Labour and Deep Monetization in Eurasia, 1000 to 1900*

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Abstract
The production and circulation of coins may be conceived as an important institution for the development of commodified labour. In Eurasia between 1000 and 1900 the degree to which people participate in a market economy is reflected in the frequency of exchanges of small denominations of currency. Long-term developments in deep monetization levels (DMLs) in Western Europe (England, the Low Countries, and France), South Asia and China enable us to trace shifts in labour relations. Explanations for changing DMLs may be found in the demand for small denomination coins (due to, e.g., increasing levels of commodification or a rise in wage labour) as well as in changing practices in payment frequencies and thus in credit relations of workers, which could determine their power relations.

Keywords: deep monetization, coin circulation, wage labour, credit, Eurasia

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The efficiency of economic institutions has been an inspiring topic for many economic historians. Labourers, among the most important actors in economic life, shape and are also shaped by several institutions. Most labour historians concentrate on institutions regarding basic freedoms, such as freedom of employment, freedom of organization, and freedom to organize collective action. In addition, protective legislation regarding working hours, age at work, dangerous circumstances, and the like, are part and parcel of labour history.

To date, modalities of payment and means of exchange have attracted barely any interest from this field, nor from monetary history or numismatics. Nevertheless, the institutions involved in producing and circulating currencies suitable for use in wage payments and for the daily expenses of workers do matter. This applies to all societies where currencies are used as means of exchange to pay for labour and services performed, which implies major parts of Eurasia and Northern Africa for the last two and a half millennia, and for the rest of the world for the last five hundred years. In this contribution, a brief introduction is provided, detailing the usage of currencies for paying wages and of the concomitant small change. It also follows, turning the argument around, that changes in circulation patterns may point to changes in labour relations. A more extended overview is provided of the implications of currency circulation for labour conditions and the welfare of workers – both as objects and as subjects – as we will see from several examples of labour protest against failing small-denomination coin circulation. This overview can only be tentative, and more suggestive than conclusive, not only because it covers such a large field, but also because of a lack of data and secondary literature.

The structure might accordingly appear a little strange at first sight. After an introduction about the usage of currencies by workers, and more specifically about their need for small change (“deep monetization”), I will proceed in three steps. I start with a comparative overview of monetization in Western Europe and surrounding countries, as this is the first occasion when such an overview has been possible. These insights are then used in an inductive way to paint a diachronic picture, using data for Britain, the

1 E.g., Van Zanden, “The Road”.
2 E.g., Steinfeld, The Invention of Free Labor; Biernacki, The Fabrication; Lucassen, Global Labour History; Van der Linden, Workers of the World.
3 Interesting for linking money (though not currencies) and labour is Reddy, Money and Liberty; see also Biernacki, The Fabrication, ch. 8.
Low Countries, and France. These long-term insights into the European situation are necessary in order to be used as input for the examination of two case studies outside Europe: India and China, to draw an overall picture of Eurasia from 1000 to 1900.

Why remunerate work by paying wages?

Some types of labour relations do not involve remuneration at all (corvée labour), some do, but only implicitly (reciprocal labour), others do, but only in the form of maintenance (unfree labour), and still others do in the form of wages in kind or in cash.4

Corvée types of labour in their most extreme form are one-sided: the polity requires labour just as it may require taxes in kind or cash. Apart from the cost of maintenance, which is needed when the corvée has to be performed far away from home, remuneration is out of the question. In a more benign form, such labour is remunerated in public goods (material or immaterial) or at least by the suggestion that the polity cares for its subjects.5

Implicit remuneration is provided in reciprocal labour relations, such as within self-subsisting households or groups of households working intensively together; for example, among hunter-gatherers. All members contribute through their labour, and the results are divided more or less equally. Unpaid work is also and foremost found inside the household, in which the head of the household works for the market, while notably women and children share the income by performing all the household chores for free. The Indian *jajmani* system has to be mentioned as well. In this highly formalized system, craftsmen in the village community provide free services to the local farmers in exchange for a share in the total harvest.

Unfree labour – if established on a permanent basis such as in the case of slavery and serfdom or on a (in principle) temporary basis in the case of convicts – requires maintenance, either provided in the form of minimal food and shelter, or in the form of small plots on plantations where labourers can grow their own food. Serfs are also allowed to work their own family plot.

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4 Here, I refer to labour relations as defined in the Global Collaboratory on Labour Relations, based at the IISH.

5 For an excellent overview of taxation systems worldwide, including corvée, see Monson and Scheidel, *Fiscal Regimes*. 
Formal remuneration of labour only occurs in market societies where either small producers receive it for their products or services, or where labourers receive a wage. These formal remunerations may be in kind, in cash, or mixed. For example, payment in kind occurs in the case of sharecroppers, who work in exchange for half the harvest while the other half goes to the owner of the soil, who often also procures the seed and makes other investments. Like small, independent producers, sharecroppers have to sell the products of their labour on the market. Partial wage payments in kind occur when workers benefit from board and lodging (apart from remuneration in money), such as soldiers, sailors, and living-in servants do. Where this is not the case, and wage labourers or small independent producers form their own households, wages may be paid in kind or – much more commonly – in currency. For an overview of all possibilities mentioned in commodified societies, see Figure 11.1.

The link between work, remuneration, and currencies is not straightforward. It is, however, important in Eurasia, a part of the world that had seen markets develop long before 1000 CE.\(^6\) To formulate it differently, apart from the relations mentioned – which pertain more to unfree than to free labour,

\(^6\) For practical reasons, tributary societies such as the Egyptian and pre-Columbian civilizations, let alone older societies, fall outside the scope of this chapter. See Lucassen, “Outlines”, and the site of the Global Collaboratory on the History of Labour Relations (GCHLR) of the IISH.
and more to women and youngsters than to adult men – work in Eurasia was performed to a substantial extent in exchange for currencies, directly in the case of independent producers (farmers and peasants, craftsmen, traders and peddlers, transporters, shopkeepers, and performers of services) or indirectly in the case of wage earners.

By implication, the history of currencies and their circulation – covering the academic fields of numismatics and monetary history – might become important for labour historians, particularly in cases where not enough other indicators for labour relations are available. This is very often the case in more distant periods in time or in societies for which no or insufficient written sources for labour history exist. To put it extremely simply: if in such cases currencies particularly appropriate for paying wages suddenly disappear, this might be an indicator of the emergence of unfree labour and vice versa.

**Deep monetization**

Circulating currencies can actually have several functions. If primarily intended for large-scale or costly trade, or when substantial amounts of savings are concerned, they originally consisted of large coins – mostly gold or heavy silver pieces – and later on paper money, bills of exchange, and the like. If intended for payments of rent, taxation, or wages, smaller denominations are often needed. Whereas the remuneration for work is one side of the circulation of currencies, the spending of income is the other. Sums used in spending are normally smaller than the sums received as remuneration for work. Even farmers selling their seasonal harvests, who receive relatively large sums, will divide their spending between the payment of rents and the purchase of necessities for the continuation of their business, as well as food, clothing, and other goods that they do not produce themselves. All others – craftsmen and wage labourers – will spend most of their income on shelter, on food in shops and at markets, and if anything is left, on small luxuries.

The difference in size between the sums received as remuneration and the sums spent takes us from medium-sizes coins most suitable for the payment of moderate sums at intervals of one, two, or a few weeks (the which provides a taxonomy of labour relations that are used in this chapter: see https://collab.iisg.nl/web/labourrelations.

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7 More extensively in Lucassen, “Deep Monetization in Eurasia”.
predominant frequency for the payment of wages, but also for advances that many craftsmen could not do without), to the coins used for weekly or daily purchases. For these transactions, much smaller denominations are needed, both because of the amounts involved and because it is impossible for people to always pay with the exact money, thus creating a need for small change. The intensity of participation by individuals and households in a market economy is therefore reflected in the degree to which medium and small denominations are available for circulation. Because small denominations best reflect the frequency of exchanges in a society, they may be considered the ideal yardstick of commercialized human relations.

In order to measure this across space and time, I have recently proposed a formal definition of “deep monetization”. I take this to be “a substantial stock of currencies per capita in circulation, consisting of denominations equalling the value of one hour or less of wage work”, in which “substantial” is defined as “a per capita stock equal to between five and ten times the prevailing hourly wage”.

The application of this definition to different societies may provide an indication not only of the levels of “deep monetization”, but also (and more importantly here) of shifts in labour relations at their root: shifts between remunerated and unremunerated work, between remuneration in kind and in currencies, and between frequencies of payment.

Clearly, for societies with abundant records concerning these shifts – such as Western Europe in recent history – a detour via deep monetization is less interesting, however, for most parts of the world before 1900, it could provide a useful approach. For many places and periods, written evidence of shifts in labour relations is not readily found or, even worse, virtually non-existent. Archaeological evidence concerning coin circulation, by contrast, is much more universally available, because of the metals used for most types of currency. The academic discipline of numismatics is centuries old and has brought us not only catalogues of coins from all over the world, but also estimates or even precise numbers of the quantities produced and the circulation patterns, as mirrored in coin hoards and stray finds. Sometimes, deep monetization is almost the only possible approach to detecting shifts in labour relations. Most valuable, however, is its importance for enabling comparisons by providing a clear and objective measuring instrument through time and space.


Implications for wage payments and the development of wage labour: Europe c. 1885

The first large-scale statistical overview of coin circulation in different countries that enables comparative research into deep monetization was made by the Austrian monetary statistician Ottomar Haupt (1839-1898).\(^\text{10}\) He produced a comparative table of coin circulation, including smaller denominations. With this detailed data, it is possible to reconstruct deep monetization levels (DML) for a number of countries (see Table 11.1).

<table>
<thead>
<tr>
<th>Country</th>
<th>DML</th>
</tr>
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<tbody>
<tr>
<td>Deeply monetized</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>10</td>
</tr>
<tr>
<td>Denmark</td>
<td>9</td>
</tr>
<tr>
<td>France</td>
<td>8</td>
</tr>
<tr>
<td>Germany</td>
<td>10</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8</td>
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<tr>
<td>Switzerland</td>
<td>8</td>
</tr>
<tr>
<td>Small credit</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4.9</td>
</tr>
<tr>
<td>Possibly deeply monetized</td>
<td></td>
</tr>
<tr>
<td>Austria-Hungary</td>
<td>12</td>
</tr>
<tr>
<td>Greece</td>
<td>6</td>
</tr>
<tr>
<td>Italy</td>
<td>14</td>
</tr>
<tr>
<td>Portugal</td>
<td>&lt;17</td>
</tr>
<tr>
<td>Spain</td>
<td>&lt;15</td>
</tr>
<tr>
<td>Medium monetized</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>2</td>
</tr>
<tr>
<td>Norway</td>
<td>3.7</td>
</tr>
<tr>
<td>Russia</td>
<td>1.5</td>
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<tr>
<td>Sweden</td>
<td>2.2</td>
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<tr>
<td>United States</td>
<td>2.7</td>
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</tbody>
</table>

*Source: Lucassen, “Deep Monetization in Eurasia”\(^\text{11}\)*

The majority of the Western European countries show deep monetization levels (a per capita stock equal to between five and ten times the prevailing hourly wage), which vary between eight and ten. For several technical reasons, it is very likely that the figures for Portugal, Spain (substantive exports


\(^{11}\) Based on Lucassen, “Deep Monetization in Eurasia”, where it is also explained why actual figures for some countries are far too high.
of domestic small change to the colonies), Italy, and Austria-Hungary (a massive amount of small change minted, but not yet put into circulation) are too high, but nevertheless might belong to this group as well. The other countries deviate from this Western European pattern. I will discuss them in four groups: first, Norway and Sweden; second, the Balkans (including Serbia and Greece, with far too high numbers for the same reasons as Italy and Austria-Hungary) and parts of the Middle East; third, the United Kingdom; and fourth, Russia and the USA.

First, Norway and Sweden contrast interestingly with the third Scandinavian country in this group, Denmark. Not only was Denmark much more prosperous than its northern neighbours, it showed much higher urbanization figures and concomitant occupational differentiation and agricultural specialization. This situation apparently required a much greater number of transactions in Denmark than in Norway and Sweden. This is eloquently illustrated in the following description of the Norwegian countrymen (85 per cent of the total population) by the British Consul-General Crow, dated 9 November 1870, Christiania (Oslo). He distinguishes three “classes” among them: the seafaring peasantry along the coast, the “Bonde”, and the “Field Bonde” or mountain peasant. The second group is the most important:

The Bonde or real peasant is generally the owner of the land he farms. This class may be considered as the kernel of the nation. The property of the Bonde is not sufficiently large to exempt him from work, but large enough to afford him and his household establishment ample support. He farms in the majority of cases, not so much to raise produce for sale as to grow provisions and everything necessary for spinning wearing-apparel.

Second, the equally low figures for the Balkans (the DML of Serbia and Greece was temporarily so high because of over-supply), Turkey, and Egypt point to similarly low demand for small means of exchange as in Norway and Sweden, even if certain indicators of economic development (such as the high literacy rates in the north) differed substantially. It is, however, possible that this cross section shows a more primitive situation than in the preceding decades. According to Michael Palairet, political freedom in the Balkans went hand in hand with economic decline in the period from 1878 to 1914.

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14 Ibid., emphasis added.
15 Palairet, The Balkan Economies.
Third, of course, the low DML of Britain – although with some imagination still within the minimum margins of my definition of deep – demands an explanation. This situation was an echo of previous ages characterized by the scarcity of small change. Muldrew and Selgin have indicated that it took the government “well into the Victorian era” to supply the public with enough small change. Therefore, counterfeits and tokens found ready acceptance.16

Fourth, the low DMLs for the USA and especially for Russia also seem to be echoes from previous periods, in this case of the widespread use of unfree labour, maintained without paying wages. However, this point needs more research into the consequences of what Kolchin sketched as the commonalities of the post-emancipation USA and Russia: “there was a common legacy of forced labour that Russia shared with the United States and with all other former slave societies as well. New forms of dependency that provided the ex-bondsman with at best semi-freedom became the rule.”17

Deep monetization and wage labour in Europe in the long term, 1000 to 1950

For a few of the countries contained in the above list with deep monetization levels in the late nineteenth century, it is possible to go back in time, sometimes only a few centuries, as in France, sometimes back to the Late Middle Ages, as in the Low Countries, and sometimes even to the High Middle Ages, as in England. These three cases will help us to understand long-term trends in Western Europe. To start with, the country with the longest trend available: England.

England

After China, England has the longest series of coinage statistics and estimates in the world, starting from the late eleventh century.18 The stage of deep monetization certainly had not yet been reached at the time of the Domesday Book (1086), let alone before.19 Precisely when it started may not

17 Kolchin, *Unfree Labor*, p. 375. For the circulation of tokens in the American South after the Civil War, see Lurvink, “Strapped for Cash”.
18 For an extensive discussion of English DMLs between 1300 and 1900, see Lucassen, “Deep Monetization in Eurasia”.
be known exactly, but there is no doubt that in the first half of the thirteenth century, pennies per capita increased fivefold, that in the second half of that century it doubled again, and that the same might have happened in the first half of the fourteenth century, just before the Black Death, after which levels fell back to those of fifty years before. If compared with the prevailing wage levels, the English DML already stood at 5 in 1282 – the first date for which enough quantitative evidence is available – to grow to 10 or more in the decades before 1351. These early and spectacular jumps run parallel to the equally early and rapid expansion of wage labour.20

More surprisingly, these levels could not be maintained from the second half of the fourteenth century onwards, and recovered only very slowly, never to reach those of the early fourteenth century. Calculations based on the output of the royal mint in London show DMLs of 3 in 1720, 4.7 in 1857, and the already mentioned 4.9 in 1885. The actual situation was slightly less worrying, as private tokens and counterfeits (officially condoned) filled the gap left by the authorities that were not willing or not able to provide their subjects with enough copper coins and small silver denominations. By including small change of all forms, DMLs in the seventeenth and eighteenth centuries may actually have oscillated around a meagre 5.

How did such an economically highly developed society, where half of the population depended on wages, cope with this continuous shortage of small change?21 Payments in kind of course were one alternative, but not greatly preferred by employers.22 Group pay was another solution, although a very imperfect one. In 1794, a manufacturer explained:

If the work of two men comes to near a guinea, or three men to near two guineas, we give them the gold and they must go together till they can get change by purchasing whatever they want. If they go to a grocer he will not give change unless the quantity of sugar, tea, etc. amounts to a certain sum, and then he stipulates for their taking a certain quantity of [bad] halfpence. [...] It often happens that groceries are not wanted by poor men who come from villages around, who seldom care to take tea and sugar home; but they generally have a public house in the market town at which they call to refresh; And to it these two or three fellows (though not all countrymen) go, with a good excuse to get their gold changed: if

22 Ibid., p. 401.
they find, after drinking a pint or two, that they cannot succeed, what can they do but go to another house. [...] But whether they get change at the first or second attempt, they are not served without taking several shillings in copper, and this of the worst quality that can be forced into circulation.\(^{23}\)

More importantly, Craig Muldrew has pointed in particular to the extension of small-scale local credit reducing the frequency of cash payments in the seventeenth and eighteenth centuries. Payments to industrial workers could not easily be solved by using wages in kind. Here, wages were often in arrears, which implies that shopkeepers had to extend credit to wage labourers. Muldrew provides the following telling example from Birmingham:

> A shopkeeper who sued a brick maker in the Birmingham court of requests in the mid-eighteenth century claimed that the latter’s master had told him that during the winter season the defendant “can get only clay, consequently his wages are small; trust him what he wants, and I will see you paid in the summer”. Here, the brick maker’s wages would have simply been turned into a debt owed by the master to the shopkeeper, eliminating the need for small change.\(^{24}\)

At the same time, this implies that the brick maker was compelled to buy all his necessities from one and the same shopkeeper, with all the attached risks of abuse.

**The Low Countries**

After the demise of the highly monetized Roman Empire, a new round of monetization began with the emergence of towns in the Southern Low Countries around 1100, followed by the North one century later. Similar to England, for several centuries only one single denomination was coined; the silver denarius or penny. Around 1300, a multi-fractional system came into being with the introduction of various silver denominations of two-and-a-half and eight penningen, greatly facilitating payments.\(^{25}\)

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For the Low Countries, data is not as abundant as for England, partially because of long periods of political decentralization.26 The manorial system, in which people are bound to the land where they are forced to provide labour, had never been important in the northern maritime provinces, and in most others declined in the eleventh to the fourteenth century.27 Instead, small-scale and independent labour on peasant holdings and in artisanal shops became dominant. Wage labour emerged afterwards in the form of mercenary armies, and in the building, public works, and transport sectors. Think of the construction of churches, town gates, and walls in this most urbanized part of the world. According to Van Bavel, in particular in the fifteenth and sixteenth centuries in coastal Flanders and later in the Guelders river area, Salland, and coastal Frisia, wealthy tenant farmers with thirty-five to seventy hectares emerged, needing much additional labour during harvest time and all year round. This happened at the expense of small tenancies, where families now had to supply their labour. The proliferation of numerous mini-tenants was also ideal for proto-industrialization.

Not by coincidence, from the mid-fourteenth century onwards – but not earlier – there appears to be a certain correlation between the denomination coined most frequently over a longer period, and the level of the daily wage. This correlation suggests that the demand side preferred a currency equivalent to four times a wage earner’s full daily wage (c. 1350-1450). From the fifteenth century onwards, this reduced to one times for the worse-paid and two times for the better-paid wage earners.28

Does it also represent a situation of deep monetization? By 1550, the Low Countries as a whole were certainly deeply monetized, and this process must have already started earlier on in certain provinces, first in Flanders and later in Brabant, most likely in the fifteenth century.29 The uncertainty about the exact timing is due to the lack of good population statistics combined with the validity of all Burgundian currencies in all provinces, irrespective of the province in which they had been struck.

Thus, the situation in the Low Countries in the mid-sixteenth century seems to have been in balance: a massive demand for small change and an equally abundant supply of it by the mint houses of Charles V and his son Philip II. The limited success of the central authorities to limit

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26 What follows about the Low Countries and in particular its northern parts is a summary of Lucassen, “Deep Monetization: The Case of Netherlands”; most recent publications are Martiny, *Het Munthuis*, and Vanhoudt, *De munten*. See also Welten, *Met klinkende munt betaald*.


maximum wages in 1560 points in the same direction. The Utrecht city
government, for example, stated that “wage setting is entirely God's work”,
which may be interpreted as a plea for the functioning of the forces of
supply and demand.30 However, the balance was not stable; not as unstable
as in England, but in the Dutch Republic, in particular, the circulation
of small coins decreased in the second half of the seventeenth century. The
country was prosperous, and overall coin production was impressive. The
key merchants who commanded coins from the mint houses, however,
were much more interested in the (comparatively cheap and thus more
profitable) minting of large denominations than in the production of
small silver and copper coins for the local market. Instead, the provincial
governments in the seventeenth century tacitly condoned the circulation
of (partially low-weight) copper coins, produced by small principalities
and noblemen in border regions.

This example shows that supply and demand for specific denomina-
tions are not automatically in equilibrium. The more unified Burgundian
Netherlands and the Kingdom of the Netherlands were apparently more
willing to act than the decentralized Dutch Republic, in spite of its very high
overall level of monetization. An intermediate solution was the responsibility
taken directly by the county of Holland in 1702, followed by other provinces
(asking for orders from their towns), for minting small change: solid copper
duiten, and in 1738, silver pijlstuivers (equal to eight duiten). How badly these
pijlstuivers were needed became apparent in Amsterdam in August of that
same year. Workers, aware of the new coin, no longer accepted the old inferior
wapenstuivers and their protests culminated in the occupation of the town
hall. They only could be persuaded to leave after a number of them had
been offered sums of ten to twenty new stuivers. Occasionally the stuivers
were not sufficient, such as when the Republic's richest banker, Henry Hope,
ordered new scheepjesschellingen (six-stuiver pieces) in order to make weekly
payments to the men who were building his mansion “Welgelegen” near
Haarlem.31

The Low Countries were already deeply monetized in the sixteenth
century, and problems concerning the supply and demand of small change
had been mastered well.32 The occasional problems that arose in the Dutch
Republic stemmed from its political structure and economic concepts, which
determined who was responsible and which instruments were available. As a

30 Ibid., p. 208; at about the same time the English Statute of Artificers (1563) was prepared.
32 Echoing Volckart, “The Big Problem”, in reaction to Sargent and Velde, The Big Problem.
result, solutions were always inadequate, to the extent that in the second half of the seventeenth century, unofficial coins had to be allowed into circulation – just like in mid-seventeenth and again in late-eighteenth-century England.33

France

Before we can speak of a (Northern or Northwestern) European pattern, it should be supplemented by other case studies. This is not easy, because research on what might be termed the social history of coin circulation has only just begun.34 Here, I can only briefly discuss the implications of some estimates for France, the largest country of Western Europe and as deeply monetized as the Netherlands around 1885, when the DMLs stood at 8 (see Table 11.1).

Between 1789 and 1810, a number of coin reforms took place, mainly for ideological reasons. They combined a desire for science-based politics with a demand for in-depth reports on the current circulation of the coins. These reports show DMLs of 11 up to 17 for the revolutionary years.35

In contrast to the situation in contemporary England, the French state took responsibility for the circulation of small change, but it should be noted that this was not a direct consequence of the French Revolution; it had much deeper roots. France’s DML was already 12 in 1789. Although I do not know of earlier precise coin production figures, the introduction of the copper one and two denier tournois under Henri III (1551–1589) was a particularly great success, apparently satisfying a huge demand, not only from townspeople, but especially from small peasants and day labourers.36 These denominations, coined in enormous quantities, were very small indeed, as hourly wage levels then stood at one sou or twelve deniers.37 In addition – comparable with the Dutch Republic somewhat later – adjacent small principalities started massive production of similar coins, which were circulated widely.

33 Muldrew, “Wages and the Problem”; Selgin, *Good Money*.
36 Cf. Béaur et al., “Northern France”.
37 In the late sixteenth and seventeenth century, hourly wages were one rather than two sous, see, e.g., Goubert, *Cent mille*, pp. 333-340, and Le Roy Ladurie, *Les paysans*, p. 123. This coincides well with the end of the denier tournois after 1650 and of the double tournois after 1700.
Conclusions for Western Europe

First, deep monetization as a response to the commodification of labour – initially predominantly in the guise of independent producers, then gradually shifting to paramount wage labour – started in England around 1300, spread to the Southern Netherlands in the late Middle Ages, to the rest of the Low Countries and possibly France in the sixteenth century, and to other parts of Western Europe at the same time or later on. Further to the east, variations in unfree labour had an effect on the circulation of small change, as recently demonstrated for eighteenth-century Russia. Serfdom was the norm, and only noblemen could own and employ serfs. Thus, non-noble industrialists there needed labour, but were not allowed to own serfs. Alternating legislation increased or diminished the possibilities for bourgeois entrepreneurs to hire serfs as paid labourers, and these fluctuations were large enough to directly influence the demand for copper coins. In addition, non-noble entrepreneurs are documented to have requested that the state authorities provided more copper coins in order to pay wages.

Second, once achieved, deep monetization is not necessarily sustainable. Apart from shifts in labour relations leading to variations in demand for small change, the supply may vary along with the quality of state institutions responsible for the output of small change. When governments fail in this respect, like England between 1350 and 1800 and the Dutch Republic between 1625 and 1725, other suppliers may offer themselves from inside or outside the polity. Alternatively, credit relations may expand or contract accordingly.

Deep monetization and wage labour in Asia, 1000 to 1900

For two large areas in Asia, it is also possible to reconstruct the relationship between deep monetization and shifting labour relations over several centuries: India and China. For India, most evidence is available for the nineteenth century, but to a certain extent it is possible to go back to the Middle Ages. For China, circulation figures go back much longer in time, but information about labour relations still is very meagre for most periods.

38 Possibly also in Northern Italy (although not discussed here).
39 Bacherikov, “Monety i zarplaty”. Information kindly provided by Bacherikov’s supervisor, Gijs Kessler. Cf. Florén, “Social Organization”.
40 For an example from late medieval Normandy, see Cardon, “Les petites”.
However, both cases enable us to put the results reached for Europe to the test in order to see whether we may speak of Eurasian instead of (West) European patterns.

India, 1200 to 1850

Coinage – and what is more, coinage of small denominations – in Northern India, goes back 2,500 years and its use is therefore as old as in the Eastern Mediterranean or China. Quantification is difficult and is, accepting many uncertainties, only possible from around 1200 onwards. What is clear, is that there was a first acceleration of small-value coinage (copper, billon, and silver coins weighing less than 5 grams) in the period from 1275 to the mid-fourteenth century. Because these denominations hardly equal hourly, but instead daily wage levels, we have to speak of medium, rather than of deep monetization in Northern India as a whole by 1300.

Firoz Shah, the Delhi Sultan from 1351 to 1388, made a serious attempt to strike more copper denominations, which is also confirmed by his court historian, Shams Siraj Afif:

The thought crossed Firoz Shah’s august mind that if poor people bought something from the market and a balance of half or a quarter jital was left of the amount paid, the shopkeeper would not have the quarter change. If the buyer let it go he would lose money. If he demanded it from the shopkeeper how could he be paid when no such coin existed? In the end, the balance due to the buyer would be left with the shopkeeper. For these reasons, the transaction between the buyer and the seller would drag unnecessarily. Sultan Firoz Shah gave orders for the striking of a half jital coin called \( \text{adh} \) [literally “half”] and a quarter jital coin called \( \text{paika} \).

A great leap forward towards deep monetization was seen in the short-lived Suri dynasty in Delhi (1538-1554) and under Akbar, the first Mughal Emperor from 1556 to 1605. Billon (low-base silver) coins were replaced by copper “dams” (initially called paisas), as well as fractions of a half down to a tenth of a paisa. Whole and half dams were struck in immense quantities in a great number of mints over many years consecutively. Especially the half dams and lower fractions may be considered as small change (smaller fractions

\[\text{Lucassen}, \text{"Deep Monetization, Commercialization and Proletarization"}\].

\[\text{Haider}, \text{"Fractional Pieces". For the actual coins meant, see Goron and Goenka, The Coins, p. 66. For frequency estimates, see Lucassen, "Deep Monetization".}\]
were also made, but far less frequently). As craftsmen earned two dams per day or more, this suggests that a paisa equalled two to four hours work for craftsmen, and half a dam, one to two hours. The number of copper coins in Akbar's probate inventory even suggest a DML of 12 for the Mughal Empire around 1600. One of the reasons for this unexpectedly high figure may be the lack of small silver coins, which caused copper ones to be used instead. Deep monetization must anyhow have made an impressive jump in the second half of the sixteenth century.

The picture in the seventeenth and eighteenth centuries becomes less clear. The production of copper coins in the seventeenth century definitely decreased, but the usage of cowries and to a certain extent bitter almonds became more widespread. On the other hand, nominal wages rose, as a consequence of which, prevailing copper coins equalled hourly wages more than ever before. According to the VOC merchant Francisco Pelsaert, artisans in Surat and Agra in the years 1620-1627 earned five to six takkas (or paisa to the value of a thirtieth of a rupee) per day. As other wage data for the seventeenth century suggests, this entailed a substantial increase after Akbar, but it is very likely that prices rose as quickly, because Pelsaert comments: “They know little of the taste of meat. For their monotonous daily food they have nothing but a little kitchery, made of green pulse mixed with rice, which is cooked with water over a little fire until the moisture has evaporated, and eaten hot with butter in the evening; in the daytime they munch a little parched pulse or other grain, which they say suffices for their lean stomach.”

44 See Lucassen, “Deep Monetization in Eurasia”.
45 See also hereafter the discussion of high deep monetization levels for China. For the low production of silver rupee fractions, see Prakash, “Long Distance Trade”, p. 337, and cf. Habib, “A System”, p. 145 (“It would therefore seem that everything that an ordinary person might buy in an ordinary North Indian city during Abar’s reign would have its price fixed in copper money. Only luxury and export items would need payment in rupees.”). See Haider, “Fractional Pieces”, pp. 93-94, for a different view.
47 Kolff, and Van Santen, De Geschriften, p. 309 (wage; cf. 311 for servants 3-4 rupees per month, which at 30 paisa per rupee would mean 3-4 paisa per day) and p. 117 (exchange rate); cf. much less favourable exchange rates of 57-58 dam/paisa per rupee in these years: Prakash, “Long Distance Trade”, p. 343.
48 Kolff and Van Santen, De Geschriften, p. 309; Haider, “Fractional Pieces”, p. 91 (quoting the English translation by Moreland and Geyl). See also De Zwart and Lucassen, “Poverty or Prosperity”. 
When the copper content of the dam was reduced by a third in 1663 we hear of the reaction of the workers in Ahmedabad:

The administrator of buildings, gardens and other workshops of Ahmedabad City represented to the Celestial Court that [...] workers have declined to accept the new coins in place of the old, saying that the difference between them is in the order of 10:15. When the intelligence of this matter reached the August Presence [Emperor Aurangzeb], an order was issued to the finance minister of the province [of Gujarat] that, in the ratio 10:15, the daily wages should be paid at the rate of one and a half tanka instead of one tanka.49

Such reactions, demonstrating that labour was paid in cash as well as illustrating the agency of the receivers, may be shown with a few more examples. The first dates from 1797, when the spouses of Bengal artillery soldiers fighting overseas in the Mysore War against the Tipu Sultan vehemently but successfully protested against the mode of payment of their husbands’ salaries. Left behind with their children in the barracks of Dum-Dum, just south of Calcutta, they depended completely on these monthly allowances. One day, the officer in charge was unable to find enough silver coins and tried to pay them in gold. As soon as the wives of the gunners and their assistants (lascars) found out that they would consequently receive less copper money from the money changers (shroffs), they turned to the poor officer who reported:

I could not even with some degree of force, prevail on the women (those of the Lascars in particular) to receive their allowances, as I received them from the Pay Office, as their tickets were made out of Sicca Rupees, and they insisted on receiving the pice according to the bazar currency [...] Every argument I used, could not prevail on the people to believe that I had not taken a Dustoor for my own trouble, in the case, my quarters were daily surrounded by the amounts of hundreds [...] who became clamorous and were so grosse [sic] in their abuse, that I was often obliged to appease them by ordering the Sircar, and Shroff, to pay them the difference.50

The position of the shroffs was very strong indeed, and the British were unable to circumvent them. In 1810, for example, the Madras government felt compelled to form an official “Establishment of Shroffs” at the presidency. “If

50  Lucassen, “The Logistics”. For the payment logistics of Indian Maratha troops, see Lingen and Lucassen, “Warfare”.
you can’t beat them, join them”, must have been the consideration. However, this concession had its price. At an annual expense of the enormous sum of 240 pagodas, this institution voluntarily agreed to reduce exchange rates and standardize them.\footnote{Lucassen, “The Logistics”, p. 362.} This may have helped for a while in Madras, but not always and not everywhere. Twenty years later, an engineer in charge of the building and maintenance of irrigation canals north of Delhi, having been sent there from Calcutta with boxes full of silver rupees, was confronted by workers who wanted to be paid only in exactly specified local copper coinage. Thus compelled to exchange his silver into copper, he complained about the \textit{shroffs} that “the price of pice is always raised when my works commence”. He even planned to go directly to the mint masters who he found out made the coins, but his masters in Calcutta frustrated this plan by ordering him to use instead the newly minted official colonial coins. The creative engineer lost his case, notwithstanding his reply that:

\begin{quote}
The supply of pice ordered up will be utterly useless to me on the works without a special regulation of Government making the pice of the Calcutta mint the only legal copper coin throughout the Companies’ territories. The pice in question cannot be introduced by an individual and will only subject me to infinite trouble and annoyance as no one will willingly take pay from me in a coin not in general currency.\footnote{Lingen and Lucassen, “Copper Circulation”.}
\end{quote}

Another example of workers’ protests against malpractices in wage payments dates from the navvies, maintaining and repairing the Sonipat division of the Western Jumna Canal north of Delhi in 1849. When they found out that their British overseer had systematically embezzled part of their earnings, they became so “clamorous for their pay” that they lodged an official complaint with the executive superintendent, Lieutenant A.D. Turnbull. The lieutenant took action against his compatriot, stating: “It is impossible for work to be carried on while such irregularities exist. It is not to be expected that labourers will come to our works if they are not paid up regularly, but kept for long periods in arrears.” Thus the British felt compelled to investigate the case by an official Court of Enquiry at the barracks of the 42\textsuperscript{nd} Regiment, Native Light Infantry, in Delhi, from 20 June until 12 July 1849.

Several foremen and workmen had to testify, which went reasonably well considering that they were illiterate. From the court case, for which 232 questions and answers were recorded, we not only learn precisely how the
embezzlement had been organized, and that the accused were found guilty and therefore “wholly untrustworthy and totally unfit to be retained”, but also importantly that the wages were paid out exclusively in one particular coin, copper takkas, most probably imported from Alwar, 200 kilometres south of the canal.53

Copper coin production in India was heavily dependent on Japanese and European imports. Production figures for Indian and Nepalese copper mines are very scarce, but overseas trade statistics show on average constant figures for Japanese copper imported by the VOC in Coromandel and Bengal, and rising figures for European copper imported by the EIC in Madras and Calcutta.54 Combining all the data on nineteenth-century circulation levels, eighteenth-century copper imports, and fluctuations in intensity from the thirteenth century onwards, I am tempted to suggest that India underwent a first phase of deep monetization in the sixteenth century, which could barely be maintained in the seventeenth, returned to lower levels in the eighteenth, and surged to a second phase of deep monetization around 1800. This was then maintained throughout the nineteenth century.

**Indian deep monetization levels in the nineteenth century**

For the beginning of the nineteenth century more quantitative data at last becomes available, as the English had more grip on their dearly won new colony. We know that in the nineteenth century, proletarianization levels remained stable in the Deccan (about which there is more information below). If we assume that this trend is valid for India as a whole, we might expect that, all other things being equal, demand for small currency at the beginning of the century was the same as at the end of it. However, what about the supply side: the output of Indian mints around 1800? Most copper coins at the time were probably produced in mints under Indian control. The English wanted to replace these with their own coins, first completely in Indian (Persian) script, later with Latin script added on. In 1847, the collector of the Delhi district wrote that he needed 50,000 rupees “for the use of his district to replace the native pyce”, partly in order to pay the sepoys.55 The efforts at replacement only became successful in the third quarter of the nineteenth century, and even then a number of “native” mint

53 In addition, coin transport over large distances involved great risks of loss and robbery; see Lucassen, “The Logistics”, pp. 368-382.
54 Shimada, *The Intra-Asian Trade*. For details, see Lucassen, “Deep Monetization in Eurasia”.
houses remained active, some of them until India’s independence in 1947. This story demonstrates that the British institutions in India were less strong than the superpower of the time had wished for.

The colonial copper coin output for India in the first half of the nineteenth century already amounted to more than thirty-one million rupees, while a number of native mints were also still very active. Given the lower population figures than half a century later (see below), this points to deep monetization already existing at the beginning of the nineteenth century. These impressions find some corroboration in the more precise figures for the district of Benares. In 1808, the number of (copper) pice required for circulation in that district was estimated at 700,000 rupees, or roughly fifteen pice per capita. As the daily wage of a labourer was four pice, this would imply that the district as a whole was on the brink of deep monetization, especially if we include the number of cowries still circulating at the time in Bengal.

There was certainly a demand for these copper coins, as demonstrated by a reconstruction of labour relations in the Deccan in the 1820s – the earliest data so far for India available in the Global Collaboratory on the History of Labour Relations – which are not substantially different from the 1901 outcomes for about the same geographical area.

### Table 11.2 Primary labour relations (%) in three collectorates in the Deccan in the 1820s

<table>
<thead>
<tr>
<th>Labour Relations Category</th>
<th>Khandesh</th>
<th>Poonah</th>
<th>Dharwar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
<td>total</td>
</tr>
<tr>
<td>1 not working</td>
<td>15</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>2 affluent</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5 working in the household</td>
<td>0</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>7 slaves</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

56 More extensively in Lucassen, “Deep Monetization in Eurasia”.
59 Lucassen and Stapel, “Shifts”. Following this, data for neighbouring Goa since the late 1830s (ongoing work in the framework of the Collaboratory with Paulo Mattos, Lisbon) has confirmed this impression.
After all these estimates, we may end with the earliest reliable reconstruction of the total money supply of India, which dates from around 1880. At that time, gold coins were used only for hoarding, for export, or in order to be melted down for ornaments. Silver coins were used for paying rents and taxes, and for petty trade transactions. The ordinary person, however, saw only the lowest possible denominations in copper. Most surprisingly, these copper coins, with an estimated value of 48.1 million rupees – or a fifth of a rupee (three annas) per capita – expressed in hourly wages of a quarter of an anna, resulted in a DML of no less than 12.

This comparatively high level may need some qualification. Wages outside agriculture may have been slightly higher than a quarter of an anna, and working days may have been longer than eight hours, but even so the result would be a per capita copper circulation of more than five times the hourly wage. Further, the actual circulation of copper coinage is likely to have been higher, because the estimates may very well exclude both copper coins produced before 1862 – the first coinage under the British Crown – and the numerous humble “native coins” that continued to circulate. Nevertheless, there are other reasons to suppose the conclusion that India was already deeply monetized by 1880 may be not too far off the mark. A recent reconstruction of labour relations for the subcontinent in 1900 shows levels of commodification (31.2 per cent self-employed and 12.1 per cent wage labourers) that are not very different from contemporaneous outcomes for European countries.

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60 More extensively in Lucassen, “Deep Monetization in Eurasia”.
62 Lucassen and Stapel, “Shifts”, Table 23. For Europe, see cross-sections 1900 for Italy, Spain, and the Netherlands on https://collab.iisg.nl/web/labourrelations.
Conclusion: India from 1200 to 1900

After a first attempt in the fourteenth century, Northern India is very likely to have been deeply monetized in the sixteenth century. After possible dips in the seventeenth and eighteenth centuries, it was certainly back to similar levels in the early nineteenth century, which goes for the entire subcontinent in the later decades of the century. These are certainly unexpected results for a subcontinent that is hardly ever considered a candidate for serious economic growth. Although research in this field still is lacking, the ubiquity of paid labour (both independent and waged) and the insistence of wage workers for payment in specific types of small change may be termed remarkable. This not only points to much greater agency of Indian wage labourers than expected, but also to small circulation circuits per type of coin before the middle of the nineteenth century. Political disunity may offer one explanation, but that is not very convincing if compared with Europe at the same time. Coin production might have been prolific, but state institutions in India hardly ever seem to have taken the responsibility for exchange ratios between silver and copper, leading to an enormous amount of power held by the intermediate layer of money changers. Consequently, workers tried to avoid exchange costs by insisting on the method of their wage payments. At the same time, this must have slowed down the velocity of money, which might point to an actual decline of deep monetization levels, especially during the period of decentralized coin production between around 1750 and 1850.

China

Like India, China has a tradition of small copper coin circulation going back well into the fourth century BCE. What is more, and unlike India, China’s well-developed central polities, characterized by much more continuity, were able to produce these small copper “cash” coins centrally and – important for us – have kept production records since the Han (206 BCE to 220 CE). These show that average annual production of five to ten cash coins per capita was quite feasible, but also that in some periods many more were brought into circulation, leading to impressive stocks. Two periods stand out at once: the Northern Song (960 to 1126), with an annual production

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63 For workers’ agency in India in general from the late eighteenth to the nineteenth century, see Lucassen, “The Brickmakers’ Strikes”, and Lucassen, “Working”, pp. 19–56.
64 Lucassen, “Deep Monetization in Eurasia”.
in the late eleventh century reaching over fifty cash coins per capita, and the Qing (1644 to 1912), with ten to twenty. The latter may seem much less impressive than the former, but the difference is smaller than one might think. On the one hand, the Song coins also circulated in Japan, which for centuries depended fully on imports of small change from China, and on the other, in the eighteenth and nineteenth centuries the stock of officially cast coins was supplemented substantially by illegally made specimens from all sorts of sources (including Vietnam), which demonstrates how great the demand was.

In the following paragraphs, I tackle two aspects: the methods of payments to workers, showing as far as possible the importance of cash coins for the functioning of the labour market, and the relationship between shifts in stock and shifts in labour relations. By way of conclusion, I discuss the comparability of the Chinese figures with those from other parts of the world.

The practice of daily payments in cash coins is abundantly testified to in official and unofficial written sources. Whether cash coins originated from castings in official mints did not matter, as long as they were accepted at the market and in shops. The government only intervened in grave cases of forgery, such as in 1794, when it closed down the Old Crow’s Nest, a complete village of forgers in the mountainous border region of Sichuan and Guizhou. It had been active for eight years and in its heyday looked like a small town.65

Apart from the abundant availability of cash coins during most of the Qing period, what enhanced their use was also the accessibility of the courts for litigation cases regarding payments. Christine Moll-Murata found litigations in Baxian (Sichuan), over sums as low as 350 or 420 cash coins, at the time good for purchasing respectively 10 kilograms of rice or 2.5 kilograms of pork. Equally important was the likelihood for wage earners to win a case. It demonstrates, according to Moll-Murata, “that to a certain extent, the ‘small people’, who in their plaints and testimonies were required to refer to themselves vis-à-vis the authorities as ‘ants’, harboured the hope that they would get their cash and acceptable working conditions by virtue of adjudication from the representatives of the state”.66

Hope could also spring from collective action, especially by craft guilds. In extreme cases, strikes would break out. The most famous one in this period is possibly the strike in one of the two large (more than 3,000 workers in

65 Cao and Vogel, “Smoke on the Mountain”.
total) metropolitan mint houses in Peking in 1741. Because of illegal wage
deductions and bribery by their foremen, focusing on incorrect exchange
rates between copper and silver money, a number of industrial actions took
place. On one occasion, the workers in one of the factories climbed onto a
mound within the mint, clamouring and shouting, and throwing bricks and
tiles, even after troops had arrived. After several rounds of blanks were fired,
the throwing stopped, but not the shouting. The prefect had the ringleaders
punished, but at the same time requested that the emperor punished the
foremen as well. It is also very probable that the workers received compensa-
tion for the illegal deductions and frauds committed by their foremen.67

Methods of payment really mattered, and this was widely recognized.

The impressively deep monetization levels for the Song period are perhaps
less surprising than those under the Ching. Kent Deng quotes the famous
dictum by Eric Jones that Song China was just a “hair’s breadth” away from
a genuine industrial revolution and adds: “Counterfactually, if the stand-off
between the nomads and the Songs had continued for another 200 to 300
years, China might indeed have become a capitalist economy.”68 Another
indicator for the growing importance of labour markets is the number of
major cities, including the port Quanzhou, with a population of 100,000
households in 989, and Hangzhou – the capital of the Southern Song – with
550,000 inhabitants in 1165 and 1,240,000 in 1173.69

It also may be significant that around 1050, compulsory work for the
Chinese state was converted into a tax, which had to be paid in cash. This
suggests that self-employed peasants and craftsmen as well as wage earn-
ers became the new taxpayers. From the twelfth century onwards, far
fewer cash coins were produced, and Von Glahn emphatically states that
bronze coin circulation virtually stopped for two centuries.70 The partial
replacement by paper money would not have been useful for regular wage
payments or advances to craftsmen, and certainly not for their shopping. In
the fifteenth century, the increase of private coinage brought some relief.
The rise of “bond servitude” in late Ming China implies a shift from free to
unfree labour in those cash-ridden centuries.71

As they did during the Song population growth, the extension of labour
markets and deep monetization went hand in hand under the Qing. This

67 Vogel, “Unrest”. For mutinies caused by contentious modes of payment, see Kaske, “Silver”,
p. 378.
68 Deng, “Imperial China”, p. 326.
69 Ibid., pp. 325-326.
70 Von Glahn, Fountain of Fortune, pp. 39-56.

distinctive pattern of monetization intensity becomes understandable if we link it to shifting labour relations, in particular those described in detail by Christine Moll-Murata in the framework of the Global Collaboratory on the History of Labour Relations.72 Wage labour became increasingly important, especially from 1780 onwards, in various industrial sectors such as printing, porcelain making, and shipbuilding.73

China stands out for maintaining the circulation of one specific coin denomination, the “cash” for more than 2200 years. It is apparent that a large increase in monetization levels took place in the eleventh century, followed by a decrease between the twelfth and the sixteenth century, and again an increase in the eighteenth century. Although this periodization is important for the study of labour relations, it is not so easy to answer the question of what per capita stock would represent “deep monetization” as defined in the introduction to this chapter. At first sight, the requirements of “a per capita stock equal to between five and ten times the prevailing hourly wage” are more than fulfilled. However, we should not forget that a substantial proportion of the cash coins did not circulate as individual pieces, but as “small” strings of (ideally) 100 pieces or “big” strings of 1,000 pieces, which compares with medium and large silver coins in the southern and western parts of Eurasia.74 With a few minor exceptions, multiple cash coins were cast and circulated by the state in large numbers only at the times of highest production in the Song and Qing periods. At these times it is apparent that there was a substantial demand for these larger denominations of five, and especially ten and higher cash coins.75 In order to enhance comparability with other polities, it might be advisable to divide the Chinese DMLs by ten.

Conclusion

This chapter shows that for several parts of Eurasia, as a rule the degree to which people participate in a market economy is reflected by the intensity of which medium and small denomination coins are available for circulation. Small denominations best reflect the frequency of exchanges in society and so may be considered the best yardstick of commercialized human relations.

72 Moll-Murata, “China, Taiwan, Japan”. For the Middle Ages, see Von Glahn, Fountain of Fortune, p. 50.
74 As all Chinese cash coins were holed, they could be strung together.
75 For the 1854 issues, in use at least until 1879, see Kaske, “Silver”, pp. 371, 392.
The concept of DMLs is used here as a yardstick for tracing shifts in labour relations. The chapter uses archaeological and other numismatic evidence as a supplement to and an alternative for written evidence of the history of work. It has proven useful for the multi-metal and multi-denominational currency systems that prevailed in the west and the south, but less so in the mono-fractional Chinese system (unless adjustments are made for the usage of cash coins strung together in units of 100 or 1,000 in order to pay larger sums because of the lack of intermediate denominations). Nevertheless, in all cases, shifts in the levels of monetization may indicate possible shifts in labour relations.

Available data for different parts of Eurasia (England, the Low Countries, France, India, and China) show unexpected results (see Figure 11.2): (1) similar levels of deep monetization in Western Europe and South Asia from around 1100 to 1900; (2) similar periods of increasing and decreasing levels overall, but diverging in the seventeenth and eighteenth centuries (an increase in Europe versus a decrease in India); (3) diverging developments between China and the rest; (4) the importance of institutions regulating coin circulation; and (5) the agency of workers if the circulation of the denominations they depend on is endangered.
To a certain extent, these results question accepted wisdom in debates on labour history, but also on the Great Divergence, urbanization, migration, and economic development. Although deep monetization did not automatically and directly follow the introduction of coins as currency, it took place everywhere much earlier than the advent of “modernity” or the “industrial revolution”, and it is certainly not a prerogative of the West.

On the other hand, this institution is not a simple function of the demand for small change, as the supply side in particular is determined by a number of political factors, and therefore this institution can vary and appear somewhat unstable. One alternative for the demand for small change that is not met by sufficient supply is the extension of small credit (not shown in Figure 11.2). Variations in demand and supply explain why the lines in Figure 11.2 sometimes run parallel and sometimes do not.

In this chapter, two explanations have been proposed for the varying levels in deep monetization: first, actual shifts in labour relations, and second, shifts in the modes of payment, independent of such relations. As we have seen in the introduction, each form of labour relations (as defined in the “collaboratory”) involves its own type of remuneration, which is linked to specific methods of payment. Actual shifts of many people engaged in free work to unfree work are likely to diminish the demand for small denominations, whereas shifts from reciprocal work to commodified work will have the opposite effect. Shifts in modes of payment may also occur when the supply of small change varies independently of developments in labour relations. In such cases, intervals of payment, and consequently credit relations, will have to change. Examples of both have been discussed: shifts in labour relations in all the countries analysed here, as well as changing credit relations in England between the fourteenth and the nineteenth century. Other shifts in DMLs still are not well understood (for example, India in the seventeenth and eighteenth centuries).

Explanations for changing levels of deep monetization may be found on the demand side in shifting labour relations (free versus unfree; (de) commodification; independent versus wage labour), as well as in changing practices in frequencies of payment, and thus in the credit relations of workers that determine their power relations.
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