

ESSAYS IN INTERNATIONAL FINANCE

No. 113, December 1975

THE OIL-TRANSFER PROBLEM
AND INTERNATIONAL ECONOMIC STABILITY

THOMAS D. WILLETT



INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

PRINCETON UNIVERSITY

Princeton, New Jersey

This is the one hundred and thirteenth number in the series ESSAYS IN INTERNATIONAL FINANCE, *published from time to time by the International Finance Section of the Department of Economics of Princeton University.*

The author, Thomas D. Willett, is Director of Research and Senior Advisor for International Economic Affairs at the U.S. Treasury. He has previously taught at Cornell and Harvard Universities and served on the senior staff at the Council of Economic Advisers. His publications include U.S. Balance of Payments Policy and International Monetary Reform (1968), Exchange-Rate Systems, Interest Rates, and Capital Flows (1970) (Princeton Essay No. 78), and Problems of International Economic Interdependence (forthcoming). The present essay represents the views of the author and does not necessarily reflect the position of the U.S. Government or the U.S. Treasury Department.

The Section sponsors the essays in this series but takes no further responsibility for the opinions expressed in them. The writers are free to develop their topics as they wish. Their ideas may or may not be shared by the editorial committee of the Section or the members of the Department.

PETER B. KENEN, *Director*
International Finance Section

ESSAYS IN INTERNATIONAL FINANCE

No. 113, December 1975

THE OIL-TRANSFER PROBLEM
AND INTERNATIONAL ECONOMIC STABILITY

THOMAS D. WILLETT



INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

PRINCETON UNIVERSITY

Princeton, New Jersey

Copyright © 1975, by International Finance Section
Department of Economics, Princeton University

Library of Congress Cataloging in Publication Data

Willett, Thomas D.

The oil-transfer problem and international economic stability.

(Essays in international finance ; no. 113 ISSN 0071-142X)

Bibliography: p.

1. Petroleum industry and trade. 2. Petroleum products—Prices. 3.
International finance. I. Title. II. Series: Princeton University. Interna-
tional Finance Section. Essays in international finance ; no. 113.
HG136.P7 no. 113 [HD9560.5] 332s [338.2'3] 75-38809

Printed in the United States of America by Princeton University Press
at Princeton, New Jersey

The Oil-Transfer Problem and International Economic Stability

The recent increase in oil prices has had a profound impact on the international economy. Never before except in major wars has such a rapid change occurred in the structure of world trade and payments. Severe effects have been felt in the oil-importing nations in the form of aggravated inflation and unemployment and direct income losses. Furthermore, the inability of the oil producers to increase their absorption of goods and services as rapidly as their revenues means that, in the short term at least, much of the transfer from exporters to importers of increased oil income must take the form of increased lending rather than increased purchases of goods and services.

The resulting large current-account deficits of the oil-importing countries have given rise to fears in many quarters that the international financial consequences of the increased oil prices cannot be handled. Numerous commentators have expressed despair about both the potential havoc to international financial markets from the large accumulation of funds by members of the Organization of Petroleum Exporting Countries (OPEC) and the "hopeless" situation of oil-importing nations, which must struggle to finance their oil deficits and pile up ever-mounting debts that they can have little hope of repaying. Such commentators have frequently concluded that international financial chaos will be the inevitable result of maintaining current levels of oil prices. More optimistic observers have predicted that the inability of some consuming nations to meet high bills for oil at current prices will prompt them to impose restrictive measures that will force down oil prices.

In this essay, I argue that these "optimistic" and "pessimistic" analyses are both incorrect, for the same two reasons.

First, the accumulation of oil debts does not substantially undermine the ability of oil-importing nations as a group to pay them off when payment is required. In the aggregate, the condition obliging these nations to pay their debts—an OPEC current-account deficit—will also allow the payment to be made. On a per-country basis, the prospective accumulation of oil debt will not exceed proportions of exports and gross national product (GNP) that have frequently been experienced in the past without undermining the economic vitality of the capital-im-

porting nations, creating insurmountable problems of debt servicing, or eroding the confidence of foreign investors.

Second, over the longer run it is quite possible that lower oil prices will lead to *higher* rather than lower current-account imbalances between oil importers and oil exporters.

Neither of these arguments is inconsistent with my personal view that oil prices are much too high for the interests of both oil exporters and oil importers. But this argument must be founded on basic economic grounds, not on balance-of-payments and international financial effects. It is true that oil is a nonrenewable resource, so that efficient pricing would incorporate a shadow cost or rent over and above the physical cost of production. Yet, even under conservative assumptions about the future demand and supply of oil, this scarcity premium does not fully justify the level of pre-October 1973 oil prices, much less the current level (see, for instance, Nordhaus, 1973). A benign view of the ability of the oil-consuming nations to deal with the international financial consequences of the oil-price increases does not, it should be stressed, imply a benign view of their real economic impact.

Sections 1 and 2 of this essay develop my two arguments in some detail. Section 3 assesses the strategy of holding oil in the ground. Section 4 deals with the major complications that large oil transfers have caused for relations among the oil-importing nations. These are (1) the incidence of the oil tax on low-income countries, which cannot reasonably expect to be able to repay additional debt on commercial terms; (2) the financial and exchange-market instability that could result from shifts of oil-producer funds from one market to another; (3) the potential inconsistency of current-account objectives among the oil-importing nations, which in the extreme could lead to a repetition of the trade wars of the 1930s, as nations seek to accomplish individually the restoration of current-account surpluses that are not collectively feasible; and (4) the possible need for official supplements to the private reshuffling of oil-producer funds to allow countries in a basically sound financial position to borrow at reasonable rates if private capital markets charge expensive premiums (i.e., "too far" above prime market rates).

1 Oil Deficits and Ability to Repay

The huge OPEC surplus exceeds the amounts that can in the short run be transferred to the oil-producing countries through the export of goods and services by the consuming countries. Since oil-exporting countries have no reasonable choice but to place their financial accumu-

lations abroad somewhere, an overall balance-of-payments problem will not arise for oil importers as a group. And, as OPEC absorption of goods and services gradually increases over time, more and more payments will be transferred in terms of goods and services.

Collectively, the oil-importing nations will need to make net repayment of their oil debts only as OPEC begins to run an aggregate current-account deficit. Although problems of ability to pay could arise for some countries, particularly the most seriously affected low-income nations, these are problems that are within the power of the oil-importing nations as a group to handle. In terms of the basic economics of the issue, the accumulation of substantial debt by oil importers to oil exporters need not undermine either the solvency or the liquidity of oil importers as a group. Under any realistic assumptions, the aggregate payment of these accumulated debts in real goods and services will be spread over many years. The aggregate need to pay will occur only as the conditions that allow payment develop.

The huge projected debt accumulations of the oil-importing nations as a group represent an episode that will be unique in historical experience in terms of the aggregate amounts of accumulations in relation to the size of the world economy. This does not mean, however, that it is correct to argue that such a development would be unmanageable and would inevitably lead to widespread national bankruptcies and bad debts. When considered on a per-country basis, the average levels of debt accumulation implied by the aggregate projections, while large, would not be outside the range of historical experience. Many examples can be found on a per-country basis of both larger transfer requirements and larger accumulations of international indebtedness in relation to national economic aggregates.

Increased oil payments during 1974 and 1975 are running on the order of 2 to 3 per cent of GNP for the typical oil-importing nation. For some countries, such as Italy and Belgium, the increased oil levy is, according to estimates of the Organization for Economic Cooperation and Development (OECD), in the range of 4 to 5 per cent of total domestic expenditure. Viewed as an international levy, even on a per-country basis, the increased oil payments are exceptionally large. For instance, Machlup (1964) has calculated that the financial transfers associated with German reparations after World War I, which stimulated so much international debate (as well as academic analysis of the transfer problem), represented 3.5 per cent of national income in their peak year (1924), and, for the entire period of 1924 through 1932, averaged only 2.5 per cent of national income. In terms of transfers of real resources or finan-

cial claims, however, there have been many instances of greater per-country magnitudes. Chenery (1975) has pointed to U.S. Marshall Plan aid after World War II, although of course it represented a "voluntary" transfer. Machlup's analysis indicates that the ratio of U.S. foreign payments to national income over this period was on the order of 3 per cent, or roughly the same as the oil tax for a typical country. As a proportion of exports or imports, however, the U.S. transfers during this period were particularly large, representing some 60 to 80 per cent of the average of total U.S. exports and imports. By contrast, the increased oil payments during 1974 were on the order of one-seventh of world trade.

As another comparison, consider historical examples of large capital outflows. During the second half of the previous century, German and French capital exports averaged on the order of 1.5 and 3.5 per cent, respectively, of national output; British exports amounted to more than 7 per cent of gross domestic product for the decade 1905-1914.

Much of the initial transfer of claims in the past was financed by large capital inflows into the countries that had accumulated the debt obligations. This was the case, for instance, with French reparations after the Franco-Prussian War (see Haberler, 1936). Many countries have imported capital for long periods of time on a scale much larger than implied by the projections of typical countries' capital imports from the oil-exporting countries, without undermining the economic vitality of the capital-importing nations. It is sometimes forgotten that the United States was a substantial net importer of capital in the nineteenth century. United States capital imports reached a peak of more than 1 per cent of GNP during the 1830s. The large capital imports by Canada and Argentina (between 12 and 15 per cent of GNP) are well known. Between 1860 and 1900, moreover, annual Australian capital imports amounted to between 3 and 10 per cent of GNP. Similar ratios held for Norway, Sweden, and Denmark during the latter part of the 1800s, while for Japan a peak ratio of 4 per cent was recorded for the decade 1897-1906. (For greater detail on capital flows, see Kuznets, 1966.)

Nor were such experiences limited to the previous century. As Chenery has recently argued, it has been quite normal in the post-World War II period for developing nations to finance 20 to 30 per cent of imports through foreign borrowing for periods lasting twenty years or more, and service on their external debt often rises to 20 or 25 per cent of exports without jeopardizing their economic prospects or ability to repay.

Even making extremely generous assumptions about rates of interest and the magnitude of OPEC financial accumulations, interest payments

on OPEC funds are unlikely to exceed 5 per cent of world trade, even at the peak of OPEC financial accumulations. Assuming amortization of the full debt to OPEC over a twenty-year period, the average country would incur a maximum ratio of oil-related debt service to exports on the order of 10 per cent or less.

Moreover, there has been a growing consensus among economic forecasters that the financial accumulations of the oil producers will not reach some of the huge sums predicted last year. Among the most publicized of last year's more pessimistic estimates were those by the International Bank for Reconstruction and Development (IBRD) in July 1974, which projected total OPEC financial accumulations of \$653 billion for 1980 and \$1,206 billion for 1985. Estimates such as these were disquieting not only because the projected accumulations were so large but also because they were expected to continue through the 1980s. Part of the reason for the large size of the IBRD estimates is that they were expressed in current rather than constant dollars. A deflation of these estimates to 1974 dollars reduces the \$653 billion figure to approximately \$400 billion.

In an article in the January 1975 issue of *Foreign Affairs*, Hollis B. Chenery, Vice President of the IBRD, presented an estimate of financial accumulations appreciably lower than the original IBRD results. The lower figure resulted from adjustments to the original IBRD estimates to take account of higher-than-anticipated absorptive capacity in the OPEC countries. Chenery foresaw the restoration of approximate current-account balance by 1980, with OPEC financial accumulations reaching only \$300 billion in 1974 dollars.

A number of other recent projections (some of which are summarized in Table 1) have been considerably lower still. The increased respectability of these substantially lower projections led me to attach greater probability to the lower range of projections presented in Table 1. By the spring of 1975, my own estimates of the most likely range of OPEC financial accumulations had been broadened from \$200-\$250 billion to \$175-\$250 billion in 1974 dollars. (The methodology and details of my projections are presented in the Appendix.)

According to newspaper reports, more recent projections by the IBRD staff have also lowered the estimates of total OPEC financial accumulations in 1980 to the \$200-\$400 billion range in current dollars. Taking the deflator implicitly used for the earlier IBRD estimates, this converts to around \$120-\$250 billion in 1974 dollars.

Considerable publicity has also been given to a study by Walter J. Levy that is extremely critical of the "new wave" of low projections. Levy's

TABLE 1
 PROJECTIONS OF 1980 OPEC FINANCIAL ACCUMULATIONS
 (in billions of dollars)

	<i>Current Dollars</i>	<i>Constant 1974 Dollars</i>
Hollis B. Chenery (January 1975)	n.a.	\$300
Edward R. Fried (1974)	n.a.	152
EXXON (Spring 1975)	\$330-380	200-240
First National City Bank (June 1975)	189	141
IBRD (July 1974)	653	approx. 400
IBRD (July 1975)	200-400	120-250
Irving Trust Case I (March 1975)	248	158
Irving Trust Case II (March 1975)	22	14
Walter J. Levy (June 1975)	449	286
Mobil Oil (Spring 1975)	303	178
Morgan Guaranty (January 1975)	179	114
OECD (July 1975)	n.a.	215
Thomas D. Willett <i>et al.</i> (January-May 1975)	n.a.	175-250

judgment, which I share, is that projections in the \$100-\$150 billion range for 1980 accumulations are probably unrealistically low. It is interesting to note, however, that even under Levy's new "pessimistic" estimate, 1980 accumulations would still be less than \$300 billion, or roughly the same as Chenery's January 1975 projection. While projections of this order may underestimate both the price responsiveness over time of the excess demand for oil imports and the capacity of the oil-exporting countries to increase their own imports, they do not appear beyond the bounds of possibility.

Based on the range of projections now available, it seems likely that if the real price of oil is maintained at approximately 1974 levels, total OPEC accumulations by 1980 will be somewhere in the range of \$125-\$300 billion in 1974 dollars. Accumulations are unlikely to prove substantially higher in real terms by 1985 than by 1980, and there is a good chance that they will even fall below the 1980 level.

To understand the impact that OPEC accumulations may have, it is helpful to compare them with the size of financial markets in the countries receiving OPEC investments. The value of stocks, bonds, and short-term securities in the major national and international financial markets was about \$3 trillion in 1972 dollars at the end of 1972. According to OECD data, the value of securities in U.S. financial markets accounted for roughly three-fourths of the total, or \$2.2 trillion. The estimated size of major world financial markets in 1974 was \$3.6 trillion.

If the major world financial markets grew at an annual rate of 10 per cent in nominal terms, and if this nominal value is discounted for inflation at a rate of 12 per cent through 1976 and 7 per cent in the 1977-80 period, the value of the world's financial markets would be \$3.8 trillion (in 1974 dollars) in 1980. Since new issues in U.S. financial markets are a much smaller percentage of total new issues than the relative size of the U.S. financial markets would suggest (only 37 per cent in 1972), the U.S. share would decline to about 70 per cent, or \$2.7 trillion.

If OPEC accumulations reached \$250 billion in 1974 dollars by 1980, they would thus amount to less than 7 per cent of the total value of securities in the major national and international financial markets. For the United States, the relative size of OPEC holdings would almost certainly be considerably smaller. For example, if OPEC invested 20 per cent of its total accumulations in the United States, its holdings would amount to 1.5 to 2 per cent of total U.S. financial markets. As a reasonable upper bound, assume that OPEC invests one-third of its accumulations in the United States (almost twice the proportion for 1974), and that these accumulations are on the high side, say \$300 billion. Under these assumptions, the resulting \$100 billion OPEC investment in the United States would amount to only 3.6 per cent of the value of U.S. securities in 1980.

Even if U.S. financial markets grew at a much slower rate than projected above, OPEC holdings would not rise substantially above 4 per cent of the value of U.S. securities in 1980. In fact, even in the most improbable event that all OPEC financial accumulations were placed in the United States, they would still amount to less than 10 per cent of the size of U.S. financial markets. For other OECD countries, the relative size of OPEC holdings would be much greater. If 70 to 80 per cent of OPEC funds went to OECD countries other than the United States, OPEC accumulations of \$250-\$300 billion in 1974 dollars would amount to about 16 to 20 per cent of the value of securities in these financial markets—a high but not overwhelming proportion.

In reality, whether the current-account imbalances and accumulation of financial assets are largely terminated by the late 1970s or continue until the late 1980s will not influence the ability of oil importers to pay off the accumulated debt. In the aggregate, the oil-importing countries will have to pay off the debt only as OPEC begins to run a current-account deficit. It is, then, relatively unimportant to determine when the debt will "come due" for the importing countries as a group. It is a mistake to apply conventional banking standards to this global problem. If the oil-importing countries were going to have to pay off all this

accumulated debt in a single year or two at some time in the early 1980s, the bad-debt analogy might apply. But this seems a most unlikely scenario. It is much more likely that the aggregate accumulated debt will be paid off gradually during the 1980s, and this will not present an impossible situation in terms of ability to pay.

If governments in the oil-importing countries wish to help lessen the future burden that this repayment will place on their citizens, they should encourage greater domestic savings and investment now, to generate the additional capacity to make future payments in real goods and services and to spread more evenly over time the burden of consumption cuts. There is no need for such additional real domestic investment to be financed directly by OPEC funds, as has been implied in some recent analysis. Given the high degree of fungibility of capital, the effects of capital imports on total domestic investment will depend in many nations much more on domestic entrepreneurship and national micro- and macroeconomic policies with respect to savings and investment than on the particular form of capital flows.

It might be objected that the previously mentioned historical episodes of successful experiences with large capital flows are not appropriate analogies to the current accumulation of oil funds, because the historical flows were typically privately motivated and went directly into productive investment. Such objections do not seem appropriate, however. Even when the capital flows went directly into productive investment, these investments were not always of the type that directly expanded future exports. Capital inflows reflect a future claim on a country's economic capacity to produce. For a nation to use these funds to expand capacity, thereby to discharge that claim when it comes due, it is not necessary that the capital imports be employed directly in real investment. Through the fungibility of capital, a placement in government securities, for instance, can lead indirectly to an expansion of private investment as a result of reduced pressures on the aggregate capital market. Even using inflows of oil funds to finance current consumption would not undercut the ability of the economy to make future repayments in real goods and services. It *would* mean, however, that a disproportionate share of the real burden of transferring goods and services abroad to pay for current oil imports had been shifted forward to citizens in the future.

2 Oil Prices and Current-Account Balances

In the preceding section, it was argued that the large current-account deficits projected to result from oil payments need not undermine the

creditworthiness of the oil-importing nations as a group and should not imply insurmountable transfer problems, even though the magnitude of the effective tax levied by the increased oil prices is without historical precedent on an aggregate basis. In this section, it is further argued that large current-account deficits would emerge even if oil prices were cut substantially. The analysis of projections of oil imports over the medium and longer term under different price assumptions indicates that concern to avoid large current-account imbalances and financial accumulations by OPEC does not provide a motive for the importing countries to seek oil-price reductions. Analysis of such projections does, however, suggest another powerful rationale for oil-price reductions: the longer-run economic self-interest of the oil producers.

Over the short run, both world demand and the non-OPEC supply of oil are extremely inelastic. The oil-price increases have unquestionably led to a substantial increase in producer revenues in the short term; a decrease in prices would reduce these revenues and reduce current-account imbalances over the next year or two. But the longer-run elasticities of oil demand and supply, while still low in comparison with most products, are much higher than those that prevail over the short run. Furthermore, the demand for oil imports is an excess-demand function, a function of domestic consumption demand minus domestic supply, and hence displays an elasticity related to the *sum* of the underlying demand and supply curves for consumption and production.

Even relatively conservative assumptions about the price responsiveness of oil demand and supply suggest that, if oil prices were lowered during 1975, annual oil-producer revenues would be greater during the 1980s than if the current real level of prices were maintained. Furthermore, the decline in total annual revenues by 1980 generated by maintenance of the current level of prices understates the degree to which current-account balances will be affected. As is well known, the oil producers differ widely in their capacity to absorb substantial increases in imports of real resources over the next decade or so. Some nations, such as Indonesia, should be able to use fully at home any increased foreign-exchange earnings with a reasonably short lag, while for others, such as Saudi Arabia, the rate of increase in imports will for many years be relatively independent of the rate of increase in oil revenues. (For a breakdown of the oil producers along these lines, see Chenery, 1975.)

The tremendous differences in short- and medium-term absorptive capacities of the oil producers indicate the extreme importance of the distribution of oil revenues in determining the current-account balances likely to result from any level of total revenues. Many projections of the distribution of oil revenues by country in 1980 have assumed that these

revenues will be divided roughly in line with pre-boycott projections of 1980 productive capacity. At the current level of prices, however, projections of 1980 demand for oil imports fall far below pre-boycott projections of 1980 OPEC productive capacity. It is, of course, uncertain how the production cutbacks or forgoing of capacity expansion necessary to maintain the current level of prices would be shared among oil producers. If some effective system of prorationing of required production cutbacks, say in proportion to productive capacity, were worked out within the cartel, the relation between total revenues and current balances would be roughly independent of the total value and volume of oil sales. A number of analysts have suggested, however, that, if the oil cartel is to be successfully maintained over the medium term, a disproportionate share of the production cutbacks will have to be borne by the Persian Gulf producers, which by and large have the lowest absorptive capacities. If such a view proves correct, the revenues of the Persian Gulf producers will be particularly sensitive to the overall volume of oil exports. Under such assumptions, lower oil prices would not only increase the total revenues of all oil producers by the late 1970s or early 1980s but would also disproportionately increase the revenues of the low-absorbing countries.

Thus, as is illustrated in the Appendix, it would be possible for a much larger aggregate current-account imbalance between oil exporters and importers to result from total revenues of, say, \$60 billion, if production cuts were prorated within OPEC, than from revenues of \$100 billion, if the required production cuts were borne heavily by the low-absorbing oil exporters. If the low-absorbing countries play the role over time of the residual maintainers of the cartel, lower prices leading to increased export volume over the medium and longer term would greatly increase the export proceeds of this group.

Thus the low-absorbing producers have a strong economic interest in lower oil prices, but such a reduction would not represent a cure for large current-account imbalances and financial accumulations by oil producers. For the first few years, a reduction in oil prices would also reduce current-account imbalances, but after four or five years current-account imbalances could be larger and might persist through most of the 1980s. This finding, detailed in the Appendix, holds even under pessimistic assumptions about the growth and price elasticities of oil demand and supply.

The basic point—that an oil-price reduction will not prevent large current-account imbalances over the next decade—should not be surprising: pre-crisis projections based on the maintenance of prices far below current levels showed large current-account imbalances by the