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Southeast Asia

The 'Colonial Drain' from Indonesia, 1823–1990

Pierre van der Eng

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Key to symbols used in tables

n.a.	Not applicable
..	Not available
-	Zero
.	Insignificant

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*a*bstract

Common perception dictates that 'colonial exploitation' impeded economic advance in developing economies. Many authors adhere to the idea that funds were 'drained' from these economies because of their colonial status, although this perception has hardly been put to the test. This paper uses historical balance of payments and national income data for Indonesia to approximate 'colonial drain'. Any attempt to define 'colonial drain' ultimately depends on the views of the beholder. The paper concludes that most of the funds flowing out of the country were payments for the services of foreign labour and investment capital in Indonesia. Even using the broadest possible definition of 'drain' the historical path of economic growth in Indonesia is not reversed. In fact, the 'drain' was most substantial during two periods of accelerated growth, 1900-29 and 1967-90.

Proponents of the colonial drain hypothesis argue that the expansion of colonial rule by Western powers in several parts of the world, in particular Asia and Africa, was entirely for economic reasons. They differ in opinion about the exact mechanism and logic of colonial expansion and drain, but the orthodox Marxist-Leninist view is that a 'structural' decline of capitalism in the advanced countries forced Western empires to expand into the other continents by importing underdeveloped labour from the colonies, and by exporting

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This paper is a critical review of the 'drain' hypothesis, which has been widely accepted in the literature on the economic development of the Third World. It is argued that the 'drain' hypothesis is based on a number of assumptions which are not supported by the evidence.

Abstract
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CONCLUSION

Common perception dictates that 'colonial exploitation' impeded economic advance in developing economies. Many authors adhere to the idea that funds were 'drained' from the economies of these states, although this perception has hardly been put to the test. This paper uses historical balance of payments and national income data for Indonesia to approximate colonial drain. Any attempt to define 'colonial drain' ultimately depends on the views of the beholder. The paper concludes that most of the funds flowing out of the country were payments for the services of foreign labour and investment capital in Indonesia, and that the drain was not reversed. In fact, the 'drain' was most substantial during two periods of accelerated growth, 1900-29 and 1967-90.

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the 'colonial drain' from Indonesia, 1823-1990¹



Since the 19th century there has been a lively debate on the relationship between 'colonial drain' and economic development in British India (Ganguli 1965; Chandra 1966:636-708; Mukerjee 1972). The issue has hardly been addressed for the colonies in Southeast Asia, but the perception that colonial drain is a major cause of economic under-development in Southeast Asia appears to be widespread, not only in popular and nationalist opinion, but also in the historiography of Southeast Asia.

In spite of the long-standing debate on India, the issue of colonial drain is not part of the mainstream of literature on development economics (Thirlwall 1983). If anything, the debate on colonial drain from British India has shown that there is no unambiguous and operational economic definition of the concept of colonial drain, which allows measurement and quantitative evaluation. The concept has always remained elusive, although it seems to provide a powerful, imaginative, and perhaps emotionally comforting explanation for economic under-development in India.

Proponents of the colonial drain hypothesis argue that the expansion of colonial rule by Western powers in several parts of the world, in particular Asia and Africa, was entirely for economic reasons. They differ in opinion about the exact mechanism and logic of colonial expansion and drain, but the orthodox Marxist-Leninist view is that a structural decline of profits in the capitalist economies forced Western entrepreneurs and States to dominate other countries. By importing underpriced raw materials from the colonies, and by exporting

¹ Author's notes: I am grateful to Stanley Engerman, Tony Reid, Anne Booth, Howard Dick and Gill Burke for their comments on a previous version of this paper.

By importing underpriced raw materials from the colonies, and by exporting manufactures to them, capitalist entrepreneurs were able to continue making profits and postpone the inevitable moment at which the workers would oppose a further squeeze of their wages and would rise against their capitalist exploiters.

On the whole, there is very little evidence for this orthodox view. The price of raw materials exported from colonies was generally determined on the world market, to which entrepreneurs in Western and non-colonized developing economies delivered their products. Exports of manufactures by metropolitan countries to their colonies were in most cases only a small portion of total exports. There are not many proponents of the orthodox view left. Critics of colonialism now seem to agree that the mechanism of exploitation was more guileful than the orthodox view suggested. Their argument is based on the assumption that the resources, in particular labour and land, used by Western companies in the colonies, were underpaid. In this way these companies managed to secure excessive profits, which they transferred back to their base countries. In this view, colonial governments facilitated the outflow of funds from the colonies to the metropolitan countries. Next to government-to-government transfers, most of these transfers took the form of returns on capital invested by foreign companies and of payments for the entrepreneurial skills of foreigners employed in the colony. The drain is largely defined by the extent to which the rewards for foreign capital and labour were excessive. On the assumption that drainage is the rationale of colonial rule, many authors have alleged that colonial drain obstructed gains in average income in the colonies. This explains the state of under-development and economic stagnation in the ex-colonial countries.

The discussion of the thesis that colonial drain explains under-development in Southeast Asia is often based on casual assumptions and unsubstantiated impressions, rather than on quantitative evidence.² Several authors have suggested that, for Indonesia in particular, there was a significant colonial drain from the country which explains the assumed lack of economic development during the colonial era and immediately thereafter.³ Many authors have asserted

²For example, Reid 1979:47; Owen 1987:15; Elson 1992:186, in spite of relevant contradicting arguments brought to the fore by, for example, O'Brien 1982; Von Albertini 1982:497-8; Fieldhouse 1983:103-66.

³The explanation has been casually used in several publications, although without any evidence (Geertz, 1963:135-43; Mackie 1987:177; Lindblad 1991:196; Boomgaard 1991:35). For other authors, however, such as Van Klaveren (1953) and Wertheim (1978) it was one of the corner-stones of their work.

during the colonial era. There are indeed indisputable signs of under-development in colonial Indonesia. Under-development in itself, however, does not prove that wealth was drained from the country to the extent that it impeded the growth of average indigenous income. In other words, under-development and economic stagnation should not be confused.

The question of whether colonial drain is a relevant concept in the explanation of economic development in Indonesia is addressed. The discussion is restricted to the issue as it was originally proposed by Indian nationalist authors. Wider arguments which have been used to assess the impact of colonialism or imperialism on under-developed countries are not discussed. 'Internal drain', or the use of business profits and government revenues for the benefit of elites in Indonesia is not addressed. More clarification of the relevance of the original hypothesis of colonial drain is required, before the issue of internal drain can be adequately addressed.

The extent to which the commodity trade balance can be accepted as a proxy for drain is discussed first. It will become clear that the main issue in accepting the trade balance as a proxy for drain is how the labour of foreign nationals and the services of foreign investment capital are valued. These valuation issues are discussed in the two subsequent sections. The hypothesis of drain has largely been discussed on the basis of the balance of payments (BoP) concept. Historical data on the BoP and national income are used to approximate drain on the basis of a broad, though still arbitrary, definition.

Is the commodity trade balance a proxy for drain?

Booth and Maddison have recently endorsed the view that colonial drain is a major factor explaining the retarded economic development of colonial Indonesia (Booth 1988a:222, 1989:75-80, 1990b:286-94; Maddison 1989, 1990). Just like the 19th century authors writing about the drain from British India, Booth and Maddison substantiated their claim by using the difference between commodity exports and imports as a proxy of the drain of funds from the country. They both concluded that the ratio of the commodity trade surplus and national income was high in Indonesia compared to that of independent countries. Many of the possible gains from export growth failed to materialize

because of what these authors have called the 'double drain' of remittances abroad by Dutch and Chinese foreign nationals.⁴

The existence of some drain from colonial Indonesia can hardly be disputed, especially in the 19th century as a result of the Cultivation System. There is also no doubt that the commodity trade balance of Indonesia has generally been positive, especially during the colonial era (Figure 1). Booth and Maddison did not address the question of whether or not the commodity trade surplus can indeed be used as a proxy for colonial drain. Several other authors used the trade surplus as a proxy for drain and cited this surplus as the cause of underdevelopment.⁵ Booth referred to this discussion, but neither she nor Maddison addressed the critical points raised in it (Booth 1989:73, 1990:270-71). In addition, both omitted discussion of several fundamental technical issues which have not been addressed in the debate on India. This debate has led to the conclusion that the balance of commodity trade cannot be readily accepted as a proxy for colonial drain (Chandra 1966; Charlesworth 1982:51-4). The main point is that a relatively high commodity trade surplus generally indicates a high reliance on the services of foreign capital and labour.⁶

The next issue is the extent to which the trade surplus is indicative of a drain of funds from Indonesia to its metropolitan power, the Netherlands. Table 1 shows that, for, the Netherlands trade contacts with Indonesia were not of dominating importance. The share of the Netherlands in the foreign trade of colonial Indonesia, and, *vice versa*, the share of Indonesia in Dutch foreign trade, declined between 1875 and 1930 (Lindblad, 1988).⁷ The trade figures also show

⁴Maddison went one step further by actually putting a figure on the drain from colonial Indonesia at an amazing 10.6 per cent of Indonesian net domestic product (NDP) during the interwar years, an outflow which he assumed boosted the Dutch economy.

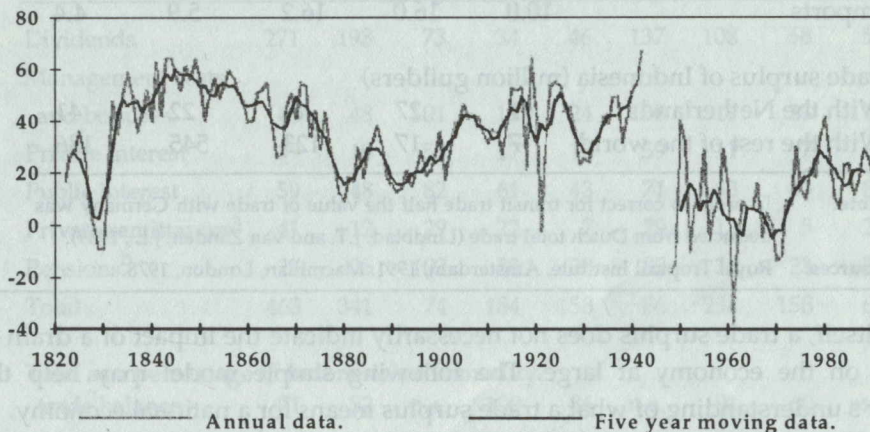
⁵In particular Golay (1976) and Frank (1976). Latham (1978) and Hanson (1980:122-8), have cast serious doubts on the extent to which the trade balance can indeed be used as a proxy of drain.

⁶Several Dutch economists came to this conclusion including: Van Gelderen 1927:112-5; Prange 1935:99-102; Boeke 1942:181-93; Haccoff 1947:72-84; Berkhuysen 1948:87-94. *Idem ditto* the Indonesian economist Oei (1948:104-6).

⁷Clark (1936:4-5) has pointed out that throughout the heydays of colonial rule, colonial powers traded far more with areas they did not control than with their own colonies. They also found little difficulty in selling merchandise to colonies dominated by other powers. Non-colonial industrialized economies were rarely excluded from the markets, whether in the colonial mother countries, or in the colonies. Only Japan seems to be an exception to this rule. The implication of these findings is that trade did not primarily follow the flag, but rather, effective demand. Demand for manufactures was generally not concentrated in the low-income colonies, but in rival industrialized economies.

that after about 1905 the trade surplus of colonial Indonesia with the Netherlands was much lower than the booming trade surplus with the rest of the world. Of relevance is the fact that the share of products from indigenous producers in total exports from Indonesia increased from 11 per cent in 1894 to 37 per cent in 1940.

Figure 1 Indonesia's trade balance as a percentage of exports, 1823-90



Note: Trade excludes unminted gold and silver. No data available for 1943-47. The Break in the 1940's is a result of a large drops in the level of exports relative to imports.

Sources: *Changing Economy in Indonesia Vol.7*, Balance of Payments 1822-1939, Royal Tropical Institute, Amsterdam, 1987; International Monetary Fund, *International Financial Statistics*, IMF, Washington, DC. (various issues).

The direction of trade data do not show the direction in which the earnings from foreign trade were flowing. To the extent that the trade surplus indeed is an indication of drain, the trade figures suggest that it was unlikely that the flow of funds out of Indonesia only benefited the Netherlands. To investigate this proposition, a comparison of the BoP of both Indonesia and the Netherlands would be useful. Unfortunately a complete set of historical data for the Netherlands, in which receipts from Indonesia are identified, is not available over the period of interest.

Table 1 Trade relations between Indonesia and the Netherlands, 1875-1934

	1875-79	1890-94	1910-14	1920-24	1930-34
The Netherlands' share of Indonesian foreign trade (per cent)					
Exports	58.1	37.5	30.4	16.7	16.6
Imports	37.6	31.5	32.1	23.9	14.6
Indonesia's share of Dutch foreign trade (per cent)					
Exports	10.0	6.8	6.6	11.1	5.8
Imports	10.0	16.0	16.2	5.9	4.4
Trade surplus of Indonesia (million guilders)					
With the Netherlands	61	27	44	22	41
With the rest of the world	-7	17	123	545	186

Note: In order to correct for transit trade half the value of trade with Germany was deducted from Dutch total trade (Lindblad, J.T. and van Zanden, J.L., 1989).

Sources: Royal Tropical Institute, Amsterdam, 1991. Macmillan, London, 1978.

In itself, a trade surplus does not necessarily indicate the impact of a drain of funds on the economy at large. The following simple model may help the reader's understanding of what a trade surplus means for a national economy.

$$\text{GDP} = C + I + (X_C - M_C) + (X_S - M_S) \quad (1)$$

$$\text{GNP} = \text{GDP} + T \quad (2)$$

In which

C	Domestic consumption
I	Gross domestic investment
X_C	Exports of commodities
X_S	Exports of services
M_C	Imports of commodities
M_S	Imports of services
T	Net transfers abroad (payments for domestic production factors employed abroad less payments for the services of foreign capital and non-resident labour employed domestically)
GNP	Gross national product
GDP	Gross domestic product

Equation (1) rewritten becomes

$$\text{GNP} = C + I + (X_C - M_C) + (X_S - M_S) + T \quad (3)$$

Table 2 Foreign payments by Indonesia and foreign receipts by the Netherlands, 1925-38

	1925-29			1930-34			1935-38		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Dividends	271	198	73	34	46	137	108	58	54
Management costs									
and bonuses	48	48	101	18	24	138	19	23	119
Private interest	19	10	53	17	10	59	11	7	60
Public interest	59	48	82	61	43	71	53	43	82
Private remittances ^a	41	12	29	22	7	29	18	5	27
Pensions ^b	25	25	102	33	28	85	30	23	76
Total	463	341	74	184	158	86	238	158	67
Total as a percentage of Indonesia's commodity trade balance	71	52	n.a.	100	86	n.a.	91	60	n.a.
Total payments for non-commodity imports	585	n.a.	n.a.	277	n.a.	n.a.	295	n.a.	n.a.
Total commodity trade balance	654	n.a.	n.a.	184	n.a.	n.a.	261	n.a.	n.a.

Notes: Data presented in Table 2 provide an indication of the extent to which Indonesian commodity trade earnings may have been used for factor payments to the Netherlands over the period 1925-38.

^a Remer (1933:185, 204) stated that China received HK\$29.4 million in private remittances in 1930, or 62% of total private remittances from Indonesia.

^b Government and private pensions for Indonesia, government pensions only for the Netherlands.

(1) Paid abroad by Indonesia, million guilders

(2) Received from Indonesia by the Netherlands, million guilders

(3) Column (2) as a percentage of column (1).

Source: *Changing Economy of Indonesia* Vol. 7, Balance of Payments, 1822-1937, Royal Tropical Institute, Amsterdam, 1987.

Commodity exports less imports ($X_C - M_C$), or the balance of visible trade, has almost always been positive during the colonial era (figure 1). The persistent commodity trade surplus is, in principle, an indication of the fact that an economy is a net importer of items which make up net services and transfers abroad ($X_S - M_S$) + T. These include a wide range of services, such as shipping, insurance, financial, bureaucratic and administrative services, and also payments for the services of foreign investment, and education, travel and tourism services. The commodity trade surplus may reflect the importation of the services of foreign workers and foreign capital rather than a drain on domestic expenditure. Foreign nationals remit part of their earnings to their countries of origin, and interest and dividends are paid abroad in return for the services of invested foreign capital.⁸ The contributions of foreign nationals and foreign capital to the economic development of a country are not specific to a relationship between a colonial power and its colonies. It is easy to establish that foreign labour and capital have been used throughout history and throughout the world in the economic development of countries, regardless of whether or not these countries were colonies. Many countries had substantial trade deficits in the prewar years, although they were not colonies. It is in fact very difficult to find an example of an autarkic economy which managed to advance with only marginal foreign economic contacts.

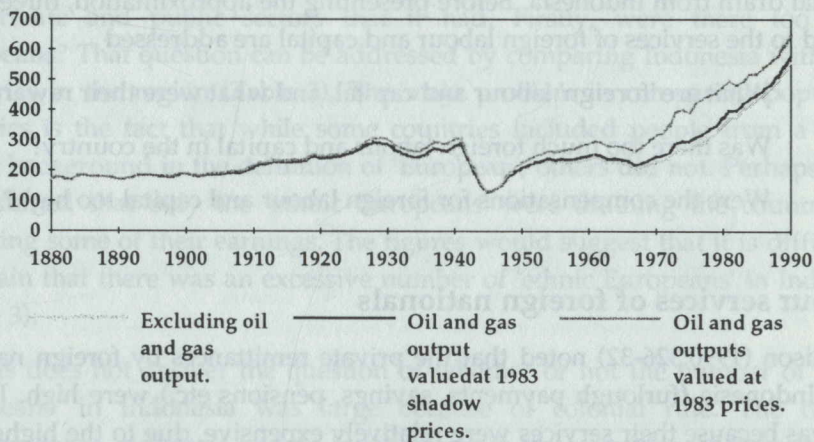
Equation (3) also shows that the mere presence of a negative value for the term ($X_S - M_S$) + T is not in itself indicative of the impact of the drain of funds from the economy. That depends critically on the size of the term relative to the size of the economy at large. The problem is that historical values of national income or the total output of developing countries are often not known. Some estimates of national income in Indonesia are available for the period 1921-39. Both Booth and Maddison used this data and suggested that the trade surplus was between 5 to 15 per cent of national income during this period. Unfortunately they ignored the fact that these estimates of national income are seriously under-estimated. It is difficult to provide an exact indication of the extent of this under-estimation. Estimates of constant prices GDP for 1880-1982 are discussed (Annex 1). A rough reflection of the constant price series, suggests that the old prewar estimates are on average 43 percent too low (Annex 2). This

⁸Booth and Maddison (Booth 1988:222, 1989:75-80, 1990b:286-94; Maddison 1989, 1990) acknowledged the positive contribution of foreign labour and capital to economic development. They noted that the commodity trade surplus is only a rough approximation of the drain. In spite of this acknowledgment, neither author made an effort to correct the available figures on this point.

data implies that the ratios of the trade surplus and national income presented by Booth and Maddison for colonial Indonesia are too high.

Although these estimates of total output are rough, the overall trend in per capita output matches qualitative descriptions of economic change in Indonesia (Gonggrijp 1957:139) (figure 2). The main feature is the increase of per capita output during the period 1900-29. The difference between the two top series is a reflection of how the contribution of oil and natural gas production is valued. Post 1973 there was a rapid increase in the price of oil, which implies that the value of oil production in relatively high 1983 prices before 1973 overestimates the actual contribution of the oil sector to GDP. The dotted line therefore uses a 1983 shadow oil-price of 20 per cent of the actual 1983 price, which is based on the pre-1973 price of oil in relation to other commodities (figure 2).

Figure 2 Gross domestic product per capita in Indonesia, 1880-1990
(thousand 1983 rupiahs)



Source: Van der Eng, 1992, updated. 'The real domestic product of Indonesia 1980-89', *Explorations in Economic History* 28:347-73, 1992, (updated).

These GDP estimates enable approximation of the impact of the flow of funds out of Indonesia. As discussed above, a positive value of T is not abnormal for colonial or for developing economies. The question therefore is not: 'Why is T not zero?' but, 'Is T excessive because of colonial rule?' In other words, the issue is not whether colonial Indonesia was paying for the services of foreign labour

and capital, but whether it was paying too much. If the issue is phrased in this way, it is immediately obvious that there is a significant subjective element in calculation/measurement of colonial drain. It may be possible to approximate the returns paid for the services of foreign labour and capital with an analysis of the BoP, but mainstream economic theory gives no guidance for assessment of whether this has been too much. Even from the literature on the colonial drain from British India it is not possible to obtain a clear methodology.

The drain concept seems to be descriptive but is actually very normative because it depends on how one views a colonial relationship in general. There will therefore always be room for debate. Many issues which had economic repercussions, such as the changes in labour and commodity markets due to the presence of foreign enterprise, or the aspects of economic policy (public finance, monetary policies) which were determined in cooperation with the authorities in the Netherlands, and which could have been to the disadvantage of Indonesia are not considered in this paper. There are also many important political and social issues which are directly related to the colonial status of Indonesia. For the sake of the argument, discussion in this paper is confined to a quantification of colonial drain from Indonesia. Before presenting the approximation, three points related to the services of foreign labour and capital are addressed

- What are 'foreign' labour and capital, and what were their rewards?
- Was there too much foreign labour and capital in the country?
- Were the compensations for foreign labour and capital too high?

Labour services of foreign nationals

Maddison (1990:326-32) noted that the private remittances by foreign nationals from Indonesia (furlough payments, savings, pensions etc.) were high. In part, this was because their services were relatively expensive, due to the higher level of education of foreign nationals. Maddison asserted that the difference was primarily due to the power structure in the colonial society, which ensured that Westerners could claim higher payments than indigenous workers. In the view of this author the issue is not whether the wages of Westerners were high compared with the wages of Indonesians, but whether the salaries received by Europeans in Indonesia were not commensurable with the services rendered, and whether this was the result of colonial rule. This is a difficult question to answer. It is difficult to assume *a priori* that the salaries of Europeans were high,

and that Indonesia was forced to employ Europeans, solely because of colonial rule.

As far as salaries were concerned, governments and private enterprise in independent developing economies such as Japan and Thailand started to employ foreign experts in the late 19th century (Yasuba and Dhiravegin 1985:26). These experts had to be paid the prevailing international allowances. Nowadays all companies and governments in the independent developing economies are obliged to pay consultants and employees from industrialized economies compensations which are at least, if not nominally, certainly in real terms, comparable to the current wage levels in the industrialized economies. As with the colonial government in Indonesia, the companies and governments in present day developing economies are not in a position to fix these wages at lower levels if they want to secure the services of these foreign workers. It is possible that high salaries are a consequence, rather than a cause, of under-development.

The issue therefore comes down to the question of whether it was really necessary for colonial Indonesia to have the number of Europeans employed in the private and public sectors that it had. Firstly, were there too many Europeans? That question can be addressed by comparing Indonesia with other countries in the region (Table 3). The main problem in comparing population statistics is the fact that while some countries included people from a mixed ethnic background in the definition of 'European', others did not. Perhaps it can be assumed that only the 'ethnic Europeans' were draining the countries by remitting some of their earnings. The figures would suggest that it is difficult to maintain that there was an excessive number of 'ethnic Europeans' in Indonesia (Table 3).

This does not answer the question of whether or not the number of 'ethnic Europeans' in Indonesia was large because of colonial rule. The colonial government in Indonesia had no involvement in the recruiting of Europeans by private companies. Most of the higher managerial positions in Western owned firms were indeed taken by ethnic Europeans, but there were no formal obstacles directly related to colonial rule as such, which prevented the recruitment of 'Asian-Europeans' or even ethnic Indonesians for these positions. Non-Europeans were under-represented largely because many of them did not have

the appropriate qualifications and experience.⁹ Those who had such skills did rise to senior managerial positions, albeit infrequently.

Table 3 Ethnic Europeans and Asian-Europeans around 1930

	Ethnic Europeans ^a	Asian Europeans	Total	Ethnic Europeans as % of population
Java and Madura (1930)	49,507	142,551 ^b	192,571	0.12
Other Islands (1930)	20,551	27,295 ^b	47,846	0.11
Burma (1931)	27,895	27,734 ^c	55,629	0.19
Thailand ^d (1937)	15,353	83,386	98,739 ^e	0.11
Indo China (1936)	28,000	14,000	42,000	0.12
Philippines (1939)	45,226	200,000	245,226	0.27
Malaya ^e (1931)	17,768	16,043	33,811	0.41
India (1931)	138,134	168,395	306,529	0.05
Sri Lanka (1929)	7,500	..	..	0.14

Notes: ^aIncludes Japanese and other non-Europeans with assimilated status.

^bDefined as 'Europeans' born in Indonesia.

^cApproximated by deducting the number of foreigners (excluding Chinese) from the number of Christians.

^dAll foreigners, except Chinese. 'Ethnic Europeans' defined as all British, French, Dutch and 'other' people of European and 'other' 'races'.

^eIncludes Singapore.

Sources: *Volkstelling 1930 Vol.8*, 1938:100-01; Andrus, J.R., *Burmese Economic Life*, Stanford University Press, Stanford 1947; Gourou, P., 'The French Indo-Chinese demographic imbalance and colonial policy', *Population Index*, 11:71-2 1945; 'Ethnic Europeans' in the 1939 Philippines population census; *Statistical Yearbook of Thailand*, 1945-55:50-1; Maddison, A., *Economic Progress and Policy in Developing Countries*, Allen and Unwin, London, 1990.

It is only in the public sector that the recruitment of Europeans can be directly related to colonial rule. In Java 27 per cent of Europeans were employed in the public sector, compared with 23 per cent in the Other Islands in 1930. That year 20542 Europeans and 193968 Indonesians were working for the central and local

⁹In the 1950s Western companies were obliged by the Indonesian government to train a quota of Indonesians and appoint them to managerial positions, but there were insufficient qualified Indonesians for these positions. The consequence of the rule was that Indonesians were only *pro forma* promoted to the higher positions.

governments, including positions in the army, navy and police force, (*Volkstelling* 1930 Vol. 8 1936:125). Europeans represented almost 10 per cent of public sector employees. Most senior positions in the public sector were occupied by Europeans. In part this was due to the colonial policy of 'dual' government, according to which Indonesian candidates with adequate qualifications were absorbed by the indigenous civil service (Sutherland 1979:50-3). During most of the colonial period Indonesians were barred from the colonial civil service, but with the gradual expansion of educational facilities in Indonesia, and the increasing number of Indonesian academics trained in Indonesia and the Netherlands, Indonesians joined the various 'welfare services', such as irrigation, agricultural extension, popular credit, public health and veterinary care. It took until the end of the colonial era before several Indonesians were elevated to the higher echelons of the public service, and even into the government.

The conclusion from the above section has to be that it is not possible to suggest without further elaboration that the Europeans in colonial Indonesia were overpaid for the services they rendered, and that there were too many of them. It is also difficult to determine whether all Europeans were indeed 'foreign' elements in the Indonesian economy. About 10 per cent of the Europeans were non-Dutch foreigners, who most likely did not remit their savings to the Netherlands (*Indisch Verslag* 1931:34).¹⁰ In 1930 71 per cent of the Europeans had been born in Indonesia (*Volkstelling* 1930 Vol.8 1938:101).¹¹ It is therefore very unlikely that all Europeans were remitting savings to the Netherlands. It is even possible that most of the Europeans in colonial Indonesia considered Indonesia as their native country.¹² As such it is difficult to regard all

¹⁰ This figure relates to 1920. In 1930 9 per cent of the 'Europeans' could not write Dutch, which could suggest that they were non-Dutch foreigners.

¹¹ Maddison (1989:30) acknowledged this point, and added that there were more 'Eurasians' among the Europeans in Indonesia than in British India, but he does not assess the relevance of this point for his conclusions, *Volkstelling* 1938:111.

¹² A considerable number of 'Europeans' must have opted for Indonesian citizenship following Independence in the 1950s. In 1930 there were 240 000. Taking account of natural increase and net migration, there were around 280 000 in 1942. Only half this number was detained in civilian and POW camps, where 20 000 died (Van der Velden 1963:519-44). Assuming a net rate of increase of 1 per cent per year for the other half, there may have been 264 000 'Europeans' in Indonesia in 1945. Net migration from Indonesia to the Netherlands during 1946-50 was 91 193, (*Maandschrift Economie* 1946-52). Assuming a natural rate of increase of 1 per cent per year for those who remained, and deducting for net migration to the Netherlands, results in an estimate of about 82 000 'Europeans' remaining in Indonesia in 1960.

'Europeans' as foreign elements in the Indonesian economy. Even if it were possible to establish exactly the foreign element among the Europeans, it has to be acknowledged that they were contributing their skills and knowledge to the Indonesian economy. These foreigners may have remitted some of their savings, but they had to earn them in the first place. It is therefore difficult to see that these foreigners, or all 'Europeans', were on balance draining the Indonesian economy through private remittances abroad.

The same argument applies of course to the large group of Chinese people employed in Indonesia. Chinese private remittances to China have been labelled as the 'double drain' on the Indonesian economy.¹³ Chinese remittances were small compared with other categories of payments on the BoP, but the main objection is that the phrase 'double drain' ignores the fact that, like the European foreigners, the Chinese had to earn their money (Table 2). The phrase is therefore very misleading. These people did not drain the Indonesian economy, on balance they contributed to it. Moreover, about two-thirds of the Chinese were not employed in primary production in 1930. This indicates that most of them were not leading the life of coolies working on plantations or in mines, who had their families back in China. It is likely that most Chinese people had settled in Indonesia with their families. Hence, most Chinese were earning and spending their income as Indonesians.

Services of foreign capital

Remitted dividends, profits and interest explain most of the trade balance (Table 1). Hence, if there was an excessive drain of funds from colonial Indonesia, it must be possible to pinpoint it as exorbitant returns to capital. Unlike in the situation of services of foreign labour, the colonial relationship may have mattered in this case, because governments of contemporary developing economies are able to impose conditions on the access of foreign capital to their economies. The influence of independent governments is, in principle, limited only by the profitability of alternative applications of investment capital in other areas of the world. As far as colonial governments were concerned, their decisions may have been determined by the interests of the metropolitan countries.

¹³For discussion on Chinese remittances from Indonesia see Tjoa (1936). On Chinese remittances in general, Remer, 1933:177-89.

Foreign investment

Foreign capital may enter an economy in two forms. First through public bonds or portfolio investments held by foreign nationals. Second, in the form of investments which involve the acquisition of some form of commercial control, for example through direct investment by private foreign nationals and foreign companies in domestic companies, or through the purchase of preferential shares in such companies by foreign nationals. Either way, a country which attracts a net inflow of foreign investment is a debtor country. If the prewar situation is considered it appears that debtor countries were not necessarily colonies or poor countries. For instance, Canada, South Africa and New Zealand were all running trade surpluses and were accumulating international debts when they were colonies. Western economies such as the United States and Austria *idem ditto*, although they were not colonies. A range of developing countries in South America (Argentina and Brazil in particular), Eastern Europe and Asia (Thailand) were also running export surpluses and attracting foreign investment, but were not colonies. Most of these countries experienced significant economic growth, in spite of their trade surpluses, and in spite of (or perhaps because of) substantial foreign investments.

Foreign investments in many industrialized economies were much higher than in the developing economies in 1929 (Table 4). The main net creditor countries in the world (UK, France, Germany, the Netherlands and Switzerland) directed more of their investments to net debtor countries in Europe and North America, than to developing economies, in particular to the colonies in Africa and Asia (Lewis 1948:37-56; UN 1949:2). Even the main colonial powers exported more capital to independent States than to their colonies. *Vice versa*, non-colonial countries found it very easy to lend their money abroad without using imperialist policies. For instance, more Dutch capital was invested in other parts of the world, in particular in Germany and the United States, than in colonial Indonesia (Lewis 1948:311-12; UN 1949:26,31). Obviously, the ability of colonies in Southeast Asia to absorb foreign investment capital was relatively small. It may therefore be possible to explain under-development by assuming that not enough, rather than that too much, foreign capital was invested.

Table 4 Foreign investment, trade balance and foreign payments, 1929, various countries (US\$ per capita)

	Gross foreign investment		Trade balance	Gross payments ^a	Interest and Dividends (% ^b)
	Total	Long-term			
New Zealand	623	552	22.5	30.2	4.8
Canada	618	610	8.1 ^c	27.1	4.4
Australia	594	594	-1.6	27.4	4.6
Cuba	360	338	14.6	..	..
Chile	316	310	20.5	13.9	4.4
Argentina	268	267	14.0	13.4	5.0
Norway	219	143	-30.7	8.7	4.0
South Africa	165	124	3.5	9.5	5.8
Denmark	131	102	-7.5	6.9	5.3
Venezuela	..	125	19.6	..	..
Malaya	..	117	3.9	..	..
Germany	97	49	1.7	5.1	5.2
Greece	88	56	-13.1	4.6	5.2
Austria	88	48	-23.2	3.7	4.2
Peru	83	59	6.1	2.8	3.4
Brazil	..	65	0.9	3.3	5.1 ^d
Romania	54	39	-0.2	2.1	4.0
Hungary	54	41	-0.8	3.3	6.2
Colombia	44	44	0.1	..	..
Indonesia	..	33	3.6 ^c	1.8	5.5 ^d
Philippines	..	29	1.6	..	..
Japan	..	21	-0.5	0.9	4.3 ^c
Burma	..	15	8.4 ^c	..	..
Indo China	..	13	0.4 ^c	..	..
Thailand	..	11	0.5	..	..
India	10	8	0.5	0.3	3.6
China	7	7	-0.4	0.2	3.3

Notes: ^aInterest and dividends.

^bPercentage of total foreign investment.

^c1927-29 average.

^dAs a percentage of long-term foreign investment.

Sources: Henderson, H.D., et al., *The Problems of International Investment*, Oxford University Press, Oxford, 1937; *Statistical Year Book of the League of Nations*, Statley, E.W., *War and the Private Investor, a Study in the Relations of International Relations and International Private Investment*, University of Chicago Press, Chicago 1935.

Countries with relatively high foreign investment were often also countries with high trade surpluses and with a relatively high burden of payments for interest and dividends (Table 4). Many countries with negative commodity trade balances had positive balances of traded services. The returns to capital invested abroad ranged between 3.3–6.2 per cent, with a geometric average of 4.6 per cent. Given that Indonesia's 5.5 per cent is calculated using long-term investments only, it does not seem that the returns to capital were extraordinarily high in Indonesia.

As far as Southeast Asia is concerned, foreign investment in Malaya has always been relatively much higher than anywhere else, followed by Indonesia (Table 5). These figures lead to an expectation of relatively high payments abroad for the services of foreign capital in these two countries. Growth of GDP per capita in Indonesia was significantly higher than in Burma, Thailand and the Philippines during 1900-29 (Van der Eng 1992:359). Many qualitative sources suggest that economic growth must have been relatively high in Malaya also. It seems therefore difficult to maintain that the presence of foreign capital was detrimental to economic development. It seems certainly unlikely that too much foreign capital was invested in Indonesia.

Moreover, in 1937, 37 per cent of all entrepreneur investments and 20–30 per cent of all rentier investments were held by non-Dutch foreigners (Callis 1942:34-5). American and British investments were especially important in the relatively very profitable new boom crops of rubber and oil palm, and in mining and oil ventures. The non-Dutch stake in foreign investment is not relevant for the argument about drain from Indonesia, but it does affect Maddison's assumption that all drain boosted the Netherlands economy.

The question then is whether or not the returns to foreign capital were exceptionally high. Booth (1988a:222) has stated that '... to the extent that the [remittances] represented monopoly profits of estate enterprises enjoying considerable government protection, they clearly constituted a loss to the colonial economy.' Strictly speaking, there was no policy of protection for foreign-owned companies in colonial Indonesia after the demise of the Cultivation System. Only in the early 1930s did the government introduce some measures to protect the major foreign-exchange earning enterprises from the full impact of the global slump. There were individual cases in which government officials favoured the interests of Western enterprise to the detriment of

indigenous producers, but evidence for the suggestion that Western enterprise and the colonial government were on the whole in league with each other is thin.¹⁴

Table 5 Per capita foreign investment in Southeast Asia, 1914-85 (US\$)

	1914	1930	1937	1967 ^a	1973	1978	1985
Direct investment							
Malaysia ^b	42.8	89.7	64.2	71.2	124.7	292.4	430.9
Indonesia	13.4	26.3	21.0	2.3	13.6	41.4	..
Philippines	11.1	22.9	20.4	21.4	22.9	39.7	..
Indo China	4.5	12.0	12.8	6.5	5.0	..	..
Burma	..	14.5	14.1	0.4	0.4	2.0	..
Thailand	2.8	6.1	6.1	6.5	13.5	10.0	..
Long-term foreign debt (public bonds and private portfolio investment)							
Malaysia	15.5	26.8	16.6	41.7	77.6	242.9	992.9
Indonesia	1.4	6.5	12.7	27.8	52.6	116.8	226.1
Philippines	1.3	6.5	3.9	47.8	50.4	150.5	321.0
Indo China	4.4	1.2	3.5	..	..	..	..
Burma	..	0.7	0.5	4.1	..	..	77.2
Thailand	4.5	4.6	2.3	22.2	23.1	65.8	277.2

Note: The per capita figures of direct investment and long-term foreign debt for Indonesia in 1900 were 7 and 0.4 dollars respectively.

^a1970 for long-term foreign debt.

^bMalaya 1914, 1930 and 1937, Malaysia and Singapore 1967, 1973 and 1978, Malaysia 1985.

Sources: Bruton, H.J., et al., *The Political Economy of Poverty, Equity and Growth*, Oxford University Press, New York, 1992; Callis, H.G., *Foreign Capital in Southeast Asia*, Institute of Pacific Relations, New York, 1942; *IMF Financial Yearbook*; *World Debt Tables 1990/91*; UNCTC, *Salient Features and Trends in Foreign Direct Investment*, United Nations, New York, 1983; and author's estimates of population.

¹⁴Lindblad (1991) discussed the general role of foreign investment in Indonesia. If Western enterprise and colonial government were hand-in-glove, he carefully managed to keep it out of his treatise. On page 197 he mentions the role of foreign companies in the development of infrastructure, and states 'On occasion a foreign-controlled firm succeeded in gaining financial support from the colonial Government in covering the expenses of constructing facilities for which the company in question was the main or sole beneficiary.'

There were only a limited number of monopolies in late-colonial Indonesia. The most important one may have been the monopoly of the Koninklijke Paketvaart Maatschappij shipping company in inter-island shipping. This monopoly had basically been granted in order to compel the company to maintain unprofitable shipping services to the remote parts of the Indonesian archipelago. Some government enterprises (for example cinchona production) were also monopolies, but these companies were not major sources of government revenue, or of foreign exchange. It is therefore difficult to pinpoint companies holding monopolies as sources of drain in the form of monopoly profits during the colonial era.

Interest payments

Interest payments on private foreign debt did not increase significantly until after 1900. The majority of foreign investment in private enterprise however, was in the form of direct investments by companies based abroad, or in the form of shares held by private foreign investors. Interest payments on private bonds were thus relatively insignificant in the international payments of Indonesia.

About a quarter of foreign investment in Indonesia concerned public bonds, most of which were held in the Netherlands. Should interest on public debt be considered as a drain? To start with, it is difficult to imagine that domestic savings would have been sufficient to raise the capital for covering the public debt domestically. The question therefore is whether public borrowing was detrimental to the Indonesian economy at large.

The first public loans were placed in 1883 and 1898 in order to consolidate floating public debts. The next commitment made by the colonial government did not occur until 1915. Floating public debt increased at the end of the 19th century, because of the costly war in Aceh which ended in 1904, and because of significantly increased public expenditure on infrastructure, in particular the construction of railways (Changing Economy in Indonesia Series, Vol. 2 1976:21). It is not possible to disentangle the two causes, but, given that the public debt did not increase rapidly until after 1915, it is possible to say that Aceh was not the cause of the accumulation of most of the public debt. The debt consolidated in 1883 and 1898 very soon became a minor part of total public debt after 1915, hence, most public debt servicing during in the 20th century was accumulated in order to finance investment in public infrastructure, utilities and irrigation works (Changing Economy in Indonesia Series Vol. 2 1976:80-3). It is difficult to argue that these investments were detrimental to the Indonesian economy.

Perhaps public debt accrued for the payment of unproductive services can be considered as a drain on the economy due to the decisions made by the colonial government. Some authors argue that defence services in particular are unproductive (Von Albertini 1982:64, 498).¹⁵ In conventional national accounting practice the services of armed forces are not considered to be unproductive. They are included in the services produced by the government. The wages of the armed forces are included in total wages. The cost of the armed forces is considered to be the value of the service produced to guarantee law and order and domestic and national security. Further debate is obviously possible on this issue. As far as colonial Indonesia is concerned, 16.4 per cent of total public expenditure was spent on the army and navy in 1930. This compares with 19.1 per cent in Thailand (1930/31), 17.2 per cent in the Philippines (1931), 10.2 per cent in the Straits Settlements (1931) and 13.3 per cent in Burma (1937/38) (Field 1934:197-274; Burma from Andrus 1947:318-22). Certainly, compared with independent Thailand and the Philippines, it would appear that Indonesia's expenditure on defence was not high. It is therefore difficult to imagine that a large part of the public debt was accrued because of excessive expenditure on unproductive defence services.

Dividends and profits

The main component of foreign investment in colonial Indonesia was direct investments in a range of enterprises operating in plantation agriculture, mining, manufacturing, trade, transport and banking etc. Most of these companies made considerable profits, but it is difficult to assess this profitability. Expressed as percentages of paid-up capital, the figures must have been very impressive, especially in short periods during which commodity prices for goods like rubber and oil were very high. For instance, during 1908-12 there was a shortfall in the productive capacity of rubber to meet its rapidly rising global demand. The few rubber companies reaped wind-fall profits at the time, but prices and profit rates dropped considerably as soon as new competitors started production.

Part of these profits were re-invested in Indonesia, hence, the dividends expressed as a percentage of paid-up capital do not show the actual returns to

¹⁵Mukerjee (1972:205) estimated the drain via the cost of war in British India, and concluded that the drain barely exceeded 0.5 per cent of total national income in India during the period 1872-1900. Maddison (1970:23) regarded all interest payments on non-railway public debt as part of the drain, because he assumed that the debt was incurred to finance colonial wars.

foreign investors.¹⁶ Nor do they take account of losses, which should be deducted from the profits. Unfortunately there are no consistent estimates of invested foreign capital in colonial Indonesia, but the evidence gathered in Table 6 suggests that dividend rates were not extremely high compared with the interest rates paid on government bonds. In 1914 and 1917 international commodity prices were relatively high due to hoarding and shortages of shipping space during world war one. Those years are not representative of the entire period, 1900-39. Windfall profits may have encouraged a surge of foreign investment, but it is likely that in the long run the forces of competition generated exceptional profits down to a level consistent with normal rates of return, allowing for risk.¹⁷ This is a possible explanation for the observation that the majority of foreign capital was invested in the rest of the world rather than in the colonies of Southeast Asia.

Dividends are not the same as profits, but the aim of this paper is to assess the total drain of funds from the Indonesian economy. Re-invested profits cannot be part of this drain because they did not leave the economy. Part of the foreign capital stock was scrapped in the 1930s, when a large number of sugar factories went out of business. About 50 per cent of the remaining stock may have been destroyed during the Japanese occupation and the subsequent war of independence during the years 1942-49.¹⁸ In the 1950s and 1960s new investments and re-investment of profits by foreign nationals must have been small compared to the prewar years, because of the political uncertainties (Tomlinson, 1986:161).¹⁹ It is almost certain that there was no major sell-out of foreign owned assets in Indonesia and a subsequent repatriation of the proceeds, because the very strict foreign exchange regime would have off-set the

¹⁶*Changing Economy in Indonesia Series Vol.7* (1987:41) explains that not much is actually known about retained profits. The author guesses that 36.5 per cent of total profits were retained. Prange (1935:91-2) suggested that 32.8 per cent was re-invested during 1925-30. A complicating factor in the analysis of colonial drain is that re-invested profits generate imports of capital goods, which diminish the trade surplus. The substantial fall in the trade surplus in the 1920s is thus not necessarily an indication of lower drain or declining profits.

¹⁷Davis and Huttenback (1987:106-10) concluded the same for British foreign investments.

¹⁸There is no adequate assessment of war damage. Fruin (1947:47) mentions an official Dutch estimate of f1919 million. damage to private productive assets in 1942 prices. The last detailed estimate of foreign investment by Keller (1940:13) suggests a stock of f4250 million, presumably in 1939. Including damage during the years 1947-49 the best guess is that 50 per cent was destroyed.

¹⁹No new European subsidiary companies were founded in Indonesia during the years 1939-64 (Tomlinson 1986:161).

profitability of remittance. Most foreign assets were nationalized in 1957/58, when Indonesian workers and the army took over Dutch enterprises. Only the Koninklijke Paketvaart Maatschappij inter-island shipping fleet sailed out of the country, but prewar Dutch investment in shipping was only 4 per cent of total Dutch investment (Callis 1942:161). Former Dutch owners only received about 13 per cent of the estimated value of their nationalized assets after 1966, hence, most of the reinvested colonial profits never left the Indonesian economy (Van der Eng 1988:352).

Table 6 Foreign capital stock and dividends, 1900-39

	Stock of foreign direct investment		Paid dividends	Dividends as % of	Interest rates
	Total (f million)	Source	(f million)	stock	on public bonds (%)
1900	738	1	24	3.2	3.0
1900	1,000	2	24	2.4	3.0
1904	900	2	35	3.9	3.0
1914	1,681	1	105	6.2	5.0
1917	1,490	2	158	10.6	5.0
1922	3,500	2	174	5.0	6.0
1929	4,500	2	222 ^a	4.9	4.5
1930	4,990	2	75 ^a	1.5	4.5
1930	3,248	1	75 ^a	2.3	4.5
1937	4,853	1	196 ^a	4.0	3.0
1939	4,250	3	93 ^a	2.2	3.5
1939	3,500	2	93 ^a	2.7	3.5

Note: The estimates of capital stock are very rough, but are not likely to be too low. If they were higher, the share of paid dividends would be lower.

^aEstimated assuming that 85 per cent of the dividends were remitted overseas as dividends and profits.

Sources: Callis, H.G., *Foreign Capital in South East Asia*, Institute of Pacific Relations, New York 1942:36; *Changing Economy in Indonesia Series Vol.2, 1976 Vol.3 1977; Vol.7 1987*; Keller, A.S., 'Netherlands India as a paying proposition' *Far Eastern Survey* 1940:11-18.

Labor Conditions.

Factor payments

Wages. Disregarding the fact that mainstream economic theory regards profits as the returns for the services of investment capital, other economic analysis would argue that profits are income which is not paid to the suppliers of the other production factors, that is, labour and land. Assuming that this was the case, the colonial relationship may have mattered, because the colonial government could have interfered in the labour market, and it did interfere effectively in agrarian affairs.

Wages paid for unskilled labour to Indonesian workers were indeed very low by Western standards. Nothing much has changed in this respect during more than 45 years of independence. Were these wages too low? This issue was addressed during the interwar years in an elaborate discussion about the introduction of minimum wages in Indonesia.²⁰ The issue emerged again in literature on economic development after world war two. To some extent the issue of minimum wages is a moral issue, not an economic issue. More importantly, the disapproval of the low nominal wages disregarded the fact that there were significant differences in the purchasing power of Indonesian and European wages.²¹

Unless it can be proved that there were forces at work which impeded the functioning of the labour market and kept the wage level artificially low, it is not possible to say that wages were too low. Scattered evidence suggests that wages paid for unskilled jobs on plantations in Java were higher than wages for similar work in the indigenous economy (Van Ginkel 1926 Vol. 2 *passim*; Huizenga 1958; *Changing Economy in Indonesia Series* Vol. 13 1992:31). It is likely the wages of migrant contract labourers on plantations and mines in the Other Islands were

²⁰Oei 1948:106-14, 117-29; *Changing Economy in Indonesia Series* Vol.13 1992:31-2. A minimum was not introduced. First, because there was no information available which allowed the establishment of a 'minimum' level of living for wage labourers employed by Western enterprises. Extensive budget research showed that wage labour often was not the only source of household income. It was not until the results of the Coolie Budget Enquiry of 1939/40 were published that it became clear that workers with nominally low wages were able to sustain their families with wages which were extremely low by Western standards, because of the higher purchasing power of Indonesian wages (Huizenga 1958). Second, because of unsolvable practical problems.

²¹On the basis of the Coolie Budget Enquiry, Huizenga (1958) calculated that the difference in purchasing power of households which spent about 50 per cent of their budget on food in the Netherlands and in Java in 1939/40 was 1:4. That meant that a comparable Javanese household could purchase four times as many calories with nominally the same amount of money. On the whole the share of food in Javanese household expenditure was 70-75 per cent, which meant that the difference in purchasing power was generally in the order of 1:6.

lower than what the local people could earn through self-employment. Outside Java plantations found it difficult to recruit local people, but in the case of contract labour the real wage should be compared with the wage level in the areas of origin of the migrant workers, in particular China and Java.²² Where migrants from Java were concerned, the nominal coolie wages in North Sumatra were two to three times higher than wages for unskilled jobs in Java. It is possible that prices were higher in the Other Islands, but, given that price levels were generally determined by cheap rice from Burma and Thailand, it is unlikely that the price difference would off-set the wage difference between Java and North Sumatra.

Although an exception can perhaps be made for contract labour, wages in colonial Indonesia were essentially determined on the free labour market. In 1930, during the heydays of plantation agriculture, 6.7 per cent of total employment was in sugar factories and plantations in Java and 6.9 per cent in the Other Islands (Volkstelling 1930). The wage rate was therefore largely determined by the demand for labour in the indigenous economy. Although there may have been regional differences, on the whole it is difficult to conclude anything other than that wages reflected the current value of the exchanged labour. In short, whether wages were too low depends on the point of view taken. In the Indonesian context it is very difficult to argue that wages were too low.

Land rent. Plantations paid a land rent for the uncultivated land they leased from the government for a period of up to 75 years. Many sugar factories and tobacco plantations paid rent to the indigenous owners for land they leased for a short period of up to 1.5 years, especially in Java. Were these land rents too low? The rent which plantations paid to the government was indeed low, because the government attempted to attract foreign investments to the land-rich areas of Indonesia. Foreign enterprises producing export commodities provided significant direct and indirect contributions to the government's revenues through, for example, taxes on foreign trade and income taxes.

²²Contract labour, in particular the 'penal sanction' in the contracts, is a controversial subject among historians. Evidence of maltreatment and poor labour conditions of contract labour induced several students, in particular Breman (1989), to vent moral outrage. The outrage is largely based on the situation around 1900, when labour conditions for the 120000 labourers on plantations and mines in the Other Islands were indeed poor. The situation was very different for the 525000 labourers in 1929. Kamphues (1988) has explained that the colonial government conceded to the continuation of the 'penal sanction' in order to force Western enterprises to implement significant improvements in the labour conditions of contract workers.

It is very unlikely that indigenous producers would have been able to use the land resources more efficiently than most of the plantations did. The yields per hectare of export crops was significantly higher on Western plantations than on small holder plantations. Production costs were also higher on estates, because they were more labour intensive and used current inputs such as fertilizer. It is not possible to compare the prewar situation, but as far as estimates for the postwar period go, land productivity of plantations in the Other Islands was 5-6 times higher than the land productivity of indigenous producers during 1950-70, and 8-11 times higher during 1970-90.²³ Moreover, processing of crops for export overseas was done on the plantations, in contrast to the processing of small holder crops, which in the case of rubber was largely done in Singapore and in the case of copra, in other parts of the world.

Was the rent paid by sugar factories to farmers in Java too low? This was a continuous debate among colonial officials. It was the main reason for government intervention in agrarian affairs in Java. Basically, the government imposed an increasing number of conditions on land hire by sugar factories, which effectively pushed the land rent up. Many students of the colonial era have readily assumed that land rents were too low, although hardly any evidence with general relevance has been presented for this supposition. Unfortunately, there are no data available which permit a straightforward comparison of land rents paid by sugar factories and rents paid by tenants in indigenous agriculture. Some qualitative evidence suggests that indigenous land rents were relatively high in areas where Western estates competed with indigenous tenants for land (Van Ginkel Vol. 2 1926:passim; Van der Flier 1932:117)

Elsewhere (Van der Eng forthcoming) it has been shown that the annual rent which farmers received from sugar factories was lower than the gross value of crops which farmers could grow on their irrigated land, but this comparison does not take into account the fact that most farmers hired labour, especially for harvesting, which implies that the rents should be compared with the net returns

²³Van der Eng (1990) revised and updated. These figures refer to harvested area. The ratio of the productivity of land occupied by plantations and smallholders was much lower, between 0.2 and 1.2. A straightforward comparison between smallholders and estates is not possible. First, because occupied estate land includes all land used in a shifting cultivation pattern. Most of that land was fallow. Fallow land is not included in the estimates of indigenous land use. Second, because during most of the colonial period there were large areas of occupied estate land planted with immature crops. Most of this land started to yield crops during the 1920s. The ratio increased rapidly during this decade from 0.2 to 1.2.

to farmers from their own crops. It also ignores suggestions that, while the land was rented to factories, farm households augmented the land rent with income from off-farm jobs which they would otherwise not have been able to perform. Often farmers rented land from colleagues for a price below the rent they received from the factories, or they contracted field or transport jobs for the sugar factories. It is therefore not clear whether farmers were on balance worse off when they let their land to factories.

In the case of sugar factories in Java the social returns from sugar production must be considered. As far as this author's estimates go, throughout the period 1884-1936 the returns per hectare to the indigenous economy in the form of rents, indemnifications, wages and deliveries were 50-140 per cent higher than the technically highest possible gross returns per hectare from the most important indigenous food crops (Van der Eng, forthcoming).²⁴ Only when farmers specialized in the production of crops with a high value-added, such as premium quality rice or vegetables, was the margin much lower. On the whole it is unlikely that income opportunities for farmers were frustrated when they leased their land to sugar factories.

Mining concessions

Perhaps the exploitation and depletion of non-renewable mineral deposits was a drain on the Indonesian economy, if the country was not adequately compensated for them. The answer to this issue cannot be found in the prices which companies operating in Indonesia received for minerals, because these were determined on the international market. Indonesia was an important producer of, for instance, tin on a global scale, but the mining companies operating in the country were themselves not in a position to fix the international price of tin and reap monopoly profits. If there was inadequate compensation it has to be found in the calculation of the production costs. The wages of indigenous and Chinese labour were low and labour conditions in the tin mines were often very poor. Again, wages were to a very large extent the outcome of

²⁴Only during the years 1919-21 were the returns from sugar production to the indigenous economy about 10 per cent higher than the technically highest possible social returns from indigenous crops. This was due to the international rice shortage which pushed rice prices up. The potential optimum returns were generally not achieved by farmers. A more realistic estimate is therefore that returns to indigenous society from sugar were 150-220 per cent higher, except for 1919-21 when they were 90 per cent higher. This impression is not off-set by possible corruption among indigenous officials. Payments received by these officials were only 1-2 per cent of total payments by factories to the indigenous economy.

interactions in the labour market in the areas where workers were recruited. Evidence of inadequate compensation must to be sought in the payments to the government for the mining concessions and the conditions regarding profit sharing which the government imposed on the mining companies.

In order to determine whether the government was adequately compensated, the value of unexploited deposits must be assessed and compared with the payments to the government, taking production costs into account. The problem is not so much that it is often difficult to know beforehand how big deposits are but mineral prices are very volatile, certainly in relation to the mining concessions, the conditions of which were often fixed for a long period. The relationship of the compensation received by the government and the value of the deposits thus will always vary considerably over time. A major discrepancy between the ensuing recompense accruing to the government and the adequate established compensation prior to exploitation may therefore be due to market conditions, rather than to inactivity of the government to secure adequate compensation.

It is unlikely that the colonial government in Indonesia failed to secure the best deal possible when granting mining concessions.²⁵ The government was heavily involved in mining ventures itself because private entrepreneurs were chary of risking money. Additionally, in contrast to other countries in the region, the government established an extensive geological survey into mineral deposits in most parts of the archipelago in the second half of the 19th century. It is therefore unlikely that colonial officials were taken for a ride when they sat down with private entrepreneurs to discuss the conditions of the concessions. It is of course possible that concessions were granted to favoured consortiums of entrepreneurs, but conflicts between officials and mining companies about the implementation of the details of concessions marred the mining history of colonial Indonesia as they marred the mining history of many Western economies. It is therefore unlikely that officials failed to secure the most favourable conditions for the government, as far as these could be established beforehand.

Moreover, revenues from mining activities were not all remitted abroad, but stayed to a large extent inside the country, in the form of wages, taxes, investment in infrastructure (roads, irrigation works, and harbours), and re-

²⁵This section is partly based on information supplied by Dr Gill Burke, who is preparing a volume on mining history in Southeast Asia for the ECHOSEA Project at the Australian National University.

investments in further exploitation of mineral resources. As with private investments in plantation production, the profitability of investments in mining ventures is perhaps not so much an indication of the extent to which the presence of foreign capital worked to the detriment of the national economy, but may rather be regarded as a reflection of the multiplier effect, generated by foreign investments, on the national economy.

In this section it has been shown that foreign investment in Indonesia was relatively small in a global context, although significantly higher than in other Asian countries. Given the fact that in an international context, countries with relatively large amounts of foreign investment experienced significant economic expansion, it is difficult to argue that there was too much foreign capital in Indonesia. It is certainly difficult to suggest that domestic savings could have replaced foreign investment. This may have been the case in Japan, but it should not be forgotten that the mobilization of savings in rural Japan caused significant hardship among the farmers who had to produce the surplus (Ranis 1970). The profits made by foreign companies in Indonesia may have been relatively high, but the actual returns to investors were not very much higher than the prevailing interest rates on government bonds. Windfall profits may have been reaped in the early phases of the development of plantation agriculture, when commodity prices were high, but it remains difficult to argue that profits were generally high because labour and land were underpaid.

An operable definition of drain

In this section the entries on the BoP of Indonesia which may be evidence of a drain of funds during the period 1823-1990 are identified. By relating these entries to the estimates of national income, an assessment of the quantitative impact of this drain can be made.

Conventional national accounting practice distinguishes between the domestic and the national economy. The national economy is defined in terms of residence of the owner of productive assets and investment. It excludes the return on assets held in the country but owned by foreign nationals and includes the income accruing to the residents of the country on their physical and financial assets held abroad. All interest payments on foreign loans and all remitted dividends and profits are generally considered as payments for the services of foreign capital. The difference between the domestic and the national concept is the balance of total factor income from abroad and total factor payments to other countries. In the discussion above the difference was

summarized by the variable T. In well developed national accounting systems, T not only constitutes the net payments abroad for the services of foreign capital, but also payments of nationals working abroad and to workers who are not normal residents. The Indonesian national accounts however omit the last category of payments, perhaps because the definitions of the BoP entries do not allow it (Pendaptaan Nasional Indonesia 1984-89; Biro Pusat Statistik 1990:90).

In principle, the Indonesian BoP data should allow a definition of T, but the data themselves do not allow a straightforward identification of items which constitute the colonial drain, because drain as previously defined refers to the extent to which net factor payments abroad were exorbitant. It obviously depends on the observer whether items are considered to have been excessive or not. It therefore makes sense to look at the composition of the BoP for colonial Indonesia (Table 7).

The data are adapted slightly. For example, the international trade of unminted precious metals is moved from the current account to the capital account. This is contrary to usual definitions. The main reason for this change is that the distinction between unminted metals and monetary gold and silver was not always clear throughout the colonial period. For instance, Dutch silver coins were used as unminted silver and exchanged abroad on the basis of the silver content long after Indonesia had adopted the Gold Standard and Dutch silver coins had become token money. The second reason is that the balance on the capital account in 19th century India often took the form of a tangible flow of gold and silver bullion out of the country. This flow of bullion out of India to the UK has always preoccupied the mercantilist authors writing about the colonial drain from India. They regarded it as concrete evidence of the drain on India's wealth, disregarding the point that it was a mere balancing item on the BoP.

The net flow of precious metals after 1870 was small compared with other balancing entries on the capital account (Table 7). Apart from the 1930s, more metal was flowing into the country than left the country, which implies that the flow of metal was certainly not an indication of colonial drain. In fact, the net inflow of gold and silver can be regarded as an indication of increasing economic activity and improving prosperity. Economic activity enhanced the demand for money and spurred the inflow of minted metal. In the absence of savings banks, Indonesian people and small Chinese businessmen hoarded unminted metal, which was pawned for cash in times of need. The extent of hoarding became clear in the 1930s, when the government pawnshop service and private gold traders received a surplus of metal which was apparently partly exported as payment for imports.

Table 7 Balance of payments for Indonesia, 1830-1939 (million guilders)

	1830-69	1870-99	1900-19	1920-39
Receipts				
Merchandise exports	71	196	580	1114
Other exports	2	4	11	37
Total receipts	73	200	590	1152
Expenses				
Merchandise imports	36	133	335	689
Other, imports	1	3	11	8
Haj, furlough and tourism	2	9	17	56
Dividends and trade profits	2	11	91	160
Management costs and bonuses paid outside Indonesia	.	3	18	35
Private interest payments	.	1	9	18
Public interest payments	.	1	5	56
Private remittances	1	4	12	29
Pensions and pension premiums	1	6	15	46
Government expenditure in the Netherlands	4	9	20	30
Cultivation system transfers	18	3	.	.
Total expenses	66	183	533	1127
Commodity trade balance	34	60	234	417
Current account balance	7	16	58	24
Coverage of current account balance				
Net change credit position ^a	3	20	76	94
Net change assets and financial reserves held abroad ^b	-6	-25	-116	-124
Net flows of precious metals^c				
Unminted precious metals	2	-7	-7	2
Minted precious metals	-7	-4	-10	4

Notes: ^aPositive figure implies net inflow of funds, or net borrowing's abroad.

^bNegative figure implies net increase of assets and reserves held abroad.

^cNegative figure implies net inflow of metals into Indonesia.

Source: *Changing Economy in Indonesia Series*, Vol.7 1987:72-95.

Data in Table 7 indicate how the net proceeds from commodity trade were spent. The revenues from the export of services were minute. This implies that almost all net earnings from commodity trade, plus the money raised through foreign loans, were used to pay for imported services and remittances of capital revenues, and for increasing the stock of assets and reserves held abroad.

The definition of drain during the colonial era consists of the following items which are discussed below.

Current account balance

- + Cultivation System transfers
- + Remittances of dividends and profits
- + Management costs and bonuses paid outside Indonesia
- + Colonial war component of interest on public debt
- + Government expenditure in the Netherlands
- Shadow value of private interest payments,
less Actual private interest payments

= Colonial drain

The surplus on the current account is used as the base of colonial drain. The surplus on the current account contributed significantly to the increase of assets and balances held abroad (Table 7). Most of this surplus was the result of private purchase of securities abroad and of changes in the metal stock held abroad by the central bank, the Java Bank. These securities remained in the hands of residents of Indonesia. The volume of national wealth did not change, but there savings were not used for domestic investment. In that sense they were disadvantageous to the Indonesian economy.²⁶ Moreover, shares purchased abroad were often held at foreign banks. It is therefore not likely that they were

²⁶Note that the assumptions made in this section are fairly robust and neglect several elements of the counterfactual analysis. In the case of assets held abroad I am neglecting the fact that dividends paid on foreign assets may have been remitted to Indonesia is neglected. (This was not the case, *Changing Economy in Indonesia Vol.7* 1987:39). The point that if funds had been invested in Indonesia their effect on the domestic economy would have exceeded their nominal amount due to the multiplier mechanism is also ignored.

ever used to further the Indonesian economy after many Europeans and Chinese were forced to leave the country in the 1950s and 1960s.

Dividends and trade profits, management costs and bonuses paid abroad and Cultivation System transfers are added without discussion to the estimate of colonial drain without discussion.

The source for, *haj*, furlough and tourism does not allow a clear distinction between expenses of Indonesian Muslims on the *haj* to Mecca and expenses of other Indonesian residents on furlough or on holiday abroad. In principle, furlough and holiday payments abroad are not related to colonial rule as such. As with private remittances and pensions it is possible to assume that these payments would not have been necessary if colonial Indonesia had not employed foreign workers. By considering these payments as a drain on the economy, one is implicitly assuming that there were enough qualified Indonesians to do the jobs of the Europeans and enough unskilled Indonesians willing to do the jobs of Chinese coolies. Such an assumption is not realistic and imposes unpredictable repercussions on the hypothetical productive capacity.

It is difficult to consider private and public interest payments as part of the colonial drain. Perhaps interest payments on public loans for financing colonial wars should be excluded. It was argued above that it is difficult to determine the colonial war component of public debt. To account for this possibility, half the interest payments on public debts until 1915 were added to the drain estimate on the assumption that half the debt occurred through financing of colonial wars. It is further assumed that the colonial war share in public interest payments declined in later years in proportion to the share of public debt in 1914 to total consolidated public debt after 1914. This means that the impact of debt repayments consolidated in 1883 and 1898 on the total sum of interest payments is neglected. The fact that the interest rate was only 3 per cent for the debts consolidated in 1883 and 1898, compared with rates of up to 6.5 per cent during the period up to 1940 is also not accounted for.

The entry government expenditure in the Netherlands contains an amalgam of expenses, which cannot be disentangled using the available data source (*Changing Economy in Indonesia Series Vol. 7* 1987:63-5). Although it is difficult to include this item in drain without taking adequate account of the repercussions, it is included on the assumption that much of these expenses would not have been necessary if Indonesia had not been a colony.

From the sub-total of colonial drain an estimated shadow value of interest payments on invested foreign capital was deducted. As explained above, the

remitted dividends and profits are net of re-invested earnings accruing to the foreign owners of capital in Indonesia. This understates total factor income accruing to non-residents. By including dividends, profits and bonuses paid abroad in the estimate of drain, it is implicitly assumed that indigenous businessmen would have replaced the foreign entrepreneurs who brought investment capital into the country. Without such an assumption, the hypothetical level of investment would have been much lower than it actually was. Output generated by capital investment thus would have been lower. It is difficult to predict the counter-factual growth path which would have emerged in this case. Therefore, it is assumed that indigenous entrepreneurs somehow managed to do the same job with capital borrowed from foreign financiers, who most likely would have demanded a premium on the current interest rate to cover themselves against risk. After all, there was no institution like the World Bank as a source of credit on soft conditions.

There are no adequate estimates of retained profits. The shadow value of interest payments was approximated with data on total invested foreign capital. There are no consistent estimates of the stock of invested foreign capital in Indonesia either (Table 6). The available estimates suggest that the ratio of foreign capital to the exported production of Western companies was 1 to 3 in the period 1885-1924, and 4 to 8 during 1929-40.²⁷ The enormous increase in the 1930s is most likely due to the redirection of foreign investment to import-substituting manufacturing. The ratio for the period 1885-1924 is what one may expect, given that a large part of investment was in agricultural plantations, for which a ratio of 2 to 3 is more appropriate (Oshima 1961; Clark 1967).

A ratio of 2.5 was assumed for foreign capital stock to exports of commodities of non-indigenous origin. A higher capital-output ratio will result in a higher shadow value, and will therefore impinge on the estimate of drain. By multiplying this ratio with the exported production of Western companies the accumulated stock of foreign capital in current prices was approximated. The value of this foreign capital stock was then multiplied with the commercial interest rate (ie. the discount rate charged by the Java Bank), to obtain an estimate of the shadow value of the prevailing interest payments on invested foreign capital (*Changing Economy in Indonesia Series Vol. 6* 1980:86-91). This

²⁷Capital stock estimates as in Table 7. The value of Western exports was obtained by deducting the indigenous share from total agricultural exports (*CEI Vol. I*, 1975) and adding Western agricultural exports and non-agricultural exports together.

shadow value was deducted from the estimate of drain. The shadow value of interest on foreign capital includes actual private interest payments which are already reflected the current account balance. To avoid double counting, the actual interest payments were deducted from the shadow value. The difference between both can be considered as the extent to which the Indonesian economy was undercharged for the contribution of foreign capital to economic development.

There is no consistent comprehensive set of BoP data available for the postwar period. Therefore the most consistent source available was used (*IMF Balance of Payments Yearbook*).²⁸ Unfortunately the data allow only a very robust definition of drain.

Current account balance

- + Payments of investment income (including all interest payments)
- + 50 per cent of 'other services'
- Received unrequited transfers

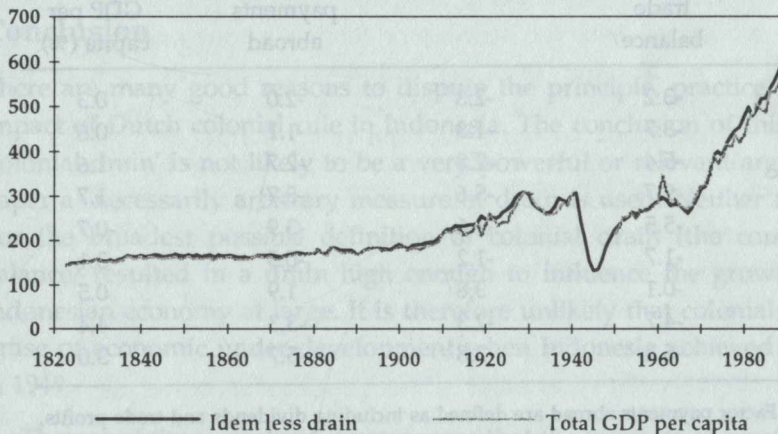
= Drain

Until the late 1970s 'other services' mainly contained oil companies expenses and the remittances of foreign workers in plantation agriculture, oil production and mining ventures.²⁹ It is difficult to include private remittances in the definition of drain because of the repercussions of the implicit assumption that Indonesians could have done the jobs. An arbitrary 50 per cent of 'other services' is therefore included on the rough assumption that these were unwarranted expenses of foreign companies abroad. Much of the oil industry was nationalized which may have prevented such unwarranted expenses, but in reality foreign companies continued most of the exploitation of natural resources as contractors or in joint-ventures. Unrequited transfers (or foreign grants for economic development) are treated as negative tribute payments, or restitution of drained funds. They should be taken into account, in the same manner as the Cultivation System payments were included in the estimate of colonial drain.

²⁸SDRs converted to US dollars to achieve consistency, US dollars converted to rupiahs with the BE-exchange rate in the late 1950s and early 1960s. Although the source is consistent, it does contain an often significant 'net errors and omissions' entry, which the prewar data do not show.

The results of this exercise are summarized in Figure 3. The chart clearly shows that the trend in GDP per capita does not change after drain is deducted. The period 1919-21 reveals the effects of a rapid increase and a subsequent decrease in exports, resulting in a sizeable surplus and deficit, respectively on the BoP, which using the above definition is translated into a positive and a negative colonial drain. The same effect occurred in 1961 when imports surged. This resulted in an increase in the deficit on the current account, which was covered by foreign loans and redemption of foreign exchange holdings of the Bank of Indonesia.

Figure 3 Gross domestic product per capita in Indonesia, 1820-1990
(thousand 1983 rupiahs)



Sources: GDP, Annex 1 and 2. Drain is defined in the main text.

A comparison of this estimate of drain with the commodity trade balance, and with the conventional definition of net factor payments abroad is presented in Table 8. It shows that the trade balance is too large to proxy for drain. Information contained in the table also reveals that drain and net factor

²⁹Wing and Nasution (1989) discuss Indonesia's postwar foreign payments.

payments abroad were most substantial during periods in which growth of the economy as a whole increased significantly. This coincides with the periods during which foreign investment increased significantly as shown in Table 5. This suggests a positive contribution of foreign investments to economic development. Data in Table 8 show that factor payments abroad were low during the 1950s and that the country was a net recipient of foreign aid during the 1960s. Economic growth was substantial during the 1950s, but most of this growth was recovery to prewar levels, rather than expansion. The low growth rate for the 1960s confirms this.

Table 8 Trade balance, drain and factor payments as a percentage of GDP, 1823-1989

	Commodity trade balance	Drain	Net factor payments abroad	Growth of GDP per capita (%)
1823-69	-3.2	-2.3	-2.0	0.3
1870-99	-3.7	-1.3	-1.2	0.6
1900-13	-5.4	-2.8	-2.7	1.6
1914-29	-9.7	-5.6	-5.7	1.7
1930-39	-5.5	-1.6	-3.9	-0.7
1950-59	-1.7	-1.2	-0.5	3.1
1960-69	-0.1	3.8	1.9	0.5
1970-79	-4.7	-2.3	-3.3	4.4
1980-89	-6.2	-3.8	-5.7	3.0

Note: Factor payments abroad are defined as including dividends and trade profits, management costs and bonuses paid outside Indonesia, private investment payments, public investments and cultivation system transfers for the colonial years, and as investment income and unrequited transfers for the postwar period. Drain is as defined in main text.

Sources: *Changing Economy in Indonesia Series Vol.7* 1987:72-95; *IMF Balance of Payments Yearbook*, Annex 1.

On the basis of his findings for India, Hanson (1980:127) concluded that 'Although we can only speculate about the situation in other developing countries, a distinct possibility does exist that even in countries that experienced a perennial export surplus and that were unable to retain part of the surplus, the resulting loss of national product to foreigners was not so large as to provide a very powerful explanation of why these countries failed to achieve economic development.' Estimates of drain presented in this paper are higher than the

available estimates for British India, which suggest a drain of less than 4 per cent of output, probably 1.5-1.7 per cent.³⁰ But they clearly corroborate this suggestion. One should realise, though, that the definitions of drain are very different and largely arbitrary. It remains speculation, but it is unlikely that the difference between India and Indonesia reveals a different extent of colonial exploitation. It is more likely that the difference reflects the fact that relatively less foreign capital was invested in India than in Indonesia. In 1938 foreign investment in India was US\$8.90 per capita, compared with US\$34.30 in Indonesia (Lewis 1948:298-343. Tomlinson 1986:145, 155). Bonded government debt was US\$3.93 per capita in India in 1939, and US\$9.71 in Indonesia.³¹ Not surprisingly, factor payments abroad from India were only 0.9 per cent of GDP in 1900-1 and 2.4 per cent in 1938-9, and per capita output in India increased at a lower rate than in Indonesia (Maddison 1985:207).

Conclusion

There are many good reasons to dispute the principle, practice and structural impact of Dutch colonial rule in Indonesia. The conclusion of this paper is that 'colonial drain' is not likely to be a very powerful or relevant argument. In this paper a necessarily arbitrary measure of drain is used. Neither this definition, nor the broadest possible definition of colonial drain (the commodity trade balance) resulted in a drain high enough to influence the growth path of the Indonesian economy at large. It is therefore unlikely that colonial drain was the cause of economic under-development when Indonesia achieved independence in 1949.

The use of the term drain presupposes that the estimate of a net flow of funds out of the economy on the basis of the conventional national accounts definition of net factor payments abroad is too high. Economists of neo-classical persuasion may *a priori* discard such a view, but many students of Indonesia's history explicitly and implicitly adhere to this opinion. Most of the paper therefore

³⁰Hanson (1980:127) has argued that exports from colonial India were, at most, 11 per cent of national output in 1911. During the years 1850-1908 the export surplus of India was on average 35 per cent of the value of exports, which meant that the export surplus was less than 4 per cent of output in those years. On the basis of national income and balance-of-payments data, Maddison provided two estimates of annual drain; 1.5 per cent and 1.7 per cent of India's GNP during the years 1921-38 (Maddison 1970:23; Maddison, 1971:64-5).

³¹India from Maddison 1971:66; Indonesia from *CEI Vol.2* 1976:83.

discussed the extent to which the rewards for the services of foreign nationals and foreign investment capital could possibly have been too high.³²

The salaries of Europeans may have been significantly higher than those of the average Indonesian but the difference can hardly be interpreted as the result of the power structure in the colonial society. If that is the case, one has to wonder what powers foreign workers manage to wield in Indonesia these days. Compared with neighbouring countries it is difficult to maintain that there were too many foreign nationals in colonial Indonesia. Indonesia also received relatively more foreign investment than neighbouring countries, but the total amounts absorbed into Southeast Asia were small compared with international capital flows directed to other parts of the world. Expressed as a percentage of the value of total invested capital, dividends paid abroad were not much higher than those paid on other investment opportunities.

The main conclusion of this paper is that it is difficult to detect the overall disadvantages associated with the services of foreign labour and capital. It is certainly difficult to imagine that the Indonesian economy would have experienced higher economic growth rates without foreign labour and capital.

This discussion of the impact of Indonesia's colonial status on its economic development disregarded many important wider repercussions of colonial rule which may have had a lasting negative impact on the conditions of economic change in the country before and after independence. A very slow expansion of educational facilities during the colonial era is one example. Together those issues will most certainly impinge on the main conclusion of this paper. For those who regard the main conclusion of this paper as controversial, to what extent do those issues indeed weaken the conclusion that the 'colonial drain' perception is neither a very significant nor a very relevant factor in explaining economic growth in Indonesia?

³²The findings in this paper coincide with those of Lebergott (1980) about US investments in Central and South America during 1890-1929.

Annex 1: GDP per capita in 1983 prices

Data sources

1880-1990 from Van der Eng, 1992, updated with population data from *Changing Economy in Indonesia Series Vol.11*, 1991, and recent national income data from *Pendapatan Nasional Indonesia*, Biro Pusat Statistik, Jakarta (various years).

1823-79 estimated by linking three variables to total GDP in 1880: population, export volumes and real government expenditure, with weights of 0.8, 0.1 and 0.1. 1830-1930 Population in Java, and non-Indonesian population in the Other Islands from *Changing Economy in Indonesia Series Vol.11*, 1991, 1820-30 total population and 1830-1930 Indonesian population in the Other Islands estimated, assuming 1.5 per cent annual growth. 1930-90 total population from Van der Eng, 1992, updated with 1990 census results.

1823-80 Volume of exports from Van Ark (1988:114-15), 1826 assumed to be the average of 1825 and 1827.

1823-80 Government expenditure from *Changing Economy in Indonesia Series Vol.2*, 1976:41-51, deflated with the 'GDP reflator' (see below).

The procedure used to estimate GDP prior to 1880 assumes implicitly that per capita income increased at best by 20 per cent between 1823-80, or 0.3 per cent per year. As illustrated in Figure 3, per capita income changed only slowly, although some historians of Java in the 19th century, in particular Bob Elson, Radin Fernando and Peter Boomgaard, are arguing, largely on the basis of qualitative information, that there must have been some change in income under the Cultivation System. Given that colonial rule was consolidated very gradually in most of the Other Islands outside Java and Madura during the 19th century, and that most of the area was not actually opened up until the early 20th century, it is difficult to imagine that there have been major economic changes in the Other Islands and it is likely that most of the Other Islands were still in a classical steady state situation.

Changes in average income in Java will only have changed average income in the whole of Indonesia to the extent that the Javanese population was represented in the entire population in the Indonesian archipelago. The indigenous population in the Other Islands was estimated using an assumed 1.5 per cent growth rate before 1930. This is no doubt too high for the entire period, but this is not of relevance for the discussion of colonial drain. Estimating the population in the Other Islands using a 1.0 per cent growth rate implies that the population in Indonesia was bigger than assumed, hence that the economy was

bigger, and therefore that colonial drain as a percentage of GDP was smaller. The bigger the assumed population in the Other Islands, the smaller the overall impact of economic change in Java on the archipelago as a whole.

Annual per capita GDP in the early 1880s was about Rp.175000 in 1983 prices, which in 1983 rice prices implies a level of living of 465 kg. of rice annually. This is probably a bit high, because rice was more expensive in relation to other goods and services until the 1970s. If it is assumed that a subsistence minimum is 1750 Kcal. per capita, and that at low levels of living about 70 per cent of income is spent on food, the minimum subsistence income rice equivalent would be 255 kg of rice per capita. The poverty line today is 240 kg. for rural Indonesia. Income distribution may have been uneven, but the numbers of Europeans and Chinese, who may have been the main cause of uneven income distribution, was relatively much smaller in the 19th than in the 20th century (Booth 1988b:331). It therefore seems that 465 kg. of rice in 1880 is not implausible. The estimated level of rice equivalent per capita income of 355 kg in 1823 is also still within the range of possibilities. The average standard of living was certainly not very high, but it was most likely more than adequate for survival.

Comparisons with historical estimates of GDP per capita in other countries lead to the conclusion that these countries, such as Japan, Thailand, Taiwan and Burma subsisted at levels of per capita output comparable to Indonesia in 1880, until the countries for some reason experienced an acceleration of economic growth. Only India was subsisting on a level of per capita income about 30 per cent lower than the countries mentioned above. This evidence leads to the conclusion that prior to an acceleration of economic growth, increases in per capita income in most Asian countries occurred at a slow rate and were interrupted by occasional setbacks due to crop failures. Bearing in mind the available evidence on economic growth in pre-modern Western Europe, this is not an unacceptable conclusion. Up until the 19th century economic growth in most of Europe was relatively slow, and even during the 19th century the aggregate weighted annual growth of per capita GDP in fourteen Western countries was only 1.1 per cent per year during 1820-70 and 1.3 per cent between 1870 and 1900 (calculated from Maddison 1991). It is only in the 20th century that sustained high growth rates have been achieved. Many Asian countries, including Indonesia do not differ from the Western countries in this respect.

The period prior to 1800 is not discussed in this paper, although estimates of GDP for the 19th century allow some deductions for that period. Before 1800 the Vereenigde Oost-Indische Compagnie undoubtedly managed to reap monopoly profits by controlling a large part of the market for tropical products in Europe.

Given that the drain defined by the trade balance was relatively insignificant in the 19th century, it is very difficult to imagine that the drain was a significant factor in explaining under-development in the Indonesian archipelago at large before 1800.

1. An index of unit prices in Java with a weight of 0.8, derived from indices with different base years from various sources were used (Van der Eng 1992:360). Monthly data for the period 1923-90 were aggregated to obtain an annual price index (the base 1955). Because annual data appeared to result in substantial distortions due to the over-weighting of inflation in postwar Indonesia. For the years 1831-1920 the retail index was linked to a general index of rice prices in Indonesia, from Calcutta, London, and Java (Van der Eng 1978:44-7). This is the only available index of domestic price movements in Indonesia. The link is justified by the fact that rice prices dominated the general price level to a very large extent.

2. An export price index with a weight of 0.2. The available postwar unit value indices for exports all refer to prices in US dollars. The indices for 1938-50 from Kopsch (1955) were linked with indices for 1950-59 from the IMF financial statistics, corrected for changes in the exchange rate of the rupiah and the US dollar. This index was related to 1955 and linked in 1958 to the Pasche export unit value index from Van der Eng (1988:112-7).

For 1823-50 the export price index was linked to Van der Eng's export price index, and data for 1825 was assumed to be the average of 1825 and 1827 figures. The price index was then converted to GDP in current prices. The ratio of drain is defined in the main text and GDP in current prices was multiplied by GDP in constant prices in order to obtain GDP less drain in constant prices. In Table 6 the same process was applied to the trade balance and the estimate of factor payments abroad.

Related New York University

Changing Indonesian Income Series

1. Journal of the Export Credit (1951-1955)
2. Public Finance (1956-1959)
3. Expenditure on Fixed Assets (1960-1964)
4. Rice Prices (1978)
5. National Income (1979)
6. Money and Banking (1980-1985)

Annex 2 Reflation of GDP in 1983 prices

The historical GDP estimates are in constant prices. In order to relate them to the BoP data in current prices they were reflatd using a constructed price index. For the years 1968-90 the implicit GDP deflator from the official national accounts statistics was used. Before 1968 the implicit GDP deflator diverges significantly from general price indices for Indonesia. Therefore a price index for 1831-1968 with two components discussed below was used.

1. An index of rural retail prices in Java with a weight of 0.8. Several price indices with different base years from various sources were used (Van der Eng 1992:360). Monthly data for the period 1920-90 were aggregated, to obtain an annual retail price index (re-based to 1983), because annual links appeared to result in substantial distortions due to the often high rate of inflation in postwar Indonesia. For the years 1831-1920 the retail index was linked to a general index of rice prices in Indonesia, from *Changing Economy in Indonesia Series Vol.4* (1978:44-7). This is the only available index of domestic price movements in Indonesia. The link is justified by the fact that rice prices dominated the general price level to a very large extent.

2. An export unit value index with a weight of 0.2. The available postwar unit value indices for exports all refer to prices in US dollars. The indices for 1938-70 from Rosendale (1975) were linked with indices for 1970-90 from the *IMF Financial Statistics*, corrected for changes in the exchange rate of the rupiah and the US dollar. This index was re-based to 1983 and linked in 1938 to the Paasche export unit value index from Van Ark (1988:114-7).

For 1823-31 the aggregated reflator was linked to Van Ark's export price index, and data for 1826 was assumed to be the average of 1825 and 1827 figures. This price index was used to estimate GDP in current prices.

The ratio of drain (as defined in the main text) and GDP in current prices was multiplied by GDP in constant prices in order to obtain GDP less drain in constant prices. In Table 8 the same process was applied to the trade balance and the estimate of factor payments abroad.

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