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A FUNDAMENTAL SYMMETRY IN INTERNATIONAL PAYMENT PATTERNS

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1. Introduction

Discussions on international monetary issues widely presuppose that the U.S. dollar is the dominant means of payments in international transactions. In vol. 2, no 4 of this journal Richard Cooper, in discussing what he calls the fundamental asymmetries of the world international monetary system, repeatedly refers to "the extensive private use of the U.S. dollar as a medium of exchange ..." (Cooper (1972), pp. 327, 330, 331, 336). In fact, Cooper's argument largely depends on the alleged dominance of the U.S. dollar as a vehicle currency. The assumption is only expressed in qualitative terms, and the only countries dealt with explicitly as to actual currency distributions are Hong Kong and Jamaica. Since the assumption as to the role of the U.S. dollar as a means of payments seems crucial not only to Cooper's argument but to many aspects of international monetary analysis, quantitative data from more important countries are needed.

Another example of the important role attributed to the dollar as a means of payments is found in a recent essay by Robert Mundell (1971, p. 33).

> "... companies engaged in international trade and those located abroad need a currency, a world currency. They are using the dollar now and if the central banks of Europe move out of the market and let the exchange rates up, the multinational corporations and the international traders still need a world currency and they can only use the dollar because it is the one that has the required international monetary properties."

The belief that most international payments are settled in dollars is so widespread in the literature and in present and past debates that further examples should hardly be needed. The pattern of international payments, therefore, is a topic of general interest, which is not confined only to Cooper's and Mundell's articles referred to above.

Contrary to the widespread assumption that most transactions are settled in U.S. dollars, empirical evidence for countries where data on actual currency distributions of foreign transactions are available indicate, in fact, that most transactions are settled *in the seller's or the purchaser's currency*. As shown below, this is the fundamental pattern in international payments. The U.S. dollar, it turns out, is used only to a somewhat greater extent than would be indicated by the U.S. share of world trade alone.

The limited role of the U.S. dollar in current international payments was revealed in a recent survey of payments habits in Sweden – the first survey, I believe, to give a picture of the financial arrangements of foreign trade on a total, country-level basis (Grassman, 1971, ch. 3). We shall present the evidence for Sweden – and a few other countries as well – and briefly discuss the factors determining the choice of currency in international payments. Some implications of the limited role of the dollar as a means of payments are touched upon in the concluding section.

2. The ambiguous vehicle concept

The dollar derives its capacity as a reserve and key currency partly from the fact that it serves as vehicle currency or means of payments for a fairly large part of total international transactions. Since the functions of the dollar are thus closely interwoven, it is interesting to assess the role of the dollar as a vehicle currency in world payments. But, first, we should scrutinize more closely the meaning of the concept of a vehicle currency, or that of means of payment or medium of exchange, which are all frequently used interchangeably. The meaning of these three terms is not wholly clear, neither in Cooper's article nor with most other writers. The only authors who have, as far as I know, made a clear distinction between the various possible meanings of the vehicle concept are Swoboda (1969) and Cohen (1971).

Swoboda is most careful to limit his discussion of the role of the dollar to what he calls foreign-exchange market transactions in "the narrower sense" as distinguished from the role of the dollar "in international economic relations in general" (Swoboda, 1969, p. 31). In Swoboda's discussion the foreign-exchange market concept is qualified as to cover capital and inter-bank transactions only, and in this respect the dollar no doubt is more dominant.[1] Cooper's article, however, deals with the use of dollars in a much broader sense, not only by banks but by firms and the private public in general. This is obvious from his references to the dollars as "units of accounts in trading contracts, which are efficiently the same as those of the medium of exchange" (Cooper, 1972, p. 329), to the importance of currency denomination in export contracts and to the risks for losses and bankruptcies by firms when parities are changed (Cooper, 1972, p. 332).[2]

Cohen distinguishes six separate "roles of international money": the three functions as a medium of exchange, a unit of account and a store of value, each operating at two levels – private transactions and official transactions.[3] From the firm's point of view the medium of exchange and the unit of account roles are, for all practical purposes, inseparable: the currency denominations in contracts and offers have to be used in actual payments (unless exchange rate clauses are stipulated or, otherwise, the seller agrees to receive payment in another currency than the contract currency).

In focusing the vehicle function it is useful, in addition, to have the rather clearcut and operational distinction *by terms of transactor*, i.e. to distinguish between the dollar use of banks and the dollar use of firms. This would roughly mean that inter-bank transactions are conceived of as the very transfer (or mutual clearing and set-off) mechanism, while firms' transactions in foreign exchange consist of quoting, price-fixing in trade contracts, invoicing, and making and receiving payments through the banks. The traditional vehicle concept readily encompasses both these elements of the international payment mechanism.

Inter-bank transactions are predominantly in dollars, and the failure to distinguish inter-bank and firm transactions may be one reason for the widespread belief that the U.S. dollar plays such a significant role in the foreign-exchange activities of the general public. As is evident from

[1] Cf. the difference between Danish current and capital payments: in 1971 22% of receipts and 25% of expenditures on account of goods and services were denominated in U.S. dollars, but a full 51 and 43% of the capital payments were denominated in U.S. dollars (Danmarks Nationalbank, 1971, p. 31).

[2] "Extensive valuation of trading contracts and assets abroad in dollars means that a change in its parity would generate bankruptcy or lesser complications for otherwise viable banks and firms." (Cooper, 1972, p. 331).

[3] Cohen, 1971, p. 17.

the earlier quotations, the analysis of Cooper, Mundell and others refers to the role of the dollar for the public in general – such as the choice of invoice currency in foreign trade payments and the various activities related to this choice. It is this aspect of the vehicle currency which is relevant when we are discussing e.g. uncertainty and disruptions in trade (Lanyi, 1969), the choice of a "pivot-currency" (Williamson, 1971), the interrelation between the vehicle and reserve functions of the dollar (McKinnon, 1969; Cohen, 1971; Mundell, 1971) and many other aspects of the international monetary system.

In the following we shall, therefore, concentrate on the general public's foreign-exchange transactions and the role played by the dollar on this market. We thus broaden the perspective as compared to e.g. Swoboda by supplying empirical evidence as to the vehicle-aspect of the dollar as it stands out in the article by Cooper and others.

3. Actual currency distribution: a Swedish case study

There is a vast literature describing payment and financing practices in international trade, but almost all evidence has had the common limitation of being 'piecemeal' and lacking generality. Usually it is either based on practices in individual firms, banks etc. or on aggregated administrative materials which only casually happen to shed light on the relevant issues. Thus the results have been either of a too specific or a too general nature. A few attempts have been made to map directly the payments and credit patterns on a larger scale. But the results obtained have been of a poor quality – mainly due to the difficulties firms experience in answering the questions posed (Hansen, 1961, p. 119). The solution to this dilemma was to get down to the individual commercial transactions, to obtain a representative sample, and to pose the pertinent questions to the companies.

The survey was carried out by the Swedish Central Bureau of Statistics, where about ten thousand items in the Swedish foreign trade statistics for 1968 were chosen in a random sample. For the items chosen each company was questioned in detail about, for example, the form and size of payment for the specific export or import item, credit periods, payment conditions, currency etc. The survey thus gave us a comprehensive picture of the financial structure of Swedish foreign trade, including methods of payment, currency denominations, credit

Table 1
The distribution of currencies used in foreign trade payments, Sweden 1968[a].

Currency	Exports		Imports	
	Payments in per cent			
Swedish kronor	66.1	–	25.8	–
U.S. dollars	12.3	(7.7)[b]	22.0	(9.3)[b]
Pounds sterling	11.2	(14.8)	17.3	(13.6)
D-marks	3.8	(11.6)	17.4	(18.7)
Danish kroner	1.8	(9.5)	3.9	(7.2)
French francs	0.8	(4.7)	2.5	(4.5)
Norwegian kroner	0.7	(10.5)	2.2	(5.8)
Swiss francs	0.5	(2.4)	2.4	(2.6)
Lire	0.3	(3.1)	1.8	(3.6)
Other	2.4	(35.7)	4.7	(34.7)
Total	100	(100)	100	(100)

[a] Sources: Grassman (1971) and Sveriges Riksbank: Yearbook, 1971.
[b] The share of Sweden's trade due to the countries whose currencies are shown in the table is given within brackets.

periods offered and actually used etc. The information obtained should in principle be representative for the total Swedish exports and imports in the year 1968.

The data for payments arrangements in the total Swedish foreign trade were distributed and cross-tabulated according to several interesting variables. These were, for example, export and import currencies for trade with different countries, commodity groups, size of payment, contractual form of payment and credit periods. It suffices here to state the actual distribution of exports and imports payments by different currencies (table 1), and to give a brief summary of the factors affecting the choice of currency in foreign trade payments.

4. The choice of currency

As is obvious from table 1, the general rule for both exports and imports is that they should be invoiced in the currency of the seller's or the buyer's country. According to the condensed table 2, the seller's currency is used in 66% and 59% of export and import payments respectively, while the purchaser's currency is used in 25% and 26% of

Table 2
Currency denomination in foreign trade payments, Sweden 1968[a].

Currency	Exports (%)	Imports (%)
Selling country's	66[b]	59
Purchasing country's	25	26[b]
Third country's	9	15
Total	100	100

[a] Source: Grassman (1971).
[b] i.e. Swedish crowns.

export and import transactions respectively. There are, however, variations and exceptions; in trade with some countries we even have the opposite relation. The general payment pattern is displayed in the detailed fig. 1.

In Swedish trade with the United States and the United Kingdom the dollar and pound sterling respectively dominate both in exports and in imports. In Swedish trade with Eastern countries convertible currencies are almost exclusively used, i.e. Swedish crowns or third-country currencies. About 62% of the value of Swedish exports to the developing countries was settled in Swedish crowns, while imports from Eastern countries are settled to the extent of 24.3% in third-country currencies and only to the extent of 0.1% in the currency of the seller's country. (Trade with the LDCs and Eastern Europe amounts only to approximately 15% of Sweden's total exports and imports.) For both buyer and seller it seems to be an important consideration that the transaction should be conducted in a currency with which each is well acquainted. This explains the preferences for the seller's or the buyer's own currencies and the fact that, when third-country currencies are used, this is mostly done in dollars (75%) or pounds sterling.

Traditions in certain industries and price quotations for certain commodities or in certain markets affect the choice of currency. Thus much of the raw-material imports including oil is invoiced in dollars or pounds (see fig. 2). The pound plays an important role in, for example, exports of forestry products, but its role in shipping seems to have been taken over by the dollar. Incidentally, it could also be mentioned that there is a positive correlation between the size of transaction and the use of dollar payment.

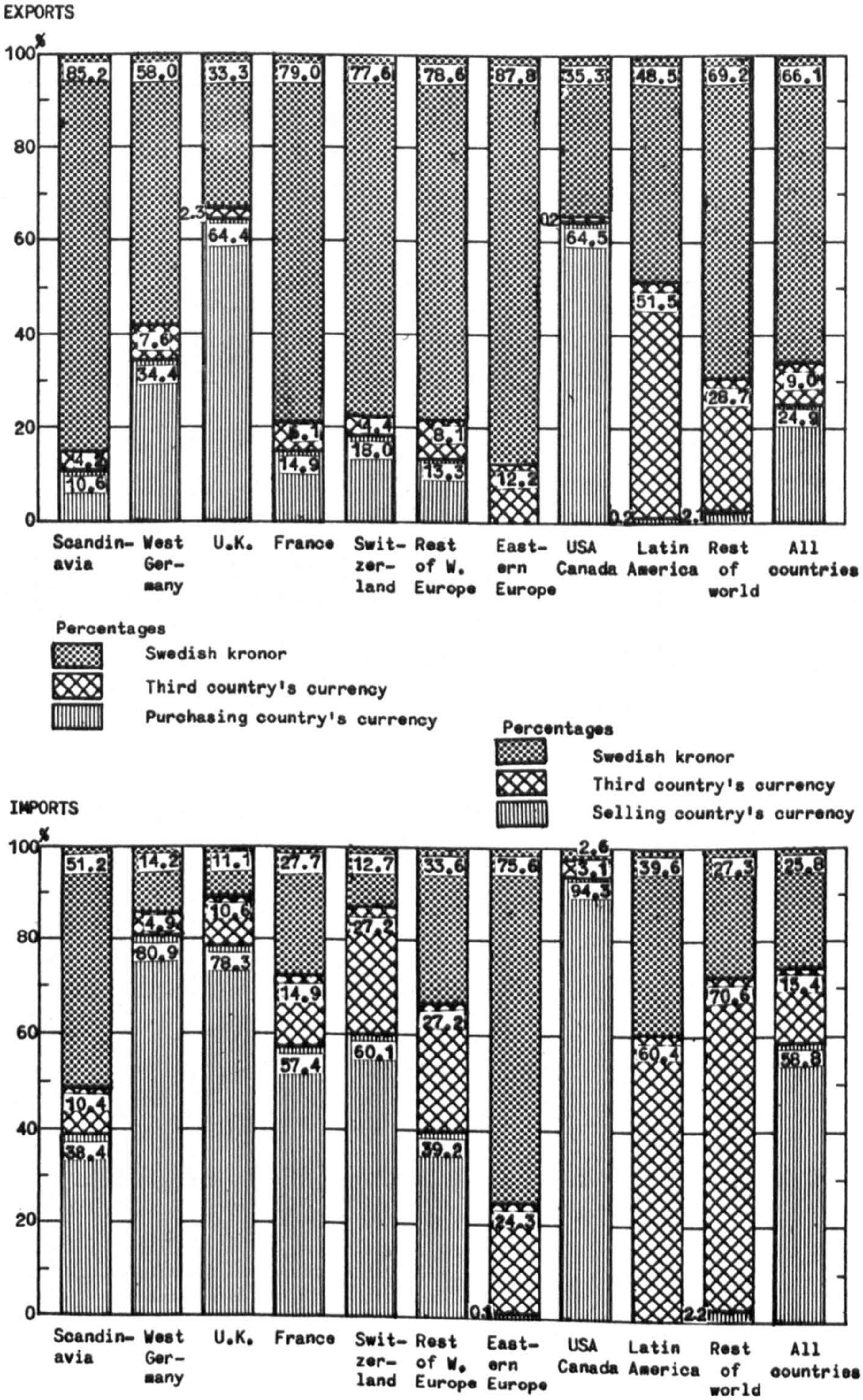

Fig. 1. Sweden: Buyer's, seller's and third country's currencies in trade with various countries in 1968. Source: see text.

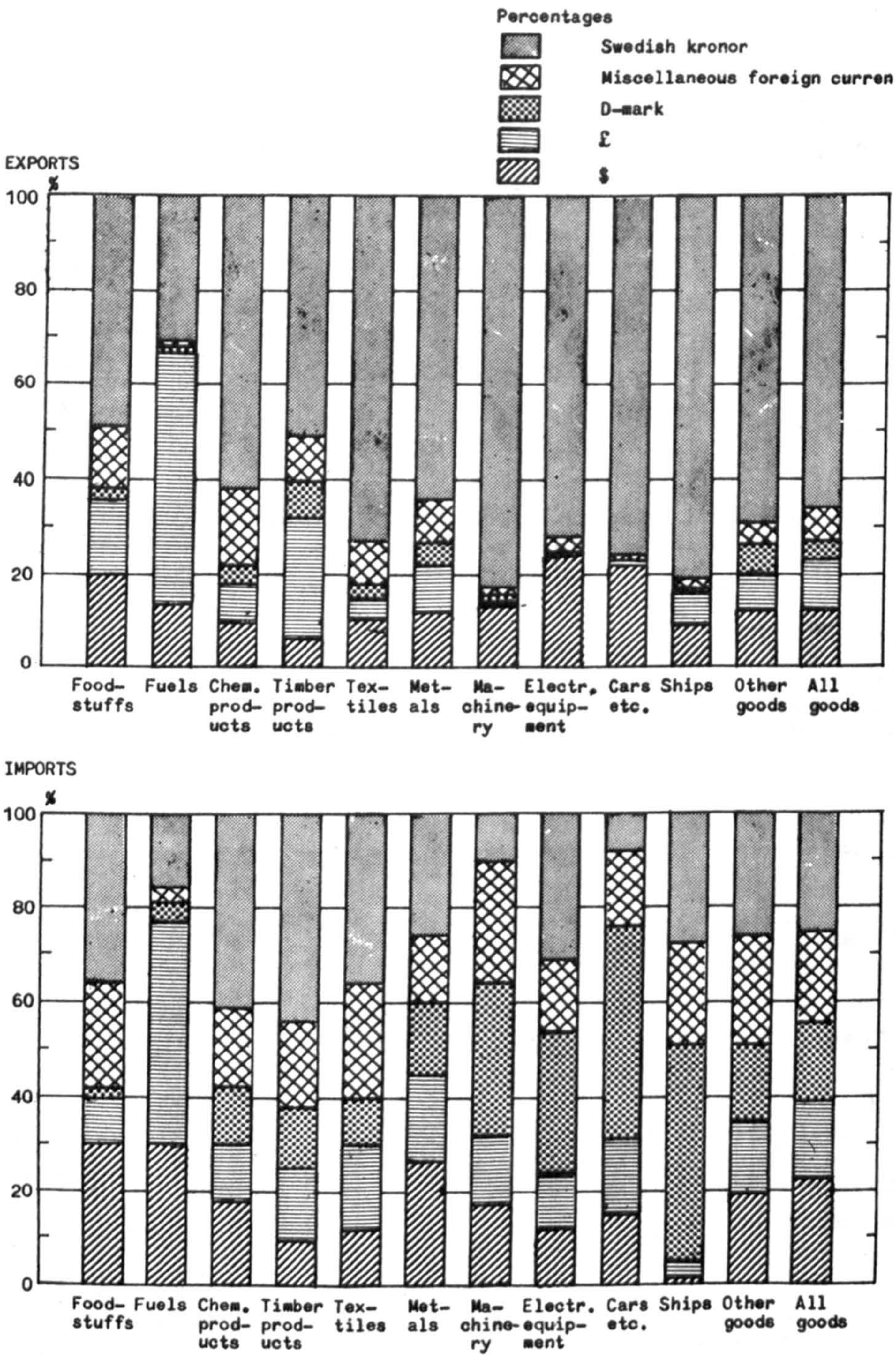

Fig. 2. Sweden: currency distributed over commodities, 1968. Source: see text.

The choice of currency of settlement can also be affected, it seems, by the availability of credit and other banking services, which vary for transactions in different currencies. The relatively strong position of the dollar and the pound in international payments probably partly depends upon the fact that banks in New York and London have for a long time played an important role in the financing of international trade.[4] For some currencies no functioning forward market exists, and so when forward transactions have to be effected it is necessary to use some of the generally accepted currencies.

Apart from the general considerations of choice of currency discussed here, the choice is of course also affected by the specific and temporary demands made on the portfolio composition of the cash balances of the firm by the firm's deliberate foreign exchange management. Two main considerations in this management are expectations as to exchange rate alterations and international interest rate differentials.

Finally, the question as to which currency should be chosen in a particular case is a matter of bargaining between the seller and the buyer. Together with the various constraints mentioned above, it is the interest in, and knowledge of, the question and the general bargaining position of the parties that will be decisive. The overall pattern of all these factors is, however, that $\frac{2}{3}$ of foreign trade transactions are paid in the seller's own currency and $\frac{1}{4}$ are paid in the purchaser's currency – leaving for third country currencies only a marginal role.

5. Currency distribution in a global perspective

Until recently little was known concerning the representativeness of the Swedish data: does the general pattern of currency distributions found in Sweden hold in other countries too? Evidence from other countries where data are gathered, such as Denmark and West Germany, indicate a payments pattern very similar to that in Sweden.

In Denmark foreign-exchange control records give a complete picture of the currency distribution in foreign payments, and the data on Denmark's foreign trade payments (Danmarks Nationalbank, 1971, p. 31) conform to the basic pattern that transactions predominantly are settled in the seller's or the buyer's currency and that the U.S. dollar

[4] Cf. the Danish case, discussed in section 5.

Table 3
The distribution of currencies used in foreign trade payments, Denmark 1971 [a].

Currency	Exports		Imports	
	(payments in per cent)			
Danish kroner	41	–	19	–
U.S. dollars	22	(7.9)[b]	25	(8.4)[b]
Pounds sterling	15	(19.3)	14	(13.5)
D-marks	8	(12.4)	15	(18.5)
Swedish kronor	6	(16.2)	11	(16.5)
Swiss francs	2	(3.0)	4	(2.4)
Other	6	(41.2)	12	(40.7)
Total	100	(100)	100	(100)

[a] Sources: Danmarks Nationalbank, Report and accounts for the year 1971, and OECD, Overall trade by countries, October 1972.
[b] The share of Denmark's trade due to the countries whose currencies are shown in the table is given within brackets.

and pound sterling play a marginal role in commercial transactions. The domestic currency, however, is used to a smaller extent than in Sweden and accordingly the U.S. dollar is used somewhat more than in Sweden (see table 3).

One reason why the domestic currency is relatively less significant in Denmark than in Sweden may be that the Danish krona has repeatedly been under strain during recent years. Another possible explanation why the U.S. dollar is somewhat more frequently used in Denmark is the fact that Denmark heavily relies on capital imports and that many of the current transactions are refinanced by Euro-dollar loans.[5]

In West Germany the pattern of using the seller's or the buyer's currency in foreign trade payments (leaving to the dollar and sterling very marginal roles) is still more accentuated than in Sweden and Denmark. Since the figures supplied to the writer by Deutsche Bundesbank are approximate, and as they have not yet been released for publication, I have been asked to confine myself in the West German case to this general qualitative statement.

Until data become available for other countries, there are no a priori reasons to assume that Sweden, Denmark and West Germany should

[5] This point was suggested by Mr. F. Hollensen, Vice President of Danmarks Nationalbank.

differ from other industrialized countries as to the use of dollars in foreign trade.

A calculation of the dollar's share in world trade payments in 1970 – under the assumption that the pattern of Sweden's foreign trade payments is representative for payment arrangements in all other countries – indicates that U.S. dollars are used in 21% of world trade payments.[6] If in the extrapolation the payments pattern for Sweden is split up into three groups, transactions with Western industrialized countries, the LDCs and Eastern countries, the percentage of total world trade payments settled in U.S. dollars increases to 26%.[7] The figures change only negligibly if the weighted average of distributions in Denmark, West Germany and Sweden is used as the blow-up standard instead of the Swedish figures alone.

6. Conclusion

The purpose of this comment has been to assess quantitatively the significance of the U.S. dollar in world payments. The empirical evidence from Sweden, Denmark and West Germany suggests that the role of the dollar as a vehicle currency has been overestimated. Approximately one-fourth of global foreign trade payments are settled in dollars – reflecting mainly the United States' own share in world trade.

The different functions of the dollar in the international monetary system are closely interrelated, as are the functions traditionally assigned to money as such in a closed economy. Thus the actual significance and use of the U.S. dollar as a vehicle currency should have some bearing on how to regard the dollar also as a key and reserve currency in a future international monetary system. The belief that most international payments are settled in dollars has been generally held, and it is important to point out that a change of assumptions on this point makes a difference in the reasoning on vital issues.

Analyzing and pinpointing the nature of the relationship between the

[6] The extrapolation is calculated on the assumption that the distribution between seller's and purchaser's currency as well as the use of third-country dollars is the same in all countries, and that the U.S. share of world exports is 13.9% (GATT, 1971, pp. 1 and 109).

[7] Here it is assumed that the Western industrialized countries account for 70% of world exports (GATT, 1971, p. 6) and that the rest is settled to 38% in U.S. dollars (the actual percentage in Sweden's import payments to the non-western countries).

vehicle function and the other functions of the dollar now emerges as a challenging research task (cf. Swoboda, 1969). A preliminary reflection is that the dollar's status as a reserve currency is highly conventional, in the sense that for historical reasons, and due to certain properties of this particular currency, the practice gradually emerged to use the U.S. dollar as a reserve asset in most countries. One characteristic of the dollar which has contributed to making this currency a reserve currency is, no doubt, that after all it is the single most important vehicle currency, since it is used in about 25% of international payments. This characteristic is, however, neither a necessary nor a sufficient condition for a currency to serve as an international reserve asset.[8] The vehicle aspect is only one of several factors explaining the position of the U.S. dollar in the monetary system. To say that the dollar has derived its capacity as a reserve currency because it is the 'normal' or 'dominant' currency in international payments is thus an error in both assumption and inference.

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[8] For a discussion of the interrelation between the different functions of an international currency and an analysis of necessary and sufficient conditions for a currency to fulfill the reserve function, see Cohen (1971), pp. 13–33, and Swoboda (1969), *passim*.