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For the readers of this paper as prepared for Session 115: New approaches to the history of work@, a panel convened by Jürgen Kocka at the International Economic History Congress in Helsinki (August 2006):

This paper is at the same time a draft introduction to a volume of collected essays under preparation. For its contents see the *appendix*. Underlined are hereafter references to the chapters in this book.

The main purpose of both the book and this introduction is to look for new sources for the occurrence and importance of wage labour in periods and parts of the world where we lack sufficiently other sources, or where a fresh view on the occurrence of wage labour would be worthwhile. These new sources are related to the character of the production as well as the specific circulation patterns of currency. The basic supposition is simple: as far as wages are paid in currency, it is possible that currency patterns tell us something about the spread of wage payments and thus of wage labour in general. This attempt fits in the IISH - research programme to extend labour history beyond its traditional boundaries, viz. the AWest@ and the period starting with the Industrial Revolution and Modern Imperialism.

It has to be stressed that this draft is still under revision, so do not quote without the permission of the author: JLU@IISG.NL

Wage is payment for work, mostly in the form of currency. A vast number of scholarly studies have been written about work and about labour (as paid work is commonly called), also historically, and the same goes for the history of currency, in particular in the form of coins. However, the historical relation between these two key concepts, i.e. between the occurrence of wage labour and of currency rarely has been the object of research. This book deals with the question to what extent employers need coins to pay their workforce and consequently it asks for the relation between the spread of wage labour, coin circulation and in the end coin production.

Maybe the best-known exception to the rule that questions of wage labour and of the history of currency are dealt with separately is Peter Spufford's comment upon medieval circulation patterns in Europe which he tried to explain by a contemporaneous example. This - for us so seminal - key passage to the questions discussed here will be given in full in order to stimulate further research in this direction.

Spufford summarizes the process he calls "the commercial revolution of the thirteenth century" as follows: "Until the reappearance of a gold coinage [in that century], large long-distance transactions seem primarily to have been settled in bar silver, if it was not possible for payments to be carried out entirely in paper. The key change therefore must have been an internal one, and I would suggest that the key lies in the relationship between the size of the basic coin available [grossi, gros, groschen or groats] and the consequent number of such coins needed for the most frequent transactions for which coin was necessary, and in the volume of such transactions. I would further suggest that the payment of, and spending of, wages were the key transactions - and even from this I would exclude the vast majority of wages, those annual money-wages paid to the rural labourer, which were supplements to the board and lodging that were the real wages for such people. This leaves the urban wage-earner, the journeyman who received

¹ I would like to thank the following colleagues who at various stages have commented on drafts of this text: Lex Heerma van Voss, Marcel van der Linden, Arent Pol, Helen Wang, and Jan Luiten van Zanden.

day-wages, possibly actually paid by the day, although more probably by the week, the peripatetic wage-earner such as the building-craftsman or labourer, who moved from job to job and whose wages were in terms of days worked, as were the seasonal labourers who performed such functions as helping to gather in the harvest, and the soldier whose pay was similarly reckoned by the day. Among these the urban wage-earners and possibly the soldiers seem to have been of critical importance. The growth of towns or armies beyond a certain point meant a need for coins of the right size to be readily available for the payment and spending of wages. [...] One might cite the modern analogy of the [L=pound] 5 note. In 1950 average, gross, weekly pay in Britain was [L] 7 10s. 5 d. And over three quarters of British wage-earners had weekly after-tax take-home pay between [L] 3 and [L] 10. The [L] 5 note was then still a rare denomination. Under 400,000 were in circulation. In 1964 the average, gross, weekly pay-packet was [L] 19 11s. 9d. And over three quarters of British wage-earners had weekly after-tax take-home pay between [L] 10 and [L] 40. The [L] 5 note had become common. Over 1000 million were in circulation. In the 1960s the [L] 5 note was of some use to ordinary wage-earners when it represented under a third of the weekly, take-home pay. In the 1950s it had not been, when it represented over half of the weekly, take-home pay."²

The cogency of this quotation makes it even more remarkable that this relation has been researched so rarely; If only because of the worldwide evidence of wage payments by means of coins for over two and a half thousand years. Apparently two different academic traditions - labour history and numismatics (and monetary history) - so far have hardly felt the need to exchange views. Leaving the reasons for this remarkable fact aside, this book attempts to bridge this gap. It does so by offering a wide range of evidence, covering a period of more than two thousand years and most parts of the world. This approach aims at formulating first proposals about the nature of the relation between wages and currency. In this introduction I first want to give some brief attention to the two key concepts and subsequently to summarize the results of the project in the form of a historical account; finally I will summarize these results in a more theoretical form and come up with some suggestions for further research.

Work

The American social scientists Chris and Charles Tilly give the following general definition of work: "Work includes any human effort adding use value to goods and services. However much their performers may enjoy or loathe the effort, conversation, song, decoration, pornography, table-setting, gardening, housecleaning, and repair of broken toys, all involve work to the extent that they increase satisfactions their consumers gain from them. Prior to the twentieth century, a vast majority of the world's workers performed the bulk of their work in other settings than salaried jobs as we know them today. Even today, over the world as a whole, most work takes place outside of regular jobs. Only a prejudice bred by Western capitalism and its industrial labor markets fixes on strenuous effort expended for money payment outside the home as 'real work', relegating other efforts to amusement, crime and mere housekeeping."³

Unavoidably, the emphasis of this book will be on work outside the home because work by one member of a household for another member of that same household rarely is paid in currency. Therefore it is good to repeat the attention the Tilly's draw to housekeeping as real work: "Despite the rise of takeouts, fast foods, and restaurant eating, unpaid preparation of meals probably constitutes the largest single block of time among all types of work, paid or unpaid, that today's Americans do." If this is so, we may easily apply this statement to the rest of the world, now and in the past.⁴

Concentrating now on work outside the household and outside self-subsistence we have to discuss the different forms of remuneration or compensation that exist for the performance of work. This

² Spufford 1988, 235-236.

³ Tilly and Tilly 1998, 22-23; cf. Van der Linden and Lucassen 1999, 8-9.

⁴ Cf. also Van der Linden 1997, 519.

compensation in the form of wages is not only a remuneration for work that has been finished, it is as well an incentive to perform new tasks. The Tillys distinguish three different types of incentives: besides remuneration also commitment and coercion. Besides, none of the three operates on its own. One is always dominant but the other two never are totally absent.⁵ Here we will have to concentrate on compensation. Coercion will come back later on because the choice between compensation and coercion as dominant work incentives has major consequences for the demand for means of exchange between those who work and those who have ordered or asked them to do so.

Wages

Free labour can be defined as the hiring out by a person (the worker) of the right to use his or her labour power for a limited time to another agency.⁶ Thus, free labour presupposes compensation. According to Van der Linden the first documented indications of wage labour show four basic variants.⁷ The first form consists of casual labour, especially in agriculture, but also in other occupations like building and lumbering. From the old Babylonian Empire c. 1700 BCE we know of labour contracts made before the harvest between employers and groups of harvesters in which wages are expressed in silver. But also wages in kind have been laid down in contracts.⁸ Another form of hiring casual labour was done on daily markets as is well known from the parable about the workers in the vineyard in Matthew 20. The second form of early wage labour consists of artisanal work. The third consists of military service, documented first in Egypt circa 2300 BCE and from Classical Antiquity everywhere in the Old World from the Mediterranean in the West up to China in the East. For many ages mercenaries formed the largest group of wage earners. The fourth group of wage labour is possibly less old than the other three and is represented as payments by artisans to their journeymen or apprentices. Still, according to Van der Linden, for a very long time free wage labour was mainly temporary, coexisting with unfree labour and self-subsistence production. Economically free and unfree labour are perfectly compatible with each other, and only under the influence of non-economic influences has free labour prevailed under modern capitalism.

Currency in the form of coins

As is well known the usage of coins dates only from circa 600 BCE. Consequently, for a period of some two thousand years the system of wage labour has functioned without the possibility to pay wages in the form of coins. Although we are used to a situation in which money and prices are measured in units of precious metals, it is also very well possible to do this in units of commodities such as a basket of rice, a roll of silk, a moulded block of salt, or rare cowrie shells.⁹ We have already seen that in old Babylon most wages were paid in kind, in particular in the form of agreed amounts of grain and also other foodstuffs,

⁵ Tilly and Tilly 1998, 73-75.

⁶ Van der Linden 1997, 502 where he opposes Marx' illogical definition of a "temporary sale of labour power" and his treatment of labour as a commodity. Van der Linden quotes Eldred and Hanlon: "The concept of exchange, however, is not adequate to the relation between capitalist and labourer. The exchange of commodity for money is the reciprocal and total surrender of commodity for money and money for commodity [...] With the hiring of labourers, however, the relation is not simply the surrender of something for money".

⁷ Van der Linden 1997, 507-510.

⁸ Van Dijk 2001, 42 [VERVANGEN DOOR Kehl 1950-1951 + Leick 2001]

⁹ Chaudhury 1986, 64; for cowrie shells see Johnson 1970. A sophisticated discussion of definitions and approaches is to be found in Einzig 1949, 319ff.

although also sometimes in the form of precious metal. Later on, when coin had become available, we know of many situations in which wages were paid partially in money and in kind.¹⁰

Coins, i.e. means of exchange in the shape of pieces of metal of a guaranteed form, content and weight, came into use - apparently independently of each other - at about the same time in three distinct parts of Asia, viz. the Eastern Mediterranean (c. 600 BCE), China (c. 500 BCE), and Northern India (c. 400 BCE). Technically there were striking differences but these cannot conceal the remarkable fact of this near-simultaneous invention in three centres of culture. In China coinage started by casting bronze and copper pieces, in India by putting different small punches on a piece of silver, in Asia Minor by striking the even more precious electrum (a naturally occurring alloy of gold and silver) first with one die and later simultaneously with an obverse and reverse die. From these three centres this invention¹¹ spread over the world. Only in the twentieth century, after a process of dissemination which took twenty five centuries, even the remotest corners of the world were reached. At the same time currency often had taken the form of paper money and recently most payments are done electronically. This diffusion process was by no means smooth or linear, to the contrary as e.g. the near-disappearance of coins from early-medieval Europe witnesses.

Coins (and paper money) can be used for five basic types of payment¹²: in exchange for trading goods, for consumer goods, for the usage of land or housing (in the form of rent), for state protection (taxes) and for the performance of work or services (wages). In all these types of economic transactions for the sake of convenience, ideally, as few as possible single pieces have to change hands. This entails valuable pieces in wholesale trade and small ones in petty commodity or retail trade. In between are the pieces best suited for the payment of rent, taxes and wages.

However, many wholesale trade transactions are too big for a convenient use of coins, even the most valuable. Therefore we wish to underline that the function of coins in wholesale trade is less obvious than often assumed. International and long distance trade involve such large sums that from the beginning easier and in particular less risky alternatives have been developed. For large sums bullion (often bar silver¹³) and ingots could be and were used but these still had to be shipped. This could be avoided by using bills of exchange, deposit and giro banking which even predate the use of coins¹⁴ but in its modern form in Western Europe date from the twelfth century and by using cheques from the fourteenth century. Only the ultimate imbalances were settled by movements of bullion. For the rest just enough couriers were needed in order to carry bills of exchange between banking places.¹⁵

Similar devices were known in the Muslim world from the tenth century onwards and India from before the sixteenth century in the form of "hundi's" (bills of exchange)¹⁶ and from the seventeenth century in Japan (Shikano, Chapter 5).¹⁷ In particular the intercontinental trade could not do without ingots nor

¹⁰ E.g. Reekmans 1953, 17 for Ptolemaic Egypt; Van Dijk 2001 [VERVANGEN] for old Babylon; Einzig 1949, 250-251 for India 4th century BC; Gupta 1993, 41 for 10th to 13th century AD South India.

¹¹ I use 'invention' here in a shorthand way, fully accepting Einzig's warning: "It is important that economists writing on the subject should duly realize that institutions such as the division of labour, or private property, or money, are not invented by some genius, lazy or otherwise, on a dull Sunday afternoon." (Einzig 1949, 353)

¹² Apart from the function of a means of payment which is central to my argument, coinage also performs the functions of money, viz. a standard of value, a mechanism of exchange, and a store of wealth (cf. Rihl 1996, 105).

¹³ Cf. also Genesis 23, 16 for the purchase of land.

¹⁴ Einzig 1949, e.g. 209-210 (Egypt), 215 (Assyria and Babylonia).

¹⁵ Spufford 1988, 2, 209-224; Spufford 1995, 319-320. [to be read: J.W. Bosanquet, *Metallic, Paper and Credit Currency 1842*] [700BC already bank in Babylon! Liever modern!]; Spufford 2006, 15, 25-29, 33.

¹⁶ Spufford 2006, 38; Subrahmanyam 1994, 31-35.

¹⁷ [JlvZ nog vragen naar Chinese plaats die de equivalent was van de A=damse wisselbank.]

bills of exchange, witness the Dutch and English East India Companies in the seventeenth and eighteenth centuries as well as the India-China trade at the same time.¹⁸ We might summarize the usage of large denomination coins (and maybe also ingots) in trade under the following conditions: if bills of exchange, giro etc. are absent or impossible, or where large accounts have to be settled finally, or where individual buyers occasionally purchase costly goods from big merchants. Rihll e.g. supposes that the adoption of Lydian coinage, fabricated from the precious alloy electrum, by the Greek world in the sixth century BCE enabled the strong growth of the slave trade.¹⁹

As is the case in wholesale trade not all means of exchange meet the requirements of wage payments. In order to play a useful role in the payment of wages, currency has to meet three requirements:

- it must contain enough different denominations in order to make precise payments possible because a wage earner cannot be expected to have enough small change available, like e.g. a shopkeeper;
- wages should not be paid in too large quantities of coins because this is inconvenient for the employer and the worker alike;
- wages should neither be paid in sums containing a minimal number of coins as this will not be appreciated by the worker and the shopkeeper alike because in this case the latter is expected to have nearly unlimited supply of small change.

To sum up: not all coins are equally useful for all economic transactions, including wage payments. If certain conditions are fulfilled they can fit perfectly in the needs of the labour market. As this market existed already long before the invention of coins, it is even possible that rather the needs of petty trade and the labour market, than those of the wholesale trade ultimately triggered the widespread use of coins.

Wages paid in coin

What happened when around 500 BC so to speak the two inventions met - the much elder wage labour and the newly invented coinage which replaced elder mediums of exchange (barter) and at the same time elder standards of value? Basically two solutions seem to have arisen. In China a solution was found by the adoption of a small coin that easily could be combined to a bigger value. In India and the Eastern Mediterranean the opposite solution was adopted: the coinage of denominations of a relatively expensive basic coin. In summary: for daily use in China the public had the task to join cheap coins, in the countries to its west to split expensive coins. These systems developed within a few centuries after the first appearance of coins.

The earliest metal money in China was probably weighed bronze.²⁰ As this practice grew, it became more convenient to cast specific weights of bronze in specific forms. From this developed in the Warring States period (475-221 BCE) the specific spade- (or hoe-) shaped coins, sometimes with three denominations, and the one-denomination knife-shaped coins. Besides, >ant-nose= money and round coins with a round or square hole, but also cowrie shells circulated, including imitations in bronze.²¹ But developments in metal money were not made in isolation. The Warring States vied with one another for territory and for power, in a period of dramatic innovations, such as the crossbow and mounted archery, meant keeping an army up to date with the latest technology, not to mention the necessity to maintain a

¹⁸ Pol 2001; Gaastra 2002; Perlin 1993, 283-338. Spufford 2006, 38 points to imbalances between Christian Europe, Muslim North Africa and the Levant in the late Middle Ages, which had to be settled by sending enormous quantities of European silver and African gold. Because of the generally unfavourable balance of the Near East with the Middle and Far East, Asuch circumstances were the very antithesis of the more balanced trading conditions in which the bills of exchange evolved.@. Cf. als Idem, 344-349.

¹⁹ Rihll 1996, 89, 104-105.

²⁰ Dang Zhiqiang and Zhou Weirong 1995. For the following I am greatly indebted to Helen Wang.

²¹ Thierry 1997.

constant supply of battle horses. Subtler techniques involved manipulation of prices and freedom from certain obligations in order to attract immigrant populations from neighbouring states.²² The rise of metal money during the Warring States period must be associated with the need to meet the new challenges to old traditions and practices, and probably also with the need to mobilize people and to pay them, either in a military capacity or in a productive capacity.

In terms of the development of Chinese money, the most significant of the Warring States forms of metal money was the round coin with a square hole, with the inscription *banliang* (A half ounce@ or 12 *zhu*). This was the currency of the Qin state, which eventually emerged victorious in 221 BCE. The Qin heartland was in western China, and as the Qin army conquered the other states, so the distribution of *banliang* expanded. From the moment of its supremacy in 221 BCE the immediate concerns of the Qin state were unification and standardization in all areas of life. Construction, standardization of road widths and chariot gauges, currency and many more reforms required substantial military and civilian resources. This would also explain the vast quantities of Qin *banliang* coins that have been found, and which far exceed any earlier finds of coins in metal money in China. Furthermore, unification of the currency rendered other forms of metal money obsolete. These were melted down and recast into *banliang* coins. Weapons were collected in, perhaps also for recycling. In this way, metal supply for coins does not seem to have been a problem.²³

The *banliang* remained the national currency after the collapse of the Qin dynasty (206 BCE) and into the Western Han dynasty (206 BCE - 25 CE). It was replaced in 118 BCE by the *wuzhu* coin, which was essentially a much improved version of the *banliang*: the weight was adjusted from twelve *zhu* in the case of the *banliang* to five *zhu* (or *wuzhu*), and rims were added to increase strength and durability. Cast-bronze round coins with a central hole continued to be made in China until 1912 and in Vietnam even until at least 1933. These coins soon became fiduciary which presupposes strong state power to guarantee its continued use. Although sometimes denominations bigger than 1 *cash* have been cast, the far majority of Chinese coinage for more than two thousand years consisted of the so-called *cash* coins measuring c. 25 mm and of the shape that was introduced in 221 BCE. Characteristic is the square hole in the middle that allows for binding together a certain number with a string. No wonder that next to the *cash* coins other means of exchange were necessary in a kind of double-standard system of which only one part consisted of coins. The other part, normal for trade, consisted of gold and silver ingots, which were widely used up until the twentieth century. Additionally, paper money was invented in Chinese already in the twelfth century.²⁴ For the argument of this book it has to be stressed that from its beginning the Chinese *cash* coin system was very well adapted to the payment of wages (Wang, Chapter 2)²⁵.

To a certain extent the world has known one more mono-denominational currency system where certain shells, in particular cowrie shells which could be found only in the Indian Ocean (mainly near the Maldivian Islands, but also near Madagascar) dominated circulation. Uniform in shape their use as means of exchange is known since c.1000 CE in South Asia and at least from the thirteenth century in West Africa. In the southern part of the latter area where they were in circulation cowries were pierced and strung. In the extensive research of Marion Johnson, however, no indication can be found that cowries were used to pay wages. Besides gold dust that was used in the long distance trade "the most important use [of cowries] may always have been as market currencies, to facilitate exchange within the market rather than to carry from one market to another".²⁶ This seems to be consistent with an economy dominated by subsistence farming and slavery.

²² Elvin 1973, 24-29.

²³ Peng Xinwei 1965, 78.

²⁴ Kuroda 2000, 192; Cribb, Cook and Carradice 1990, 198-203 [better authority to be consulted!]

²⁵ [Cf. Kuroda 2000, 193 and 196, fn. 9]

²⁶ Johnson 1970, 46-47. Early groups of wage earners in West-Africa like colonial troops and police by the beginning of the twentieth century were paid in coin. The function of cowries in Bengal seems to have been similar to

The first alloy electrum coins in Asia Minor all were of the same size and weight but soon, in the mid sixth century BCE a bimetallic system of coins struck in both gold and silver came into use. This not only meant coins of different denominations but also the necessity to determine their mutual value. This multi-denominational system spread remarkably quickly. Recent discoveries have demonstrated the spread of small change already during the early stages of Greek silver coinage, implying that they could be used for low-value transactions. In fact it took this moneyed economy only some seventy-five to one hundred years to develop after the striking of the first silver coins, post c. 550 BCE.²⁷ Significantly the central role of silver in this Greek system is also linked to the elitist identification with pure gold versus the polis-oriented, anti-elitist tradition of silver. The especially for the Athenians readily available silver stands for the collective citizen body. It is no coincidence that the Greeks perceived a conceptual link between *nomisma* (currency) and *nomos* (law) and that the purity of coinage and the quality of the application of laws had to be tested equally by the citizens.²⁸ Soon after the introduction of silver a third metal, bronze was also used to make coins on a very large scale. Unlike silver coinage, bronze coinage is essentially a token coinage with little value outside the region in which it was recognized.²⁹ In the second and first centuries BCE the production of Greek coins is first supplemented by a massive production of Roman Republican denarii and subsequently replaced by the Roman imperial coinage which in the first and second centuries CE is also characterized by a multi-metal and multi-denominational production.

It is hard to link this evidence of a highly monetized Greek economy to the extent to which wage payments were usual. On the one hand, if all this small change is used to buy products at the market place, the buyers first must have earned the money. The problem is, however, that we know that much of the manual work was done by slaves (e.g. the 10,000 slaves mining silver in Laurion for Athens) and that, as in all ancient societies, most people engaged in self-subsistence agriculture. Thus, where is the Greek wage earner? On the one hand the oldest electrum staters of c. 14 grams seem to have represented a month's pay for a mercenary soldier.³⁰ But does this indicate that these earliest coins were minted mainly for this purpose? As long as no sufficient fractional denominations were available how could a soldier pay for his daily needs unless by credit?

We reach firmer ground in the Classical period, dominated by the odd-thousand Greek poleis around the Mediterranean and Black Sea. A recent analysis of occupational titles in classical Athens suggests that 10,000 free citizens could be found in the non-agricultural sector (which contained as many unfree labourers). For this sector alone, Harris published a few years ago 170 different occupations in the sources for classical Athens, covering the period 500-250 BCE. This extensive horizontal specialization of labour made it inevitable that the individual would need to acquire goods and services outside the immediate circle of friends, neighbours, and family. These craftsmen and merchants were the main users of coins and small change.³¹ To what extent these people can be called wage labourers depends on the question how their workshops were organized. Were they all independent small craftsmen owning their own workshop or did part of them work for others in exchange for wages - either as journeymen or as subcontractors? Certainly the slaves did and - contrary to what one would expect - quite a few also received wages. This was allowed under the proviso that such independently living slaves as they were called provided their owners with part

that in Africa (Prakash 1994, XII, 476), with a possible exception for the seventeenth century (Perlin 1993, 158-160, Perlin 1994, 290).

²⁷ Kim 2002. [plus the discussion between Paul Kehl and Bernhard Laum 1950-1952]

²⁸ Von Reden 2002, 54-55.

²⁹ Kim 2002, 48.

³⁰ [Only reference so far in Sear I, xxviii; look for better source]

³¹ Harris 2002, 70-73.

of their earnings.³² For the Roman period, although also characterized by large-scale slavery, wage labourers receiving wages can be amply demonstrated. Consequently, the Roman currency system consisted of many denominations and of coins, fabricated of several metals. Differences in metals, weights, thickness, size and symbols indicated their mutual relation (Van Heesch, Chapter 3).

Our knowledge about the old Indian coinage is much more limited but there is no doubt that the silver punch-marked coins from very early on, maybe from the fourth century BCE were made in several denominations and that within one or two centuries this production of silver coins was supplemented by coins of copper, bronze and other minor metals.³³ This leads us to the conclusion that the currency system as a whole resembles much more the one that originated not long before in Asia Minor than the Chinese one. The easy fusion between the Greek and the Indian system since the expedition of Alexander the Great is therefore not so astonishing.

Now we have to deal with the development of the two currency systems in relation to the function of coins for wage payments. First I will discuss the extent of the mono-denominational system as it developed in and from China to other parts of the world. This also involves its confrontation with the multi-denominational system, which will be discussed secondly. The latter system is remarkable for its instability as is evident from the variation of periods of contraction and expansion it shows.

The mono-denominational system

The mono-denominational system that originated in China in the late third century BCE spread originally with the political system that guaranteed its stability, the Chinese Empire (Wang, Chapter 2). De Ligt, following authors like Balazs and Braudel characterizes this political system not only as one with a large degree of state control over the economy, of administrative and governmental unity but also one with regular flows of goods. This means more attractive channels of trade and communication than the more primitive periodic assembly of merchants and merchandise at interregional fairs.³⁴

The link between the mono-denominational system of small cast bronze or copper coins and strong policies is no coincidence because of the vulnerability of the system. This vulnerability stems from the simplicity of the production technique and the availability of the raw materials needed. It can be done in many production centres at the same time, but in order to maintain its fiduciary character - symbolized by the seal each coin bears - a strict and centralized control over the production is necessary. With ups and downs this has been the case for over two millennia - an achievement unheard of in any other civilization. This high degree of stability in the appearance of the only legal tender had the added advantage that old coins could be used time and again. Even in periods when the government failed to make new coins the liquidity was much better than e.g. in Europe. In the fifteenth century, according to Kuroda, "ordinary people in China were using currency in their daily transactions much more frequently than their counterparts in England".³⁵ In comparison to Europe another implication of the durability of this particular currency system would be a long-term reasonable stability of wages as expressed in copper cash coins. Or, to put it differently, a long-term equilibrium existed between the supply of copper and the demand of the economy for copper cash coins (for which the size of the population and the degree of urbanization would be proxies).³⁶

³² Cohen 2002.

³³ Cribb, Cook and Carradice 1990, 163-172 [better authority to be consulted!]

³⁴ De Ligt 1993, 26, 29.

³⁵ Kuroda 2000, 193; cf. also Lucassen 2005.

³⁶ The number of *cash* coins received as daily wages varied as follows according to different sources: 5-15 and 25-30 (c. 1480), c. 25-30 (1600), 60 (1638 and 1628-1644), and c. 50 (eighteenth century), see Lucassen 200, 439 after Peng Xinwei (1962/1993) 721-722.

One thousand years after their invention the Chinese copper *cash* coins were imitated by other states in East and South-East Asia and their use even spread to Southern India, the Persian Gulf and the East African Coast. First the production spread to Japan (708 CE), Vietnam (970 CE) and Korea (996 CE) and subsequently, possibly through Chinese commercial diaspora, also to the Philippines and Indonesia ([Van Aelst, Chapter 4](#)). It has to be stressed that these other states stuck until the very end to the appearance of the original Chinese examples. We might suppose that China acted in this respect as a powerful epicentre which guaranteed a fiduciary currency system even in foreign independent states. Maybe there is another hidden power behind the Chinese copper cash system as it can be combined easily with parallel payment systems for high-value transactions in cloth ([Wang, Chapter 2](#)), paper, and bars which from the sixteenth to the nineteenth century nearly exclusively were made of silver³⁷, and finally via giro banking ([Shikano, Chapter 5](#)). This is not trivial because the alternative would be that traders would have to shift time and again impossibly heavy loads of copper cash-coins (e.g. in the seventeenth century 100 times heavier than silver) whether strung or not. Copper cash was also too bulky to store as an asset.

The spread of the mono-denominational system from the northeast of China west- and southwards showed the confrontation between this principle and the multi-denominational system that often existed already there. Already from the first century CE we know e.g. that in nowadays Xinjiang in the very northwest of China this meeting resulted in bilingual Kushan coins that fit not only the coinage system of Bactria and Northwest India, but also the Chinese system.³⁸ In this book this confrontation is described for the eighteenth and nineteenth centuries in the then Spanish Philippines ([Wolters, Chapter 6](#)) and in then Dutch Indonesia ([Van Zanden, Chapter 7](#)). In these cases not an adaptation of the multi-denominational system to the Chinese one occurred but, after a period of complementarity, the repelling of the copper cash, sometimes to the ceremonial realm. At last the traditional system also vanished from China proper, not by accident at the moment when China lost its political independence to European powers, the United States and Japan.³⁹ This meant the introduction of the multi-denominational and multi-metallic coin system. The old holed copper *cash* coins, then mostly brass ones, were replaced by solid copper coins of the European type, albeit - significantly - nearly exclusively of one size, the 1 *cent* piece (also called 1 *fen* or 10 *cash*). Besides, silver coins of several denominations were made. Gold coins however never received the attention of the Chinese coinmakers as they did in the rest of the world.

The multi-denominational system

The multi-denominational system as it developed in Asia Minor and in India and, from these two centres, spread over the world proved to be much less stable than the mono-denominational system of China. This might be explained by the absence in the rest of the world of a political system as solid over such a long period as the Chinese one. Although the number of denominations that circulated at the same time in the Roman Empire was smaller than one might think ([Van Heesch, Chapter 3](#)), the multi-denominational system probably knew its first heyday between the second century BC and the third century AD.

At the same time its instability can be shown not better than by studying what happened afterwards. From the third century onwards the production of new coins became restricted to debased antoniniani, later to smaller and smaller and increasingly uniform copper coins and a completely distinct series of solid gold pieces. The Sassanian Empire, between the mid third and the mid seventh century dominating nowadays Iran, Iraq, Afghanistan and most of Russian Central Asia, managed to monopolize the fabrication of silver coins (mainly big flat silver *drachms* of c. 4 grams) and the Arab conquerors continued this situation for

³⁷ Kuroda 2000.

³⁸ Wang 2000, 1362. [PLUS NOG NIEUWSTE BOEK]

³⁹ Traditionally, the change of the Chinese monetary system under the influence of the West is dated one or two centuries earlier (e.g. Von Glahn 1998) but this pertains to the system as a whole, not necessarily to wage payments.

the ages to come.⁴⁰ This development culminated in the situation in early medieval Western Europe when the circulation of coins virtually had come to a halt, at least in comparison to the levels of Classical Antiquity.⁴¹ The Byzantine Empire also lacked silver but for the rest it differed very much from the west by its production of big coppers and gold pieces.

Theoretically the stoppage of production in Western Europe does not preclude the continued circulation of the millions of coins produced in the preceding ages, but this was not very significant. Imports of Arabian silver *dirhems* took place but this only served international trade, not daily needs. The return of coins in daily circulation occurred in the form of silver *pennies* measuring c. 10 to 20 millimeters. This return was not only hesitant but also took several centuries in which only one denomination was available. Only the expansion of the towns and international trade and the gradual demise of the dominant labour institution of serfdom from c 1200 CE signaled the return of the multi-denominational system in Europe. One of the first groups of wage earners that are mentioned are mercenaries who replaced the feudal knights and their servants, e.g. in Flanders.⁴² From the middle of the thirteenth century and the end of the Middle Ages Marc Bloch distinguishes between golden coins for big and international payments and silver for the payment of soldiers, builders of fortresses and civil servants. The French kings were unable to influence the size, weight and content of the gold pieces. Instead, they very actively dealt with the silver pieces, precisely because they had to pay massively wages.⁴³ This multi-denominational system was not to vanish again in Europe until now albeit with ups and downs. These ups and downs however were never as drastic as during the first centuries after the demise of Roman authority.

The developments in Europe since 1200 can be followed for the different countries of that continent. In this book we discuss in particular medieval Italy (Stahl, Chapter 8), medieval and early-modern England (Mayhew, Chapter 9) and the Netherlands from the twelfth to the twentieth centuries (Lucassen, Chapter 10). In line with these data, Sargent and Velde provide interesting figures for different countries in the fourteenth and fifteenth centuries which lead to their conclusion that ATypically, the daily wage represented 1 to 3 silver coins and thus daily necessities required smaller coins. A⁴⁴

⁴⁰ Cribb, Cook and Carradice 1990, 151-153.

⁴¹ Bloch 1954, 11-33.

⁴² Verbruggen 1960, 56-58, 118-127; Bloch 1954, 67.

⁴³ Bloch 1954, 39, 55-56, 67, 73-74; cf. Sargent and Velde 1997, 21 [= Idem 2002, pp]

⁴⁴ Sargent and Velde 1997, 7-8 [= Idem 2002, pp]

Table 1 Daily wages for unskilled labour and denominational structure of coinage in late Medieval Europe

Place and time	Daily wage for unskilled labour in local pence (deniers, denari)	Existing denominations		
		Billon	silver	Gold
Paris, 1402	30d	2, 1, 2	5, 10	270
Paris, 1460	35d	1, 3	10, 30	330
Florence, 1347	30d	1, 4	32, 48	744
Flanders, 1389	48d (deniers parisis)	2, 1	24	528
Low Countries, 1433	60d	2, 1	3, 6, 12, 24	288, 576
England, 1349	2.2 d	1/4, 1/2	1	20, 40, 80
England, 1467	5d	1/4, 1/2	1, 2, 4	30, 60, 120
Castile, 1471	25 maravedis	2, 2, 4	31	420

Striking for politically fragmented Europe is the asymmetrical relation between centres of coin production and the areas where coins actually circulate. Although all political authorities pretend to take care of the necessary supply of coins this did not happen in reality. Certain production centres catered for much wider regions than the political unit to which they belonged and that controlled its output. This was possible on the condition that such a coin production yielded profits - something that was not the case in China.⁴⁵ Well-known examples are the circulation in the seventeenth century Dutch Republic and the German Rhineland of silver coins minted in the Southern Netherlands. The same happened in the eighteenth century when the many and highly uniform French minthouses supplied the large silver pieces, not only for the Dutch Republic but also for the Southern Netherlands. At the same time the Dutch minthouses produced large quantities of dollars for the international trade which did not circulate at home.

The developments just sketched would never have been possible without the massive supply of American silver from the early sixteenth century onward. After all Europe's own silver production was too small⁴⁶ This new source of silver affected primarily the multi-denominational systems of Europe and India and contributed to their development. However, its influence could be noticed first at the heartlands of silver production in Central and South America, Mexico and Bolivia (*Te Paske, Chapter 11*). Subsequently, via Europe, it reached India (*Prakash, Chapter 12*). This influx of new silver had a long-lasting impact on the size, weight and fineness of the standard silver coin. However, whereas the fineness in Europe and India (which experienced at the same time an increased silver influx from Japan) did not differ essentially, the other two parameters did. The new European standard coin, the *taler* or *dollar* was a coin of ca. 40 mm and 30 grams, which meant a weight five times and more that of the *pennies*, for long the medieval silver standard coins. The new Indian standard coin, the *rupee*, measured roughly one half of the diameter and one third of the weight of the European standard coin. This meant a weight that was roughly two times that of the silver *jitals*, the standard coin in preceding centuries. This difference in the change that the standard coin in Europe and India underwent reflects probably differences in demand of the respective economies, rather than supply of American silver.⁴⁷

⁴⁵ Kuroda 2000.

⁴⁶ Flynn 1996; Flynn and Giráldez 1997.

⁴⁷ [Parthasarathi in Past and Present idem: NAZIEN] Van Zanden 2003 concludes for the nineteenth century that the

More than contemporary Europe but also than countries like e.g. Persia, from the sixteenth to the eighteenth century the Moghul Empire was capable of maintaining a decentralized but highly uniform coin production stretching from Bengal far into nowadays Afghanistan ([Haider, Chapter 13](#)). It was so viable that also the colonial powers had to adapt to it. All the silver they imported for the trade had to be reminted in the Indian mint houses according to the Indian standard. In fact the English only had to take this system over and eventually they concentrated it in a few gigantic coin factories.⁴⁸

The story told so far risks to become too rosy because multi-denomination coin production tends to bring about bi- or multimetalism and the concomitant problem of assessing the mutual values of different mint metals. The easiness with which silver can be mixed with non-precious metals, i.e. debasement of silver only adds to these problems, so typical for a multi-denominational system as contrasted to a mono-denominational system. However, they have been aggravated since the "price revolution" that affected Europe because of the massive supply of American silver. This problem is directly linked to the availability of coins for wage payments because this "big problem of small change", as it was called recently, regularly led to a shortage of small denominations.⁴⁹ All too easily governments failed to fix properly the value of copper or other base metals and silver.⁵⁰ The best-known examples are Spain in the seventeenth and England in the eighteenth century. The latter case in particular is interesting because simultaneously proletarianization caused by industrialization and commercialization of agriculture caused an acute shortness of coins for wage payments ([Muldrew, Chapter 14](#)). Only in the beginning of the nineteenth century scientific solutions for the complicated problem of balanced copper : silver ratios in coinage systems became available. These came to replace the trial-and-error methods so far applied by the government.⁵¹ Another effect of these new insights and their application in more and more countries was the nationalization of the coin circulation. Never before had national circulation patterns been so homogeneous.⁵²

Nevertheless, this is not to say that wage payments from then on did not encounter difficulties, notwithstanding the already long existing legal tender obligations on small change.⁵³ W. Stanley Jevons gives a very nice example in discussing the money circulation of United Kingdom in 1873 (see table 2).⁵⁴

purchasing power of the Netherlands-Indies *gulden* (guilder) was three times that of the Dutch gulden. This is interesting because virtually the only silver coins struck in the Dutch East Indies between 1747 and 1817 were rupees of the Persian-Indian style.

⁴⁸ Perlin 1994, 296.

⁴⁹ Sargent and Velde 2002.

⁵⁰ This could also happen with the value of gold and silver but that affects less the problem of wage payments we envisage in this book. Therefore, I will leave it out. Besides, it has been for centuries one of the main topics in economic literature.

⁵¹ Nevertheless the solutions found still were not waterproof witness the shifts between silver and gold standards later in that century.

⁵² The existence of international currency agreements like the Latin Monetary Union of 1865 and similar other systems does not fundamentally change this conclusion.

⁵³ Sargent and Velde 1997, 51 (their oldest example dates from 1494), also 64 [= 2002,].

⁵⁴ Jevons 1875, 130-131 (he also provides details for pennies, halfpennies and farthings)..

Table 2. Money circulation of the United Kingdom in 1873

several kinds of currency	denominations in pennies, shillings, guineas and pounds	weight in tons	nominal value in pounds sterling
paper		16	40,000,000
gold	guinea, 2 pound, pound	786	100,000,000
silver	3p, 6p, 1s, 2s, 2.5s, 5s	1670	15,000,000
bronze	1/4p, 2p, 1p	2652	1,000,000
		5124	156,000,000

Related to his assertion that a workman=s weekly wages are counted in shillings he comments upon the inverse relation between value and weight as follows: A It is impossible to give a satisfactory reason why the least valuable part of the currency should be so much the most weighty. A tendency thus arises for the pence to accumulate upon the hands of the retail traders, especially publicans, omnibus proprietors, and newspaper publishers. At one time the London brewers had such large quantities of bronze coins thrown upon their hands from the public-houses which they own, that the mint had eventually to arrange to buy it from them, instead of coining more. In large towns, arrangements have to be made for getting rid of the accumulating pence with the least trouble and loss; the coin is transferred weekly to mills and factories, where it is used in paying wages.@ He better could have said that the trouble now was for the workers because bankers apparently were able to A refuse to have anything to do with bronze coin beyond the amount of a shilling, for which it is legal tender, and it is usual for persons [excluding workers jl] to object to receive more than 2d. or 3d. of change in pence@.

Notwithstanding all this trouble, the new-won understanding of bimetallism lost part of its brightness by the advent of fiduciary money, in particular paper money. From the beginning of the twentieth century this also started to be used for the payment of salaries and wages. But this device also lost its significance with the introduction of giro and bank transfers beyond the realm of commerce. The shift from cash payments to wage transfers via bank or giro started in the United States, spread after the Second World War to Britain⁵⁵ and to other prosperous countries in Western Europe. Thus within a few decades the pay-packet disappeared (Lucassen, Chapter 10). Up until now cash payments of wages have a much longer life in less prosperous countries and in countries with unstable political regimes - which can mean a higher risk of hyperinflation - but also, in order to evade taxes and social premiums, in well-organized countries.

A preliminary conclusion: the relation between wages and currency

Currency in the form of coins and paper money can be used for many economic transactions. Monetary history and numismatic literature - as far as it concerns itself with the actual use of coins - tend to concentrate on the function of coins for commercial transactions, in particular trade or even international trade.

Some authors cast their nets wider, like Sanjay Subrahmanyam in discussing the more general question of "the twin issues of commercialization and monetization". He poses the following questions: "Was the

⁵⁵ In the U.K. Jevons' proposal to pay wages by way of ACheque Bank cheques@ dates already from 1875. He derived this idea from great railway contractors who used to issue Atally checks [sic] in the form of one, two, or five-shilling cards, which were paid to their workmen, and circulated among the publicans and tradesmen of the neighbourhood, until taken back by the contractor in wholesale.@ (Jevons 1875, 295-297; cf. also 184).

coinage of the Indian subcontinent, whose antiquity is testified to by museum collections all over south Asia and elsewhere in the world, servicing a growing body of transactions and needs over the centuries? If it did, what effects did the 'cash-nexus' have on those who entered?".⁵⁶ His answer to these questions - contrary to the dominant perspective - on the one hand shows the possibility that economic developments in Europe and India from the Middle Ages until the eighteenth century have been more similar than thought of until recently. On the other hand he stresses that "beyond basic numismatic calendaring, the real monetary history of much of India before 1500 remains to be written". In this respect, following John S. Deyell, he expects new results from careful analysis of coin hoards despite the difficulties connected to this source of historical information.⁵⁷

We want to go one step further because there are good reasons to assume that currency has also had an important function for wage payments for more than two thousand years. This distinction between different types of economic transfers is often reflected in the different denominations found in the actual circulation of a certain political or economic entity. In a full-fledged multi-denominational system we can distinguish between three types of coins (supplemented for the last two centuries by paper money), each with its own particular circulation characteristics -, one of which is best suited for wage payments:

- large-denomination coins - generally gold and heavy silver pieces - which are mainly used for wholesale trade (and, besides, for hoarding);
- small-denomination coins - generally base metals or small or low-grade silver pieces - which are mainly for daily payments and change in the retail trade;
- between these two, medium-denomination coins - generally high-grade silver but of a low average value - preferred for wage payments (and, besides, for the payment of rents and taxes).

From the variety of remuneration systems and of currency systems in existence worldwide over the last 2500 years it follows that the full array of possibilities of a multi-denominational system as given here only occurs under specific circumstances and that between that situation and the absence of currency in the form of coins and paper money numerous other circulation types can be found. Based on the evidence in this book, supplemented by other secondary literature we can distinguish six different types of circulation according to the type of transactions (see Figure 1).

Figure 1 The use of different denominations for different types of transactions.⁵⁸

denominations:	case 1	case 2	Case 3	case 4	case 5	case 6
large	-	WT	WT	[BG]		
medium	-	-	RT / WP	RT / WP	[BG]	RT
small	-	-	RT / WP	RT / WP	RT / WP	RT

Key:

[BG]: no currency but instead bills of exchange or giro

WT: mainly used for wholesale trade

RT: mainly used for retail trade

WP: also used for wage payments

⁵⁶ Subrahmanyam 1994, 2.

⁵⁷ Cf. Perlin 1994, 43, 51.

⁵⁸ In this figure on coin circulation we leave away the extremely important hoarding or savings function for which especially large denominations are well suited. Also payments of rents and taxes (until the middle of the twentieth century by most people done by medium denominations) are left out for the sake of clarity.

These six cases can be demonstrated in the following countries and periods⁵⁹:

Case 1:

There is long-distance trade and there are wage earners, but there is no currency in the form of coins. Instead, payments are accounted and done in kind or barter (Mesopotamia 1700-500 BCE maar wrsch eerder!!, pre-Ptolomaic Egypt and possibly also some pre-Columbian cultures⁶⁰).

Case 2:

Long-distance trade uses (amongst others) currency in the form of coins, but there are hardly any wage earners and as far as they exist they are paid in kind (Western Europe c. 500 - 1100; Western Africa c 1000-1900).

Case 3:

All merchants use currency in the form of coins, wage labour is widespread and labourers are paid in coins (Western Europe 500 BCE - 500 CE and 1100-1300⁶¹; Western Asia 500 BCE -1900 CE; South Asia 400 BCE - 1700 CE).

Case 4:

Long-distance trade uses bills of exchange or giro transfers, retail trade uses currency in the form of coins, wage labour is widespread and labourers are paid in currency, first in the form of coins and at the end of the period in paper money (Southern Europe 1200 - 1970s; Western Europe 1300 - 1960s; Western Asia 1000- now; South Asia 1500 - now; North America 1700 - 1950s; South America 1500/1800-now; Africa 1900 - now).

Case 5:

Long-distance trade uses bills of exchange or bullion transfers, retail trade uses currency in the form of coins, wage labour is widespread and labourers are paid in currency (China 500/200 BCE - 1900 CE).

Case 6:

For trade and wage payments bank or giro transfers are preferred and only the retail trade uses currency in the form of paper money or coins; at the same time the use of plastic money increases (North America since the 1950s; Western Europe and Japan since the 1960s; Southern Europe since the 1970s; other prosperous countries are following).

For this book cases three, four and five are especially interesting; in particular the conditions which lead to situations where the demand of means of exchange for wage payments and the supply of currency are related and can influence each other. This situation seems to occur only if certain thresholds are crossed. This book suggests that not only the supply of currency should be sufficient, but also that a minimum of

⁵⁹ Although we have tried to summarize the general literature, there are many gaps and many uncertainties in this overview.

⁶⁰ Einzig 1949, 343 gives the Inca Empire as "the outstanding instance" for "communities where there is a thorough-going planned economy on Communistic lines [where] the use of money is not indispensable and, in some known instances, it has in fact been dispensed with ", cf also 460. [... on Maya's ... 1491??]

⁶¹ For the difference between Western and Central/Eastern Europe divided by a line Afrom Antwerp to Nuremberg to Venice@ in the late Middle Ages see Spufford 2002 [OF 2006?], 342. East of this line Avirtually all payments were made in coin or bullion, and west of that line most separate international commercial payments, and some others as well, were made by bills of exchange.@

some 5% of the adult (male) population should be mainly dependent for its income on wage labour (Lucassen, Chapter 10; Van Zanden, Chapter 7).

As soon as these conditions are fulfilled it depends on the responsibilities the prevailing political authorities can and wish to take whether supply and demand will meet satisfactorily. In that case there will not only be enough currency available for regular wage payments, but also for subsequent spending of these wages on the market or in shops. Two systems have been developed worldwide to meet these requirements: in China the system of a small standard copper unit that can be combined easily for wage payments (and other small commercial transfers) and at the same time is perfect for shopping; in the rest of the world a combination of medium- and small-denomination coins meets the same requirements. In order to be successful the first solution presupposes enforcement by a strong political authority, the second one depends on either a similarly strong political authority or a wise handling by the authorities of bi- or multimetallic standards. If the first condition is not easy to be fulfilled, the latter one in reality has rather complicated implications.

In the transition from case 2 to case 3, it should be borne in mind that under certain circumstances not only medium but also small denominations may play a role in wage payments. After all, the required circulation of small-denomination coins per capita is determined by the following conditions, which differ by regions and per period:

- *the frequency of wage payments*: when wages are paid weekly rather than daily, the demand for small-denomination coins is less; in weekly payments, firstly, the employer needs far less small change and, secondly, a system will develop of credit, granted by shopkeepers to wage labourers. Thus the latter will pay the major part of their purchases at the end of the week in medium-denomination coins;
- *the distribution of small change*: when small change can be distributed easily to meet demand - which depends mainly on the quality of the transport network and the degree of political unity - far less is needed per capita than in a situation where local shortages or surpluses develop⁶²;
- *the variety of denominations within a system*: the greater the variety, the less value small change will represent in the total value of the coin supply;
- *legal tender limitations on small change*, which favour the use of the medium range coin denominations.⁶³

New research questions

Based on the evidence presented in this book we can formulate for most parts of the world the following very general hypothesis: the greater the quantity of copper⁶⁴ and small silver coins produced and the more denominations that circulate simultaneously, the more chance that a substantial part of the population depends on regular wage payments.

The main variations on this Arule@ depend on the following conditions:

- a. The degree to which these same denominations are used for other purposes;
- b. The degree to which the unfree labourers also receive remunerations in coin;

⁶² This might provide a partial explanation of the following observation by Jevons 1875, 130: Awhile the English, Scotch, and Irish seem to be sufficiently supplied with 8.5d. per head, the French employ on the average 1 franc 60 centimes, (15 pence), the Belgians, 2 francs 26 centimes (21.5 pence), and the Italians as much as 3 francs 10 centimes (29.5 pence).@ The apparently odd position of Belgium can be explained by its high wage level [????]; Petty=s high estimation of 12d per household (Sargent and Velde 1997, 52 [=2002, ...]), seems to be consistent, taken into account both the more primitive infrastructure of the country and the lower wage levels

⁶³ Sargent and Velde 1997, 51 [=2002,] (they provide examples from 1494 onwards); cf. Jevons 1875, 131 and Lucassen, Chapter 10.

⁶⁴ This specifically applies to China and the regions that adopted its mono-denominational system later on.

- c. The degree to which wage labourers receive board and lodging and only a relatively small sum at the end of the contract;
- d. The degree to which employers use their own currency in order to pay their workers.

Ad a

Firstly, of course not all these particular coins are needed exclusively for wage payments and the subsequent spending of these wages in shops and on the market. Apart from the - generally only annual⁶⁵ - payment of rents and taxes which, notwithstanding the much bigger sums than wage payments, partially will have taken place in these denominations, small enterprise production (including market-oriented peasant farming) depends on the very same means of exchange. These production units however can only develop on a great scale if there is demand by wage earners. As a rule they will be linked to occupational specialization and urbanization.

But even if we deduce from archeological evidence the existence of a fully monetary society it still is the question whether the cash-nexus has to be conceived primarily in terms of a commodity market alone or rather as a labour market. Or, to put it differently: are coins needed primarily for transactions of independent small producers like artisans and peasant farmers or for wage payments? Connected is the question whether these two types of cash-nexus ask for two different types of coin circulation. It is too early to answer this question, but some preliminary remarks can be made already.

At first sight it would seem that peasants who sell their harvest at the market place or weavers who need weeks or more to finish a piece of cloth demand less money circulation than day labourers or labourers that receive their wages weekly or biweekly. The actual difference in the currency velocity, however, depends on the extent of credit and of advance payments. The more credit is admitted by producers and shopkeepers, the less actual transactions in coin are needed. For seventeenth and eighteenth century India Frank Perlin sees a connection between the frequency of the payment of advances by merchants to peasants and craftsmen and even mint production. His observations are important enough to quote at length: "Advances also need to be differentiated, however, in the late 18th century they take on a less voluntaristic, more coercive character in which low value coinages have a special function. It is very likely that several of the 22/23 mints so far identified in one political unit of Central India, were established precisely for the purpose of producing monies for advance payments. This is especially likely to have been the case with gimcrack coppers, many being produced in small village mints, some of which remain to be identified. The need to pay advances to producers helps to explain why merchants became involved in gimcrack production, especially in regions like central India where commercial crops and textiles were of major importance."⁶⁶

Ad b

Second, wage payments are mostly made to compensate free labour. In the case of coerced work far less currency is needed than in the case of paid labour. Not only is the compensation far lower, it mostly is procured for all toilers together in kind, i.e. involving far less economic transactions. Nevertheless, also the employment of coerced workers, whether slaves, serfs or convicts does cost their masters something, if only because unfree labourers have to be fed in order to be able to work also the next day. Most common is the system in which unfree labourers are stimulated to grow their own food, without of course neglecting their main job.

Though, sometimes also unfree labourers receive wages, as examples from Classical Athens and elsewhere show.⁶⁷ There are three possibilities in which this can happen: unfree labourers can be hired out by their masters, they can be permitted by their masters to hire out themselves in exchange for part of their

⁶⁵ [Spufford 2006, 96-99to be checked; cf. Van Bavel ... to be checked].

⁶⁶ Perlin 1994, 290.

⁶⁷ Cf. F.n [... before]; for Russian serfs see Kolchin 1987.

earnings as a retribution for their master, or they can be permitted to earn wages elsewhere and keep them when their master don=t need them.

Thus, even the system of chattel slavery in its heydays was in need of coins for payments of slaves. In Jamaica in 1774 it was calculated that slaves owned twenty per cent of all circulating cash. Especially the scarcity of the lowest denominations of currencies hit the slaves. According to Walvin slaves acquired hard cash in a number of ways: Adirect from their owners, sometimes for work, for goods, other times for sexual favours.⁶⁸ Also milder forms of coercion may need money circulation. E.g., during the corvee labour on Java in the 1840s, forced labourers received half the wages of free labourers, i.e. 12,5 versus 25 cents per day.⁶⁹ A last example dates from the Second World War. According to Ferencz the Daimler-Benz factories spent approximately 710 marks a year per person in employing foreign workers who had been deported from occupied Europe. Compare this to the 2,500 to 3,000 marks paid during the same years to their ordinary German workers in annual wages, with hundreds of additional marks in social benefits.⁷⁰ Here the point is not the abysmal difference in money spent on workers of different backgrounds that performed the same jobs with about the same outturn, but the different sums of money involved and consequently the different needs of currency.

Ad c

It goes without saying that wage labourers who receive board and lodging as a substantial part of their earnings demand for less coin circulation than those who live on their own and receive daily, weekly or fortnightly payments. The cash the former group receives consists of only a relatively small sum at the end of the contract. This goes for important groups of wage earners, in particularly in-living servants and domestics, sailors and professional soldiers. Seasonal labourers who also nearly always are entitled to their wages only at the end of their contract in practice fall in a different category because they tend to receive regular advances which have a similar impact on coin circulation as time wages or frequently paid piece wages.

Ad d

Under specific circumstances employers use their own currency in order to pay their workers. This has occurred especially on plantations with contract labourers in sub-Saharan Africa, South- and Southeast Asia and Oceania in the latter part of the nineteenth and the first decades of the twentieth centuries. For labour historians it is interesting to study the denominations of this money because the highest ones often were especially produced for wage payments. The lowest ones of course fulfilled the role of small change in canteens, plantation shops, etc.

Based on the preceding remarks it is to be hoped that the history of money and currency and numismatics will be helpful in the expansion of labour history. More specifically, it also may shed more light on one of the major problems of labour history, viz. the occurrence of wage payments in situations where no or hardly any written sources have been preserved. To put it in the form of a straightforward question: to what extent can the extension of the circulation of medium- and small-denomination coins provide an indication for the occurrence of wage payments, in particular in cases where other sources are missing to study this phenomenon.

⁶⁸ [Still to be checked: Walvin 1996, 145-147 after McDonald 1993, 31-32; cf. Genovese 1976, 313-314].

⁶⁹ [Jan Luiten van Zanden].

⁷⁰ Cited in Brass 1997, 34, fn. 28.

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APPENDIX

Wages and Currency: global and historical comparisons

Jan Lucassen (ed.)

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Contents:

Jan Lucassen (IISH, Amsterdam) and Arent Pol (Money Museum, Utrecht)

Foreword

1. Jan Lucassen (IISH):

Introduction: Wages and Currency 500BCE - 2000CE

2. Helen Wang (The British Museum, London, UK):

Official salaries and local wages in Juyan, north-west China 1st c. BCE to 1st c. CE

3. Johan van Heesch (Royal Library, Brussels, Coin Cabinet Brussels, Belgium / Universities of Leuven / Louvain, Belgium):

Some aspects of wage payments and coinage in ancient Rome, 1st to 3rd c. CE

4. Arjan van Aelst (+, formerly Erasmus Universiteit, Rotterdam):

The South-Chinese currency zone: China, Japan and insular Southeast-Asia from the 12th to the 18th c.

5. Yoshiaki Shikano (Doshisha University, Kyoto):

Currency, wage payment and large fund settlement systems in Japan, 1600-1868

6. Willem Wolters (Radboud University, Nijmegen, the Netherlands):

Monetary systems, small coins and wages in the Philippines, 18th and 19th centuries

7. Jan Luiten van Zanden (Utrecht University / IISH, Amsterdam):

Linking two debates: money supply, wage labour and economic development in Java in the nineteenth century

8. Alan Stahl (Curator of Numismatics at Princeton University, USA):

Coins for trade and for wages: the development of coinage systems in medieval Venice

9. Nicholas Mayhew (Ashmolean Museum, Oxford, UK):

Wages and Currency; the case in Britain up to 1600.

10. Jan Lucassen (IISH, Amsterdam):

Wage payments and currency circulation in the Netherlands from 1200-2000

11. John Jay TePaske (Duke University, USA):

Early Spanish colonial mints: Mexico, Santo Domingo, Lima, Potosi

12. Najaf Haider (Jawahralal Nehru University, New Delhi, India):

Structure and movement of wages in the Mughal Empire, 1500-1700

13. Om Prakash (Delhi School of Economics, University of Delhi, New Delhi, India):
Long distance trade, coinage and wages in India, 1600-1960

14. Jan Lucassen (IISH)
The logistics of wage payments: changing patterns in Northern India in the 1840s

15. Craig Muldrew (Queens= College Cambridge, UK):
The economic context of wages and wage payments in England, c. 1600-1800

Collective Bibliography

List of tables, graphs, maps and illustrations

Indexes

Notes on contributors