607.

<sup>86</sup> Karl Erich Born, "Moritz von Sachsen und die Fürstenverschwörung gegen Karl V.", *Historische Zeitschrift* 191, no. 1 (1960), 28.

only in the autumn of that year, but he knew much earlier that the Saxon elector was negotiating with his enemies and by March 1551 relations had become very strained.<sup>87</sup>

Soon after the Nuremberg assay had begun the Habsburgs moved to make sure it would have the desired outcome. In April, King Ferdinand published an edict for Austria which fixed the value of the *taler* with immediate effect at 68 *kreuzers*. He also declared that Charles V had ‘graciously warned’ the assayers in Nuremberg ‘not to rate the better *taler*, hitherto struck, higher than 68 *kreuzers* of the planned new common coinage’.<sup>88</sup> Ferdinand seemingly tried to ease the introduction of the new currency by minimising the change it involved: As we have seen, the official value of the rhinegulden was to remain unchanged; so was that of the *taler*. What the edict did not mention was that the new common *kreuzer* contained less bullion than the traditional Austrian coin of that name. *Talers* of the Saxon standard should have had a value of not 68, but more than 69 such *kreuzers*.<sup>89</sup> Hence, Charles V’s intervention was clearly intended to make sure that the *taler* would be undervalued, with his brother’s edict helping its circulation at that rate. The assayers in Nuremberg obliged. They listed the Saxon *talers* among a large number of others whose bullion content, they said, merited a rate of ‘in part more than and up to’ 68 new *kreuzers*.<sup>90</sup>

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<sup>87</sup> Ines Grund, "Die Ehre – die Freiheit – der Krieg: Frankreich und die deutsche Fürstenopposition gegen Karl V. 1547/48 – 1552" (Universität Regensburg, 2007), 163 f. with FN 2; Fritz Hartung, *Karl V. und die deutschen Reichsstände von 1546 bis 1555* (Halle a.S., 1910), 70 f. In March 1551, Charles had threatened to depose Maurice as elector and re-instating John Frederick in order to force him to support Philip II of Spain’s succession as emperor. The threat had not worked. Born, "Moritz von Sachsen", 43, 54. Charles thereafter blamed Maurice for the failure of his plan to ensure Philip’s succession. For his knowledge of the elector’s negotiations with Henry II and the ‘war princes’ see Wilhelm Maurenbrecher, *Karl V. und die deutschen Protestanten, 1545-1555* (Frankfurt, 1865), 292; Leopold von Ranke, *Deutsche Geschichte im Zeitalter der Reformation*, vol. 5 (Leipzig, 1894), 170;

<sup>88</sup> Siegfried Becher, *Das österreichische Münzwesen vom Jahre 1524 bis 1838 in historischer, statistischer und legislativer Hinsicht*, vol. 2: Legislativer Theil (Wien, 1838), no. 22, p. 29. Schrötter, "Münzwesen, Teil II", 51 f., believed that the Saxon mints had produced underweight *talers* and that their rate of 68 *kreuzers* reflected this. He was not aware of Ferdinand’s edict.

<sup>89</sup> Hirsch, *Münz-Archiv*, vol. 1, no. CCVI, p. 312; cf. table 1 in the appendix.

<sup>90</sup> Their discomfort is palpable in the wording of this section of the report (garbled almost to the point of ambiguity): ‘Diese jetzt gemeldte Thaler alß die zum theil darüber biß in 68. kr. erlangen, laßen wir bey

The currency bill of July 1551 thus presented consumers with a choice. They could either use *talers* at their legal value despite their intrinsic value being higher, or give preference to the imperial *guldeners*. The incentives were clear: *Guldeners* would be used, while *talers* would disappear from circulation. From Charles V's perspective this was advantageous in every respect. On the one hand, the demise of the *talers* would make room for the imperial *guldeners*, which would help spreading the new common currency. On the other hand, *talers* were the most important product of the Saxon mints, which made a weighty contribution to Maurice's revenues.<sup>91</sup> Driving them out of circulation would therefore not only politically damage the new elector's reputation and grandeur but also economically weaken him – as it would most other 'war princes', who were producing *talers* of roughly the Saxon standard.<sup>92</sup> While Charles nowhere openly said that this was his aim, he cannot but have been aware of what abolishing the *talers* implied for his opponents. As in the case of the fungibility of rhinegulden and *gulden*, the original aim of the reform – creating conditions where coins would not be broken in neighbouring mints – began to fade behind a new objective.

## V.

In 1552, Maurice of Saxony and the other 'war princes' revolted, invading South Germany and driving Charles from Tirol. The war shook the emperor's rule to the core. It also delayed the reform of the Empires' currencies. In Austria, for example, Ferdinand's edict of April 1551 seems to have had no effect, and the Imperial Monetary Ordinance came into

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*dem wehrdt der 68. kr. im Edict gesetzt neben der neuen Reichs Muntze bleiben*'. Ibid., no. CCXI, p. 336; cf. table 2 in the appendix.

<sup>91</sup> In 1549/50, the income from silver mining and the mint (which the Saxon treasury registered separately only after 1556) accounted for more than a quarter of Maurice's revenues. Between 1572 and 1582, when the income from mining had shrunk, the income Maurice's successor received from the mint equalled more than 100,000 gulden per year, i.e. c. 12 per cent of his total revenues. Schirmer, *Kursächsische Staatsfinanzen*, 558, 621 ff., 917.

<sup>92</sup> Cf. table 2 in the appendix.

force only after he had finished negotiating the peace with the opponents of the Habsburgs.<sup>93</sup> However, once that had happened it quickly became obvious that crying down the *talers* to 68 *kreuzers* did not work. Outside Austria this measure had not yet been taken, so that Austrian consumers soon began to complain about foreigners buying up *talers* and exporting them to where they commanded a higher price. In Austria *talers* did indeed disappear from circulation, as intended, but they left the country rather than ending in the Austrian mints to be turned into new *guldeners*.<sup>94</sup>

One part of the Empire where *talers* commanded a higher price was North Germany. In April 1555 Duke Henry the younger of Brunswick-Lüneburg concluded a contract with a number of regional imperial estates and provincial towns that fixed its value at 24 Saxon *groschens*.<sup>95</sup> The agreement seems to have confirmed the market rate of the *taler*: In Mecklenburg, for example, this had been its value since about 1550.<sup>96</sup> At that rate, *talers* were overvalued by almost 10 per cent – a huge premium which reflects their popularity and implies that compared to *guldeners*, they were ‘bad’ coins in the sense of Gresham’s Law. This, in turn, implies that no-one experienced in the trade in coinage would ever use *guldeners* in payments in North Germany. Rather, they would be withdrawn from circulation and sold as bullion – the opposite of what Charles V had intended. Once this became known, further repercussions were bound to follow. Any authority who considered issuing *guldeners*

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<sup>93</sup> *Römischer, Auch zu Hungern, vnd Behaim etc. Khünigklicher Mayestat, Ertzhertzogen zu Osterreich etc. Neue Müntzordnung*, (Wien, 1556), 1, 63.

<sup>94</sup> Newald, *Münzwesen unter Ferdinand I.*, 54 f., 57.

<sup>95</sup> Max von Bahrfeldt, ed. *Niedersächsisches Münzarchiv: Verhandlungen auf den Kreis- und Probationstagen des Niedersächsischen Kreises 1551-1625* vol. 1: 1551-1568 (Halle, 1927), no. 81, p. 78. The contract referred to Saxon *groschens* minted according to the electoral-Saxon ordinance of 1549 rather than to *groschens* of the Saxon regional currency recognised in the Imperial Monetary Ordinance of 1551. Cf. Schrötter, "Münzwesen, Teil II", 108.

<sup>96</sup> Carl Friedrich Evers, *Mecklenburgische Münz-Verfassung, besonders die Geschichte derselben*, vol. 1 (Schwerin, 1798), 56.

would realise that its product would end in the melting pots of the Lower Saxon mints. Unsurprisingly, few estates implemented the Imperial Monetary Ordinance.<sup>97</sup>

The fate of the rhinegulden in the years following 1551 suggests that a fundamental problem lurked behind these developments. At a very early stage of the conference in Speyer, when the value of the gulden was first being discussed and long before the issue of the export of gold was raised, the electoral delegates had warned that ‘it would be impossible to keep the rate of the Rhenish gold gulden at 72 *kreuzers*; rather, ... it would climb much further’.<sup>98</sup> In Augsburg for example, the gulden’s average exchange rate did indeed rise from 72.12 *kreuzers* in 1552 to 75.00 *kreuzers* in 1558.<sup>99</sup> As the *kreuzer* was not debased during these years, the upward trend of the exchange rate reflected the continuous fall in the value of silver relative to gold. However, this is not the whole story. Enforcing the circulation of coins at their legal par value is costly. If consumers were well-informed – and the rhinegulden-rates quoted above were collected from the books of professional brokers who certainly were – forcing them to use coins at a rate other than their market value required constantly monitoring the market, and this was prohibitively expensive. Hence, rhinegulden were neither exported nor melted and sold as raw metal; rather, they circulated at a premium.

All this points to a dangerous illusion of power Charles V seems to have nurtured in the years after the Schmalkaldic War, when according to a modern biographer his behaviour was characterised by excessive pride.<sup>100</sup> He was certainly powerful enough to bully the Rhenish

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<sup>97</sup> For a list of estates who did mint coins in accordance with the currency bill see Vorel, *Monetary Circulation*, 96 ff.

<sup>98</sup> StArchWü, MRA Münze K 137/2, fol. 8 v.

<sup>99</sup> Exchange rates from Blendinger, *Augsburger Unterkaufbücher*, 43-203.

<sup>100</sup> Alfred Kohler, *Karl V. 1500 - 1558: Eine Biographie* (München, 1999/2013), 314. Early modern German rulers seem to have tended to overestimating their ability to enforce economic legislation, possibly because they conceived of their subjects as a ‘super-oikos’ they could manage like a household. Cf. Leonhard Bauer and Herbert Matis, *Geburt der Neuzeit: Vom Feudalsystem zur Marktgesellschaft* (München, 1988), 190-196.

electors into submission. He was also perfectly capable of seizing the opportunity offered by the diet of Augsburg's *ex ante* agreement to any result the coinage experts in Nuremberg would come up with: He personally intervened in the assay, manipulating its outcome in a way that would harm his opponents. However, monitoring millions of transactions on markets all over the Empire, where consumers decided what coin to spend at which value, far surpassed the emperor's abilities. This is why the idea to deflate princely debts by fixing the bimetallic ratio foundered, and why the plan to harm Maurice of Saxony by undervaluing the *taler* blew up in his face. When in 1555 Charles V decided to resign, his project of creating a common German currency had failed just as his power politics.

## VI.

This article uses new primary sources to examine the creation and failure of the Holy Roman Empire's common currency in the years around 1550. It advances four hypotheses:

1. Political actors were primarily interested in monetary harmonisation not in order to help trade or advance economic integration, but to prevent the coins their own mints were issuing from being broken by their neighbours: a practice that tended to trigger rounds of competitive debasements. A common, Empire-wide currency would eliminate the 'trade in coinage' that stood behind this problem.
2. One influential strand of research claims that attempts to create a common currency failed because the Empire's economy was poorly integrated, with local silver prices diverging so far that the estates were unable to agree on a common standard. However, at the coinage conference in Speyer in 1549 silver prices were not an issue. The estates' delegates agreed very quickly on a common standard. They were able to do this for reasons of politics: Since the Schmalkaldic War, Charles V's power had increased so far that now, for the first time, there was widespread belief in the viability of a common

currency. Once all expected harmonisation to work, the silver-producing estates, who until then had insisted on a high mint equivalent in order to reduce the likelihood of their coins being broken, were willing to agree to a lower equivalent, thus accommodating the wishes of the estates without silver mines.

3. The other common explanation of the failure of an Empire-wide currency argues that the number of political agents was too large and the will to cooperate too weak to allow overcoming differences. Examining how the currency bill of July 1551 was drafted shows, however, that monetary policies were shaped by a relatively small number of actors, with effective decision making procedures at every level: Solutions were developed in committees, discussed among the participants in expert conferences, and finally submitted to the imperial diet at large. In this process, the rigid separation of the estates into colleges disintegrated, with several delegates sitting in more than one college and intercollegial committees playing an important role. Moreover, the emperor's growth in power since the Schmalkadic War allowed the estates credibly to commit to monetary harmonisation. Co-operation in the late 1540s and early 1550s therefore turned out to be relatively unproblematic.
4. The attempt to create an Empire-wide currency in 1551 failed for two reasons. First, the imperial commissioners and princely delegates pushed through a bimetallic system that they hoped would allow them deflating the value of their debts. Somewhat later, and using a *carte blanche* given him by the imperial diet, Charles V tried to weaken Maurice of Saxony by undervaluing the *taler*. In this way, the common-currency project antagonised both the electors on the Rhine and of Saxony, making its implementation unlikely. The second cause of the failure of this project is that neither the bimetallic ratio suggested in Speyer in 1549 and endorsed by the diet of Augsburg in 1551, nor the undervaluation of the *taler* proved enforceable. In North Germany the *taler* was

overvalued and the new *guldirer* conversely undervalued. As a consequence, *guldirer* and with them the common currency disappeared.

In sum, harmonisation failed less because Germany was economically poorly integrated or the will to co-operate was lacking than because important actors tried to use monetary policies for ulterior ends. Their policies thus played a core role in perpetuating the diversity of currencies that would continue to characterise German economic life far into the nineteenth century.



## Appendix

*Tab. 1: Mint data*<sup>101</sup>

1	2 <i>Taille</i>	3 <i>fineness</i>	4 <i>nominal value</i>	5 <i>g Au./Ag. per piece</i>	6 <i>metal</i>	7 <i>mint equivalent</i>	8 <i>Official gold- silver ratio</i>
<i>Rhenish electors 1515</i>							
Rheingulden	71.33	0.771	26 albus	2.5274	Au	2,405.5 albus	10.69
<i>Austria 1535</i>							
Guldiner	9.75	0.895	60 kreuzers	25.7717	Ag	654.0 kreuzers	-
Kreuzer	294.50	0.438	1 kreuzer	0.4173	Ag	673.1 kreuzers	-
<i>Electoral Saxony 1549</i>							
Taler	8.00	0.903	24 groschens	26.3874	Ag	212.7 groschens	-
Groschen	88.00	0.455	1 groschen	1.2087	Ag	193.5 groschens	-
<i>France 1549</i>							
Écu effigie	67.00	0.958	540 deniers	3.1757	Au	41,844.4 deniers	11.65
Teston	25.50	0.938	132 deniers	9.0472	Ag	3,590.4 deniers	11.65
<i>Imperial Monetary Ordinance 1551</i>							
Gold gulden	71.33	0.771	72 kreuzers	2.5274	Au	6,662.8 kreuzers	10.88
Guldiner	7.50	0.882	72 kreuzers	27.4970	Ag	612.3 kreuzers	10.88
Kreuzer	237.00	0.378	1 kreuzer	0.3734	Ag	626.2 kreuzers	10.64

NB: Column 2: Rhenish electors, Imperial Monetary Ordinance: Mark of Cologne; Austria: Mark of Vienna; Electoral Saxony: Mark of Erfurt; France: Mark of Troyes. Column 5 gives the maximum values. Mint officials were granted a tolerance so that the actual content of fine gold and silver was often less than the one prescribed in the ordinance. Wear and tear would increase the divergence.

*Tab. 2: The Nuremberg assay report, 27 May 1551*<sup>102</sup>

The report as printed by Hirsch does not have IDs; those given here reflect the order in which the coins are listed there and which follows their fineness. Below, coins minted by the same authority are grouped together. The report mentioned silver coins from Austria, the Rhenish electors, Würzburg, Bamberg, Württemberg, Baden, Ulm, Saxony, the Rappen-Union, Stralsund, Rostock, Lübeck and Holstein only summarily. archb. =

<sup>101</sup> Rhenish electors: Weisenstein, *Münz- und Geldwesen*, 235; Austria: Hirsch, *Münz-Archiv*, vol. 1, no. CLXXXIII, pp. 269 f.; Lori, *Sammlung*, vol. 1, no. CLXXV, pp. 191 f. (this ordinance did not determine a fixed bimetallic ratio); electoral Saxony: Hirsch, *Münz-Archiv*, vol. 1, 312. (this ordinance did not determine a fixed bimetallic ratio. The official name of the *taler*, used in the ordinance, was ‘*güldengroschen*’); France: Blanchet and Dieudonné, *Manuel de numismatique Française*, vol. 2: Monnaies royales Françaises depuis Hugues Capet jusqu'à la Révolution, 323; Imperial Monetary Ordinance: *Kaiser Karl des fünfften Newe Müntzordnung*, 6 f., 29 f.

<sup>102</sup> Hirsch, *Münz-Archiv*, vol. 1, no. CCXI, pp. 323-343.

archbishop; b. = bishop; c. = city; ct. = count; d. = duke; el. = elector; imp. c. = imperial or free city; k. = king; lgr. = landgrave; mgr. = margrave. *Talers* of the 'war princes' in **bold**.

<i>ID</i>	<i>minting authority</i>	<i>minted</i>	<i>g Ag./Au. per piece</i>	<i>metal</i>	<i>type</i>	<i>suggested value in kreuzers</i>
<i>authorities within the Empire</i>						
30	el. of Brandenburg		2.4809	Au	'rhinegulden'	72.00
55	el. of Brandenburg		2.4358	Au	gulden	70.50
67	el. of Brandenburg		2.3343	Au	gulden	68.00
257	el. of Brandenburg	1535-1551	5.5435	Ag	¼-taler	14.00
259	el. of Brandenburg		0.6597	Ag	groschen	1.25
3	el. of Cologne		2.4809	Au	rhinegulden	72.00
222	el. of Cologne		25.5755+	Ag	taler	68.00
1	el. of Mainz		2.4809	Au	rhinegulden	72.00
23	el. of Saxony		2.4809	Au	'rhinegulden'	72.00
<b>191</b>	<b>el. of Saxony</b>		<b>25.5755+</b>	<b>Ag</b>	<b>taler</b>	<b>68.00</b>
2	el. of Trier		2.4809	Au	rhinegulden	72.00
4	el. Palatine		2.4809	Au	rhinegulden	72.00
190	el. Palatine		25.5755+	Ag	taler	68.00
220	abbess of Essen and Werden		25.5755+	Ag	taler	68.00
239	abbess of Herford		25.5755+	Ag	taler	68.00
275	abbess of Herford		0.7760	Ag	groschen	2.00
224	abbot of Fulda		25.5755+	Ag	taler	68.00
289	abbot of Fulda		0.2384	Ag	kleingröschlein	0.63
229	abbot of Murbach		25.5755+	Ag	taler	68.00
249	archb. of Bremen		25.5755+	Ag	taler	68.00
14	archb. of Salzburg		2.4809	Au	'rhinegulden'	72.00
152	archb. of Salzburg		3.3432	Au	ducat	95.50
202	archb. of Salzburg		25.5755+	Ag	taler	68.00
17	b. of Bamberg		2.4809	Au	'rhinegulden'	72.00
41	b. of Basel		2.4809	Au	'rhinegulden'	72.00
28	b. of Eichstätt		2.4809	Au	'rhinegulden'	72.00
189	b. of Halberstadt	1513-1545	25.5755+	Ag	taler	68.00
80	b. of Liège	1506-1538	2.1087	Au	gulden	62.00
83	b. of Liège	1482-1506	2.0298	Au	gulden	60.00
93	b. of Liège	1544-1551	1.8494	Au	gulden	55.00
94	b. of Liège	1538-1544	1.8494	Au	gulden	55.00
106	b. of Liège	1521-1538	1.6238	Au	gulden	48.50
109	b. of Liège	1482-1506	0.9743	Au	gulden	30.00
110	b. of Liège	1506-1538	0.9743	Au	gulden	30.00
111	b. of Liège	1482-1506	0.9743	Au	gulden	30.00
113	b. of Liège	1538-1544	0.8769	Au	gulden	27.50
256	b. of Liège	1544-1551	24.6708	Ag	taler	63.00
276	b. of Liège	1538-1544	3.2883	Ag	4-stiever	8.50
280	b. of Liège		5.3168	Ag	schnapphahn	13.00
281	b. of Liège		1.2025	Ag	¼-schnapphahn	3.00

72	b. of Metz		2.3004	Au	gulden	67.00
284	b. of Minden		0.6591	Ag	groschen	1.75
46	b. of Münster		2.4809	Au	'rhinegulden'	72.00
60	b. of Münster	1497-1508	2.4019	Au	gulden	69.50
70	b. of Münster		2.3343	Au	gulden	68.00
235	b. of Münster		25.5755+	Ag	taler	68.00
48	b. of Osnabrück	1482-1508	2.4358	Au	gulden	70.50
49	b. of Osnabrück	1482-1508	2.4358	Au	gulden	70.50
76	b. of Osnabrück	1424-1437	2.2215	Au	gulden	65.00
33	b. of Passau		2.4809	Au	'rhinegulden'	72.00
24	b. of Regensburg		2.4809	Au	'rhinegulden'	72.00
199	b. of Regensburg		25.5755+	Ag	taler	68.00
78	b. of Utrecht		2.1087	Au	gulden	62.00
79	b. of Utrecht		2.1087	Au	gulden	62.00
82	b. of Utrecht	1457-1496	2.0298	Au	gulden	60.00
92	b. of Utrecht	1516-1524	1.8494	Au	gulden	55.00
102	b. of Utrecht	1433-1455	1.7253	Au	gulden	51.00
108	b. of Utrecht		1.4885	Au	gulden	45.00
35	b. of Würzburg		2.4809	Au	'rhinegulden'	72.00
285	b. or c. of Metz		1.8674	Ag	blanken	5.00
286	b. or c. of Metz		0.5683	Ag	blänklein	1.50
246	b. or c. of Passau		25.5755+	Ag	taler	68.00
62	b.-elect of Utrecht	1456	2.3343	Au	gulden	68.00
77	b.-elect of Utrecht	1456	2.1087	Au	gulden	62.00
15	baron of Reitzenstein		2.4809	Au	'rhinegulden'	72.00
65	ct. of Friesland	1466-1491	2.3343	Au	gulden	68.00
75	ct. of Friesland	before 1493	2.2215	Au	gulden	65.00
84	ct. of Friesland	1466-1491	2.0298	Au	gulden	60.00
85	ct. of Friesland	1466-1491	2.0298	Au	gulden	60.00
89	ct. of Friesland	1529	1.9170	Au	gulden	56.50
90	ct. of Friesland		1.9170	Au	gulden	56.50
114	ct. of Friesland		0.8769	Au	gulden	27.50
115	ct. of Friesland		0.7794	Au	gulden	24.00
247	ct. of Haag		25.5755+	Ag	taler	68.00
237	ct. of Henneberg		25.5755+	Ag	taler	68.00
234	ct. of Hohenzollern		25.5755+	Ag	taler	68.00
213	ct. of Honstein		25.5755+	Ag	taler	68.00
32	ct. of Königstein		2.4809	Au	'rhinegulden'	72.00
196	ct. of Königstein		25.5755+	Ag	taler	68.00
219	ct. of Manderscheid		25.5755+	Ag	taler	68.00
250	ct. of Mansfeld-Hinterort		23.0779	Ag	taler	59.00
19	ct. of Oettingen		2.4809	Au	'rhinegulden'	72.00
194	ct. of Oettingen		25.5755+	Ag	taler	68.00
69	ct. of Regenstein	1519-1551	2.3343	Au	gulden	68.00
243	ct. of Regenstein		25.5755+	Ag	taler	68.00
241	ct. of Schwarzburg		25.5755+	Ag	taler	68.00

100	ct. of the Bergh	1465-1511	1.8494	Au	gulden	55.00
227	ct. of the Bergh		25.5755+	Ag	taler	68.00
16	ct. of Tirol		2.4809	Au	'rhinegulden'	72.00
10	ct.s Fugger		2.4809	Au	'rhinegulden'	72.00
193	ct.s of Mansfeld		25.5755+	Ag	taler	68.00
258	ct.s of Mansfeld		1.5209	Ag	spitzgröschlein	4.00
22	d. of Bavaria		2.4809	Au	'rhinegulden'	72.00
153	d. of Bavaria		3.3432	Au	ducat	95.50
228	d. of Brunswick-Calenberg	1540-1551	25.5755+	Ag	taler	68.00
270	d. of Brunswick-Calenberg	1540-1551	0.7646	Ag	mariengroschen	2.00
207	d. of Brunswick-Wolfenbüttel	1514-1551	25.5755+	Ag	taler	68.00
116	d. of Burgundy	1516-1551	3.9436	Au	lion	113.00
117	d. of Burgundy	1516-1551	5.2406	Au	real	150.00
118	d. of Burgundy	1521-1551	2.6449	Au	½-real	77.00
119	d. of Burgundy	1521-1551	1.6639	Au	carolus	49.50
120	d. of Burgundy	1516-1551	2.1087	Au	philippus	62.00
163	d. of Burgundy		3.1085	Au	sun-crown	89.00
290	d. of Burgundy		19.0108	Ag	silver carolus	50.00
291	d. of Burgundy		3.8032	Ag	schaff	10.00
292	d. of Burgundy		2.8738	Ag	stieverer	7.50
293	d. of Burgundy		2.9988	Ag	toison	7.50
294	d. of Burgundy		1.9657	Ag	2-stievers	5.00
295	d. of Burgundy		1.4010	Ag	1½-stievers	3.75
296	d. of Burgundy		0.9134	Ag	stiever	2.50
50	d. of Cleves and Mark	1481-1521	2.4358	Au	gulden	70.50
66	d. of Cleves and Mark	1481-1521	2.3343	Au	gulden	68.00
91	d. of Cleves and Mark	1481-1521	1.9170	Au	gulden	56.50
63	d. of Guelders	1492-1538	2.3343	Au	gulden	68.00
64	d. of Guelders	1492-1538	2.3343	Au	gulden	68.00
74	d. of Guelders	1492-1538	2.2215	Au	Klemmer-gulden	65.00
87	d. of Guelders	1492-1538	1.9170	Au	Klemmer-gulden	56.50
88	d. of Guelders	1383-1402	1.9170	Au	gulden	56.50
101	d. of Guelders	1492-1538	1.8494	Au	rider-gulden	55.00
103	d. of Guelders	1423-1465	1.7253	Au	Klemmer-gulden	51.00
107	d. of Guelders	1423-1465	1.6238	Au	gulden	48.50
279	d. of Guelders		4.9763	Ag	schnapphahn	13.00
51	d. of Holstein	1474-1481	2.4358	Au	gulden	70.50
31	d. of Jülich		2.4809	Au	'rhinegulden'	72.00
221	d. of Jülich		25.5755+	Ag	taler	68.00
277	d. of Jülich		4.1756	Ag	schnapphahn	11.00
112	d. of Jülich and Berg	1503	0.9743	Au	gulden	30.00
36	d. of Jülich, e.l.s on the Rhine		2.4809	Au	rhinegulden	72.00
61	d. of Mecklenburg		2.4019	Au	gulden	69.50
<b>210</b>	<b>d. of Mecklenburg</b>	<b>1547-1551</b>	<b>25.5755+</b>	<b>Ag</b>	<b>taler</b>	<b>68.00</b>
251	d. of Mecklenburg		20.7491	Ag	taler	53.00
252	d. of Mecklenburg			Ag	½-taler	26.00

253	d. of Mecklenburg		5.3014	Ag	¼-taler	9.50
184	d. of Savoie		2.9809	Au	crown	85.00
192	d. of Saxony		25.5755+	Ag	taler	68.00
26	d. of Württemberg		2.4809	Au	'rhinegulden'	72.00
255	d. of Württemberg		24.2561	Ag	taler	62.00
44	d.s of Mecklenburg		2.4809	Au	'rhinegulden'	72.00
203	d.s of Mecklenburg		25.5755+	Ag	taler	68.00
260	d.s of Pomerania, c. of Stralsund		0.2205	Ag	witte	0.50
13	k. Ferdinand		2.4809	Au	'rhinegulden'	72.00
143	k. Ferdinand (Bohemia)		3.3910	Au	ducat	97.00
149	k. Ferdinand (Carinthia)		3.3910	Au	ducat	97.00
145	k. Ferdinand (Linz)		3.3910	Au	ducat	97.00
141	k. Ferdinand (Vienna)		3.3910	Au	ducat	97.00
21	lgr. of Hesse		2.4809	Au	'rhinegulden'	72.00
<b>208</b>	<b>lgr. of Hesse</b>		<b>25.5755+</b>	<b>Ag</b>	<b>taler</b>	<b>68.00</b>
198	lgr. of Leuchtenberg		25.5755+	Ag	taler	68.00
34	mgr. of Baden		2.4809	Au	'rhinegulden'	72.00
5	mgr. of Brandenburg-Kulmbach		2.4809	Au	'rhinegulden'	72.00
<b>197</b>	<b>mgr. of Brandenburg-Kulmbach</b>		<b>25.5755+</b>	<b>Ag</b>	<b>taler</b>	<b>68.00</b>
248	palatine of Veldenz		25.5755+	Ag	taler	68.00
39	pr. of Anhalt		2.4809	Au	'rhinegulden'	72.00
37	Teutonic Order		2.4809	Au	'rhinegulden'	72.00
9	imp. c. of Augsburg		2.4809	Au	'rhinegulden'	72.00
156	imp. c. of Augsburg		3.3432	Au	ducat	95.50
47	imp. c. of Besançon	1541	2.4358	Au	gulden	70.50
287	imp. c. of Besançon		0.6008	Ag	münzlein	1.50
27	imp. c. of Cologne		2.4809	Au	'rhinegulden'	72.00
223	imp. c. of Colmar		25.5755+	Ag	taler	68.00
233	imp. c. of Cologne		25.5755+	Ag	taler	68.00
7	imp. c. of Donauwörth		2.4809	Au	'rhinegulden'	72.00
201	imp. c. of Donauwörth		25.5755+	Ag	taler	68.00
68	imp. c. of Dortmund		2.3343	Au	gulden	68.00
226	imp. c. of Dortmund		25.5755+	Ag	taler	68.00
273	imp. c. of Dortmund		0.7721	Ag	groschen	2.00
278	imp. c. of Dortmund		2.1110	Ag	großgroschen	5.50
6	imp. c. of Frankfurt		2.4809	Au	'rhinegulden'	72.00
236	imp. c. of Frankfurt		25.5755+	Ag	taler	68.00
232	imp. c. of Goslar		25.5755+	Ag	taler	68.00
268	imp. c. of Goslar		0.9134	Ag	mariengroschen	2.50
283	imp. c. of Goslar		0.3885	Ag	new Matthias	1.00
157	imp. c. of Kaufbeuren		3.3432	Au	ducat	95.50
187	imp. c. of Kaufbeuren		2.9809	Au	crown	85.00
204	imp. c. of Kaufbeuren		25.5755+	Ag	taler	68.00
18	imp. c. of Kempten		2.4809	Au	'rhinegulden'	72.00
195	imp. c. of Kempten		25.5755+	Ag	taler	68.00
29	imp. c. of Lübeck		2.4809	Au	'rhinegulden'	72.00

155	imp. c. of Lübeck		3.3432	Au	ducat	95.50
205	imp. c. of Lübeck		25.5755+	Ag	taler	68.00
263	imp. c. of Lübeck		17.5916	Ag	mark	46.00
20	imp. c. of Nördlingen		2.4809	Au	'rhinegulden'	72.00
8	imp. c. of Nuremberg		2.4809	Au	'rhinegulden'	72.00
25	imp. c. of Regensburg		2.4809	Au	'rhinegulden'	72.00
200	imp. c. of Regensburg		25.5755+	Ag	taler	68.00
217	imp. c. of Schwäbisch-Hall		25.5755+	Ag	taler	68.00
12	imp. c. of Straßburg		2.4809	Au	'rhinegulden'	72.00
225	imp. c. of Straßburg		25.5755+	Ag	taler	68.00
206	imp. c. of Ulm		25.5755+	Ag	taler	68.00
40	imp. c. of Worms		2.4809	Au	'rhinegulden'	72.00
150	b. of Breslau		3.3910	Au	ducat	97.00
211	b. or c. of Breslau		25.5755+	Ag	taler	68.00
52	c. of Basel	1521	2.4358	Au	gulden	70.50
53	c. of Bern		2.4358	Au	gulden	70.50
218	c. of Breisach		25.5755+	Ag	taler	68.00
43	c. of Bremen		2.4809	Au	'rhinegulden'	72.00
231	c. of Bremen		25.5755+	Ag	taler	68.00
151	c. of Breslau		3.3910	Au	ducat	97.00
240	c. of Brunswick		25.5755+	Ag	taler	68.00
267	c. of Brunswick		0.8655	Ag	mariengroschen	2.25
282	c. of Brunswick		1.5562	Ag	schilling	4.50
11	c. of Constance		2.4809	Au	'rhinegulden'	72.00
244	c. of Constance		25.5755+	Ag	taler	68.00
57	c. of Deventer	1498	2.4019	Au	gulden	69.50
73	c. of Deventer	1488	2.3004	Au	gulden	67.00
96	c. of Deventer	1523	1.8494	Au	gulden	55.00
216	c. of Erfurt		25.5755+	Ag	taler	68.00
238	c. of Freiburg i.Br.		25.5755+	Ag	taler	68.00
272	c. of Göttingen		0.8268	Ag	mariengroschen	2.00
288	c. of Göttingen		0.3207	Ag	kleingröschlein	0.75
59	c. of Groningen	before 1493	2.4019	Au	gulden	69.50
81	c. of Groningen	1486-1493	2.1087	Au	gulden	62.00
86	c. of Groningen	1486-1493	2.0298	Au	gulden	60.00
38	c. of Hamburg		2.4809	Au	'rhinegulden'	72.00
154	c. of Hamburg		3.3432	Au	ducat	95.50
230	c. of Hameln		25.5755+	Ag	taler	68.00
264	c. of Hameln		0.7763	Ag	mariengroschen	2.00
271	c. of Hanover		0.8341	Ag	mariengroschen	2.25
254	c. of Hildesheim		23.0779	Ag	taler	59.00
269	c. of Hildesheim		0.8986	Ag	mariengroschen	2.25
265	c. of Höxter		0.8488	Ag	mariengroschen	2.50
99	c. of Kampen	1519-1551	1.8494	Au	gulden	55.00
42	c. of Lüneburg		2.4809	Au	'rhinegulden'	72.00
209	c. of Lüneburg		25.5755+	Ag	taler	68.00

274	c. of Neuß		0.7501	Ag	groschen	2.00
105	c. of Nijmegen		1.7253	Au	gulden	51.00
245	c. of Nijmegen		25.5755+	Ag	taler	68.00
262	c. of Rostock		0.4236	Ag	new schilling	1.00
261	c. of Stralsund		0.3347	Ag	new schilling	1.00
215	c. of Thann		25.5755+	Ag	taler	68.00
58	c. of Zwolle	before 1493	2.4019	Au	gulden	69.50
95	c.s of Deventer, Kampen and Zwolle	1519-1551	1.8494	Au	gulden	55.00
97	c.s of Deventer, Kampen and Zwolle	1519-1551	1.8494	Au	gulden	55.00
98	c.s of Deventer, Kampen and Zwolle	1519-1551	1.8494	Au	gulden	55.00
104	c.s of Deventer, Kampen and Zwolle	1519-1551	1.7253	Au	gulden	51.00
214	c.s of Deventer, Kampen and Zwolle		25.5755+	Ag	taler	68.00
144	ct. of Glatz		3.3910	Au	ducat	97.00
242	ct. of Glatz		25.5755+	Ag	taler	68.00
212	d. of Liegnitz		25.5755+	Ag	taler	68.00
266	?		0.7443	Ag	mariengroschen	2.00
298	c. of Basel		25.1743	Ag	taler	64.00
135	d. of Münsterberg		3.3910	Au	ducat	97.00
<i>authorities outside the Empire</i>						
137	c. of Genoa		3.3910	Au	ducat	97.00
172	c. of Genoa		3.0389	Au	crown	87.00
169	c. of Lucca		3.0389	Au	crown	87.00
140	c. of Lyon		3.3910	Au	ducat	97.00
183	c. of Lyon		3.0389	Au	crown	87.00
324	c. of Schaffhausen		0.3484	Ag	groschen	0.88
186	c. of Sens		2.9809	Au	crown	85.00
138	c. of Venice		3.3910	Au	ducat	97.00
167	c. of Venice		3.0389	Au	crown	87.00
308	c. of Venice		6.0282	Ag	double marcell	16.00
309	c. of Venice		4.5534	Ag	pfundner	12.00
310	c. of Venice		3.0349	Ag	marcell	8.00
311	c. of Venice		2.2369	Ag	½-pfundner	6.00
312	c. of Venice		1.0906	Ag	3-kreuzer	3.00
54	c. of Zürich		2.4358	Au	gulden	70.50
185	canton of Uri		2.9809	Au	crown	85.00
322	canton of Uri, Schwyz, Unterwalden		3.1317	Ag	groschen	8.00
297	canton of Uri, Schwyz, Unterwalden, c. of Schaffhausen		25.4756	Ag	taler	65.00
188	considered to be Swiss		2.5286	Au	crown	73.50
164	d. of Brittany		3.1085	Au	sun-crown	89.00
168	d. of Ferrara		3.0389	Au	crown	87.00
146	d. of Florence		3.3910	Au	ducat	97.00
166	d. of Florence		3.0389	Au	crown	87.00
320	d. of Florence		2.9446	Ag	marcell	7.50
45	d. of Lorraine	1473-1508	2.4809	Au	rhinegulden	72.00
299	d. of Lorraine		7.5671	Ag	dickpfennig	19.75

300	d. of Lorraine		2.5260	Ag	groschen	6.50
301	d. of Lorraine		1.7114	Ag	Kopf	4.75
302	d. of Lorraine		1.3841	Ag	schwert	3.50
303	d. of Lorraine		0.5549	Ag	dahlin	1.50
323	d. of Prussia		0.6661	Ag	groschen	1.50
159	d. of Urbino		3.3432	Au	ducat	95.50
174	d. of Urbino		3.0389	Au	crown	87.00
176	Gamorin (?)		3.0389	Au	crown	87.00
134	k. Ferdinand (Hungary)		3.3910	Au	ducat	97.00
56	k. of Denmark	1481-1513	2.4019	Au	gulden	69.50
71	k. of Denmark	1481-1513	2.3004	Au	gulden	67.00
307	k. of Denmark		0.6616	Ag	groschen	1.50
305	k. of England		1.2810	Ag	stoßer	3.25
165	k. of France		3.1085	Au	sun-crown	89.00
306	k. of France		0.7473	Ag	stiever, called foß	1.75
136	k. of Poland		3.3910	Au	ducat	97.00
304	k. of Poland		2.1894	Ag	düttchen	5.50
161	k. of Portugal		3.2238	Au	ducat	92.00
162	k. of Portugal		3.1522	Au	ducat	90.00
180	k. of Spain		3.0389	Au	crown	87.00
321	k. of Spain		3.0853	Ag	real	8.00
122	k. of Spain (Aragon)		6.7342	Au	2-ducat	192.00
133	k. of Spain (Aragon)		3.3910	Au	ducat	97.00
121	k. of Spain (Castile)		6.7342	Au	2-ducat	192.00
130	k. of Spain (Castile)		3.3910	Au	ducat	97.00
171	k. of Spain (Castile)		3.0389	Au	crown	87.00
127	k. of Spain (France)		6.7342	Au	2-ducat	192.00
178	k. of Spain (Lombardy)		3.0389	Au	crown	87.00
126	k. of Spain (Milan)		6.7342	Au	2-ducat	192.00
147	k. of Spain (Milan)		3.3910	Au	ducat	97.00
131	k. of Spain (Naples)		3.3910	Au	ducat	97.00
181	k. of Spain (Naples)		3.0389	Au	crown	87.00
125	k. of Spain (Navarra)		6.7342	Au	2-ducat	192.00
177	k. of Spain (Navarra)		3.0389	Au	crown	87.00
124	k. of Spain (Sicily)		6.7342	Au	2-ducat	192.00
170	k. of Spain (Sicily)		3.0389	Au	crown	87.00
182	k. of Spain (Sicily)		3.0389	Au	crown	87.00
123	k. of Spain (Valentia)		6.7342	Au	2-ducat	192.00
132	k. of Spain (Valentia)		3.3910	Au	ducat	97.00
175	k. of Spain (Valentia)		3.0389	Au	crown	87.00
129	lord of Mirandola		6.5431	Au	2-ducat	187.00
160	lord of Mirandola		3.2716	Au	ducat	93.50
128	mgr. of Mantua		6.5431	Au	2-ducat	187.00
158	mgr. of Mantua		3.3432	Au	ducat	95.50
317	mgr. of Mantua		5.6626	Ag	double marcell	15.00
318	mgr. of Mantua		4.3179	Ag	pfundner	11.00



319	mgr. of Mantua		2.9446	Ag	marcell	7.50
179	mgr. of Montferrat		3.0389	Au	crown	87.00
139	pope		3.3910	Au	ducat	97.00
173	pope		3.0389	Au	crown	87.00
314	pope		2.9354	Ag	marcell	7.50
315	pope		2.1590	Ag	sechser	5.50
148	pope (Bologna)		3.3910	Au	ducat	97.00
313	pope (Bologna)	1534-1549	4.1302	Ag	bononier	11.00
316	pope (Bologna)	1534-1549	1.4960	Ag	4-kreuzer	4.00
142	woiwode of Transylvania		3.3910	Au	ducat	97.00

Tab. 3: Exchange rates of the rhinegulden, 1525-1559<sup>103</sup>

year	Hamburg (lübisch schillings)	Cologne (albus)	Nuremberg (schillings)	Vienna (kreuzers)	Augsburg (kreuzers)
1525	27.00	31.00			64.00
1526	28.00	31.50			
1527	27.00	33.00		64.00	
1528	28.00	33.50	11.17		64.00
1529	27.50	34.00			
1530	29.00	35.00			64.00
1531	27.36	36.50			
1532	24.00	38.00		65.00	
1533	30.16	38.50		64.00	
1534	29.00	37.50		64.00	68.00
1535	29.67	38.00			
1536	30.00	38.50	11.54	70.00	
1537	30.00	38.50		70.00	
1538		40.50	12.21		
1539	32.00	42.00		69.00	
1540		42.50		70.00	
1541	32.00	44.00		70.00	
1542	32.00	45.00		72.00	65.00

<sup>103</sup> Hamburg: Karl Koppmann, ed. *Kämmereirechnungen der Stadt Hamburg* vol. 5: 1501-1540 (Hamburg, 1883), *passim*; *Kämmereirechnungen der Stadt Hamburg* vol. 6: 1541-1554 (Hamburg, 1892), *passim*; *Kämmereirechnungen der Stadt Hamburg* vol. 7: 1555-1562 (Hamburg, 1894), *passim*; Cologne: Rainer Metz, *Geld, Währung und Preisentwicklung: Der Niederrheinraum im europäischen Vergleich 1350-1800* (Frankfurt, 1990), 371-375; Nuremberg: Ernst Scholler, *Der Reichsstadt Nürnberg Geld- und Münzwesen in älterer und neuerer Zeit (Ein Beitrag zur reichsstädtischen Wirtschaftsgeschichte.)* (Nürnberg, 1916), 239; Vienna: Carl Schalk, "Der Wiener Münzverkehr im 16. Jahrhundert", *Numismatische Zeitschrift* 13 (1881), 261 f., "Der Wiener Münzverkehr im XVI. Jahrhundert", *Numismatische Zeitschrift* 16 (1884), 91 f.; Augsburg: B. Greiff, "Tagebuch des Lucas Rem aus den Jahren 1494-1541: Ein Beitrag zur Handelsgeschichte der Stadt Augsburg", *Jahres-Bericht des historischen Kreis-Vereins im Regierungsbezirke von Schwaben und Neuburg* 24/25 (1860), 62; Blendinger, *Augsburger Unterkaufbücher*, *passim*; Karl Otto Müller, ed. *Quellen zur Handelsgeschichte der Paumgartner von Augsburg (1480-1570)* (Wiesbaden, 1955), 26, 240.

1543		45.00	71.00	
1544		46.50		
1545		47.50	70.88	66.50
1546		50.00	72.00	
1547		51.00	72.00	66.00
1548		51.50	74.00	
1549		51.50		71.00
1550		51.75		73.00
1551		52.75	13.13	73.00
1552		52.00	74.75	72.12
1553	32.91	52.00	74.75	73.17
1554	32.06	52.00	74.00	74.03
1555	33.50	53.00	74.00	74.09
1556	34.00	54.50	72.00	74.63
1557	34.00	55.50		
1558	34.50	56.00		75.00
1559		56.50	13.13	

*Tab. 4: The delegates at the Speyer conference, 10 September to 5 November 1549<sup>104</sup>*

E = electors' college; P = princely college, C = cities' college.

<i>college</i>	<i>estate</i>	<i>delegate</i>	<i>comment</i>
E	archb. of Mainz (Sebastian von Heusenstamm)	Christoff Matthias Philip von Gronradt	Licentiate of law Bailiff of Lahnstein
E	archb. of Trier (John von Isenburg)	Otto von Lingenfeld	Mayor of Coblenz
E	archb. of Cologne (Adolf von Schaumburg)	Hieronymus Einkorn Dietrich Grünwald	Doctor of law, dean of St Andrew (Cologne), judge of Recklinghausen Mint master
E	c. Palatine on the Rhine (Frederick II 'the wise')	Hans Steinhauser	Revenue officer of the Upper Palatinate
E	mgr. of Brandenburg (Joachim II)	Timotheus Jung	Doctor of law
P	house Austria (k. Ferdinand)	Jacob Jonas Lienhart Jung Thomas Beheim	Court-vice-chancellor, doctor Doctor Mint master
P	Habsburg Netherlands (Mary of Hungary)	Anthוניus Karlier Johann Stratius Lienhard von Ennbergen	'General' Doctor of law, imperial councillor Mint assayer
P	archb. of Salzburg (Ernest d. of Bavaria as administrator)	Jacob Jonas	Court-vice-chancellor, doctor
P	Grandmaster-administrator, Teutonic Order (Wolfgang Schutzbar)	Jörg Bass	Mint master

<sup>104</sup> According to the draft recess of the conference: GStAPK, I. HA, Rep. 15, Nr. 1 D, fol. 24 r. – 33 v.

P	b. of Würzburg (Melchior Zobel von Giebelstadt)	Jörg Bass	Mint master
P	b. of Constance (Christoph Metzler)	Jörg Bass	Mint master
P	b. of Speyer (Philip von Flersheim)	Johann Rat	Licentiate and chancellor of the bishop of Speyer
P	b. of Straßburg (Erasmus Schenk von Limpurg)	Johann Rat	Licentiate and chancellor of the bishop of Speyer
P	b. of Münster and Osnabrück (Francis c. of Waldeck)	Johann Wesseling Zercks vom Bock Eberhard von Elen	Licentiate unknown Secretary
P	b. of Naumburg (Nikolas von Amsdorf)	Daniel Monck	Doctor of law
P	d. of Bavaria (William IV)	Georg Stockhammer zum Lichtenhaag	Doctor of law
P	d. of Jülich, Cleves and Berg (William V)	Kaspar Greser Johann von Limburg Gerhard Urban	Doctor of law, dean of Xanten Mint assayer Secretary
P	d. of Württemberg (Ulrich)	Christoff Landschaff von Stainach	Chief bailiff of Weinsberg
P	d.s of Pomerania (Barnim IX and Philip I)	Bartholomäus Sastrow Jacob von Zitzewitz	Lawyer Chancellor
P	mgr. of Baden-Durlach (Ernest)	Jacob Liechtenstein	Bailiff of Graben
P	The mgr. of Baden-Baden's underage children (Philibert and Christoph)	Hans von Rinckenberg	Princely councillor
P	Igr. of Leuchtenberg (George III)	Anton Roberger	unknown
P	Provost of Selz (George von Weickersheim)	Hans Steinhauser	Revenue officer of the Upper Palatinate
P	c. of Haag (Ladislas von Fraunberg)	personally present	
P	Wetterau c.s	Gregor von Nallingen	Licentiate
P	c.s of Mansfeld (Hugh, Philip III, Christoph II, Volrad III)	Wolfradt Hans Schultheiss	unknown Mint master
C	Cologne	Hieronymus Einkorn Kaspar Greser	Doctor of law, dean of St Andrew (Cologne), judge of Recklinghausen Doctor of law, dean of Xanten
C	imp. c. of Straßburg	Thomas Obrecht	City-syndic
C	imp. c. of Augsburg	Marx Pfister	Member of the city council (?)
C	imp. c. of Nuremberg	Jobst Detzel	Member of the city council (?)
C	imp. c. of Ulm	End... Rautschnabel the elder <sup>105</sup>	Member of the city council (?)
C	imp. c. of Dortmund	Kaspar Greser	Doctor of law, dean of Xanten
C	imp. c. of Kempten	Lienhard Hanold	Member of the city council (?)
C	imp. c. of Kaufbeuren	Gardion Martin Hans Apfelfelder	Member of the city council (?) Mint master
C	imp. c. of Gelnhausen	Hans Steinhauser	Revenue officer of the Upper Palatinate

<sup>105</sup> Illegible, document damaged.

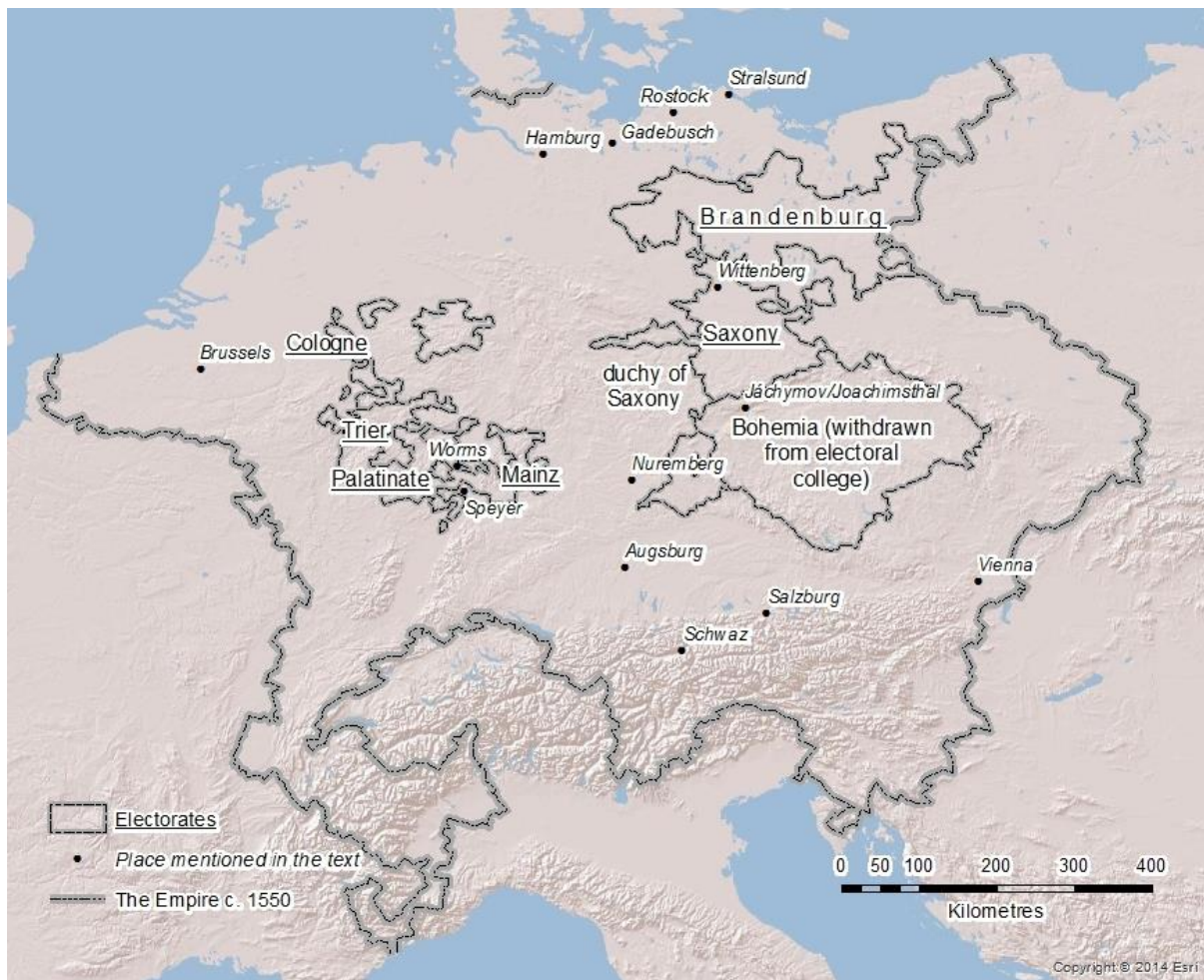
Fig. 1: The common currency<sup>106</sup>

Note that all silver units show their face values (in *kreuzers*). This was a self-binding device that at this time was still uncommon: The emperor and the estates tried to make it harder arbitrarily to change the value of a coin. The large number of denominations was to help the acceptance of the new currency in the Empire, some parts of which used duodecimal systems while elsewhere people were used to currencies based on multiples of 5.



<sup>106</sup> Kaiser Karl des fünfften Neue Müntzordnung, 59.

Fig. 2: Map



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StArchLu: Staatsarchiv Ludwigsburg, B 113 I Bü 1794 (,Münzedikt und Münzprobationsordnung, Karl V').

StArchWü: Staatsarchiv Würzburg, MRA Münze K 137/2 (,Prothocollum münztweßns belangendt anno 1549, zu Speyer zwischen gesambten reichsständen vorgangen').

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