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Article — Digitized Version

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Intereconomics

Suggested Citation: Lütkenhorst, Wilfried; Minte, Horst (1979) : The petrodollars and the world economy, Intereconomics, ISSN 0020-5346, Verlag Weltarchiv, Hamburg, Vol. 14, Iss. 2, pp. 84-89,
<http://dx.doi.org/10.1007/BF02930203>

This Version is available at:
<http://hdl.handle.net/10419/139600>

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The Petrodollars and the World Economy

by Wilfried Lütkenhorst, Horst Minte, Bochum *

The quadrupling of the oil price by the OPEC in 1973 was a poignant event in the post-war development of the world economy. Which measures and mechanisms conduced to the international income redistribution¹ necessitated by the hoisting of the oil prices in the past five years?

The raising of the oil price by the OPEC was anything but a "normal" modification of relative prices of traded goods even if the political and psychological side issues are left out of account. It could not be otherwise, so large and abrupt was the change and so outstanding is the quantitative importance of mineral oils in international trade and their strategic significance for the industrialization and economic growth processes of the oil importing countries. How then was it possible for the near-panic engendered by the expectation of continuing accumulation of foreign currency holdings by the OPEC states to be superseded by wide-spread trust in the effectiveness of the petrodollar recycling mechanism and the ability of the international economic system to cope successfully with this problem?²

The Petrodollar Problem

In the OECD countries the petrodollar problem has often been discussed in the historic context of "classic transfer problems" such as occur in connection with war debts and reparations. The analysis therefore operated in similar categories³. There are however significant specific features of the petrodollar problem which must not be ignored:

□ The first one is that all important trading nations belong to one or other of two blocs facing each other⁴, with the result that the bloc of the oil

importing countries was unable to acquire the resources for the additional transfers to the oil exporting states through trade with third countries; from the OPEC states alone could these resources be obtained. On the other hand it was to be expected that the different conditions of individual importing countries in regard to dependence upon OPEC oil, ability to export to the OPEC area and attractiveness for petrodollar investments would bring about major shifts inside the bloc of oil importing countries.

□ Secondly, the process of income redistribution was conceived to be a continuous one; unlike reparation payments for instance which are made once and not again, it posed special problems of structural adjustment to a permanently worsened distribution of trade gains (terms of trade), to altered cost structures and changes in national and sectoral export patterns.

□ Thirdly, the transfer had been forced on the industrialized states by developing countries, a fact which kept alive the hope that the OPEC cartel might collapse as the result of military or political action or simply through the working of market forces, so that appropriate economic adjustments could be avoided, while it created at the same time much uncertainty about the likely con-

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¹ According to Triffin this involved 1.8% of the GNP of the OECD states. This average applies also to the Federal Republic of Germany; for the EC the redistribution amounted to 2.4%. (Quoted from Y. S. Park, *Oil Money and the World Economy*, Boulder, Colorado, 1976, p. 79.)

² Cf. "Die Katastrophe fand nicht statt" (The catastrophe did not take place), a euphemistic article dealing only with the outlook for the well-performing industrialized countries, in: *Die Zeit*, October 13, 1978, p. 18.

³ G. Tichy, *Ölkosten - ein Transferproblem* (Oil costs - a transfer problem), in: *Sparkasse*, No. 2/1975, p. 29 ff., on the basis of F. Machlup, *Das Transferproblem - Thema und vier Variationen* (The transfer problem - theme and four variations), in: *ORDO* 1963, p. 139 ff.; J. Welcker, *Ölschulden als Transferproblem* (Oil debts as a transfer problem), in: *Konjunkturpolitik* 1975, p. 71 ff.; H. B. Chenery, *Restructuring the World Economy*, in: *World Development*, No. 10-12, 1975, p. 3 ff.; W. Lütkenhorst, H. Minte, *Probleme des monetären und realen Transfers. Die Aufbringung und Verwendung der Petrodollar* (Problems of monetary and real transfer. The generation and utilization of petrodollars), in: M. Tietze (ed.), *Die Energiekrise: Fünf Jahre danach* (The energy crisis: Five years later), Bonn 1978, p. 37 ff. (English edition forthcoming).

⁴ The centrally planned economies and the quantitatively insignificant oil exporting countries outside the OPEC are disregarded in this simplifying bipartite view.

duct of these states in the international commodity and financial markets.

Collection and Utilization of Petrodollars

The effectuation of the real transfer of petrodollars — and under comparative-static aspects this alone is of interest — is in actual fact achieved through adjustment processes. The petrodollar problem proper arises from the concrete repercussions of these processes on individual actors and the need and means for their political control. The *internal collection* of the petrodollars in the oil importing countries posed no problem in this context inasmuch as — this was one effect of the oil shock syndrome — neither subsequent producers nor the final consumers offered any resistance to the additional costs being passed on to them.

In monetary terms the *external provision* of the petrodollars by the bloc of oil importing states was, likewise, relatively unproblematic inasmuch as the OPEC states had no choice but to accept payment in the currencies of the importing states in settlement of their current account surpluses — at least as long as they abstained from balancing their current accounts by reducing exports, which was politically out of question.

As the OPEC states would not however accept all the currencies of the oil importing states but payments in the international oil trade are for the most part made in US dollars, many oil importing states had to turn to the international capital markets or draw on bi- or multilateral public credits to effect the necessary *monetary transfers*. Proposals to introduce a basket of currencies as unit of account — as is regularly suggested whenever the dollar runs into a crisis — would leave the predominant position of the US-dollar unchanged.

At the same time the OPEC states had to look for profitable outlets for their financial assets, which they could only find in the big capital markets of the oil importing states due to the dimensions of the sums involved. The end result was thus that the OPEC states provided the financial resources which the deficitary importing states were in need of in order to meet their monetary transfer obligations. But this recycling of petrodollars⁵ could not provide the perpetual motion for limitless deficit financing because (1) every new cycle was bound to aggravate the asymmetry between petrodollar receiving and deficitary oil importing countries, (2) the absorptive capacity of the private capital markets which were the main support for the recycling process was shown to be limited, and (3)

⁵ Cf., in regard to the definition of petrodollars and petrodollar recycling, H. M i n t e, *Petrodollar-Recycling und die Dritte Welt (Petrodollar recycling and the Third World)*, in: *Probleme der Entwicklungsländer*, 1975, p. 315 f.

in view of the existing currency and inflation risk⁶ the OPEC states could not be interested in accumulating an unlimited amount of petrodollars, the less so as the acquisition of real assets abroad, which would have done most to lessen the inflation risk, tended to cause resistance in the recipient countries.

Against a maximization of the adjustment velocity and, thus, the immediate effectuation of the *real transfer* operated the limitations on the internal absorptive capacity of the OPEC countries themselves. These have been the subject of many discussions; in the early prognoses on the accumulation of petrodollars they were greatly overrated. Bearing in mind the limited number of short-term investment opportunities and the lack of complementary production factors (human capital, infrastructure) in most OPEC countries, the case for short-term transformation of the petrodollars into imports seemed however unrealistic.

Immediate real transfers also faced serious obstacles from the point of view of the oil importing countries: In the first place it seems reasonable to ascribe the limited absorptive capacity of certain OPEC countries in some part to the unavailability of innovative supplies matching the specific needs and factor equipment of the OPEC states and to the absence of appropriate marketing concepts in the industrialized states. Moreover, the interposing of a transition period made it also easier for the oil importing states to establish new production patterns on the supply side and mitigated the need for domestic adjustments on the demand side, for many of these states decided to reduce the cost pressure due to higher oil prices by a suitable monetary policy. Had the OPEC states in this situation insisted on full-scale real transfers and used all their petrodollars for the purchase of goods, the already existing structural and supply-oriented inflationary impulses would have been reinforced by substantial impulses from the demand side⁷.

The Transformations Process

In the situation five years after the oil crisis however the constraints of the adjustment process have probably less influence on the size and utilization of current account surpluses by the OPEC states than the ideas of the economic and financial policymakers — who in many surplus countries constitute small oligarchical groups — about optimum arrangements for “their” portfolios. They

⁶ Of interest is an estimate of the pecuniary losses due to the dollar depreciation: This loss is put at about \$ 27 bn as \$ 96 bn of the foreign assets were held in US currency which at the end of 1977 had only 72 % of its 1974 value (cf., amongst others, Euro-money, May 1978, p. 36).

⁷ Cf. H. A d e b a h r, *Zwischenphase zur Bewältigung der Ölkrise (Interim phase in the struggle against the oil crisis)*, in: *WIRTSCHAFTSDIENST*, 1975, p. 27 f.

have to take decisions on the volume and pricing of oil exports and thus on the desired level of oil revenues and their use for consumer goods, investment goods, financial investments at home and abroad, etc. The decision-making process involves ultimately the determination of the optimum rate of transformation of a natural resource, crude oil, into consumer goods, the final objective of all economic activities. This transformation process is taking place in several stages at each of which there is a choice between several transformation alternatives with different economic and social profitability and risk values. The decisions, which in the theoretical optimization model have to be taken simultaneously, are diagrammatized here in an easily understandable heuristic model in which several qualitatively important details are highlighted. The component decisions emphasized in the diagram are also indicative of the sequence observed in the following empirical analysis of the recycling process.

Declining Petrodollar Surpluses

How then have the current account surpluses of the OPEC states developed in the years since the oil crisis?

Table 1 shows that the enormous surplus in 1974, the year following the oil crisis, was exactly halved in 1975 already. In the following two years the surplus underwent little change. For 1978 no re-

Table 1
Components of the Petrodollar Surplus of the OPEC States in 1974-1977
(in US \$ bn)

	1974	1975	1976	1977 ^a
Income from				
Oil exports	102	97	118	131
Other merchandise exports	7	7	7	9
Services exports ^b	4	5	6	7
Foreign investments	4	6	5	8
Total income	117	115	136	155
Merchandise imports (fob)	36	59	68	85
Services imports ^b	15	23	30	35
Total imports	51	82	98	120
Petrodollar surplus	66	33	38	35

^a estimated; ^b including private transfers.

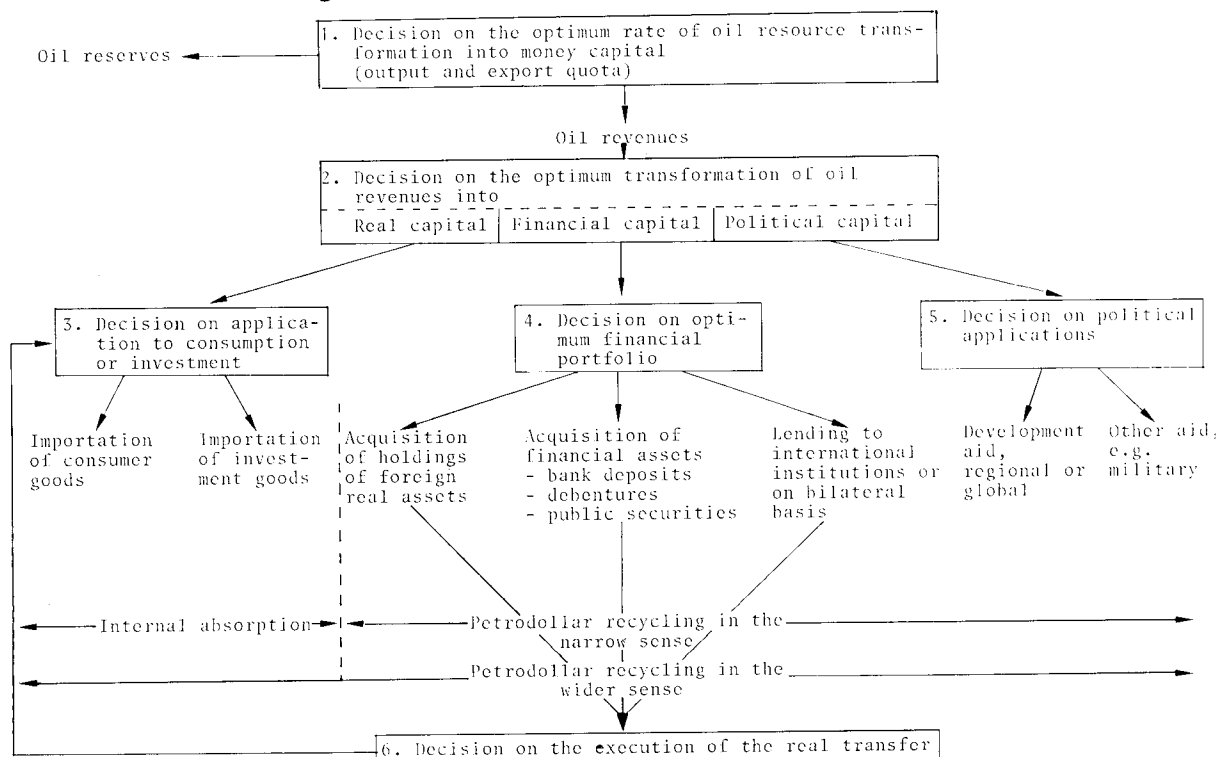
Source: Morgan Guaranty Trust, World Financial Markets, September 1976 and November 1977.

liable figures are as yet at hand but estimates suggest a further big drop to some \$ 15 bn⁸. The contraction of the surplus is mainly due to the frenzied import boom, especially in 1975. A secondary factor was that, owing primarily to cyclical influences, the OPEC exports did not regain the 1973 volume until 1976; in 1975 they declined even in value.

It has to be pointed out however that calculations concentrating on the aggregate petrodollar sur-

⁸ Cf. Morgan Guaranty Trust, World Financial Markets, Dec. 1978, p. 8.

The Decision-Making Process Relating to the Generation and Application of Petrodollars



plus of the OPEC countries are becoming increasingly irrelevant: By 1977 the whole of the surplus (except an insignificant amount from Iraq) originated from the four "low absorbers" in the Arab peninsula — Kuwait, Qatar, Saudi Arabia and the United Arab Emirates. In view of the current account deficits of the other OPEC states, the "high absorbers", the aggregate OPEC surplus is therefore a less than adequate indicator of the accumulation of foreign currencies which is increasingly concentrated on a small number of states.

A comparison with the early petrodollar surplus prognoses shows how greatly the real trend had been generally overestimated. No matter which index is being used to take account of inflation, the forecasts, which are reproduced here in constant US dollars, are seen to be above the actually achieved surpluses.

Table 2
Early Prognoses of the Cumulative Petrodollar Surplus in 1974–1980
(in constant 1974 dollars)

	1974	1975	1976	1977	1978	1979	1980
World Bank (July 1974)	—	—	—	—	—	—	410
World Bank (December 1974)	—	—	—	—	—	—	300
OECD (July 1974)	—	—	—	—	—	—	250-300
Morgan Guaranty (January 1975)	80	137	191	231	248	235	179
First Nat. City Bank (June 1975)	66	102	139	169	188	196	189
Irving Trust (March 1975)	85	149	200	234	258	265	248
Levy (June 1975)	75	122	191	264	337	402	449
Deutsche Bank (May 1975)	60	101	135	162	183	202	216
Schröder (Prognos) (May 1975)	65	110	140	155	155	140	110
Actual figure at current prices	66	99	137	172	c. 187		

Sources: H. Ben-Shahar, *Oil: Prices and Capital*, Lexington 1976, p. 122; Deutsche Bank, *OPEC, Informationen und Analysen*, September 1975; H. Minte, *Petrodollar-Recycling und die Dritte Welt*, *ibid.*, p. 318.

Without raising objections to economically relevant macroprognoses in general it can be said that in the particular case of the petrodollar problem the international economic relations have been upset so thoroughly as to overtax the forecasting capabilities of almost all the pundits. The dilemma common to the many long-term prognoses which have been undertaken was that they had either to be based on bold assumptions about numerous variables (export demand, import demand, prices, cyclical trend) or required the sim-

⁹ Cf., on the latter mode of procedure, H. Ben-Shahar, *Oil: Prices and Capital*, Lexington 1976.

¹⁰ Cf. S. M. Yassukovich, *Oil and Money Flows: The Problem of Recycling*, issued by The Banker Research Unit, London 1975, p. 50.

¹¹ Cf. the figures given in W. Lütkenhorst, H. Minte, *Probleme des monetären und realen Transfers*, *ibid.*, p. 56.

ulation of a variety of scenarios in the form of sensitivity analyses⁹. They were therefore usually either wrong or of little relevance thus illustrating incidentally, the general conflict between truth and empirical content in all extrapolation exercises.

Rising Absorption Rate

As to the alternatives for the transformation of oil revenue (see: component decision 2 in the diagram) the official statements of the OPEC states always adhered to a clear order of priorities, namely: internal absorption (real capital) > development aid (political capital) > recycling (financial capital)¹⁰, and the practical conduct of the OPEC states indeed confirmed the priority ranking of internal absorption. The rate of absorption, defined as the quotient of total imports and total foreign currency income, surged from 0.44 in 1974 to 0.71 in 1975 and continued to rise at a more sedate pace in the following years; in 1978 it was about 0.80. In other words, four-fifths of the OPEC oil revenues are by now absorbed internally through importation of goods and services¹¹.

There has been a great change in the sources of origin of the OPEC imports:

Table 3
Additional Exports to OPEC Countries as a Result of Market Share Changes compared with 1974
(Period covered: 1975 and 1976)

	Total Exports to OPEC Countries (in US \$ bn)	Additional Exports (in US \$ bn)	Additional Exports (in % of Total Exports)
Advanced raw material countries	6.1	— 0.1	— 1.6
Developing countries	12.5	— 3.3	— 26.4
Industrialized countries	94.8	+ 3.4	+ 3.6
Including: Fed. Rep. Germany	14.9	+ 1.3	.
France	9.3	— 0.1	.
Great Britain	10.0	+ 1.1	.
Japan	17.5	— 0.7	.
USA	22.5	+ 0.7	.

Source: M. J. M. Neumann, *Zahlungsbilanzeffekte der Energiekrise*, in: M. Tietzel (ed.), *Die Energiekrise*, *ibid.*, p. 160.

Table 3 shows the additional exports to OPEC states of individual countries and groups of countries as a result of shifts in market shares (1974 has been used as the basis year as the OPEC states set about restructuring their imports with a time-lag of about one year). The crucial fact revealed by this table is that the industrialized countries have been able to increase their share of the OPEC markets further at the expense of the developing countries. They are thus profiting not only from the *volume effect* of rising OPEC imports but additionally from a *structural effect* reflected by a rise of their market share. This structural effect probably results primarily from

the sectoral composition of the OPEC imports. Investment goods have become much more important in accordance with the industrialization function of these imports. They account by now for more than two-thirds of all imports.

Since the OECD states supply over 80 % of all imports into OPEC states – the USA, Japan and the Federal Republic of Germany attracted (in 1975) 43 % of all OPEC import orders – it is not surprising that a few observers have already spoken of an actual dependence of the OPEC states upon the largest industrial nations¹², the more so as the financial recycling, as will be shown, is equally limited to a few investment alternatives which are regionally concentrated.

FR Germany in Strong Competitive Position

The German exporters have achieved a substantially improved competitive position in the markets of the OPEC states as was shown in Table 3. More than one-third of the additional imports from industrialized countries due to changes in market shares came from the Federal Republic. Its total share of OPEC imports has risen so much compared with other EC and OECD countries that by 1977 one-third of all petrodollars spent in the EC area and one-sixth of those spent in OECD countries went to German export firms:

Table 4
The Share of the FR Germany in the Total EC and OECD Exports to OPEC States in 1973–1977
(in %)

	1973	1974	1975	1976	1977
Share of Federal Republic in EC exports	28.2	30.3	30.3	32.2	33.6
Share of Federal Republic in OECD exports	14.1	14.2	14.6	15.5	16.9

Source: Own calculations based on data in OECD, Statistics of Foreign Trade, Series A, several volumes; IMF, Directions of Trade, 1970–1976.

As a result of its strong export position the Federal Republic recorded only a small deficit in its trade with the OPEC countries in 1976, and in 1977 it earned for the first time a surplus; in the first nine months of 1978 this surplus increased to about DM 4 bn as the German imports declined

¹² Cf., e.g., A. K. Bhattacharya, *The Myth of Petro-Power*, Lexington 1977, p. 71 ff.

¹³ Cf. H. Minte, *Erdöl und Entwicklung. Zur Ökonomie und Politik der erdölexportierenden Länder (Oil and development. On the economics and policies of the oil exporting countries)*, Wentorf/Hamburg 1975, p. 185 ff., and Z. Mikdashi, *Surplus Funds and the Strategy of Oil Exporting Countries*, in: N. A. Sherbinin / M. A. Tessler (ed.), *Arab Oil. Impact on the Arab Countries and Global Implications*, New York 1976, p. 209 ff.

¹⁴ Cf., e.g., A. Alkazzaz, *Die multilaterale arabische Entwicklungshilfe an die afrikanischen Staaten. Die Institutionen und ihre Leistungen (The multilateral Arab development aid to African states. Institutions and their performances)*, in: *Orient* 3/1977, p. 115 ff.

Table 5

Ratio of the Volume of Merchandise Exports to and the Volume of Merchandise Imports from OPEC States in Selected Industrialized Countries in 1972, 1974 and 1976

	1972	1974	1976
FR Germany	0.56	0.44	0.85
France	0.42	0.29	0.42
Great Britain	0.57	0.30	0.71
Italy	0.41	0.24	0.52
Japan	0.40	0.26	0.41
USA	0.97	0.40	0.46

Source: Own calculations based on data in IMF, Directions of Trade, 1970–1976.

while the exports from the Federal Republic to OPEC countries continued to advance slightly.

It is worth noting that the export-import ratio in its trade with the OPEC has changed greatly in favour of the Federal Republic also in comparison with the time *before* the oil crisis.

Increasing Financial Diversification

The second leg of the OPEC's proclaimed investment priority scheme has been reversed in practice. The public development aid rendered by OPEC states since the oil price hoisting amounts to less than 10 % of the cumulative petrodollar surplus although

□ the transformation of oil revenues into political capital through development aid is an efficient concept both economically (linkage of complementary production structures, creation of larger markets) and politically (strategy of regional cooperation and bloc formation)¹³,

□ the OPEC states have set up a large number of national and multinational funds for the support of – in the main – Islamic developing countries¹⁴,

□ the OPEC states spend a several times larger portion of their GNP on development aid than do the DAC states¹⁵.

The lion's share of the petrodollar spending in the narrow sense of the term has therefore gone into financial investments which according to the proclaimed political priorities were to have been only a residual item. The cumulative value of the foreign assets of OPEC countries at the end of 1977 was about \$ 155–160 bn¹⁶.

A more detailed examination of their spread over various investment alternatives reveals that bank deposits and treasury bills account for nearly two-thirds (64 %), notes and bonds for 15 %, stocks

¹⁵ Cf. W. Lütkenhorst, H. Minte, *Probleme des monetären und realen Transfers*, *ibid.*, p. 67 ff.

¹⁶ Cf. Morgan Guaranty Trust, *World Financial Markets*, November 1977, p. 10, and *Euromoney*, May 1978, p. 36.

and shares for 6%, direct bilateral loans for 8% and loans to international organizations (IMF oil facility, World Bank) for 7%.

The years since 1974 (when the investments were still mostly short-term and concentrated in Great Britain and the USA) were marked by increasing diversification.

Table 6
The Placing of Petrodollar Surpluses by Regions in 1974–1977

	(in %)			
	1974	1975	1976	1977
Great Britain	36.8	12.1	12.6	12.2
Euromarket	(26.3)	(12.1)	(17.9)	(10.1)
Other than Euromarket	(10.5)	(± 0)	(− 5.3)	(2.1)
USA*	20.4	28.0	33.5	27.2
Other countries	36.7	48.7	48.3	59.8
International organizations	6.1	11.2	5.6	0.9
Total	100.0	100.0	100.0	100.0

Source: Own calculations based on data in Bank of England, Quarterly Bulletin, various issues.

While in 1974 more than half of all surpluses were invested in the USA or Great Britain, the share of these two countries had by 1977 fallen to less than two-fifths; close on 60% went into "other countries", a rather heterogeneous category including other industrialized countries as well as developing countries. This item also includes Euromarket investments in centres outside Great Britain¹⁷. It emerges from Table 6 that since 1975 Great Britain has been of interest as a place for investments only because of its Euromarket. In 1976 the sterling accounts were actually drawn down quite substantially, which shows that the OPEC states are much more sensitive to sterling fluctuations than to dollar fluctuations.

Recent years also saw major changes in the time-scale of the petrodollar investments. The short-term bank deposits and holdings of treasury bills fell off while the holdings of US Treasury bonds and notes showed a striking increase from an insignificant 0.4% of the petrodollar surplus in 1974 to a little under 13% in 1977¹⁸. The buying of stocks and shares followed a similar course. At no time however did the latter reach the dimensions of a national "sell-out" of the industrialized countries as had been feared in 1974.

Is the International Financial System Doomed?

A study of the principal recycling channels attracting economic interest – bilateral arrangements, capital transfer through multilateral institutions (IMF, World Bank), private national capital markets, private international capital markets – reveals the pre-eminence of the private capital markets: The Euromarket was the "turn-table"

for over 40% of the recycling potential; more than three-quarters of all petrodollars in the narrow sense of the term were pumped back into oil importing countries through the private capital markets.

This dominant role of the private capital markets has caused some observers to paint the future in sombre colours. Wilhelm Hankel for instance presented some time ago the thesis that the western money and capital markets were doomed to collapse in the near future¹⁹. His line of argument was this: As soon as the OPEC petrodollar overhang has been removed, the oil states will be compelled to draw down their financial investments in order to finance their continuing industrialization. The withdrawal of the OPEC states as major creditors will hit the – at present favoured – strong-currency countries most severely. To balance their capital accounts they will have to call in the loans which they have given to deficit countries. And this will cause the pyramid of interstate credits to collapse. The consequence could be a new economic crisis involving the entire world.

Such a scenario for disaster seems however exaggerated, and this for several reasons. First of all, it is by no means certain that the petrodollar surplus will soon be eliminated. It is quite possible that the importing countries will be hit by another hoisting of the oil price which some experts are already anticipating for the mid-eighties. Besides, the analysis of the policies of the OPEC states has shown that they do not aim at maximizing the real transfer; they value financial investments in the US and Euro-currency markets for their own sake as means of optimizing their portfolios. Furthermore, it is not really clear why a withdrawal of petrodollars should cause the strong-currency countries to call in loans as, to go by past experience, they are the ones to profit primarily from the real transfer financed with withdrawn capital. Above all, Hankel's argumentation leaves the intra-OPEC structure of the petrodollar holdings out of account: While it is true that the majority of OPEC states have since 1976/77 again been incurring current account deficits, others – like Saudi Arabia and the United Arab Emirates – will in the medium-term future still be in substantial surplus so that an abrupt falling-off of their financial investments need not be apprehended. Thus already the trigger factor for the predicted financial collapse does not exist.

¹⁷ Cf., on the relative importance of various Euromarket centres, Y. S. Park, *ibid.*, p. 89.

¹⁸ Own calculations based on figures in: Bank of England, Quarterly Bulletin of Statistics, various years.

¹⁹ Cf. W. Hankel, Die Zukunft des internationalen Währungssystems (The future of the international monetary system), in: WIRTSCHAFTSDIENST, March 1976, p. 137 ff., and the same author's book: Weltwirtschaft (The world economy), Düsseldorf 1977, p. 311 ff.