From Subsistence Crises to Business Cycle Depressions, Indonesia 1800-1940

by

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Introduction

The spectre of a global crisis, predicted in 1997, but then failing to materialise outside (parts of) Asia, Russia, and Brazil, now looms again. Expectations of the arrival of a world-wide economic recession might constitute a conducive atmosphere for the study of economic crises and depressions in the past, in this case the Indonesian past. It is in fact somewhat amazing that, the study of the 1930s Depression apart, economic and social historians have not taken up this topic more eagerly during the last five years.

In this paper, I make the not unusual distinction between subsistence crises (*crises de subsistence*, *Hungerkrisen*) and trade cycle or business cycle depressions. It has been argued that in Western Europe subsistence crises started to disappear during the eighteenth century, a process that was completed around 1850 or somewhat earlier.[1] At that time, such crises were far from over in Indonesia.

Usually, the Depression of the 1930s is regarded (implicitly) as the first downward turn of the modern and global trade cycle to be seriously felt in Indonesia (and in Southeast Asia as a whole). The area had become increasingly more vulnerable, so the argument goes, to such crises, as a constantly growing proportion of Southeast Asia's population had been exposed to fluctuations in the world-economy since the later half of the nineteenth century (Dixon 1991, 133; Brown 1997, 216).

Here, I present data on the influence of the world market, or, broader, world events, on the Indonesian economy, with emphasis on the economy of Java, as that is the area with the best documentation prior to, let us say, the 1870s. But first I present an inventory and analysis of Java's subsistence crises between 1800 and 1940 to be found in the archival and published record. I begin with a short exposé on subsistence crises in general.

Subsistence crises; the notion

In pre-industrial Europe the death rate and the birth rate seldom diverged greatly. In normal years the birth rate was slightly higher, and on average, and in the long run, pre-industrial Europe was characterised by a slowly growing population. However, with sad regularity weather anomalies, such as droughts, wet summers, and prolonged or late frost, would lead to harvest failures. If a harvest failure was widespread, it could easily turn into a famine, thus causing a so-called subsistence crisis. During such a crisis the usual relationship between birth and death rates would be reversed, and as more people died than were born, the total number of people dropped.[2] This is the narrow definition of a subsistence crisis. There were many more cases of lean years and near-famines that also led to higher mortality figures, particularly of the very young and the very old, without actually qualifying as a subsistence crisis because there was no negative natural population increase. In this paper I use the term somewhat more loosely than the definition requires, as I am not always completely certain that the fertility rate did drop below the death rate.

Probably all pre-industrial societies consisting primarily of sedentary peasants were regularly faced with subsistence crises. However, it is possible that the incidence of such crises is neither constant over time nor the same between regions. For instance, Europe may

[1] Abel 1972, 57; Braudel 1973, 37; Lamb 1982, 288; Salaman 1985, 289-316; Ponting 1991, 106-16.

[2] Abel 1972; Braudel 1973, 37-42; De Vries 1976, 6-7; Gutmann 1980, 3; Livi-Bacci 1992, 79-85.

have been hit by more subsistence crises between 1550 and 1850, the period of the 'Little Ice Age', than in the period prior to 1550. Something similar may have applied to southern China. If we compare China and India during the same period with Europe, the scope and impact of the subsistence crises in the latter area may have been less daunting (Braudel 1973, 41; Lamb 1982, 228).

Dearth, however, seldom came alone. In the wake of a lean season, when people were weakened and their immune system was 'down', endemic and epidemic diseases claimed many people who until then had survived the hunger period as such. As Braudel has it, "Famine was never an isolated event. Sooner or later it opened the door do epidemics, which have their own individual cycles." Epidemics, therefore, can come alone, famines are almost always accompanied by epidemics. It has even been argued that crop failures as such did not cause all that many deaths, but that the epidemics that followed in their wake did most of the killing.[3] Finally, if a disease were sufficiently debilitating, or if it wiped out sufficient able-bodied agriculturists, the next harvest might have been poor, thus causing another lean season. Dearth and disease, therefore, were often closely linked.

The third spectre, often to be found in the company of dearth and disease, was war. War, of course, killed people directly, but the number of indirect victims was probably larger. Armies often lived of the land, which provided fertile soil for poverty and malnutrition to take root in the areas concerned, which opened the door to higher rates of morbidity and mortality. Sometimes, standing crops were deliberately destroyed. At the same time, armies brought epidemics, even when they did not plunder or burn the crops. The soldiers themselves, and the townspeople they besieged, frequently fell ill, owing to lack of good and sufficient food, clean water, hygiene, and to living in cramped conditions (De Vries 1976, 4; Gutmann 1980, 4-6, 196-208).

Finally, one should consider the possibility that wars were caused or at least precipitated by crop failures. What better time to start a war than when your adversary is crippled by a famine? Or, should a harvest failure loom, why not wage war on your neighbour whose crops are in better shape in order to fill your own barns anyway?[4]

Braudel called the frequent occurrence of famines and epidemics, often but not always operating in tandem, the 'old biological régime'. They have also been called *'crises de type ancien'*, or crises of the old type. These crises were disappearing in Western Europe by the eighteenth century, and had vanished before the second half of the nineteenth century. We will now turn to the data from Java, where this was not the case.

Subsistence crises in Java

The nineteenth century opened with a number of bad to very bad rice harvests in a row. Information on these years is not abundant, but it seems that except for one year (1797/8), all years between **1795/6 and 1803/04** were either very wet or very dry. The data on wet and dry years are taken from an article by Berlage, who published his tree-ring measurements, based on teak trees from Java, for the period 1514 to 1929 (Berlage 1931). These data are supported for most years under consideration by references in archival sources to pests (locusts, worms) in the rice crop, bad rice harvests, scarcity of rice, and high prices.[5] Scarcity and high prices were still being mentioned in 1805, even though 1804/5 and 1805/6 do not seem to have suffered from weather anomalies. But of course, after a row of bad harvests many people must have been out of rice seed, which then had a follow-through effect on the next harvest as well. However, the sources do not use the term famine (*hongersnood*).

In 1802, smallpox was mentioned in Batavia and in 1805 in Bali. Smallpox in Batavia may have spread easily to other areas in Java, while this might apply to smallpox from Bali as

[3] Braudel 1973, 43-51; De Vries 1976, 8-9; Gutmann 1980, 4; Livi-Bacci 1992, 44-50.
[4] I have dealt with this phenomenon regarding seventeenth-century Indonesia elsewhere (Boomgaard 2001, 198-9); I am not aware of literature on famine induced wars elsewhere.
[5] On harvest failures, and diseases and pests in crops, see Boomgaard & Van Zanden 1990, 45-7; 106-7.

well. Of course smallpox was not caused by malnutrition, but it is likely that more people died from the disease than would have been the case in a normal year.[6]

Another series of bad years started in **1816/7 and lasted until 1824/5**, again with only one year that was not too bad (1823). Six of these years were very dry and two were very wet. The weather anomalies were probably partly caused by the eruption of Mount Tambora on the island of Sumbawa in 1815. This not only led to harvest failures and large-scale famines on the islands of Sumbawa, Lombok and Bali, but also to the so-called year without summer across the world, in 1816. Tambora had ejected so much ash and dust that it remained in the atmosphere throughout 1816, causing harvest failures as far afield as Europe.[7] According to some authorities this was the last subsistence crisis in Europe, which was, therefore, caused by a disaster occurring in Indonesia! The influence it had on Java is not easily measured, but at least it stopped rice exports from Bali to eastern Java, causing dearth there. During the period under consideration, six volcanoes in Java erupted as well, which in at least two cases led to flooding, and in one case caused at least 2,000 deaths.

During the dry years rats and mice (*tikus*) were often mentioned in the standing rice crop (1819, 1822, 1823), not an unusual phenomenon. During a drought these animals do not find sufficient food in forests and other uncultivated areas, which drives them onto the arable lands, where they destroy crops that were already damaged by the drought. Droughts not only harm wild animals, but domesticated ones as well. High mortality among livestock was mentioned in the Residency of Rembang in 1823 and 1824.

In all these years we encounter reports on harvest failures, high to very high rice prices, rice shortages, and in the Residency of Banten famine during two years in a row (1820 and 1821).

In addition to these disasters, Java was hit first by smallpox in 1820 and then, in 1821, by cholera, at that time a new disease for Java, and therefore quite lethal. The cholera would not disappear until 1824, and in 1823 we find the combination smallpox and cholera.

On might speculate, finally, on the influence of this series of natural disasters on the beginning of the Java War (1825-1830), also called the Dipanagara uprising. There are many reports on peasant riots in the Principalities during the years before the uprising, and it is certainly plausible that the long period of weather anomalies, harvest failures, and epidemics had prepared the ground for Dipanagara's rebellion.[8]

Information on the war years is not abundant. We do know that the war itself killed at least 200,000 Javanese. We also know that there were two very wet years and one very dry one between 1826/7 and 1828/9, but the reports regarding harvest failures are almost entirely lacking. Unless there was a conscious effort to keep harvest failures and epidemics out the reports, we must conclude that the expected companion phenomena of war did not materialise.

We are better informed about the next batch of unfavourable years, namely the period between **1832/3 and 1835/6**. Only one of these years, 1834/5, was truly anomalous according to the tree-ring measurements. Nevertheless, we find many reports on droughts, floods, and pests (*walang sangit, tikus*), harvest failures, scarcity of rice, rice shortages, high prices, and high mortality.[9] This was partly caused by famine, partly by cholera (1834), smallpox (1835), and 'fevers', a term then often used for malaria.

It is, however, unlikely, that climatic anomalies and epidemics were the sole factors responsible for the higher death rate, the more so as the tree-ring measurements do not show

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[6] On smallpox see Boomgaard1989a; on diseases in general in Indonesia's past, see Boomgaard 1987; Gardiner & Oei 1987; Boomgaard 1989b, 187-191.

[7] A detailed account of the eruption of Mount Tambora is to be found in De Jong Boers 1995.

[8] On this possible link see also Carey 1981, xxxviii, xliii.

[9] Mortality figures on an annual basis are available since 1834, and although they are far from reliable, they can be used to distinguish between normal and high death rates (Boomgaard & Gooszen 1991, 49-50, 55-66, 165-79).

a row of abnormal years. The dislocation caused by the introduction of the so-called Cultivation System (*Cultuur Stelsel*) must explain at least part of the higher rate of mortality. The introduction of the forced cultivation of crops for the European market (coffee, indigo, sugar) in many areas led to unrest among the peasantry, including land flight (*volksverloop*), and thus to partial crop failures.[10] This episode is a reminder that war is not the only form of government policy that can lead to or at least contribute to a subsistence crisis. But the worst was yet to come.

It could be argued that the entire period from **1843/4 to 1853/4** was one prolonged subsistence crisis. Between 1844 and 1851 Java was hit by what was arguably the most impressive series of crop failures during the entire period after 1800. This time, the climatic factor cannot be easily overlooked. During the 11 years under consideration, the tree-ring analysis comes up with four very wet and four very dry years. And that does not include 1844, because the average precipitation in that year was not all that extraordinary, resulting in a 'normal' tree-ring. However, we know from other literature that the monsoons had been reversed, and that the beginning of the year, ordinarily the wet season, had been dry, while the wet season, once it had started, lasted until September, thereby taking the place of the dry season. At the end of the year the rice price had reached unprecedented levels.[11]

These weather anomalies doubtlessly were partly responsible for the famines in three Residencies: the 1844-46 famine in Cirebon and the 1849-50 famine in Semarang (regencies Demak and Grobogan) and parts of Jepara. But also in other Residencies throughout the period we find a litany of complaints regarding droughts, floods, rice diseases (*ama mentek*) harvest failures, a 'great sickness among the horses', high rice prices and rice shortages.[12]

Few complaints of this nature were heard in 1852 and 1853, but these were the years that the third cholera epidemic struck Java. Cholera had been preceded by the first typhoid epidemic to hit Java, at least in the nineteenth century, lasting from 1846 to 1850. This was accompanied by smallpox, with a peak in 1849. In 1854 and 1855 the harvest failures continued, accompanied by cholera and smallpox.

Beside climatic irregularities and epidemics, it would appear that the over-ambitious extension of the Cultivation System and oppressive rule were partly responsible for this extraordinary series of bad years. The very high mortality figures between 1846 and 1853 inclusive bear witness to this combination of bad rule, weather anomalies, and epidemics.

During the next episodes the combination of climatic disasters, epidemics, and mismanagement would no longer be observed. Between 1858/9 and 1861/2 there were weather anomalies and a number of related harvest failures, but mortality was not particularly high. High mortality did occur in 1864 and 1865, which could be largely attributed to the fourth cholera epidemic, perhaps in combination with the modest harvests of those years (but no weather anomalies according to the tree-rings, and not all that many negative contemporary reports). The years between 1868/9 and 1870/1 were most irregular according to the tree-ring measurements, but they do not show up as particularly bad years in the reports on the state of the crops and the rice prices or in the mortality figures. We do have an eyewitness account, however, for almost daily rains during most of the dry season months of 1870 (Berlage 1931, 947), a year that also witnessed the last important smallpox epidemic in Java.

Another surge in the death rates occurred from **1874 to 1876**. This was again a cholera peak, no doubt made worse by high rice prices as a result of various harvest failures. 1873/4 had been a very dry year (tree-ring measurements), while the period of the dry monsoon in 1874

[10] For a more detailed account of unrest and migration in the 1830s see Boomgaard 1982.
[11] Jukes 1847, II; 116, 163; Junghuhn 1852/3, III, 667. Annual figures on rice harvests are available since 1837 (Boomgaard & Van Zanden 1990, 112-21), and a rice price index since 1848 (Creutzberg 1978, 43-7).
[12] For more details on the Cirebon and Semarang famines see Hugenholtz 1986, 159-65; Elson 1985.

had been extraordinarily wet, which was bad for the so-called second crops or *palawija* (all annual crops except rice). In all probability these years were worse than the mortality peak in 1864 and 1865, but not as bad as the late 1840s and early 1850s, and probably neither as bad as the years to be dealt with now.

Another series of weather anomalies (according to the tree-ring method) started in 1877/8 and lasted until 1887/8. During this eleven-year period there were five very dry years and four very wet ones. However, this should not be taken to mean that the entire period was a subsistence crisis. Although crop failures were mentioned since 1877, and high rice prices had prevailed since 1878, the only years with a high death rate were those from **1880 to 1883** inclusive. That 1877/8 had been a very dry year is confirmed in the literature. The calendar year 1878 seems to have been mostly very dry, but from November onwards very wet, which lasted until March 1879. This might explain that on balance the tree-ring of 1878/9 did not deviate too much from the norm, which reminds us again of the limitations of this method. Be that as it may, rice prices were high to very high from 1877 to 1882, and the harvests of 1877, 1880, 1881 and 1883 were all disappointing.

The worst hit was the Residency of Banten, where rice scarcity had been mentioned in 1878. More importantly, rinderpest broke out in 1879 and continued in 1880. In combination with floods in 1879 this made for serious harvest failures in 1880 and 1881. This was accompanied (and partly caused) by a malaria epidemic. The end result was that Banten lost 10% of its population in 1880 and 1881. The famine lasted until 1882. Just when the population was recovering in 1883, Mount Krakatao erupted, again killing large numbers of the inhabitants.[13]

Relatively high mortality was also registered in the years from **1890 to 1892** inclusive, but apparently neither because of weather anomalies as suggested by the tree-rings, or of high rice prices. Nevertheless four rice harvests in a row seem to have been modest (mentioned are drought and pests), and mortality was high during the three years between 1890 and 1892. Perhaps we may assume that the main culprits were cholera and 'fevers'. It is a badly documented subsistence crisis, assuming it was one.

Much more publicised, and perhaps also somewhat more severe, was the crisis of the years **1900-1902**. Weather anomalies are deduced for the three years 1900/1 to 1902/3 from the tree-ring measurements (one very wet and two very dry years). This is supported by contemporary sources mentioning both droughts and floods. There were epizootics, two very bad harvests in a row, high rice prices particularly in 1901, and a famine in Central Java, leading to high mortality in 1902. 1901 and 1902 were also cholera and malaria years. It was particularly the population of the regencies of Demak and Grobogan, already hit in 1849 and 1850, which bore the brunt of this crisis. The famine impressed the colonial civil service so much that it led to the well known '*mindere welvaarts onderzoek*' (investigation into the declining prosperity [of the Javanese]). Perhaps the presence in Java of a Member of Parliament from the Netherlands, the socialist H. van Kol, who was deeply impressed by what he saw during his visit, was a factor in the more widespread publicity surrounding this crisis.[14]

The final big subsistence crisis in Java prior to 1940 seems to have been the row of bad years between **1918 and 1921**. This was a combination of two very dry years, rice diseases and pests, harvest failures and therefore very high rice prices, plus the fact that the First World War led to difficulties regarding the import of rice. A complicating factor was that in 1918/9 rice crops failed in mainland Southeast Asia as well, the area where Java usually imported its rice from. However, the peak mortality of 1918 was largely caused by something else – the

[13] For details on the Banten famine and the events leading up to it see Forbes 1885, 75-6; Van Sandick 1892, 29, 87; Breitenstein 1900, II, 68-9; Hugenholtz 1986, 172-4.
[14] Van Kol 1903, 656-78; see also Hugenholtz 1868, 177-9; Boomgaard & Van Zanden 1990, 46.

largest influenza pandemic since there are reliable records of such things. Total mortality in 1918 was almost double that of 1917.[15]

Between 1922 and 1940 several very dry or very wet years were observed, leading to harvest failures and therefore modest rice harvests, but they did not lead to a significant increase in the rate of mortality. Even during the Depression of the 1930s, mortality figures hardly went up.

Indonesian subsistence crises in perspective

It would seem that after the bad years of 1918 to 1921, the colonial state finally got its act together. During most of the nineteenth century, the policy of the state had been a 'liberal' one, that is liberal in the nineteenth-century sense of the word: *laissez faire*. It was believed that government's responsibility for the well being of the indigenous population was limited to removing obstacles that blocked the free operation of market forces. If natural calamities occurred, government did admittedly attempt to alleviate the most obvious symptoms of suffering. Taxes were lowered, relief works organised, and corvee labour services suspended. But that was it, and it was often too late and too little. This was partly caused by two other factors, namely limited knowledge and understanding of the rice trade, and extreme reluctance of the Residents, the highest local colonial civil servants, to admit that famine conditions obtained in their resort. A Resident who had not prevented a famine, had seriously blotted his copy-book.

After 1900, most of these factors changed. In the first place, manipulation of the rice market had become easier, in a sense, as Java around 1870 had started to turn into a net rice-importer, while it had always been a rice-exporter. Then, of course, the early 1900s also witnessed the beginning of the period of the so-called ethical policy. Starting in 1911 we see that government is willing to intervene much more drastically in the rice trade. During the 1930s government strictly controlled the rice trade. This was closely related to another factor - increased knowledge of the rice market. Taken together, these factors go a long way in explaining the absence of subsistence crises between 1921 and 1940.[16]

Almost all evidence given above refers to Java. We do know, however, that there were various instances of Archipelago-wide weather anomalies. A famous (or rather infamous) case was the drought of 1877/8, which caused forest fires even in the tropical rainforests of Borneo. Even more severe conditions were to be found in British India during those years. Equally infamous cases were the droughts and harvest failures of 1918/9, which were not only to be found in the Outer Islands, but also in mainland Southeast Asia.

We are now increasingly inclined to see such irregularities as part of a larger mechanism - the El Niño Southern Oscillation (ENSO) effect. Particularly the anomalies across the globe of the years 1877 and 1878 have been identified as one of the most severe ENSO effects of the nineteenth century (Grove & Chappell 2000, 9). Nevertheless, the analytical value of calling something an ENSO phenomenon remains limited, as long as not every drought is part of an El Niño effect and not every El Niño produces a drought. It is perhaps more important to realise that the irregularities of the monsoons occur regularly, on average once every 3.4 years.

The business cycle in Indonesia

There is no need for a long theoretical section on the notion of the business cycle. To my knowledge it is generally accepted that industrialisation brought with it its own fluctuations, which are often dubbed business or trade cycles. We observe them in England since the late

[15] For more information on the difficult years at the end of World War Two, see e.g. Creutzberg 1972/5, II, 172-6, 203-73. On the influenza pandemic, see Brown 1987.
[16] For more details on government policy regarding the rice trade see Creutzberg 1972/5, II, 171-750; Hugenholtz 1986.

eighteenth or early nineteenth century, and in the Netherlands, for instance, since around 1850 according to recent research (Jacobs & Smits 2001). The mechanisms behind these cycles have to do with (over)investment, (over)production, (over)stocking, and (under)consumption. Cycles can be short and mild, but also long and severe. Business cycles are usually measured by looking at the year to year (or, more recently, quarter to quarter) development of GDP data.

Indonesia prior to 1940 was clearly a nation that was hardly industrialised and therefore did not generate its own trade cycle. Any trade cycle to be observed would have to come from outside. This is clearly what happened in the 1930s, and the question I would like to answer in this section is whether similar occurrences can be discovered in earlier periods.

Thanks to the good services of Pierre van der Eng we have an annual GDP series for the whole of Indonesia at our disposal from 1880 onward (Van der Eng 1993). Before 1880, however, GDP data are not yet available, but it seems that they will be shortly.

A quick and dirty way of trying to locate outside influences is looking at unusual fluctuations in the export figures, on the assumption that exports would show a gradual increase commensurate with population growth if outside influences were absent. If, therefore, we find large dents and bulges in the graph, we should be alive to outside influences, although policy changes could be another explanation.

Applying this admittedly rather crude approach, I have singled out three episodes prior to 1880 that might indicate negative outside influences on the Indonesian (prior to 1874 the Javanese) economy. These are the years 1846-1848, 1864-1870, and 1874 to 1879.[17]

During the years **1846-1848** the upward trend of (nominal) Java export values is interrupted. As we have seen above, this was a difficult period in Java, and an internal component is, therefore, likely. However, contemporary sources and the scholarly literature also refer to connections with problems in Europe. European countries were going through a bad patch. This started with the potato blight in 1845 and culminated in the political trouble across Europe in 1848, also a period of European outmigration. The Dutch export statistics show a dip in 1848 and 1849. In 1848 world market prices of coffee and sugar reached a relative trough.[18] As we have seen, the years before 1850 in Europe are sometimes regarded as the last European subsistence crisis, and it is an interesting thought that the last European subsistence crisis might have triggered the first business cycle depression in Java.

Another episode of stagnation owing to outside influences might be the period **1864-1870** (or perhaps even 1862 to 1871). The first sign that something was wrong came in 1862. Prices for food were relatively high because, after a very wet 1861/2, the rice harvest had been modest. This meant that European and Chinese merchants were not able to sell the textiles they had imported from Europe in large quantities. Several merchant houses went belly-up, and credit was tight because of these developments. The (printed) Colonial Report (*Koloniaal Verslag*) on 1863 used the term 'crisis' for this situation, which continued in that year. Three important Batavia merchant firms went broke, and in Surabaya, the other important Java harbour, the trade was also depressed. As causes, the Colonial Report lists the 'depressed mood' reigning generally in Europe, the American Civil War, and the high rice prices early in the year. In 1864, cholera is added to this mixture, and the mood in Batavia and Surabaya remained depressed among the traders. The Civil War kept prices on a high level, and the Java harvests of tobacco, sugar, and coffee were less favourable. In 1865 things seem to brighten up, but in 1866 Batavia and Surabaya are again in a depressed mood, because of the political situation in Europe.[19] The situation did not improve in the following years, and large

[17] I have used the export figures as published (and corrected) by Korthals Altes (1987, 102-10).
[18] *Mededeelingen* 1850, 3; Korthals Altes 1986, 84. For annual exports (values) from the Netherlands, see Van der Bie & Smits 2000.
[19] This refers no doubt to the wars between Prussia on the one hand and Austria and the other German states on the other, and between Austria and Italy.

numbers of European and Chinese business houses in Batavia and Surabaya went broke between 1867 and 1869. Export figures had been low ever since 1864, reaching a trough in 1869. It is not until the Colonial Report on 1872 that the uninterrupted series of pessimistic statements came to an end.

If we look at the Dutch exports, we find a dent in the upward trend of the export figures between 1866 and 1869 inclusive. These lower figures coincide with part of the Java 'trough'. It seems likely, therefore, that apart from an indigenous component, the bad performance of Java's export economy between 1862 or 1864 and 1870 or 1871 was also partly the result of world market forces.

Finally the years between 1874 and 1879. In fact, we should be looking at the entire period between **1874 and 1890**, which includes the first eleven years of Van der Eng's GDP series. These figures cover the entire economy of the Netherlands Indies. The period does not show much development as regards (nominal) export values, certainly not in comparison with the steeply rising exports after 1890. Van der Eng's figures show four years where GDP was lower than the year before between 1880 and 1890 inclusive. These years are 1882, 1883, 1886, and 1890. Piet Creutzberg regarded the entire period 1883/4 till 1898 as one of export stagnation and depression, but that is, as Anne Booth pointed out, an exaggeration, to say the least. Nevertheless, even according to her figures, the growth of export volume in real terms was much slower between 1874 and 1885 than between 1885 and 1900.[20]

As so often, we find external and internal factors behind the sluggish growth rates (and occasional dips) between 1874 and 1890. The external factors seem to be the downward trend of commodity prices on the world market after 1873, which was linked to the so-called Great Depression of 1873-1896. This depression is reflected in the export figures in the Netherlands between 1873 and 1886. The internal causes were the coffee leave disease that made itself felt for the first time in 1883, and depressed harvests until 1924 [sic], and the *sereh* disease in the sugar, leading to dips in 1878-1880, and 1885-1889. This was related to the banking crisis of 1884. And, finally, two subsistence crises-cum-epidemics and the beginning of a third fell within the period under consideration.

It is, therefore, again quite difficult to disentangle outside and inside factors, but it is at least likely that the Great Depression had some bearing on the Indonesian economy during these years.

Until the 1930s Depression, when there is another cluster of years with negative GDP growth (five years between 1930 and 1940), there are only three much less impressive episodes. These are 1896, 1901-1902, and 1920-1921. The 1896 dip is probably a small subsistence crisis, in combination with a bad year in the plantation sector. The rice harvest was considerably lower than the 1895 one, and there were many harvest failures. However, it was probably not a real subsistence crisis as neither the rice price index nor the registered death rate showed much of a rise.

We have dealt with the two other crises above. The 1901-1902 depression seems to have been entirely a subsistence crisis.
The **1920-1921** depression, however, was at least partly triggered by the problems caused by World War One. Here again it is hard to deny that the world market had a strong influence on the Indonesian economy.

Finally, the **1930s Depression**. Elsewhere, I have dealt extensively with the effects of the global depression that started in 1929 on the Indonesian economy and society (Boomgaard 2000). One of the conclusions is that the indigenous population of Java did have a hard time, but that it was not the disaster it has been made out to be. In fact, mortality does not appear to have risen, except - and then only slightly - during 1934 and 1935, two years with anomalous weather conditions and harvest failures, or, in other words, potential subsistence crises. Apparently, loss in income from the export sector was compensated for by lower rice

[20] Creutzberg 1972/5, I, xvii, xxx-xxxiii; Van der Eng 1993, 102; Booth 1998, 18, 31-2.

prices, cheap imports from Japan, expansion of rice cultivation on former sugar fields, and new opportunities in industries recently established behind tariff barriers.

Epilogue

It would appear that world market developments and world events made themselves felt in the Indonesian economy as early as the late 1840s, precisely at the moment that Europe was living through what may have been its last subsistence crisis.

What we cannot establish for the moment is to what extent the dips in the export figures did mean hardship for a significant proportion of the indigenous population. Of course a partly externally generated depression such as that of the 1860s did mean hardship for the many employees of the merchant houses that went broke. Many of those must have been Europeans and Chinese, but there were of course also Javanese wage-owners among their personnel. A drop in activities in the harbours translated into less employment for dockers and other coolies, and a drop in demand for carters, pack animals and their human companions. Ultimately it must have meant lower prices or a lower demand - or both - for agricultural and other products, which took the depression to the peasant's doorstep. So it would appear that if a depression lasted for a number of years in a row, and if there were no compensatory developments, such as the ones observed during the 1930s, business cycle depressions, including the early ones, must have made themselves felt among a sizeable segment of the indigenous population.

On the other hand, (potential) subsistence crises, such as the one in 1934/5, may have led to more local suffering than a reputedly terrible trade cycle depression as that of the 1930s. During the other Depression years large sections of the Javanese population were probably only marginally more 'depressed' than they were during a non-(trade cycle)-depression year.

References

- Abel, Wilhelm, 1972, *Massenarmut und Hungerkrisen im vorindustriellen Deutschland*. Göttingen: Vandenhoeck & Ruprecht
- Berlage Jr., H.P., 1931, 'Over het verband tusschen de dikte der jaarringen van djatiboomen (Tectona grandis L.f.) en den regenval op Java', *Tectona* 24, pp. 939-53
- Bie, R.J. van der, and J.P. Smits, *Tweehonderd jaar statistiek in tijdreeksen, 1800-1999*. Amsterdam: IISG
- Boomgaard, Peter, 1982, 'Geweld en protest op Java, 1800-1875', paper prepared for the 3rd KOTA Conference on Violence in Asia, Amsterdam, 13-14 May
- Boomgaard, Peter, 1987, 'Morbidity and mortality in Java, 1820-1880: changing patterns of disease and death', in Norman G. Owen (ed.), *Death and disease in Southeast Asia; explorations in social, medical and demographic history* [Asian Studies Association of Australia; Southeast Asia Publication Series, 14] Singapore, etc.: Oxford University Press, pp. 48-69.
- Boomgaard, Peter, 1989a, 'Smallpox and vaccination on Java, 1780-1860; medical data as a source for demographic history', in A.M. Luyendijk-Elshout et al. (eds.), *Dutch Medicine in the Malay Archipelago 1816-1942*. Amsterdam/Atlanta: Rodopi, pp.119-32.
- Boomgaard, Peter, 1989b, *Children of the Colonial State; Population Growth and Economic Development in Java, 1795-1880*. Amsterdam: Free University Press
- Boomgaard, Peter, 2000, 'Surviving the slump; Development in real income during the depression of the 1930s in Indonesia, particularly Java', in: Peter Boomgaard and Ian Brown (eds.), *Weathering the storm; The economies of Southeast Asia in the 1930s depression*. Singapore/Leiden: ISEAS/KITLV Press, pp. 23-52
- Boomgaard, Peter, 2001, 'Crisis Mortality in Seventeenth-Century Indonesia', in Tsui-jung Liu et al. (eds.), *Asian Population History*. Oxford: Oxford University Press, pp. 191-220
- Boomgaard, Peter, and A.J. Gooszen, 1991, *Population trends 1795-1942* (Changing Economy in Indonesia, Vol. 11) Amsterdam: Royal Tropical Institute
- Boomgaard, Peter, and J.L. van Zanden, 1990, *Food crops and arable lands, Java 1815-1942* (Changing Economy in Indonesia, Vol. 10) Amsterdam: Royal Tropical Institute
- Booth, Anne, 1998*, The Indonesian Economy in the Nineteenth and Twentieth Centuries; A History of Missed Opportunities*. London/New York: MacMillan/St. Martin's
- Braudel, Fernand, 1973, *Capitalism and Material Life 1400-1800*. London: Weidenfeld & Nicolson [Original French edition 1967]
- Breitenstein, H., 1900, *21 Jahre in Indien; aus dem Tagebuche eines Militärarztes*. Leipzig: Grieben (2 Vols.)
- Brown, Colin, 1987, 'The Influenza Pandemic of 1918 in Indonesia', in Norman G. Owen (ed.), *Death and disease in Southeast Asia; explorations in social, medical and demographic history* [Asian Studies Association of Australia; Southeast Asia Publication Series, 14] Singapore, etc.: Oxford University Press, pp. 235-56
- Brown, Ian, 1997, *Economic Change in South-East Asia, c. 1830-1980*. Kuala Lumpur, etc.: Oxford University Press
- Carey, Peter B.R., 1981, *Babad Dipanagara; An account of the outbreak of the Java War (1825-1830)*. Kuala Lumpur: The Malaysian Branch of the Royal Asiatic Society
- Creutzberg, P., 1972/5, *Het ekonomisch beleid in Nederlandsch-Indië*. Groningen: Tjeenk Willink [3 Vols. In 4 parts]
- Creutzberg, P., 1978, *Rice Prices* (Changing Economy in Indonesia, Vol. 4) Amsterdam: Royal Tropical Institute
- Dixon, Chris, 1991, *South East Asia in the World-Economy*. Cambridge: Cambridge University Press
- Elson, Robert E., 1985, ' The Famine in Demak and Grobogan in 1849-50; Its causes and Circumstances', *Review of Indonesian and Malaysian Affairs* 19, pp. 39-85
- Eng, Pierre van der, 1993, *Agricultural Growth in Indonesia since 1880; Productivity Change and the Impact of Government Policy*. PhD thesis, University of Groningen

- Forbes, H.O., 1885, *A naturalist's wanderings in the Eastern Archipelago*. New York: Harper.
- Gardiner, Peter, and Mayling Oey, 1987, 'Morbidity and Mortality in Java, 1880-1940', in Norman G. Owen (ed.), *Death and disease in Southeast Asia; explorations in social, medical and demographic history* [Asian Studies Association of Australia; Southeast Asia Publication Series, 14] Singapore, etc.: Oxford University Press, pp. 70-90
- Grove, Richard H., and John Chappell (eds.), 2000, *El Niño - History and Crisis; Studies from the Asia-Pacific Region*. Cambridge: The White Horse Press
- Gutmann, Myron P., 1980, *War and Rural Life in the Early Modern Low Countries*. Assen: Van Gorcum
- Hugenholtz, Wouter R., 1986, 'Famine and Food Supply in Java 1830-1914', in C.A. Bayle & D.H.A. Kolff (eds.), *Two Colonial Empires*. Dordrecht: Nijhoff, pp. 155-88
- Jacobs, Jan, and Jan-Pieter Smits, 2001, 'Conjunctuurbewegingen in Nederland gedurende de negentiende eeuw - met een internationale vergelijking', *NEHA-Jaarboek* 64, pp. 178-199
- Jong Boers, Bernice de, 1995, 'Mount Tambora in 1815; A volcanic eruption in Indonesia and its aftermath', *Indonesia* 60, pp. 36-60
- Jukes, J.B., 1847, *Narrative of the Surveying Voyage of H.M.S. Fly (...) during the Years 1842-1846; together with an Excursion into the Interior of the Eastern Part of Java*. London: Boone (2 Vols.)
- Junghuhn, Franz Wilhelm, 1853/4, *Java, zijne gedaante, zijn plantentooi en inwendige bouw*. 's-Gravenhage: Mieling (3 Vols.)
- Kol, H. van, 1903, *Uit onze koloniën. Uitvoerig reisverhaal*. Leiden: Sijthoff
- *Koloniaal Verslag*, 1849-1930, Batavia: Landsdrukkerij (annual)
- Korthals Altes, W.L., 1986, *De betalingsbalans van Nederlandsch-Indië 1822-1939*. PhD thesis, University of Rotterdam
- Korthals Altes, W.L., 1987, *Balance of Payments 1822-1939* (Changing Economy in Indonesia, Vol. 7) Amsterdam: Royal Tropical Institute
- Lamb, H.H., 1982, *Climate, History and the Modern World*. London/New York: Methuen
- Livi-Bacci, Massimo, 1992, *A Concise History of World Population*. Cambridge MA & Oxford: Blackwell [Original Italian edition 1989]
- [*Mededeelingen*], 1850, *Mededeelingen betreffende de Kolonien (Art. 60 der Grondwet)* [Stukken Tweede Kamer, zitting 1849-1850 (xxxvi), Exh. 20 Juni 1850, no. 2]
- Ponting, Clive, 1991, *A Green History of the World*. Harmondsworth: Penguin
- Salaman, Redcliffe N., 1985, *The History and Social Influence of the Potato*. Cambridge, etc.: Cambridge University Press [First published 1949]
- Sandick, R.A. van, 1892, *Leed en lief uit Bantam*. Zutphen: Thieme & Co.
- Vries, Jan de, 1976, *The Economy of Europe in an Age of Crisis, 1600-1750*. Cambridge, etc.: Cambridge University Press