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Burying Money. The Monetary Origins of Luther's Reformation¹

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Idiosyncrasy – the notion of a specific location of people and their ideas in their peculiar contexts of time and space as a guide towards the interpretation of their actions and interactions – has become an increasingly popular heuristic concept, not only in the historical disciplines, but in other social sciences, as well.² With regard to Martin Luther’s Reformation (1517) an authority in the field has recently suggested: “Here are two of the most tantalising questions in Western history: How could the Protestant Reformation take off from a tiny town in the middle of Saxony, which contemporaries regarded as a mudhole? How could a man of humble origins who was deeply scared by the devil become a charismatic leader and convince others that the Pope was the living Anti-christ?”³ The present paper is intended to contribute to this by arguing that a contextualization of Luther’s Reformation of 1517 in its idiosyncratic location of time and space can be further advanced by studying a factor that has been overlooked so far: money. I will argue that the 95 Theses and the early works of Martin Luther should be interpreted against a background of monetary shortage and depression. The argument will be presented in three sections. A first section will challenge the usual notion that Luther’s comments on business ethics and economics, mainly on greed (avarice) and high interest rates (usury) were made in the light of an increase in the price level (I).⁴ I will argue instead that the first three decades of the sixteenth century were a period of depression, economic and social crisis in the central German lands where Luther grew up and spent the major part of his life (Eisleben, County of Mansfeld and Wittenberg in the Electoral Lands of Saxony). This economic crisis, marked by a deflationary trend in the general price level, as well as a downward trend in many other economic variables of the time was triggered in a sense by a decline in per capita supplies of silver available in this region (II). I then purport to re-read parts of Luther’s early oeuvre against the background of this deflationary crisis, to see whether we may perhaps gain some additional insights into the man and how his world view developed around 1500, culminating in his *95 Theses* (1517) and his early works of the 1520s (III). The conclusion points the way to further research and interpretation (IV).

² Growth and development studies, see Erik Reinert, *How Rich Countries Got Rich...And Why Poor Countries Stay Poor* (London, [2008] 2010), and Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (London, 2003).

³ Ulinka Rublack, *Reformation Europe* (Cambridge, 2005), blurb (for quote) and *passim*.

⁴ See, e.g. Hans-Jürgen Prien, *Luthers Wirtschaftsethik* (Göttingen, 1992).

Luther's comments on business ethics usually evolved around unduly high interest rates (*usury*) and greed (*avarice*). He frequently identified individual persons as scapegoats for price inflation, for instance by blaming peasants for charging unjustifiably high prices, thus linking the economic problem of inflation to the soteriological concept of *avaritia* (a common scholastic topos and cornerstone of medieval social and economic theory).⁵ The cardinal sin of *greed*, however, could also be the result of a disinclination to give or spend money. Luther, of course never formalized his views, or developed an actual 'theory' of economics and business ethics, let alone treating them in a systematic way.⁶ The benchmarks of his 'business ethics' accordingly were⁷, at the risk of over-simplification: A moderate level of interest (four to six per cent per annum) was acceptable on specific capital transactions, such as commercial credit. This was in line with the medieval Scholars' idea of a just reward for someone's efforts and expenses to make a 'fair' and equitable living, which every member of society was equally entitled to, even the lender of capital (here it referred in particular to the foregone uses and purposes which the money may otherwise

⁵ As did many others, incl. Thomas More and most of the medieval Scholars.

⁶ Even though Thomas Sedlacek, *The Economics of Good and Evil* (Oxford: OUP 2011) reminds us that even Scholastic economists had a theory of economy and society. This was, however, neither quantitative nor model-based and time-space unspecific as most models in the social sciences after Adam Smith (*Wealth of Nations*, 1776).

⁷ There is a small volume with a sample of Luther's speeches with specific regard to money: Martin Treu (ed.), *Martin Luther und das Geld. Aus Luthers Schriften, Briefen und Tischreden* (Wittenberg, 2000). Prien, *Luthers Wirtschaftsethik*, is a standard introduction to Luther's business ethics, yet it gets the macro-economic framework of the pre-1540 period wrong. Günter Fabiunke, *Martin Luther als Nationalökonom* (Berlin [East], 1963), is a Marxist classic from the German Democratic Republic. A similar piece is Hans-Jürgen Kähler, 'Luthers Beitrag zum ökonomischen Denken aus der Sicht marxistisch-leninistischer Politökonomien', *Wirtschaftswissenschaft*, XXXI (1983), 1035–1045. A much better introduction to Luther on economics may be found in Heiko A. Oberman, *Spätscholastik und Reformation*, Vol. 2, 3rd ed. (Tübingen, 1989), 161–200. Ricardo Rieth, *Die "Habsucht" bei Martin Luther. Ökonomisches und theologisches Denken, Tradition und soziale Wirklichkeit im Zeitalter der Reformation* (Weimar, 1996), deals specifically with Luther's avarice yet not quite in the same context as the present paper. Tom Scott, 'The Reformation and Modern Political Economy: Luther and Gaismair compared', in: Thomas A. Brady (ed.), *Die deutsche Reformation zwischen Spätmittelalter und Früher Neuzeit* (Munich, 2001), 173–202 is important. Ekkehard Westermann, 'Der wirtschaftliche Konzentrationsprozess im Mansfelder Revier und seine Auswirkungen auf Martin Luther, seine Verwandte und Freunde', in: Rosemarie Knappe (ed.), *Martin Luther und der Bergbau im Mansfelder Land. Aufsätze* (Lutherstadt Eisleben, 2000), 63–92 the more so, as it is one of the best surveys on the regional economy and society in Luther's early years. On scholasticism in general, see Raymond de Roover, *Business, Banking and Economic Thought in Late Medieval and Early Modern Europe* (Chicago / London, 1974); Ernesto Screpanti / Stefano Zamagni, *An Outline of the History of Economic Thought*, 2nd ed. (Oxford: Oxford University Press, 2005), 19–26; Alessandro Roncaglia, *The Wealth of Ideas. A History of Economic Thought* (Cambridge: Cambridge University Press, 2005), 31–41. Odd Inge Langholm, *The Legacy of Scholasticism in Economic Thought. Antecedents of Choice and Power* (Cambridge et al., 1998), 97–136; Odd Inge Langholm, *Economics in the Medieval Schools: Wealth, Exchange, Value, Money and Usury According to the Paris Theological Tradition 1200–1350* (Leiden, 1992).

have been spent on). Consumptive credit, to use a modern phrase, on the other hand should remain interest-free, so as to not infringe with the need of the 'man of the street' to make ends meet in times of dearth. Business profits should stay in line with the general margins late medieval Scholasticism allowed for interest rates and "just profits". The larger medieval super-companies, such as the giant Fugger and Welser firms at Augsburg should be regulated and their profit levels capped to levels in accordance with the late medieval ideal of socio-economic equilibrium. Here we also find, alongside a mere medieval topos, a form of early modern critique of capitalism, as especially the Augsburg and Nuremberg Fugger, Welser, Höchstetter, Imhof, Gossembrot and Hirschvogel firms had become heavily involved in the inter-continental copper and spice trades and silver exports from Germany since the later fifteenth century. Contemporaries held them accountable for the Reformation economic problems, marked by an undue divergence of these businesses' profits and the general scope for economic expansion experienced by the majority of society which, over the early sixteenth century, experienced a progressive decline (in real wages and incomes).⁸ The debate centred on 'monopolies', currency and the 'Lutheran cause', which were usually treated on the same panel on the Imperial Diets of the 1520s and 1530s.⁹

As a good and late scholastic theologian of his time, Luther commented on practical or day-to-day economic matters in a slightly ad-hoc manner. As he said in his *Sermon on Usury* (1520):

Eleventh. There are some who not only deal in insignificant properties but also charge too high a rate: 7, 8, 9, or 10 per cent. The rulers ought to look into this. Here the poor common folk are secretly fleeced and severely oppressed. This is also why these robbers and usurers often die an unnatural and sudden death, or come to some other terrible end, as tyrants and robbers deserve; for God is a judge¹⁰ for the poor and needy, as he says frequently in the Old Law.

He never really altered this view, although he also had a reputation of being someone whose views on other matters were either adaptable or perhaps just plain undecided.¹¹ His remarks on peasants for instance had,

⁸ Wilhelm Abel, *Agrarkrisen und Agrarkonjunktur in Mitteleuropa vom 13. bis zum 19. Jahrhundert* (Berlin, 1935; Hamburg / Berlin, 3rd ed., 1978); Id., *Agricultural Fluctuations in Europe from the Thirteenth to the Twentieth Centuries* (London, 1980).

⁹ See section III.

¹⁰ *Luther's Works*, Vol. 45, ed. Jaroslav Pelikan, Concordia Publishing House, St. Louis, MO, 1955.

¹¹ Most recently Heinz Schilling, *Martin Luther. Rebell in einer Zeit des Umbruchs* (Munich, 2012), 56–179.

during the early stages of the Peasants' War (1524–26), been moderately supportive. They changed within a couple of months to vitriolic damnation, when it finally dawned on Luther just how potentially revolutionary his teachings were in terms of turning society upside-down.¹² He even acknowledged an increased level of legal interest of six per cent towards the 1540s.¹³ In this regard he seems to have accepted at least grudgingly that capital markets were bound to fluctuate over time, as would the price of capital. But what he refused to accept was that the interest rate was a *market price* in its fullest sense, i.e. the point of intersection of a supply and a demand curve based on individual negotiation between two independent actors with complete freedom of choice. On *avarice* Luther said, that whoever held back money for reasons of private gain, not giving or spending it on alms for the poor or productive measures, was “gruesome”; he called them “tyrants”, even “murderers” and “manslaughters” by refusing to give that what was necessary to keep the poor man up and running and providing them with the means to eat.¹⁴ In his Table Talk (*Tischreden*), a problematical source in its own right, as it blurred memory and oral narrations that were captured in written terms long after they had been delivered¹⁵, he commented (in October 1538) negatively on noblemen who withheld grain from the market for speculative reasons.¹⁶ In April 1539 he referred to variance in the weather conditions in Saxony compared to Thuringia, leading to the fact that “Just now the grain in Thuringia and Meissen must be cut shorter with the sickle because the fertility is excessive. We Saxons don't have to do this, and therefore we have an earlier harvest than they do.”¹⁷ In summer 1539, when there were signs of a crisis in grain supply he suggested that inflation was caused by deliberate action of peasants and merchants withholding supplies from the market, and those who did so would become “murderers” and “thieves” to their fellow countrymen. With some grim pleasure he commented on the case of three wealthy Saxon farmers who had hung themselves out of shame for their misdeeds and malfeasances.¹⁸

12 Most recently, Peter Blicke, ‘Die Zwölf Artikel der oberschwäbischen Bauern. Das Scharnier zwischen Bauernkrieg und Reformation’, in: Görge K. Haselhoff / David von Mayenburg (eds.), *Die Zwölf Artikel von 1525 und das “Göttliche Recht” der Bauern – rechtshistorische und theologische Dimensionen* (Würzburg, 2012), 19–44, at 19.

13 See the works referred to in n. 7 above.

14 F. W. Lomler / G. F. Lucius / J. Rust / L. Sackreuter (eds.), *Geist aus Luther's Schriften, oder: Concordanz der Ansichten und Urtheile des großen Reformators über die wichtigsten Gegenstände des Glaubens, der Wissenschaft und des Lebens*, Vol. 2: G bis J (Darmstadt, 1829), 250.

15 See Schilling, *Martin Luther*, 144–152.

16 This relates a story of a wealthy farmer who refused to sell grain at a low price and accordingly had it eaten up by mice, even the grain still in the field, whilst his fellow farmers who had not been avaricious, had their grain spared. *Table Talk*, No. 4079 (p. 317).

17 *Luther's Works* ed. Hartmut Lehmann, Vol. 54, ed. Theodore G. Tappert (Philadelphia, 1967), *Table Talk*, No. 4533 (p. 350–1).

18 Luther, Werkausgabe (WA), *Tischreden (Table Talk)*, Nr. 4746.

In an earlier comment he even expressed his desire to become a little angel (*Engel*) and rob the wealthy farmers of their supplies to re-distribute them to the poor, to take the farmers' wealth and assets and chuck them into the River Elbe.¹⁹

Obviously these words were directed against wealthy farmer-entrepreneurs who made a killing at times of inflation. But to what extent were they mere scholastic *topoi*, i.e. themes that went back to Aristotle and medieval Scholastic theory on money by Aquinas or specialists, such as Oresme?²⁰ Or should we take them at face value, as references to actual circumstances of the day, more precisely: fluctuations in the business (that is harvest cycle) of the German or Saxon economy? A final answer to these questions is difficult to come by. But towards the end of the 1530s, when we find Luther condemning *avarice* with regard to price inflation, the price of cereals²¹ was indeed high across all known locations from which price data survives. Between 1506 (a trough in the price series) and 1534 and 1540 respectably (two peaks in the south-central German grain price cycle) rye prices (rye was the basic nutrient at the time) had more than tripled (from a figure of 56 to 194 and 191 respectably, based on an average of 100 for 1500). An average of the available price data for south German locations shows that by 1540 grain prices were 91 per cent above their 1500 value.²² This is in line with the European historical climate record. The years around 1540 were years of wide-spread harvest failure. 1540 is widely held to have experienced one of the hottest and driest summers recorded in history.²³ But Luther had made similar remarks on avarice around 1520, when the price level had been *low*. Between a peak in 1506 and a trough in 1522 rye prices had declined by 55 per cent, only to be interrupted by a temporary peak 1517, which was a year of crisis and harvest failure across the whole of the German Empire. The peak value in the south German grain price series of 1501 was only surpassed in 1529 again, leading to the inflationary peaks of 1534 and 1540, when grain

¹⁹ WA, *Tischreden*, 2295 a.

²⁰ See e.g. Bertram Schefold, *Nicolaus Oresmius – Die Geldlehre des Spätmittelalters* (Düsseldorf, 1995), 19–72; Peter Spufford, *Money and its Use in Medieval Europe* (Cambridge, 1988), 295–301.

²¹ Which may be usefully approximated using rye prices, see below.

²² Own calculations based on a sample of central and south German rye price series presented in: Philipp Robinson Rössner, 'Bad Money, Evil Coins? Coin Debasement and Devaluation as Instruments of Monetary Policy on the Eve of the "Price Revolution"', in: Philipp Robinson Rössner (ed.), *Cities – Coins – Commerce. Essays in Honour of Ian Blanchard on the Occasion of his Seventieth Birthday* (Stuttgart, 2012), 89–120, at 97 (Fig. 1).

²³ Wine harvests, see Christian Pfister, 'The Little Ice Age: Thermal and Wetness Indices for Central Europe', *The Journal of Interdisciplinary History*, Vol. 10, No. 4, *History and Climate: Interdisciplinary Explorations* (Spring, 1980), 665–696, Fig. 3 (p. 686). Rüdiger Glaser, *Klimageschichte Mitteleuropas. 1200 Jahre Wetter, Klima, Katastrophen*, 2nd ed. (Darmstadt, 2008), 108.

prices were 94 and 91 per cent above their 1500 value.²⁴ Therefore, some of Luther's most pointed and sharpest remarks on business ethics and the economic situation – and his *95 Theses*, after all – were made, as it were, in a time of deflation, when men were reluctant to spend money *because* prices were low (or: prices were low because people were reluctant to spend money: a classical deflationary scenario).

Luther in fact frequently picked up on a deflationary situation more or less directly. Just consider the oft-quoted passage of Luther's Sermon on *Trade and Usury* (1524), where he wrote about the Frankfurt trade fairs that acted as a commercial hub, draining the empire of liquid funds for imports, a negative balance of payments and monetary contraction that would have caused interest rates to be high. There is a second component to this oft-quoted passage, which has been much less-frequently cited, but which is equally, if not more, important in the present context: "If that hole (i.e. the Frankfurt-on-the-Main trade fairs, P.R.) were stopped up, we should not now have to listen to the complaint that there are debts everywhere and no money, that all lands and cities are burdened with *zinss* (which in the present context translates as interest rates, rather than annuity or other forms of interest-bearing asset, P.R.) payments and milked dry by usury."²⁵ What Luther seems to suggest here is, framed in modern linguistic conventions, that a drain on financial liquidity (silver, to be precise) to the east (the Baltic, Venice, the Levant and ultimately India and China) caused a monetary shortage which simultaneously made the level of credit and loans contract and interest rates increase in Saxony and the surrounding lands. Much more importantly, however, than the credit crunch, for which we have some evidence across all of Germany during the first decades of the sixteenth century²⁶ and which Luther dealt with using a Scholastic framework of interpretation referring to it as *usury*, was the underlying symptom of the liquidity shortage: economic depression. In the above-quoted passage from the *Sermon on Trade and Usury* Luther was obviously referring to a time of economic hardship and increased indebtedness (in the German original: *allenthalben eytel schuld und keyn gelt*). Hardship caused interest rates to be increased (*ale landth und stedte mit zinsen beschweret und ausgewuchert sind*). Here we come to an interesting and significant aspect that previous scholars have failed to notice. If we study the available grain market data, which may in turn serve as a useful proxy for the overall (yet unknowable due to the absence of reliable data) general price level at that

²⁴ For a detailed discussion, see Philipp Robinson Rössner, *Deflation – Devaluation – Rebellion. Geld im Zeitalter der Reformation* (Stuttgart, 2012), ch. II, esp. 126–141, Fig. 3 (p. 128).

²⁵ *Von Kaufshandlung und Wucher* (1524), in: Luther, WA, Bd. XV, Weimar 1899, 294. Translated in Luther's Works, ed. Walther I. Brandt, Vol. 45, ed. Hartmut T. Lehmann, *The Christian in Society* (Philadelphia, 1962), 247.

²⁶ Rössner, *Deflation – Devaluation – Rebellion*, ch. II with detailed references and examples.

time²⁷, it is clear that Luther's early work, especially the *95 Theses* or his great Sermon on Merchants and Usury (*Von Kaufshandlung und Wucher*, 1524), as well as some of his lesser writings, such as the *Shorter Sermon on Merchants and Usury* (1519) were delivered during a period of *deflation*.

II

Let us start with some basic, if by and large speculative macroeconomic data. The modern terminology and epistemological framework of "crisis", "deflation", "depression", and so on pertains to fully-integrated and functionally-differentiated specialized market economies, where the majority of transactions are carried out using markets and expressed in and booked using value signs that have a monetary unit as their basis ("prices") and which may be aggregated yielding a monetary expression of what we are accustomed to call "gross domestic product". People decide freely about the allocation of the productive factors, and they are usually assumed to have near-perfect information and that there are no principal asymmetries in terms of its distribution that would lead to market failures such as speculation and arbitrage. It is quite clear that within the historical context of the time around 1500, these modern metaphors and concepts, if they are to be used at all, can be so only with considerable caution.²⁸ Neither was economic activity comprehensively recorded, nor did contemporaries entertain a 'modern' conceptual framework of national income accounting. Moreover, as scholars, from Kula to Boldizzone have pointed out, late medieval and early modern economies were not primarily organized around the market as the clearing agent for economic transactions.²⁹ Yet the circumstantial evidence suggests that a

²⁷ There are much more sophisticated ways of calculating price level trends, such as devising a hypothetical basket of consumables and working out a proper yet imputed CPI for the period, see e.g. Ulrich Pfister, 'German Economic Growth, 1500–1850, Contribution to the XVth World Economic History Congress, Utrecht, August 3–7 (2009)', Panel E4: "Reconstructing the National Income of Europe before 1850: Estimates and Implications for Long Run Growth and Development" (paper retrieved from www.wehc2009.org July 2009); Ulrich Pfister / Jana Riedel / Martin Uebele, 2012, 'Real Wages and the Origins of Modern Economic Growth in Germany, 16th to 19th Centuries, *Working Papers* 0017, European Historical Economics Society (EHES); Ulrich Pfister, 'Consumer prices and wages in Germany, 1500–1850', *CQE Working Papers* 1510, Center for Quantitative Economics (CQE), University of Münster. Any such attempt, however, remains ultimately speculative, as the evidence on average baskets of consumption and patterns of expenditure for the period is decidedly thin to say the least. Older methods of calculating price level changes using bread prices are by and large more reliable. The more 'primitive' neo-Malthusian method developed by Wilhelm Abel in 1935 (and by his contemporary M. M. Postan in England) has used grain prices without coming to radically different or less sophisticated conclusions: Abel, *Agrarkrisen und Agrarkonjunktur* (several eds.).

²⁸ See, e.g. Witold Kula, *An economic theory of the feudal system: towards a model of the Polish economy 1500 – 1800* (London, 1976), and more recently, Francesco Boldizzone, *The Poverty of Clio: Resurrecting Economic History* (Princeton, 2011).

²⁹ See previous footnote for empirical examples.

significant share of total production *was* indeed marketed, so significant in fact that Luther and many other contemporaries never tired to complain about these practices or “the market economy”. Nevertheless, as redistributive or reciprocal allocative mechanisms certainly still had a high weight in terms of overall transactions (the classic alternatives to market transactions), we must treat all the evidence relating to market-based exchange scenarios with some degree of caution. Perhaps it may be apt to state that the non-subsistence sector of the economy outside the redistributive and reciprocal spheres went into a deep crisis during the first two-and-a-half decades of the sixteenth century (Table 1).

Table 1: Germany in Times of Depression, 1500–1530 (index 1500 = 100)

	1	2	3	4	5	6
	Price Level (six south German cities)	Real Wages (local CPIs)	Coin Hoards	Silver Content South German Penny Currencies	Rye Prices, Germany, deflated by silver content (Augsburg, Nuremberg, Frankfurt, Munich, Würzburg)	Silver Out- put, Tyrol & Saxony
1500	100	100	100	100	100	100
1505	95	105		100		91
1510	57	100	65	93	35	87
1515	80	86		93		77
1520	78	82	73	93		68
1525	72	77		86	43	65
1530	186	82	66	83		81
1535	102	86		82		121
1540	191	82	69	78		85
1545	172	77		76		68
1550	179	73	66	77		

Sources:

Price level: own calculations, based on data in Moritz Elsas, *Umriss einer Geschichte der Preise und Löhne in Deutschland vom ausgehenden Mittelalter bis zum Beginn des neunzehnten Jahrhunderts*, 3 Vols. (Leiden, 1936–49), and newly-traced Leipzig data by Nils Decken, M.A. (2011).

CPI: Ulrich Pfister, ‘Consumer prices and wages in Germany, 1500 – 1850’, University of Münster / Centre for Quantitative Economics Working Papers 15/2010; Ulrich Pfister / Martin Uebele / Hakon Albers, ‘The great moderation of grain price volatility: Market integration vs. climatic change, Germany, seventeenth to nineteenth centuries’ (http://www.wiwi.uni-muenster.de/wisoge/md/personen/uebele/PfisterUebeleAlbers_Strasbourg_2011_Mi_1400.pdf) (2011)

Coin hoards: see below

Silver content of south German penny currencies: Allen-Unger Global Commodity Prices database on: <http://www.history.ubc.ca/faculty/unger/ECPdb/about.html>

Column 5: see above

Column 6: John Munro, ‘The Monetary Origins of the “Price Revolution”’, Dennis O. Flynn / Arturo Giráldez / Richard von Glahn (eds.), *Global Connections and Monetary History, 1470–1800* (Aldershot / Burlington, 2003), 1–34, Appendix.

Recent calculations show that during the first three decades of the sixteenth century, whilst population levels increased, both the overall price level, as well as real wages decreased by as much as 25 per cent.³⁰ Whilst the price level, real wages and silver output speak for themselves, a few of the other indicators require some explanation. The rate of depreciation of the leading south German penny currencies (Vienna, Augsburg and Munich, column 4 in table above) provides a rough index of what we may with some imaginative fantasy call the 'general business climate'. It is a proxy measure for overall societal stability. The penny was the small man's everyday means of market-based transactions.³¹ All money was made of at least some precious metal, usually silver, as at that time people derived its purchasing power mainly from the market value of the metal contained in each coin.³² And since money usually also serves as a means of storing wealth, the rate of a coin's depreciation would indicate the development in the (hypothetical) business climate. If rates of depreciation (here: loss in terms of silver content measured in grams of silver per penny) were high, people tried to get rid of the money, rather than saving it, because they expected the value of their savings to deteriorate if they were held in bad and debased or coin. Moreover, people may be reluctant to make agreements and contracts with each other, if the precious metal content of circulating coins was unstable and their exchange rate fluctuated over time. They may seek for alternatives, i.e. virtual currencies, book money or 'ghost money'.³³ However, this was no option for the small man on the street. The lesser people were often charged a risk premium if they made payments in underweight coins, thus increasing transaction costs for the entire system. Also, peasants and others *paid* in underweight coins would, in times of deflation, have experienced a further reduction in profits than warranted on the grounds of the decline in the general price level (column 5).³⁴ The social consequences of bad or unstable money were immeasurably high.³⁵

³⁰ Ulrich Pfister / Jana Riedel / Martin Uebele, 'Real wages and the origins of modern economic growth in Germany, 16th to 19th centuries', EHC Working Paper 17 (April 2012), p. 5, Fig. 1.

³¹ Rössner, *Deflation – Devaluation – Revolution*, chs. III, IV.

³² This is called a commodity standard of money. Contrary to the fiduciary standard where the intrinsic or material value of money is much lower than its exchange value, a commodity money standard or theory poses many coordination problems and raises transaction costs, a phenomenon that has been overlooked by most economists and historians and which has been addressed for the Reformation period in Germany in detail in: Rössner, *Deflation – Devaluation – Revolution*, chs. II (market for money as a commodity), III (problems of monetary coordination and areas of tension between monetary policy and societal welfare issues) and IV (social costs of bad money: economic rents; economic costs of bad money: transaction costs).

³³ Frederic C. Lane / Reinhold C. Mueller, *Money and Banking in Medieval and Renaissance Venice, Vol. I: Coins and Moneys of Account* (Baltimore / London, 1985).

³⁴ Rössner, *Deflation – Devaluation – Rebellion*, ch. IV, Table 1 (p. 496).

³⁵ Rössner, *Deflation – Devaluation – Rebellion*, ch. IV.

This devaluation of petty coins, christened by Sargent and Velde the *Big Problem of Small Change*³⁶, was a phenomenon haunting Germany, as well as most other parts of Europe, almost continuously between c. 1250 and 1870.³⁷ However, there were phases when devaluation rates were particularly high. One such phase was in the early 1400s, coinciding with the rhythm of the 'bullion famine' (in the words of J. Day); the other one fell in the 1450–1511 period, i.e. lasted well into the second decade of the sixteenth century. Rates of coin debasement in this period were (with an annual rate of 0.65 per cent) almost near the peak debasement rate experienced for the second half of the fourteenth century. At that time silver remained high in price, and obviously monetary authorities had to either economize on silver or adjust the circulating means of exchange to a changed market price of the base metal.

These points tie in with further circumstantial evidence on a general deflationary crisis. In 1510/1515 an over-supply of copper to European and African markets led to a series of collapses of larger firms involved in the long-distance copper trade.³⁸ These copper trades linked the central European and especially the Upper German regional economies with the nascent global economy. In 1527/8 the lead mining business in the Harz Mountains came to a stand-still when an army in the service of the Duke of Brunswick besieged the lead mines of Rammelsberg near Goslar in pursuance of an old mortgage.³⁹ 1512 also saw an increase in property and land transactions in Buda (Ofen), as well as a significant decline in cattle exports towards the west, the main source of demand for the Hungarian cattle export industry.⁴⁰ The Augsburg Chronicle reported a harsh contraction in fustian production at the same time. Chronicles and other proxy data confirm that the second decade of the sixteenth century was

³⁶ Thomas J. Sargent / François R. Velde, *The Big Problem of Small Change* (Princeton, 2003).

³⁷ Rainer Metz, *Geld, Währung und Preisentwicklung. Der Niederrheinraum im europäischen Vergleich: 1350–1800* (Frankfurt-on-the-Main, 1990); Id., *Geld und Geldwert in Mitteleuropa 1350–1800* (Lübeck, 2006).

³⁸ Ekkehard Westermann, 'Die Bedeutung des Thüringer Saigerhandels für den mitteleuropäischen Handel an der Wende vom 15. zum 16. Jahrhundert', *Jahrbuch für die Geschichte Mittel- und Ostdeutschlands*, XXI (1972), 67–92; Ekkehard Westermann, 'Zur weiteren Erforschung kommerzialisierter Agrargesellschaften Mitteleuropas und ihrer Konflikte im ersten Drittel des 16. Jahrhunderts', *Studia Historiae Oeconomicae*, XV (1980), 161–178; Ekkehard Westermann, 'Zur Silber- und Kupferproduktion Mitteleuropas vom 15. bis zum frühen 17. Jahrhundert', *Der Anschnitt*, 5–6 (1986), 187–211, at 188–194.

³⁹ Ian Blanchard, *The International Economy in the 'Age of the Discoveries', 1470–1570: Antwerp and the English Merchants' World* copy-ed. by P. R. Rössner (Stuttgart, 2009), ch. 4.

⁴⁰ Gusztáv Heckenast, 'Die mitteleuropäische Handels- und Finanzkrise der Jahre 1512/1513 un (sic!) der ungarische Bauernkrieg', in: Gusztáv Heckenast (ed.), *Aus der Geschichte der ostmitteleuropäischen Bauernbewegungen im 16.–17. Jahrhundert* (Budapest, 1977), 107–112.

unusually cold, and winters were usually harsh.⁴¹ In Marburg (Hesse), public expenditure, particularly on consumption and building activity (a component of expenditure that was particularly sensitive to fluctuations in the business cycle) fell by 80 per cent, 1500–1520.⁴² Such a grave reduction in public expenditure can be traced in many other cities in the southern part of the Empire and Switzerland, too, such as Basle.⁴³ In 1529 finally, the giant firm of the Augsburg *Höchstetter* merchants collapsed and went bankrupt after a failed attempt at monopolizing European quicksilver supplies.⁴⁴ The Höchstetter Company had controlled significant shares of the intercontinental silver and spice trades via Lisbon. They were the main rivals of the proverbially rich and last medieval super-company of the Fuggers.⁴⁵ Their collapse led to a series of defaults of private investors who had invested their savings in the firm, down to members of the lower strata of society such as maidservants.

This evidence is admittedly fragmentary. Price series for bread grain assembled a long time ago by Wilhelm Abel and others display some considerable regional variance in terms of the medium-run conjuncture, in particular with regard to the timing of the onset of the frequently-mentioned ‘price revolution’.⁴⁶ The latter is often said to have set in during the 1470s, but the sustained long-term increase in the ‘German’ price level only commenced in the 1530s. In some areas an economic downturn or deflation commenced in the 1490s; in others around 1500. These divergences are not entirely due to problems of source coverage and measurement issues. Certainly the long-run or bird’s perspective of operating with averages of

⁴¹ *Die Chronik von Clemens Sender*, cited in: Historische Kommission bei der Bayerischen Akademie der Wissenschaften (eds.), *Die Chroniken der schwäbischen Städte, Augsburg*, Vol. 42 (Leipzig, 1894), 132; Bayerische Akademie der Wissenschaften (eds.), *Die Chroniken der bayerischen Städte. Regensburg. Landshut. Mühldorf. München* (Leipzig, 1878), 28, 32, 55s. Glaser, *Klimageschichte*, 94 (Fig. 31); Christian Pfister, ‘Climate and Economy in Eighteenth-Century Switzerland’, *Journal of Interdisciplinary History* 9, no. 2 (1978): 223–243; Franz Mauelshagen, *Klimageschichte der Neuzeit. 1500–1900* (Darmstadt, 2010).

⁴² Public building expenditure declined 56 per cent; public expenditure halved; expenditure on provisions declined by 80 per cent. Calculated after Bernd Fuhrmann, *Der Haushalt der Stadt Marburg in Spätmittelalter und Früher Neuzeit (1451/52–1622)* (St Katharinen, 1996), 121s. (Table 2), 264s. (Table 11), 277 (Table 14), 326 (Table 19).

⁴³ Josef Rosen, ‘Eine mittelalterliche Stadtrechnung – Einnahmen und Ausgaben in Basel 1360–1535’, in: Erich Maschke / Jürgen Sydow (eds.), *Städtisches Haushalts- und Rechnungswesen* (Sigmaringen, 1977), 45–68, esp. Fig. 4, A (67s.).

⁴⁴ Thomas Max Safley, ‘Bankruptcy: Family and Finance in Early Modern Augsburg’, *Journal of European Economic History*, XXIX (2000), 43–76; Thomas Max Safley, ‘The Höchstetter Bankruptcy of 1529 and its Relationship to the European Quicksilver Market’, in: Rössner (ed.), *Cities – Coins – Commerce*, 149–166.

⁴⁵ Mark Häberlein, *The Fuggers of Augsburg: Pursuing Wealth and Honor in Renaissance Germany* (University of Virginia Press, 2012).

⁴⁶ Most recently J. Munro, Art. ‘Price Revolution’, in: Steven N. Durlauf / Lawrence E. Blume (eds.), *The New Palgrave Dictionary of Economics*, 2nd ed., Vol. 6 (London / New York, 2008), 631–34.

grain prices averaged across regions and over time by constructing long moving averages of up to 50 years etc. as popular with many economic historians is not particularly helpful. It implies that one was dealing with one perfectly integrated German national economy; nothing could be further from the truth. As the above-mentioned remarks by Luther on grain markets in Saxony and Thuringia show, there could be considerable inter-regional variations in climate and harvest levels (productivity), and it is far from clear how well integrated grain markets were in Germany at the time. This also has a bearing in terms of whether one may speak of a *general crisis* in the German lands after c. 1490 or 1500; the available stray evidence we have may deserve more careful examination in future studies.

The evidence presented so far needs to be seen in the context of an emerging (proto-)global economy and its logistics involving locations, routes and actors far away. Silver production in the Saxon Erzgebirge Mountains and Tyrol faced a long-term decline between the 1490s and the 1540s. Between 1500 and 1525 aggregate output decreased by about 35 per cent. Most of what still came out of these mines went to Venice, Lisbon and ultimately to Asia. This link became particularly significant in the wake of the Portuguese discoveries, when the naval route to Asia along the West and East Coast of Africa was developed in the wake of Vasco da Gama's return from Calicut in 1499. Around 1500 Portuguese investment in the Asian trades, above all the creation of a chain of ports and staging-posts alongside the west coast and east coast of Africa and the shores of the Indian Ocean experienced an unusually fast growth.⁴⁷ A considerable share of silver produced in the German mines was, on top of the traditional drain via Venice and the Baltic, channelled into these new Asian trades. Lisbon's urban fabric changed, as witnessed by such formidable buildings as the *Mosteiro dos Jerónimos* (extension commenced in 1501) financed out of the *Vintena da Pimenta*, which was levied at five per cent on the African and Oriental trade, and which is said to have yielded the equivalent of up to 70 lbs of pure gold

⁴⁷ A quantitative model of this cycle of expansion can be found in Jorge Nascimento Rodrigues / Tessalena Devezas, *Portugal. O Pioneiro da Globalização. A Herança das Descobertas*, (2nd ed., Lisbon 2009), 205, 211–232. Such cycles were recognized earlier on by I. de Lúcio de Azevedo, *Épocas de Portugal Económico* (Lisbon, 1929). See also A. H. de Oliveira Marques, *Breve História de Portugal* (Lisbon, 1995) – I have used the German translation instead: *Geschichte Portugals und des portugiesischen Weltreiches* (Stuttgart, 2001), *passim*, esp. 79–104, 134–184; Joaquim Veríssimo Serrão, *História de Portugal, Vol. III, O Século de Ouro (1495–1580)*, 2nd ed. (Lisbon, 1978), 95–119; 329–332; Armando Castro, *História Económica de Portugal, Vol. 3: Séculos XV e XVI* (Lisbon, 1985), 155–212; Carlos Alberto da Silva Nogueira, *Elementos de História Económica Portuguesa (da integração na economia euro-atlântica à actualidade)*, 2nd ed. (Lisbon, 1997), 65–75; Vitorino Magalhães Godinho, *Os descobrimentos e a economia mundial* (Lisbon, 1981–83); Joaquim Romero Magalhães, 'A estrutura das trocas', in: Joaquim Romero Magalhães (ed.), *História de Portugal, Vol. 3: No Alvorecer da Modernidade (1480–1620)* (Lisbon, 1993), 315–353, esp. at 336–353.

in the years after 1501. The *Torre de Belém* was a fortification built in 1514/15, which all the ships sailing out from Lisbon en route for Africa and India had to pass before they left for the open sea towards the south Atlantic.⁴⁸ At the same time the proverbial renovation of Rome under the Renaissance Popes transformed the physical outlook of the Sacred City of Western Christendom. This was due to the huge remittances from the north for religious services such as pilgrimages or indulgences. It put a further drain on available silver resources, the main share of which at that time still came out of the central European, especially the Saxon mines and the Mansfeld smelting district.⁴⁹ It is hardly conceivable how these two largely parallel booms in the urban architecture of two of Europe's most eminent capitals that came simultaneously in the decades after 1500 could have run their course without the silver that came out of the German mines, as the American mines at that time still yielded only insignificant amounts.⁵⁰ Prodigious amounts were further exported to the Baltic, as well as Venice and the Levant.⁵¹

As silver was the main ingredient for money production or coinage, such a drain had an impact on aggregate monetary supply, however hard to measure or to define for the political conundrum of 'Germany' these days. After about 1490/1500 most of the south German, Swiss and Austrian mints went through a protracted period of decline, up to total stand-still, as many mint masters were unable to obtain silver for coinage at a price making the striking of coins worth-while at all. The larger mints in Crain, Vienna, Hall (Tyrol), Linz, Klagenfurt, Graz, Salzburg, Basle, Constance, Nuremberg, Augsburg, Baden-Baden, Swabia, Bavaria all contracted in terms of output, as did lesser ones in the many smaller territories in Central Germany, such as Henneberg-Schleusingen.⁵² A growing population had to make ends meet with a progressively reduced supply of silver-based currency since the 1490s. This led to a general deflation in the price level. This situation can be illustrated using a slightly more formalized framework. Let MO be the available amount of 'good' or full-bodied

⁴⁸ Helder Carita, *Lisboa Manuelina e a formação de modelos urbanísticos da época moderna(1495–1521)*, (Lisbon, 1999). See also <http://www.mosteirojeronimos.pt/pt/index.php?s=w hite&pid=219&identificador=>

⁴⁹ Westermann, 'Zur Silber- und Kupferproduktion Mitteleuropas', graphs.

⁵⁰ Dennis O. Flynn / Arturo Giráldez, 'Born with a "Silver Spoon": the Origin of World Trade in 1571', *Journal of World History*, VI (1995), 201–221.

⁵¹ See e.g. Artur Attman, *The Bullion Flow between Europe and the East (1000–1750)* (Gothenburg, 1981); Id., 'Precious Metals and the Balance of Payments in International Trade 1500–1800', in: Wolfram Fischer / R. Marvin McInnis / Jürgen Schneider (eds.), *The Emergence of a World Economy 1500–1914* (Wiesbaden, 1986), 113–122; Artur Attman, 'The Bullion Flow from Europe to the East: 1500–1800', in: Eddy H. G. Van Cauwenberghe (ed.), *Precious Metals, Coinage and the Changes of Monetary Structures in Latin-America, Europe and Asia (Late Middle Ages – Early Modern Times)* (Leuven, 1989), 65–68.

⁵² Rössner, *Deflation – Devaluation – Rebellion*, 185–190 with examples containing further sources and references.

gold (Rhenish Florin, Hungarian Ducat and foreign gold coins) and silver coins in circulation, MO' the amount of medium-sized coins such as *groats* and *batzen* (that were nearly full-bodied usually, but contained some copper), and MO'' the amount of heavily debased or underweight small change that consisted mainly of copper and other base metals and whose exchange value far exceeded these coins' intrinsic, i.e. silver value. These were coins, such as pennies, mites, *hellers*, *kreuzer*, the small man's daily money. Let V be the velocity, or frequency with which the full-bodied coins changed hands in the period under consideration, V' the equivalent for medium-sized denominations and V'' the velocity for small change (which due to a mechanism colloquially known as 'Gresham's Law' was much higher than either V' or V''); P the price level and T the aggregate amount of real transactions in the economy. Furthermore let all arrangements derived from alternative means of payment, such as bills of exchange and other cashless transactions be booked under V . This is because such bills and comparable credit arrangements were at the time neither fungible nor convertible, but tied to a limited range or 'club' of actors, mostly rich merchants who knew each other personally. Then the simple Fisher equation establishing a relationship between economic activity and money supply (originally $MV = PT$) can be re-written as

$$MO * VO + MO' * VO' + MO'' * VO'' = P * T. \quad (1)$$

With a growing population and economic activity (T) and a money supply (M) which by all standards appears to have been much less dynamically increasing, the deflation in the overall price level referred to above can be explained *ceteris paribus*. Other factors on the 'real', i.e. not purely monetarily-driven side of the economy may also have been at work. Of course, equation (1) should only be used in a metaphorical way, as there was neither a central monetary authority in the Holy Roman Empire, nor a commonly-agreed upon monetary standard, nor the means of measuring money supply or mint output in a statistical way.⁵⁴ With close to 600 open mints and a slightly smaller number of monetary authorities that did not

⁵³ Due to spontaneous debasement ('Gresham's Law').

⁵⁴ Joachim Schüttenhelm, 'Problems of Quantifying the Volume of Money in Early Modern Times. A Preliminary Survey', in: Eddy H. G. Van Cauwenberghe (ed.), *Precious Metals, Coinage and the Changes of Monetary Structures in Latin-America, Europe and Asia (Late Middle Ages – Early Modern Times)* (Leuven, 1989), 83–98. Arthur Suhle, *Deutsche Münz- und Geldgeschichte von den Anfängen bis zum 15. Jahrhundert* 8th ed. (Berlin [West], 1975), A. Luschin v. Ebengreuth, *Allgemeine Münzkunde und Geldgeschichte des Mittelalters und der Neueren Zeit*, 2nd ed. (Munich / Berlin, 1926). On a very speculative basis, referring to late medieval financial market integration, see Oliver Volckart, 'Regeln, Willkür und der gute Ruf: Geldpolitik und Finanzmarkteffizienz in Deutschland, 14. bis 16. Jahrhundert', *Jahrbuch für Wirtschafts-geschichte* (2009/2), 101–129; David Chilosì / Oliver Volckart, 'Money, States, and Empire: Financial Integration and Institutional Change in Central Europe, 1400–1520', *The Journal of Economic History*, LXXI/3 (2011), 762–791.

achieve a sufficient degree of monetary coordination, the monetary standard of these days deserves to be called localized at best or chaotic at worst. With all due caution sketched out above, especially the problem of how much of total product was (non)marketed, the circumstantial evidence supports the notion of an acute monetary shortage during the first three decades of the sixteenth century, at least in the mid-central and southern parts of the Empire, caused or co-determined by a drain of silver and liquid resources from Germany to southern and north-western Europe and ultimately Asia.

We can make out further indications of deep crisis that arose in consequence of a monetary shortage. There was for instance a significant contraction in religiously-motivated donations. Until the late 1490s, religious pilgrimage and devotional gifts to churches, into offertory boxes, alms etc. had gone through an Indian summer. As elsewhere, for instance in England⁵⁵, more people than ever had visited shrines and went on pilgrimage depositing religious devotional objects and money even in smaller places, such as St Wolfgang or Grimmenthal in Saxony (of which Luther had first-hand evidence).⁵⁶ Perhaps this was due to some millenarian frenzy in anticipation of year 1500. Shortly thereafter, however, donations literally dried up. On the Lower Rhine, money deposited in offertory boxes significantly declined between 1500 and 1540. The same was true at Nuremberg, where between 1500 and 1510 practically no money was donated to the parish treasure of St Laurence.⁵⁷ We can move to a somewhat more 'macro' scale and approximate the decennial levels of hoarding money by searching a database of coin hoards held by the *Numismatische Kommission* (Board of Numismatists of the states of the Federal Republic of Germany).⁵⁸ Numismatists can approximately date coin hoards by determining the age of the most recently-struck coin that was added to one particular hoard. This gives us a tentative *post-date* or 'age' for the hoard. An aggregate series of accordingly-dated coin hoards would indicate the approximate trend in hoarding, as opposed to spending, money in the Empire. The result of this query has been plotted in Figure 1.

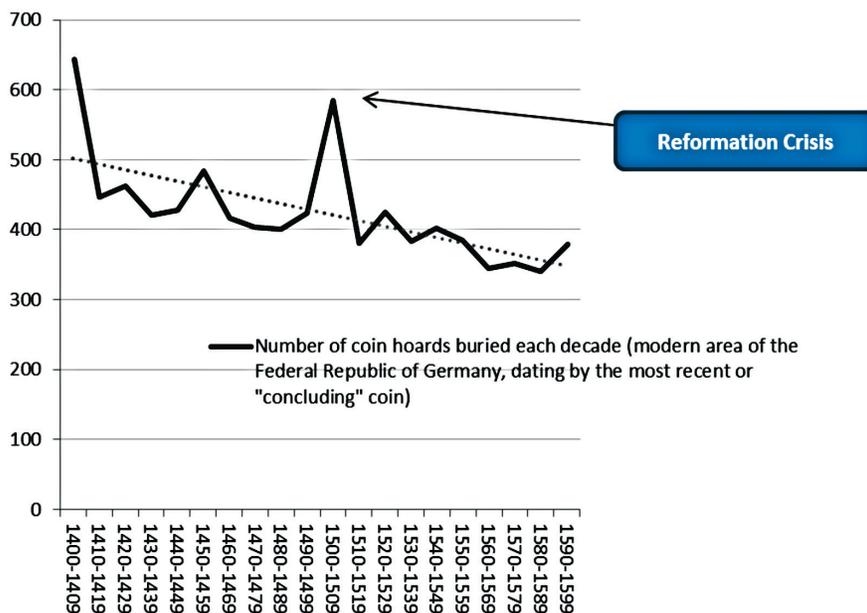
⁵⁵ See, e.g. Eamon Duffy, *The Stripping of the Altars. Traditional Religion In England, c. 1400–c.1580* (Yale, 2005).

⁵⁶ Euan Cameron, *The European Reformation*, 2nd ed. (Oxford, 2012), 14–17.

⁵⁷ Klaus Militzer, 'Die Finanzierung der Kirchenbauten am Niederrhein im Spätmittelalter und in der frühen Neuzeit', in: Andrzej Abramowicz / Jerzego Maika (eds.), *Budownictwo / Budowniczowie w przeszłości. Studia dedykowane Profesorowi Tadeuszowi Poklewskiemu w siedemdziesiątą rocznicę urodzin* (Łódź, 2002), 265–280, at 275, 279. Heinrich Dormeier, 'Kirchenjahr, Heiligenverehrung und große Politik im Almosengefällbuch der Nürnberger Lorenzpfarre (1454–1516)', *Mitteilungen des Vereins für Geschichte der Stadt Nürnberg*, LXXXIV (1997), 1–60, at 16, Fig. 4 and p. 20.

⁵⁸ I am grateful to the curator of the coin collections in the Moritzburg, Halle (where I obtained access to this database), Mr Ulf Dräger (Halle) for advice, coffee and company.

Figure 1: Number of coin hoards buried per decade in the area of today's Federal Republic of Germany (1400–1600)



Source: *Datenbank der Numismatischen Kommission der Länder in der Bundesrepublik Deutschland e. V.*, accessed 23 December 2010.

It seems as though the long-term trend in hoarding within the German parts of the Empire (1400–1600) was decreasing. This is in line with a ‘monetarist’ explanation of the sixteenth century inflation (the so-called Price Revolution), when an increasing amount of coin would have been dis-hoarded and put back into circulation so as to cope with or reflect a declining amount of economic resources per capita of the population, 1470/1520–1620, yielding in combination with some long-term monetary expansion (more money / new coins being produced) the long inflation characteristic of the sixteenth century ‘Price Revolution’.⁵⁹ There was one notable upswing or peak in the series during the first decade of the sixteenth century, however, when the long-term negative trend was temporarily reversed (Figure 1). The decade immediately preceding Martin Luther’s *95 Theses* (1517) was a period of *increased hoarding*.

How does this tie in with the notion of a depression? The pattern of hoarding, representing a form of saving that is disjointed from the usual market mechanism as it lacks the usually implied transfer from savings to

⁵⁹ John Munro, ‘Price Revolution’, in: Steven N. Durlauf / Lawrence E. Blume (eds.), *The New Palgrave Dictionary of Economics*, 2nd ed., Vol. 6 (London / New York, 2008), 631–34.

investment, may have economic, as well as cultural and social ramifications. Usually people hoard money when they are uncertain about the expected return of an investment, especially when neither feasible means of consumption nor profitable investment opportunities exist, as is the case in times of war, bad climate or economic depression. Whilst the earlier upswings in the coin hoard series in 1400–9 and 1450–59 can be interpreted very easily, as previous research has modelled these decades as periods of severe monetary contraction or ‘Bullion Famine’ (John Day)⁶⁰, the pattern of the first decade of the sixteenth century is unusual. Was there a ‘fifth’ Bullion Famine around 1500–1509 (the most common interpretation heralded by J. Day has four such ‘famines’ in the late middle ages)? The coin hoards, in combination with the evidence sketched out so far on monetary scarcity and economic depression, seem to suggest that this was the case, at least in Germany. Within an economy and society where money played some role, even when not all transactions were made using cash, monetary shortage may well have translated into a general depression. People withheld liquid resources from the market which they would otherwise have spent on purchases or investment. The above-sketched pattern of coin hoards has a bearing in terms of the velocity of money, i.e. the speed with which the available supply of money changes hands; together with M, velocity (V) may, if both are moving in tandem, reinforce a pattern of contraction. But in terms of measurement and interpretation, velocity is a complex phenomenon; moreover, it is culturally framed, i.e. subjected to feedback processes between the realms of culture and economics, which the following section will work out in more detail.

III

We may ask two questions: first, how does monetary shortage interact with the wider realm of society and culture? Second, how did people cope with hardship and depression? One may speculate for instance that people identified new ways and means of generating funds for investment. Or else, that they condemned existing practices of investment that were vital from the point of view of established church and ritual as unproductive. The great German humanists of the 1510s and 1520s almost uniformly mocked the drain of silver that plagued central Europe these days. They were unanimous in terms of blaming, if in a very satirical way, Rome and the Papacy for the situation (even though some of the

⁶⁰ John Day, ‘The Question of Monetary Contraction in Late Medieval Europe’, Jørgen Steen Jensen (ed.), *Coinage and Monetary Circulation in the Baltic Area, c.1350–c.1500* (Copenhagen, 1982), 12–29, John Day, ‘The Great Bullion Famine of the Fifteenth Century’, *Past & Present*, LXXIX (1978), 3–54.

money may have come back via German soldiers enlisted in the Italian wars). Ulrich von Hutten, the great Humanist, wrote in his *Vadiscus* dialogue (1519/20) of the 'Romans' (meaning the Curia / Papal Court) how they, on a daily basis, devised new means of "taking away" money from the Germans. It was three things in particular, he wrote, that anyone returning from Rome would bring: "bad conscience, an upset stomach, an empty purse." And, significantly, there were three things everyone at Rome desired: "short Mass, good coins, having a good time."⁶¹ Numerous other pamphlets and writings of the time bear out an increasingly negative, or at least cynical attitude towards forms of investment that were identified as unproductive in the economic sense. The Old Granny, in the fictitious dialogue with Heinrich von Kettenbach (1523⁶²), confesses that she burns devotional candles to the tune of seven pennies (d) per week (*Ich verprenne all wuchen 7 pfenbart liecht*). For this she gets the harsh reply by the reformed priest that by gambling or betting the money, or even simply burning it she would have gotten a better return on her investment. The mere practice of spending money on devotional candles was deemed idolatrous by an increasing number of "reformed" adherents to the new faith. By giving it to the priests, the money would be either transferred to Rome and exacerbate an already negative balance of payments, or else used in the most frivolous way, for vain pleasures, conspicuous consumption or whores in the very extreme: They *nemen das zu irem geprauch, schlemmen, demmen, prassen darvon, machent kostparlich klaiden, und, spricht Hieremias, klaiden und ziern ir hurn darmit*, as the talk goes on.⁶³ Because luxurious clothes usually had to be imported, often from Italy, as Luther himself pointed out in his Table Talk *Italian Clothing is Better Than German* (1538), possible multiplier effects of the spending on manufactures were thus foregone for the German lands.⁶⁴ *The haubt artickel durch welche gemeyne Christenheyt byßhere verforet worden ist [...], Wittenberg 1522*, another pamphlet of the 1520s that was widely circulated these days, lamented about indulgences, pilgrimages,

⁶¹ In the original: *scheren platt und kahl / Und nehmen stets von Teutschen Geld / Dahin ihr Praktik ist gestellt / Und finden täglich neue Weg / Daß Geld man in den Kasten leg / Da kommen Teutsche um ihr Gut. (...) Drei Ding hasset Rom, Jus patronatus, frei election und daß die Deutschen noch einen Pfennig haben. (...) Drei Ding bringt man gewöhnlich von Rom, böses Gewissen, bösen Magen, leere Säckel [...]; Drei Ding will jedermann haben zu Rom, kurze Messen, gute Münzen, bon tempo.* Rudolf Bentzinger (ed.), *Die Wahrheit muß ans Licht! Dialoge aus der Zeit der Reformation* (Leipzig, 1982), 46, 52, 72–74.

⁶² Hannelore Winkler, 'Der Wortbestand von Flugschriften aus den Jahren der Reformation und des Bauernkrieges in seiner Einheitlichkeit und landschaftlichen Differenziertheit', Univ. Diss. Leipzig 1970, 61s.

⁶³ *Eyn gesprech Bruder Hainrich von Kettenbach mit aim fromen alte mutterlin von Vlm [...]* (1523), cited after: Adolf Laube / Annerose Schneider / Sigrid Looß (eds.), *Flugschriften der frühen Reformationsbewegung (1518–1524)*, Vol. 1 (Berlin [East] 1983), 201–203.

⁶⁴ *Luther's Works*, ed. Hartmut Lehmann, Vol. 54, Table Talk, ed. Theodore G. Tappert, Philadelphia 1967, Nr. 3956, p. 298.

shrines and monasteries. These were institutions where money was simply sunk without coming back or ever being retrieved within a productive framework.⁶⁵ Zwingli made similar remarks.⁶⁶ During the Peasants' War in 1525 the grievances of the peasants in Salzburg in the Austrian Hereditary Lands mentioned the malpractice of confessors who habitually charged one florin to those who were terminally ill. This was a practice that harmed especially the poor descendants and widows and would increase their hardship even more than the loss of the main bread winner.⁶⁷ Similar *topoi* abound in the early Reformation discourse. They often had a decidedly vitriolic and satirical outlook, but clearly singled out the 'unproductive' manner in which money had been (and still was) spent under the Old Catholic pattern of 'purchasing' salvation from purgatory.

It is interesting in the present context to see how the depression of the early 1500s had a pre-history of boom, almost akin to the notion of modern Schumpeterian business cycles: no economy moves along a stable path forever; there usually are cyclical fluctuations in all sorts of output along a medium- or long term trend. In 1494, Sebastian Brant, in his *Stultifera Navis* (Ship of Fools) hinted at an overheated boom or upswing in the business cycle. This cycle must have run its course prior to the date he wrote the *Ship of Fools*, i.e. between the early 1470s and the early 1490s, because in the section on *Von narrechtem anslog* ("on senseless planning and investment") Brant graphically describes an overheated business cycle in building and infrastructure, with over-capacities created that in the aftermath of the cycle would remain un- or underused, when the cycle turned into a recession.⁶⁸ This is significant for Luther's contextualization in time (cyclical notion) and space (location of silver production in the central German mining areas). Such a boom had indeed run its course during the 1470s and 1480s, when the price level in Germany had increased, as had the output of the south-central German silver mines which experienced a boom between the mid-1470s and the 1490s. At

⁶⁵ *Die haubt artickel durch welche gemeyne Christenheyt byßhere verforet worden ist [...], Wittenberg 1522, cited in: Laube / Schneider / Looß (eds.), Flugschriften, 166: viel scheynender werck, mit wallfartten, ablas suchen, kirchen pawen, kloester, messen, jar tag, seelgereyth und anders stifften, grosse opffer thun, kirchen tziern, vasten unnd andern der gleychen eußerlichen wercken zu erdichten und sich darynn zu bemuhen.*

⁶⁶ In his *Schlussreden* (1523) Zwingli talked about *Die grosse schatz an guldinen und silbrinen goetzen, monstrantzen, kelchen, krützen die genanten geistlichen lassend von dem armen volck erbettlen, mit erdachten falschen leren und fabeln*, Laube / Schneider / Looß (eds.), *Flugschriften*, p. 897.

⁶⁷ Albert Hollaender, 'Die vierundzwanzig Artikel gemeiner Landschaft Salzburg 1525', *Mitteilungen der Gesellschaft für Salzburger Landeskunde*, LXXI (1931), 65–88, at 84: (*wo ein mensch kranckh ist worden, so haben die peichtväter den kranckhen angehalten, und dem beichtvater ainen gulden schaffen, was arm wittib und waisen auch gellter abbruch haben und mangl muessen leiden.*)

⁶⁸ Sebastian Brant, *Stultiferum Navis* (1494).

the same time the costly Saiger process had been perfected, drawing on a set of metallurgical innovations, but above all, a prodigious amount of capital for investment.⁶⁹ The same applies to the new ventures in the Tyrolean and Saxon mining districts that likewise went through a boom phase between the early 1470s and the early 1490s. Thereafter, output collapsed, triggering a silver shortage that lasted until the inflationary period of the 1530s.⁷⁰ Such a boom in silver production would have been reflected in a fall in the silver price level, which would have caused overall prices for goods, such as grain, but also many others, to rise. It may also, by ways of monetary expansion, have translated into an economic boom or stimulus. And this is exactly what we can observe, and what Brant may have had in mind when completing the *Ship of Fools*, at least in the industrial and mining districts in central Europe. In Tyrol, Thuringia and the Saxon Erzgebirge, minor towns and hamlets such as Schwaz (Tyrol), Schneeberg and St Annaberg (Saxon Erzgebirge Mountains) since the 1470s witnessed a demographic explosion that saw their populations grow into the tens of thousands. A rapidly growing share of non-agrarian producers needed to be fed. This required large-distance grain trade and imports of foodstuffs, bringing these areas into larger contexts of inter-regional division of labour, integration and structural change. The Thuringian Saiger huts consumed prodigious amounts of capital, infrastructure, machinery and environmental resources, up to environmental pollution: landscape features and place names such as *Giftbach* (poisonous river) were common in these areas. The Erzgebirge Mountains were ridden with mine shafts, primitive machinery and men that were not tied to the soil any more but, by the sheer wealth they took out of the mountains and the demand for foodstuffs they could not produce themselves, increased the level of grain prices and stimulated the integration of this region into wider networks of trade that span across central Europe (oxen, grain) up to Antwerp, Venice, Lisbon and Asia, where much of the silver was exported to. The famous *Annaberg Bergaltar* (1521) is a beautiful graphic depiction of the 'Silicon-Valley'-like economic and social transformation that affected the mountainous regions in Central Europe during the mining booms of the 1470s and 1480s (Figure 2).

⁶⁹ Ian Blanchard, *International Lead Production and Trade in the "Age of the Saigerprozess"* (Stuttgart, 1995); Ekkehard Westermann, *Das Eislebener Garkupfer und seine Bedeutung für den europäischen Kupfermarkt, 1460–1560*, Univ. Diss. Marburg 1970 (Cologne, 1971).

⁷⁰ Munro, 'Monetary Origins'.

Figure 2: Annaberg Bergaltar (Mantlepiece / Altar of St Anne Church in Annaberg / Saxony), 1521



The Leipzig trade fairs also grew prodigiously in size. Alongside the Naumburg Fairs located close-by they turned into central Europe’s major financial and goods market of the period.⁷¹ The area around Leipzig and Wittenberg, where Luther grew up and spent most of his lifetime, were highly commercialized, with a significant share of the population outside agriculture and a high degree of interaction with the wider world and integration into global logistics and financial markets, marked by the global flows of silver. Born in 1483 the son of a comparatively wealthy mining entrepreneur, Hans

⁷¹ Manfred Straube, ‘Zum Warenaustausch im Ost-West-Handel auf dem Landwege in der ersten Hälfte des 16. Jahrhunderts’, *Wissenschaftliche Zeitschrift der Pädagogischen Hochschule “Clara Zetkin” Leipzig*, III (1977), 22–36; Manfred Straube, ‘Zur Stellung der Leipziger Messen im überregionalen Warenverkehr zu Beginn des 16. Jahrhunderts’, *Wissenschaftliche Zeitschrift der Pädagogischen Hochschule “Clara Zetkin” Leipzig*, I (1979), 101–110; Manfred Straube, ‘Zur Stellung der Leipziger Messen im überregionalen Warenverkehr zu Beginn des 16. Jahrhunderts’, *Jahrbuch für Wirtschaftsgeschichte*, III (1979), 185–206; Manfred Straube, ‘“Mitteldeutschland”: Der Wirtschaftsraum’, in: Jürgen John (ed.), *“Mitteldeutschland”. Begriff – Geschichte – Konstrukt*, Rudolstadt 2001, 193–206; Manfred Straube, ‘Waageordnungen der Leipziger Messen zu Beginn des 16. Jahrhunderts’, in: Helmut Bräuer / Gerhard Jaritz / Käthe Sonnleitner (eds.), *Viatori per urbes castraque. Festschrift für Herwig Ebner zum 75. Geburtstag*, Graz 2003, 667–684.

Luder, in the Mansfeld mining district, Martin Luther received some first-hand evidence of these rapid structural and social changes of the 1470s and 1480s, but also the crisis and subsequent downturn in the business cycle after the 1490s, when silver supply in central Europe declined and prices decreased again. By about 1500, the adult Luther may have become aware, if very indirectly, of a decline in silver supply, public spending, as well as a growing propensity of the people not to spend but rather hoard or bury their money. At least this is what shines through many of his early writings (see above). In fact, in his views on avarice Luther drew a clear connection between treasure and under-consumption. Who does not spend money will have no benefit from it, and God had not put silver and gold into the mountains for them to be left there without transforming them into capital for investment and money to be spent on consumption.⁷² Avaricious people, Luther said, buried their treasure, thus forfeiting any societally and economically productive investment.⁷³ Where there are no funds for investment, gross domestic capital formation will decline, as will the amount of goods produced. Savings translate into capital only when invested, and capital by definition is goods or artefacts which produce other goods.⁷⁴

In fact, in his *Sendbrief vom Dolmetschen* (On Translation, 1530), as well as many other occasions, Luther quoted scripture whilst condemning the practice of burying money: "Thus is why the master in the gospel scolds the unfaithful servant as a slothful rogue for having buried and hidden his money in the ground [Matt. 25:25-26]."⁷⁵ The idea that money was misallocated by indulgences and other similar practices such as pilgrimages, purchasing devotional candles, eternal masses, comes across, if indirectly, and framed within a traditionally Scholastic view, as early as 1517, in Luther's *95 Theses*, where he said (Nr. 43, 45 and 46) that money was not to be spent on indulgences but rather, if there was a surplus in savings, to be given to the poor (43, 45) or their own families (46).⁷⁶ On religious pilgrimages to Rome, which were connected with the problem of indulgences, Luther said in his address *To the Christian Nobility of the German Nation Concerning the Reform of the Christian Estate* (1520) that "all

⁷² F. W. Lomler / G. F. Lucius / J. Rust / L. Sackreuter (eds.), *Geist aus Luther's Schriften, oder: Concordanz der Ansichten und Urtheile des großen Reformators über die wichtigsten Gegenstände des Glaubens, der Wissenschaft und des Lebens*, Vol. 2: G bis J (Darmstadt, 1829), 248.

⁷³ Lomler / Lucius / Rust / Sackreuter (eds.), *Geist aus Luther's Schriften*, Vol. 2, 259.

⁷⁴ Original: *Ist es aber nicht wahr, wenn du schon das Haus voll Gülden hättest, und das Haus wäre auch gülden, und die Elbe oder der Rhein flösse mit Gold; was könnte solches dich helfen, wenn sonst Nichts, kein Korn, kein Bier, kein Wein, kein Wasser da wäre? Du wirst je das Gold nicht fressen können.* Lomler / Lucius / Rust / Sackreuter (eds.), *Geist aus Luther's Schriften*, Vol. 2, 249.

⁷⁵ *Sendbrief vom Dolmetschen*, Engl. *On Translating*, Luther's Works, ed. Hartmut Lehmann, Vol. 35, *Word and Sacrament*, ed. E. Theodore Bachmann, Philadelphia 1960, 81.

⁷⁶ Luther, *95 Theses*.

pilgrimages should be dropped. There is no good in them: no commandment enjoins them, no obedience attaches to them. Rather do these pilgrimages give countless occasions to commit sin and to despise God's commandments. (...) Let priest and master show him how to use the money and effort for the pilgrimage for God's commandments and for works a thousand times better by spending it on his own family or on his poor neighbours."⁷⁷ On the more local shrines in Saxony and Thuringia he said that the "chapels in forests and the churches in the fields, such as Wilsnack, Sternberg, Trier, the Grimmenthal, and now Regensburg and a goodly number of others which recently have become the goal of pilgrimages, must be leveled. (...) They do not see that the devil is behind it all, to strengthen greed, to create a false and fictitious faith, to weaken the parish churches, to multiply taverns and harlotry, to lose money and working time to no purpose, and to lead ordinary people by the nose."⁷⁸ In 1524, he said that people "waste a great deal of money and property on indulgences, masses, vigils, endowments, bequests, anniversaries, mendicant friars, brotherhoods, pilgrimages and similar nonsense", and that it would be better "to contribute a part of that amount towards schools for the training of the poor children. That would be an excellent investment."⁷⁹ During the first decades of the sixteenth century more than half a million florins were handled by the Fugger merchants of Augsburg alone as payment transfers of indulgences from Germany to Rome. The Fuggers were the most important financial intermediaries providing this service to the German lands, i.e. remittances to Rome, especially for indulgences. They closely cooperated with the Pope and his financial representative in Germany, Albrecht of Mainz. Luther requested that the Fugger company and other high financiers of the time should be supervised by the authorities more closely: "One final word remains, and I am bound to say it. Since this boundless Avarice is not satisfied with all this wealth, wealth with which three great kings would be content, he now (referring to Albrecht of Mainz, P.R.) begins to transfer this trade and sell it to the Fuggers of Augsburg."⁸⁰ He later, in the same treatise (*To the Christian Nobility*, 1520) said that "In this connection we must put a bit in the mouth of the Fuggers and similar companies."⁸¹ Ironically (or perhaps not so, after all), the *Causa*

⁷⁷ Luther's Works, ed. Hartmut T. Lehmann, Vol. 44, ed. James Atkinson, *The Christian in Society*, I (Philadelphia, 1966), 171.

⁷⁸ *To the Christian Nobility...*, Luther's Works, ed. Hartmut T. Lehmann, Vol. 44, ed. James Atkinson, *The Christian in Society*, I (Philadelphia, 1966), 185.

⁷⁹ *To the Councilmen of all Cities in Germany that they Establish and Maintain Christian Schools*, Luther's Works, ed. Hartmut Lehmann, Vol. 45, ed. Walther I. Brandt, *The Christian in Society*, Vol. II, 351.

⁸⁰ *To the Christian Nobility...*, Luther's Works, ed. Hartmut T. Lehmann, Vol. 44, ed. James Atkinson, *The Christian in Society*, I (Philadelphia, 1966), 155.

⁸¹ *To the Christian Nobility...*, Luther's Works, ed. Hartmut T. Lehmann, Vol. 44, ed. James Atkinson, *The Christian in Society*, I (Philadelphia, 1966), 213.

Lutheri was always disputed on the Imperial Diets of Nuremberg in 1522 and 1523 alongside the so-called *monopoly debate*, i.e. the very same ‘anti-capitalist’ discourse and issue Luther complained about here. The accusations against the large south German merchant houses mainly of Augsburg were part of the general socio-economic grievances of the German population at that time. The large Nuremberg and Augsburg firms that were involved in the intercontinental trades via Lisbon, Antwerp and Venice (see above), were accused of having created a “monopoly” on luxury goods such as spices and Asian commodities. These had yielded them profits that were way out of line with what the rest of the economically active population could possibly expect during their lifetimes.⁸² Such profits were seen as especially obscene during a time when grain prices, as well as the overall price level, decreased and the German economy went through a deflationary depression, and those people working with their hands and in the sweat of their brow – the majority (around 90 per cent in fact) of Germans around 1500 were located on the countryside – had to face declining rewards to their labours and efforts (declining marginal productivity reflecting an increase in the overall price level driven by grain prices which increased faster than manufactures and wages).⁸³

What Luther and the satirical discourse of the years and decades immediately after publication of his 95 Theses complained about could perhaps be re-phrased as a decrease in *velocity* of money. Rearranging the simple Fisher equation ($MV = PT$), for the moment disregarding different types of money with different velocities, yields

$$V = PT/M \quad (2)$$

As neither M nor T carry any meaning in terms of measurable quantities for the period, it has been notoriously difficult for scholars to arrive at meaningful statements as to how velocity (V) may have developed over time.⁸⁴

⁸² Fritz Blaich, *Die Reichsmonopolgesetzgebung im Zeitalter Karls V. Ihre ordnungspolitische Problematik* (Stuttgart, 1967); Fritz Blaich, *Die Wirtschaftspolitik des Reichstags im Heiligen Römischen Reich. Ein Beitrag zur Problemgeschichte wirtschaftlichen Gestaltens* (Stuttgart, 1970); Bernd Mertens, *Im Kampf gegen die Monopole. Reichstagsverhandlungen und Monopolprozesse im frühen 16. Jahrhundert* (Tübingen, 1996).

⁸³ It was only by imperial decree (“the powers that be”) that the monopoly case was dropped in the 1530s, as the Emperor, Charles V, needed the money of the large medieval super-companies, especially the Fuggers, and could not afford to have a case decided against them on the Imperial Diets.

⁸⁴ See the earlier controversy between Mayhew and Miskimin fought over velocity in the *EcHR*: N. J. Mayhew, ‘Money Supply, and the Velocity of Circulation in England, 1300–1700’, *Economic History Review*, Second Series, XLVIII (1995), 238–257, and Harry A. Miskimin, ‘Not Sterling: A Comment on Mayhew’s Velocity’, *Economic History Review*, Second Series, XLIX (1996), 358–60, and again N. J. Mayhew, ‘Not Sterling: A Reply to Prof. Miskimin’, *Economic History Review*, Second Series, XLIX (1996), 361.

In modern national income accounting V is usually framed as a residual, where the price level (P), gross domestic product (T) and the amount of money in circulation (M) can be reasonably well estimated, i.e. measured. For the present purpose this concept is useless, as neither M , nor T can be quantified for early Reformation Germany. But there is an alternative at hand. The micro-economic conception of V , developed by the so-called Cambridge School of Economics in the 1920s and 1930s, defines velocity as the inverse of a variable called 'demand for money to hold' (k):

$$V = 1/k \quad (3)$$

and accordingly

$$k = 1/V \quad (4)$$

If seen as a *micro*-economic variable, V turns from passive actor or residual into a 'protagonist', so to speak. Here, velocity is contingent on individual decisions of households, on how much money to spend or alternatively to hold back from the market: for transactions, speculation and safeguarding against instable economic circumstances in the near future. If k *increases* (less money spent), V *decreases* and vice versa.⁸⁵ The pattern of coin hoards described in section II above (Figure 1) may perhaps, with a pinch of salt, historically be interpreted as one possible proxy for the *trend in k*. And with the number of coin hoards buried during the first decade of the sixteenth century significantly above the long-term average (Figure 1), it becomes quite clear what Luther, in his views on avarice and an increased propensity to hoard during the 1510s and 1520s was actually referring to: a *decrease in the velocity of money*, with k or hoarding increasing. Since credit, such as consumptive credit, plus financial paper, such as bills of exchange, are usually booked under V , rather than M (unless they are so liquid as to be readily convertible into cash or else are uniformly accepted by the public as a general means of payment, i.e. "cash"), the somewhat pointed notion of a 'credit crunch' would also be in line with the presently-suggested interpretation of the early works of Martin Luther. Coupled with a decline or stagnation in M for which the circumstantial evidence is overwhelming (see above), the value of the product MV should have declined after c.1500. Vis-à-vis an

⁸⁵ This and the following is somewhat at variance with Mayhew's suggestion that "(i)ncreased use of money is thus usually combined with a fall in velocity, made possible by the availability of growing amounts of coin", which is certainly a very peculiar if not rather awkward explanation perhaps applying to early modern England but certainly not Germany (author's italics). This explanation would also be at variance with an imputed increase in k (as a result of a decline in velocity). Quote taken from Nicholas Mayhew, *Sterling. The History of a Currency* (London, 1999), 59.

increase in real transactions (T) due to a vigorous population growth since the 1470s, this could well have triggered a severe cycle of deflation. Again: that is exactly what can be observed from the available evidence on grain prices during the first decade of the sixteenth century, as well as the evidence presented above, especially in section II.

IV

What can be said in conclusion? Without trying to explain away Luther's Reformation by reducing it to a monetary or economic context, it seems as though a lot of his ideas (which weren't all that new) may have, if rather indirectly, made economic sense as they would have represented a clever adjustment or coping strategy with a changing social and economic environment. Luther grew up within a fairly advanced social and economic environment, a region marked by structural change and spurts in non-agrarian activities, especially within mining and financial services since the 1470s. He must have witnessed a turn in the mining fortunes, subsequent deflation in the grain price level and other factors indicative of a contraction in economic activity after about 1490. With his father, Hans Luder being a mining entrepreneur in the Mansfeld mining district, as well as regular conversations and encounters with the Counts of Mansfeld and other investors involved in the central German mining and smelting businesses both before and after Luther's "conversion" from layman to monk in 1505 these developments should at least have left an imprint on his work and thinking. The common pre-reformatory practice of generating religious or spiritual capital, such as absolution, salvation or the reduction of time spent in purgatory by investing monetary funds into the 'dead hand' of the church must, by the early decades of the sixteenth century, have appeared progressively perverse to many contemporaries, given the overall framework of monetary contraction. It would be certainly wrong to put forth a reductionist approach to the phenomenon of the Reformation of 1517. But whoever stood up at such a time of crisis and depression and formulated a heterodox interpretation of scripture that was centred upon separating salvation (*religious capital*) from monetary resources (*financial capital*) certainly had the chance to be heard particularly clearly.

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