

Hentschel, Jesko

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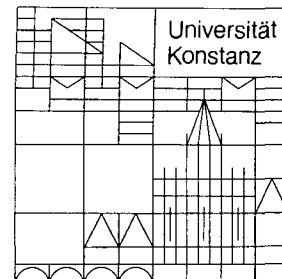
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Fakultät

Fakultät für Wirtschafts-
wissenschaften und Statistik

Jesko Hentschel

**The Changing Composition of Imports
of Highly Indebted Countries**

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W 113 - 76

Postfach 5560
D-7750 Konstanz

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Jesko Hentschel
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THE CHANGING COMPOSITION OF IMPORTS OF HIGHLY INDEBTED COUNTRIES

by Jesko Hentschel

ABSTRACT

A number of highly indebted developing countries have experienced severe foreign exchange shortages for a couple of years. They could not simply roll over old debt any more by taking up new loans. Since export revenues could not be raised sufficiently, quite a few countries resorted to a curtailment of imports. This paper examines whether the cutback on imports was distributed equally across different types of import goods for a number of countries classified as being problem debtors. It can be observed that the cutback fell primarily on capital goods. In addition, capital goods produced abroad accounted for a significantly smaller share in total Gross Fixed Capital Formation after the outbreak of the debt crisis than before. Consumption goods also carried the burden of adjustment, but only if they accounted for a substantial share of imports before the beginning of the crisis. The share of intermediate goods in real merchandise imports increased instead, reflecting the short-run vulnerability of domestic output to imported inputs.

I. Introduction

The supply of international credit decreased substantially for quite a few developing countries in 1982 as Mexico's inability to service its external obligations caused fears that the magnitude of debt had grown unsustainable for a number of heavily indebted countries. Especially several Latin American countries experienced that they could not continue rolling over their debt by financing amortization and interest payments on old debt with new loans from commercial banks any more. Rounds of rescheduling with both official and commercial creditors had to be entered in large numbers.

Most heavily indebted countries financed a net transfer of resources abroad in the years following the disruption in 1982. The expansion of export revenues contributed only a minor share to the improvement of the balance of payments; the major adjustment was achieved through a reduction of imports. It is generally recognized that quite a few developing countries use imported capital and intermediate goods as factors of production. If the substitution possibilities between imported and domestically produced factors of production are very low (at least in the short run), a cutback of real merchandise imports can cause a supply shock in the developing economies.

A decomposition of imports into capital, intermediate, and consumption goods before and after 1982 promises to give some further insight into the import behaviour of developing countries. It can then be assessed whether the cutback of real imports of countries facing a foreign exchange restriction was levied on all imports alike or whether specific categories carried a proportionally higher burden than others. If a priority was given

to specific import goods, this sheds some light on the importance of these goods in the domestic production process in the credit-constrained countries.

It is also of interest to compare the composition of imports between a group of credit-constrained 'problem' debtors and one of creditworthy 'non-problem' debtors. The question can be evaluated whether the two groups of countries can be distinguished from each other according to the importance of consumption goods in real merchandise imports and the latter's variation in times of high and low external borrowing.¹

Section 2 of this paper briefly describes some theoretical links between imports and output. Section 3 then defines the two groups of countries subject to analysis. In section 4, the composition of imports of ten countries is presented. The importance of imported capital goods for gross domestic capital formation in the developing countries is considered separately in section 5. The paper concludes with some summary remarks.

II. Imported Capital, Intermediate and Consumption Goods

(a) Imported Capital Goods: It is generally recognized that one of the major characteristics in the process of economic development is the establishment of an industrial base for the production of manufactures. A structural change that decreases the predominant role of the primary sector in developing countries has to take place (Chenery 1979, Chenery, Robinson and Syrquin 1986). The establishment of an industrial base itself requires the

¹ It is wrong to conclude, though, that rising volumes and shares of consumption goods in real imports indicate the use of borrowed funds to raise the level of consumption instead of supplementing domestic resources for investments. Even if imports of consumption goods increased during times of high external borrowing, it is still possible that the absorption of *domestically produced* consumption goods decreased and investments increased instead.

accumulation of capital goods. Obviously, without a capital goods' industry, a large part of these have to be imported at the early stages of economic development. Later, some capital goods required to increase output might be producible domestically (like light machinery or transport vehicles), while certain other capital goods still have to be imported (e.g. high-tech machinery).

A foreign exchange shortage can have a negative impact on domestic productive capacity if the substitution possibilities between domestically produced and imported capital goods are low. Empirical studies estimate this elasticity of substitution to be of a low magnitude in developing countries (Marquez 1985, Bautista 1980). In the extreme case, the elasticity of substitution is zero and the two capital goods have to be treated as complements in the production process. The United Nations Industrial Development Organization (1987, p.77) classifies the production process in a lot of developing countries to be of such nature. In this case, only one optimal composition of the total capital stock exists for each level of production. A foreign exchange restraint results in an underutilization of the total capital stock if it causes imports of capital goods to fall short of their optimal level. Since investments take time to come on stream, the impact of a foreign exchange restraint via the reduction of imports of capital goods is realized in the medium-to longer-run.

(b) Imported Intermediate Goods: While imports of capital goods have a long-term impact on output, imported intermediate inputs can have a short-run effect on domestic economic activity since they are immediately used in the production process. They comprise processed food, fuels and lubricants, spare parts for machinery and capital equipment, industrial supplies and the like. The vulnerability of domestic output with respect to imported intermediate inputs depends on the import intensity of production and the degree of substitutability between imported and

domestically produced intermediate goods. Even if domestic substitutes can be produced, the reallocation of factors of production into the industries producing the import substitutes takes time. Therefore, domestic output might nevertheless be effected in the short run. The more flexible factors of production can move between different industries and the higher the elasticity of substitution between domestically produced and imported inputs, the lower is the negative effect of a curtailment of imported inputs on domestic output.² The sector likely to be most intensive in the use of imported inputs is the manufacturing sector. The chain of supply linkages becomes vulnerable when domestic basic industries (such as industrial chemicals, iron and steel, energy) with strong forward linkages to industrial production are highly dependent on imports of industrial inputs³.

(c) Imported Consumption Goods: The final category of imported goods are consumption goods. They comprise durable consumption goods (radios, TVs, furniture etc.) and non-durables like food, medicaments etc. The supply linkages to domestic output are weak.⁴

² This argument obviously holds for the imports of capital goods as well.

³ The United Nations Industrial Development Organization (1987) estimates the elasticity of manufacturing value added with respect to imported industrial raw material inputs in a cross country study of developing countries to be slightly higher than one.

⁴ A supply vulnerability could be present, if the quality of the domestic labour force varies with imported consumption goods. In a lot of developing countries consumption good imports are only available to a relatively small, wealthy elite, though.

III. Problem versus Non-Problem Debtors

In order to compare the composition of imports of indebted countries that experienced a foreign exchange shortage and those that remained creditworthy on the international financial market, a distinction between 'problem' and 'non-problem' debtors is made.

In the 1988 World Economic Outlook, the International Monetary Fund classifies countries as 'having recent debt-servicing problems' if they incurred external payment arrears in 1985 or rescheduled their debt during the end-1983 to end-1986 period (IMF 1988, p.54). Apparently, this classification is built on the notion that countries do not enter rescheduling agreements or incur payment arrears because they are in a position of strength and can negotiate more favourable conditions on old debt, but because they are unable to meet debt-service payments. Each of the five countries classified here as being problem debtors meets the IMF criteria outlined above and is very unlikely to have rescheduled its debt or incurred arrears as a consequence of its strong position in renegotiating its external obligations. Argentina, Bolivia, Brazil, Chile, and the Philippines are included in this group. The 'non-problem' debtors considered here (Columbia, Indonesia, South-Korea, Malaysia, and Thailand) did neither incur payment arrears nor did they enter rounds of reschedulings⁵. Table 1 shows the two groups of countries, total external debt in 1986 and the debt-to-export ratio in the same year.⁶ The countries in the problem-debtor group show significantly higher ratios of total external debt to exports than those included in the other group.

⁵ Recently, Columbia incurred arrears and paved the way for rescheduling talks. Cf. Economist, 20.8.1988, pp.68-70. See also Süddeutsche Zeitung, 2.1.1989, 'Kolumbien setzt Schuldendienst aus'.

⁶ Besides the debt-service ratio, the debt-export ratio is considered the most important indicator of the ability of an indebted country to pay back accumulated debt. See Morgan Guarantee Trust Company (1983) and Krueger (1987).

Table 1: Classification of Countries, Total External Debt and Debt Indicators in 1986

	Total External Debt (mill dollars)	Debt-to-Export (in %)	Debt-to-Income (in %)
<u>Problem Debtors</u>			
Argentina	48908	533.9	65.8
Bolivia	4619	676.7	118.8
Brazil	110675	437.5	41.0
Chile	20740	394.5	138.8
Philippines	28172	326.3	93.8
<u>Solvent Debtors</u>			
Columbia	14619	225.0	46.8
Indonesia	42090	278.1	58.5
Korea	45108	107.5	47.4
Malaysia	19650	120.5	76.3
Thailand	17950	154.0	44.7

Data Source: World Bank (1988), World Debt Tables, Washington D.C.

The classification used here is not a judgement of whether the debt-situation of the problem-debtors is one of illiquidity or insolvency. Insolvency implies that creditors cannot expect to be paid back their loans. Illiquidity, on the other hand, characterizes a situation in which the debtor countries will eventually be able to service the debt if a temporary mismatch of maturities between returns on investments and external obligations is overcome.⁷ Since imports and the composition thereof are of interest here, the focus rests with the presence of a foreign exchange restriction for the countries classified as being problem debtors.

⁷ There is no general agreement on whether the developing countries are in a situation of insolvency or illiquidity. Several authors judge them as being in a situation of illiquidity (Sprinkel 1984, Cline 1984). The current situation is described as being an insolvency problem by Sjaastad (1983).

Table 2 compares real growth rates of output, exports and imports for the two groups. Output growth rates decreased considerably from 1962 to 1986 for both groups, but they were higher for the non-problem debtors in each time period considered. Both groups cut back growth rates of real imports after 1982, but while import volumes actually decreased for the problem debtors, the non-problem debtors were able to maintain positive growth rates.

Table 2: Growth Rates of Real Output and Real Merchandise Ex- and Imports,

	1962-1986		
	Average Growth Rate of Real Output, in %	Average Growth Rate of Real Exports, in %	Average Growth Rate of Real Imports, %
<u>Problem Debtors</u>			
1962-1973	+ 7.5	+ 7.9	+ 7.7
1974-1981	+ 4.4	+ 6.5	+ 4.1
1982-1986	+ 2.2	+ 1.3	- 4.3
<u>Solvent Debtors</u>			
1962-1973	+ 10.2*	+ 10.9	+ 9.1
1974-1981	+ 8.9	+ 9.1	+14.2
1982-1986	+ 5.2	+ 8.7	+ 4.1

* Excludes Malaysia

Data Sources: Own calculations from: United Nations, Yearbook on International Trade Statistics, New York, various issues; United Nations Conference on Trade and Development, Handbook of International Trade and Development Statistics 1987, Supplement, New York 1988; United Nations Database.

IV. The Composition of Imports

Merchandise imports according to the Standard International Trade Classification were deflated by the UNCTAD price deflator system (UNCTAD 1986), which results in a much more precise deflation than using a general unit-value index as is most often done⁸. They were aggregated into nineteen Broad Economic Categories as used by the United Nations Statistical Commission (1970). Estimates for

⁸ Most studies employ a common price index to deflate all import categories. Mirakhor and Montiel, examining the composition of imports of developing countries as well, deflated all categories of nominal imports by the export-price index of the industrial countries. Compare Mirakhor and Montiel (1987, p.76, fn 11).

capital, intermediate, and consumption goods imports were then derived from these Broad Economic Categories as recommended by the United Nations Statistical Commission (1970).

Results of the decomposition exercise are presented in Table 3. The time phase of extensive borrowing (1974-1981) is divided into two periods. In the latter one (1978-1981), the pace of external borrowing was considerably higher than in the first one (1974-1977). The years following the outbreak of the debt crisis are considered separately. The table reports an average yearly import quantity index (1978-1981=100) and the shares of capital, consumption and intermediate goods in total real merchandise imports.

For the problem debtors, the burden of reduced imports in the crisis period fell primarily on capital goods; the importance of capital goods in real imports decreased for all five countries considered. Three countries, Argentina, Bolivia and Chile, used external funds in the 1978-1981 period to raise both imports of consumption and capital goods overproportionally relative to import volume growth. With import quantities falling off after 1981, these import categories had to carry the burden of adjustment. All five countries considered in this group shifted their composition of imports towards intermediate goods.

Each of the countries which did not exhibit debt-servicing problems were able to raise real merchandise imports past their respective 1978-1981 level. Compared to the group of problem debtors, a lower variation of the composition of imports can be traced from the data in Table 3. It is interesting to observe that all countries assigned capital goods a higher importance in real merchandise imports in the third time period. Except for Indonesia, the importance of imported intermediate goods was slightly reduced instead.⁹

⁹ It is interesting to observe that Indonesia cut back consumption goods imports with real imports increasing. This contrasts

Table 3: The Composition of Developing Countries' Imports

	Average yearly import quantity index (1978-1981=100)	Share of capital goods in real imports	Share of consumption goods in real imports	Share of intermediate goods in real imports
<u>Problem Debtors</u>				
- Argentina				
1974-1977	54	.17	.05	.78
1978-1981	100	.28	.13	.59
1982-1985	62	.23	.07	.71
- Bolivia				
1974-1977	91	.35	.18	.47
1978-1981	100	.37	.19	.44
1982-1984	62	.33	.10	.57
- Brazil				
1974-1974	101	.19	.04	.78
1978-1981	100	.14	.04	.82
1982-1984	74	.11	.04	.85
- Chile				
1974-1977	59	.22	.10	.68
1978-1981	100	.26	.19	.56
1982-1986	67	.22	.14	.63
- Philippines				
1974-1977	83	.19	.05	.76
1978-1981	100	.19	.05	.75
1982-1985	95	.16	.06	.78
<u>Solvent Debtors</u>				
- Columbia				
1974-1977	59	.29	.08	.63
1978-1981	100	.28	.08	.64
1982-1984	124	.30	.07	.62
- Indonesia				
1974-1977	77	.31	.14	.55
1978-1981	100	.26	.15	.60
1982-1984	163	.30	.07	.62
- Korea				
1974-1977	60	.18	.02	.80
1978-1981	100	.19	.03	.77
1982-1986	139	.22	.04	.75
- Malaysia				
1974-1977	86	.24	.16	.60
1978-1981	100	.23	.14	.64
1982-1984	147	.25	.14	.61
- Thailand				
1974-1977	72	.19	.06	.75
1978-1981	100	.18	.06	.76
1982-1985	117	.21	.07	.73

Source: Own calculations based on United Nations database. Rounding errors account for the fact that some of the shares in one row do not sum exactly to one.

the behaviour of Argentina, Bolivia and Chile where the share of consumption goods imports in real merchandise imports moved pro-cyclical with real import volumes.

Considering some of the theoretical arguments made above, the import behaviour is not surprising. Countries that were forced to reduce imports tried to minimize the short-run vulnerability of domestic production by importing necessary intermediate inputs. Countries that had raised the share of consumption commodities in real merchandise imports reversed this behaviour with the foreign exchange restraint being in effect. Capital goods had to give priority to imports of intermediate goods as well. As will be pointed out below, this can cause long run supply disturbances.

V. The Composition of Investments

The estimates of imported capital goods can be related to the total volume of Gross Fixed Capital Formation (GFCF) per period in order to trace the development of the composition of investments in the three time periods considered.¹⁰ Since data on expenditures on Gross Fixed Capital Formation include the investments of imported capital goods, the ratio reports the relative importance of capital goods produced abroad in total investments per period. These shares are presented in Table 4.

The magnitude of GFCF dropped significantly for the five countries classified as problem debtors after the outbreak of the debt crisis. Further, the importance of imported capital goods in GFCF declined as well - the negative growth rates of real imports of capital goods were therefore even lower than the declining growth rates of real capital formation. In three of the five countries considered here, the share of capital goods produced abroad in total GFCF was lower in the crisis years than in the 1974-1977 period.

¹⁰ This assumes that there are no stocks of capital goods that are build up or reduced.

Table 4: Share of Imported Capital Goods in Real Gross Fixed Capital Formation (GFCF)

	Real GFCF (average 1978-1981 = 100)	Share of imported capital goods in real GFCF
<u>Problem Debtors</u>		
Argentina		
1974-1977	95	.09
1978-1981	100	.21
1982-1985	61	.16
Bolivia		
1974-1977	99	.32
1978-1981	100	.37
1982-1984	69	.30
Brazil		
1974-1977	89	.11
1978-1981	100	.07
1982-1984	82	.05
Chile		
1974-1977	68	.22
1978-1981	100	.31
1982-1984	80	.21
Philippines		
1974-1977	71	.20
1978-1981	100	.18
1982-1985	80	.16
<u>Solvent Debtors</u>		
Columbia		
1974-1977	79	.18
1978-1981	100	.23
1982-1984	115	.27
Indonesia		
1974-1977	63	.26
1978-1981	100	.19
1982-1984	115	.26
Korea		
1974-1977	57	.22
1978-1981	100	.22
1982-1985	126	.29
Malaysia		
1974-1977	61	.36
1978-1981	100	.32
1982-1984	126	.35
Thailand		
1974-1977	68	.21
1978-1981	100	.19
1982-1985	104	.25

Source: Own calculations based on United Nations database.

Two problems arise for these countries. First, low rates of investment jeopardize the future productive capacity. Reisen (1987, p.118) even sees the existing capital stock to be endangered as new capital formation can not keep pace with depreciation. Second, the composition of new investments changed dramatically with a reduction of imports of capital goods as foreign exchange had to be freed for the purchase of necessary intermediate imports. It is reasonable to assume that the two different capital goods are imperfect substitutes in the production process. Even if one assumes that during times of high borrowing a substantial amount of capital goods were close substitutes to the domestically produced ones, the reduction of the importance of imported capital goods in total GFCF below their 1974-1977 level in a number of countries is alarming. Since the substitution of imported capital goods does take time as factors of production have to be reallocated and new technologies have to be applied, it is likely that an underutilization of the total capital stock has resulted. In addition to the low level of gross investments, their efficient utilization has to be doubted for a number of countries.

A different picture arises when one looks at the countries labeled 'non-problem' debtors. All five of them were able to increase real GFCF after the beginning of the debt crisis and imported capital goods contributed a higher share to total investments.

Considering the two newly industrializing countries in the sample, Brazil and South-Korea, it is interesting to observe that Korea shows a significantly higher share of capital goods produced abroad in real GFCF than Brazil. But in the same time period in which Korea increasingly relied on imported capital goods for GFCF, the country emerged as an important exporter of capital goods. They made up for about one quarter of real merchandise exports in 1985.¹¹

¹¹ This figure was derived by applying the same procedure of deflation and aggregation to merchandise trade data as described in section 4.

VI. Summary

A number of highly indebted developing countries have experienced severe foreign exchange shortages for a couple of years. They could not simply roll over old debt any more by taking up new loans. Since export revenues could not be raised sufficiently, quite a few countries resorted to a curtailment of imports. This paper examined whether the cutback on imports was distributed equally across different types of import goods for a number of countries classified as being problem debtors. It was shown that the cutback fell primarily on capital goods. Consumption goods also carried the burden, but only if they accounted for a substantial share of imports before the beginning of the crisis. The share of intermediate goods in real merchandise imports increased instead, reflecting the short-run vulnerability of domestic output to imported inputs. It was shown that the group of non-problem debtors showed a considerably more stable composition of imports in the debt-crisis years.

For the problem-debtor countries examined here, capital goods produced abroad accounted for a significantly smaller share in total Gross Fixed Capital Formation after the outbreak of the debt crisis than before. If a short-term substitution of imported capital goods did not taken place, an underutilization of the total capital stock has resulted. Growth prospects for the five problem debtor countries appear to be quite endangered in the medium- to longer-run. This is not only due to reduced levels of capital formation, but also to the changing composition of these investments.

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