MULTIPLE TRADE SHOCKS & PARTIAL
LIBERALIZATION: DUTCH DISEASE
& THE EGYPTIAN ECONOMY

Nemat Shafik

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Please address correspondence to: Nemat Shafik, Senior Economist, Middle East and North Africa Region, The World Bank, 1818 H Street NW, Washington DC 20433, USA. Fax: (202) 477 0810.

Multiple Trade Shocks and Partial Liberalization:

Dutch Disease and the Egyptian Economy

Nemat Shafik

The World Bank
1818 H Street, NW
Washington, D.C. 20433

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Abstract

The multiple external shocks experienced by the Egyptian economy are analyzed using a series of conterfactuals for income, consumption, savings, investment, wages and prices. The public sector's use of the windfall (equivalent to $53 billion in net present value terms). was misguided, with little public savings and a variety of policies that forced adjustment into parallel markets. Meanwhile, the private sector consumed and invested as well as exploited opportunities for rent-seeking that were created by the government's control regime. However, the private sector also accumulated assets abroad which served to shift the boom intertemporally and could provide a source of invesmtent financing in the future.

ملخص

يحلل هذا التقرير الصدمات الخارجية العديدة التى تعرض لها الاقتصاد المصرى، وذلك باستخدام سلسلة من الافتراضات المخالفة للواقع بالنسبة للدخل والاستهلاك والادخار والاستثمار والاجور والاسعار. وقد أساء القطاع العام توجيه استخدام المكاسب غير المتوقعة (التى تعادل ٥٣ بليون دولار بالقيمية الحالية الصافية)، حيث كانت المدخرات العامة ضئيلة واتبعت مجموعة متنوعة من السياسات أدت الى اجراء تعديلات فى الاسعار فى الاسواق الموازية. وفى الوقت ذاته، قام القطاع الخاص بالاستهلاك والاستثمار واستغلال فرص تحقيق أرباح ريعية، وهى الفرص التى أتاحها نظام السيطرة الحكومية. غير أن القطاع الخاص تمكن أيضا من تحقيق تراكم للأصول فى الخارج مما أدى الى نقل الازدهار من فترة زمنية الى اخرى، و يمكن أن يتيح مصدرا لتمويل الاستثمارات فى المستقبل.

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1.   Introduction

To understand the economic consequences of the Egyptian foreign exchange windfall it is necessary to disentangle the effects of multiple trade shocks that coincided with a partial liberalization program. Egypt experienced a number of different trade shocks during the late 1970s, each of which had its own characteristics. Moreover, after many years of public sector-led import substitution industrialization, the Egyptian government launched an effort to revive private investment in the economy in 1974. This was accompanied by a series of reforms that affected exchange rate regulations, the financial system, and the trade regime. This liberalization program, the "infitah" or "open door policy," was not in response to the windfall income; in fact, many of the reforms preceded the windfall. But the evolution of the reform effort did respond to the changing external circumstances associated with the boom.

The analysis that follows will evaluate the economic implications of these changes in the control regime in the presence of a foreign exchange windfall. Section 2 analyses the nature of the trade shock and the state of expectations for the different sources of growth in national income. The consequences for consumption and savings behavior are discussed in Section 3 and the effects on the government budget are the subject of Section 4. Section 5 considers the consequences of the trade shock for aggregate capital formation in both the public and private sectors. The implications for the labor market are analyzed in Section 6 and the evolution of relative prices in the goods market is presented in Section 7. Section 8 describes the control regime -- foreign exchange controls, the financial system and trade policy. Section 9 considers the overall impact of the control regime on the ability of agents to adjust to the windfall. Some general conclusions are presented in Section 10.

2.   The Nature of the Trade Shock

The foreign exchange bonanza experienced by Egypt was caused by the combination of a sharp increase in petroleum prices and an increase in production volumes during the 1970's. Although Egypt had been producing oil on a small scale for decades, the country did

not become a net oil exporter until 1977.[1] Egypt's terms of trade improved somewhat after the first oil shock in 1973, but there was no significant windfall until after 1975 when export volumes had increased (Figure 1). In 1976, revenues from oil exports rose by 123%. Production volumes doubled in the late 1970s with new discoveries and the return of the Sinai fields after the signing of the peace treaty with Israel. Oil export volumes increased by 56% in 1975, 42% in 1976, 26% in 1977 and 17% in 1978. Production increased fairly steadily between 1979-84 at a rate of about 9% per year. This quantity shock after 1975 was compounded by the price shock in 1979. Thus the increase in transitory income was delayed. The windfall associated with oil accrued largely to the government since domestic private sector activity was limited to providing services to the petroleum industry.

In addition to the oil windfall, the economy experienced a number of other shocks during the same period. The most important one was the remittances of migrant labor working in the oil exporting countries of the Middle East. As with petroleum exports, Egyptian labor had been migrating to the Gulf for decades, albeit in considerably smaller numbers. Demand for Egyptian migrant labor increased sharply in the 1970s fueled by the oil boom and higher wages. Although no comprehensive figures on the number of migrants from Egypt are available for the entire period, estimates are that the numbers rose from 100,000 in the early 1970s to over 1 million in the early 1980s, and to possibly double that amount by the late 1980s.[2] This massive emigration represented between 5-10% of the labor force. Most of the demand was for labor in the nontradables sectors of the oil exporting countries, particularly construction and services.[3]

The tradability of Egyptian labor was facilitated by a number of policy changes. Emigration was made a constitutional right in 1971. Exit visas were abolished in 1973 and replaced by travel permits available at one's place of work. The issuing of passports was also decentralized so that they could be, in principle, obtained at any police station within 24 hours. Remitting earnings abroad back to Egypt was made more attractive with the establishment of the "own exchange" market which effectively legalized the parallel market for the private sector. In addition, the state exempted migrants from paying taxes on income earned abroad and abolished

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1/   Oil seepages were discovered near the mouth of the Gulf of Suez in early Roman times, but the first significant modern discoveries were not made until 1909. Despite these early discoveries oil development in Egypt lagged behind that in the more well-endowed Gulf countries. Ikram, 1980

2/   The available estimates vary, but all show an upward trend over the 1970's and early 1980's. Fergany's estimate based on survey data is that there were not more than 200,000 migrant laborers in 1976. This rose to 1.2 million in 1985. Fergany, 1988 cited in Assaad and Commander, 1990. Amin and Awney estimate that as many as one million Egyptians were working abroad in the early 1980's which constituted between 9-10% of the labor force. Amin and Awney, 1985. Commander reports that approximately 5% of the labor force was abroad in the mid-1970s and 9-10% by 1981/2. Commander, 1987, p. 125.

3/   Serageldin, Socknat, Birks, Li and Sinclair, 1983.

a law requiring migrants to transfer a minimum of 10 percent of earnings to Egypt at the official exchange rate.[4] The volume of the resulting remittance income was large (see Table 1), sometimes exceeding revenues from petroleum exports, and ranged from 22-43% of the total export earnings. Moreover, because remittances are both in cash and in kind, the officially reported amounts are generally considered to be underestimates.

Besides oil and remittances, the reopening of the Suez Canal after the 1973 war provided the government a steady supply of foreign exchange that amounted to approximately 10% of total export earnings. The signing of the Camp David Accords in 1979 ushered in a period of sustained high aid flows from the United States as well as increased political stability that encouraged tourism. However, this increase in U.S. aid partly replaced Arab aid of a similar magnitude that was cut off after the signing of the peace treaty with Israel in 1979.[5] Therefore, on a net basis the effect was probably neutral with increased aid from the U.S. offset by the fall in Arab aid. There was an analogous effect with tourism as tourists from the United States and Europe supplanting those from traditional sources like the Arab countries and Eastern Europe. Again, on a net basis, the effect was probably neutral during the 1980s. The fluctuations observed in tourism revenue also reflected political events in the region, with sharp declines in periods of regional conflict.

Table 2 presents a taxonomy of the different shocks experienced by the Egyptian economy providing a disaggregation in terms of whether the public or private sectors were the primary beneficiaries and the duration of the windfall gain for individual agents and for society as a whole.

The oil price shock of 1973 had insignificant effects on the economy since export volumes were low. The quantity shock associated with oil occurred after 1975 when volumes increased. The price shock of 1979, which coincided with the higher volumes resulted in a 134% increase in export revenues. The increase in revenues from higher production levels stabilized by the mid-1980's. Given knowledge about reserves and the extent of exploration, the increase in foreign exchange revenues associated with the quantity shock was perceived as temporary.[6] This was exacerbated by the rapid increase of domestic demand because of subsidized energy prices and rising incomes. Agents in Egypt could observe the declining world price during the 1980s which signaled the end of the world oil price boom. Therefore, precluding the possibility of major new discoveries of petroleum reserves, the international signals were fairly clear that

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4/   Ibrahim, 1982, p. 49.

5/   van den Boogaerde, 1990.

6/   For example, Dervis, Martin and van Wijnbergen, 1984 writing in the early 1980s were concerned about intertemporal choices about growth given finite nonrenewalbe resources. The Egyptian government's own plans reflected its awareness of limited oil reserves and the need for future diversification.

the price boom in the oil market was on the wane and that Egypt's windfall was a temporary one. The government's strategy was clearly one of exploiting oil resources as rapidly as possible to finance diversification of the economy, particularly toward industry.

Remittances are linked to the oil price through the demand for labor in the oil exporting countries. However, remittance income has tended to be more stable than the price of oil because of structural labor shortages in the Gulf. Thus, in terms of aggregate income, the increase in remittance flows represented an upward shift in permanent income. For the individual migrant, however, the remittances were a temporary increase in income which would usually be used to finance major purchases (such as housing) or for investment (in land or a business). An analysis of migrant spending of remittance income based on household survey data found that 54% was spent on housing and 21% on land.[7] Except for the poorest migrants, the share of remittance income devoted to consumption was fairly low (about 32%). Migrants in the top 20% income quintile devoted over 80% of marginal budget shares to investment. Thus, income from tradable labor was spent largely on investments in non-tradable assets. While the migrant's use of remittance income reflected his/her perception of its temporariness, society as a whole experienced an increase in permanent income.

The increase in foreign exchange earnings from aid, the Suez Canal and tourism can be considered Egypt's "peace dividend". These were revenues which were permanent as long as there was no war between Israel and Egypt and relative stability in the region. Barring any major political changes, agents would probably assume that these increased revenues represented a rise in permanent income.

The above discussion implies that the only truly temporary shock experienced by the Egyptian economy was that associated with oil. This oil windfall was determined by both quantity and price effects. The magnitude of this shock is analyzed in Table 3 where the effects of the price and quantity shocks are disaggregated. The oil production figures reflect only the Egyptian share, not that of foreign partners. Egypt's total oil reserves are estimated to be about 600 million metric tons which, if depleted at the rate of 44 million metric tons per year, would last until the year 2000.

The price shock counterfactual is constructed assuming that the price and volume of oil production were maintained at 1974 real values and levels and that the collapse of the oil market in 1986 did not occur. Real net oil income was derived using an import price index and the present value of the oil revenue and calculated using a 10% discount rate. The present value

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7/   Adams, 1991. Adams used household survey data to explore differences in migrant and non-migrant expenditure
         patterns. He estimates counterfactual income and expenditure of migrant households econometrically and then
         compares the actual levels with those of non-migrant households. His results provide strong evidence against the
         view that migrants consume the bulk of their remittance income.

of the oil price shock is $34 billion, more that double Egypt's GDP of $15 billion in 1977 when it became a net oil exporter.

The quantity shock counterfactual is based on the assumption that production volumes in 1974 were maintained. Increases in production volumes above the level of 7.5 million metric tons annually are defined as the quantity shock. The real revenue that resulted from the quantity shock and the net present value are presented in Table 3. The net present value of the quantity shock is $18.9 billion, which is one and one-quarter times Egypt's GDP in 1977. The quantity shock was particularly important between 1976-8 when volumes were increasing rapidly and prices were relatively stable, but after the 1979 price increase most of the windfall came from the oil price shock, the net present value of which amounted to $34.1 billion. The total windfall to the Egyptian economy was about $53 billion in net present value terms. About two-thirds of the windfall could be attributed to the price shock and one-third could be attributed to the effects of increased production volumes (figure 2).

The price and quantity shocks estimated in Table 3 were used to explore various counterfactuals. Actual income was defined as real GDP in 1980 prices plus the price windfall from Table 3. Counterfactual income was defined as real GDP in 1980 prices minus the export volume effect in Table 3. This counterfactual level of income was that which could be considered "permanent" had the temporary oil windfall not occurred. The resulting estimates of income appear in Table 4.

3.   **Consumption and Savings Behavior**

To understand the impact of the windfall on the economy, actual and counterfactual estimates of consumption and savings are presented in Tables 4 and 5. Actual savings rates rose after 1974, reflecting the effects of the quantity shock associated with increased oil export volumes. While there is no major increase in savings rates associated with the 1979 oil price shock, saving rates were markedly higher between 1975 - 1986 compared to other periods. This implies that savings rates were responding to a temporary, albeit long, windfall that began with an oil quantity shock in 1975, was reinforced by an oil price shock in 1979 and subsided with the oil price collapse in 1986.

Counterfactual consumption was calculated on the assumption that consumption and savings rates for the public and private sectors remained at 1975 levels. The resulting counterfactual levels were calculated as a share of counterfactual income. Windfall private and public consumption were calculated as the difference between the counterfactual and actual levels of consumption. The results in Table 4 indicate that both the private and public sectors saved a substantial portion of the windfall. This may reflect the fairly high levels of consumption in the year chosen for the counterfactual -- aggregate savings was only 7% of GDP in 1975. But the savings rate in the previous years, 1971-73, were similar, ranging between 6-8 percent. The

public sector dissaved briefly after the initial quantity shock in 1975 and 1976, but saved increasingly thereafter. Counterfactual public consumption was actually higher than actual consumption for much of the windfall period, implying that the public sector did save some of the windfall. The private sector saved substantially after 1974, despite the fact that it was the public sector that was the direct beneficiary from the oil windfall. Private savings rates subsided in the early 1980s, but recovered in the second half of the 1980s.

Counterfactual foreign savings are presented in Table 5 based on the assumption that the current account deficit remained at 5% of counterfactual GDP over the period. Five percent was the average current account deficit as a share of actual GDP for the 1970-73 period. Windfall foreign dissavings are calculated as the difference between the actual current account deficit and the counterfactual current account deficit. The data indicate substantial foreign dissavings during the windfall period, with the exception of 1974 and 1976. Egypt drew on foreign savings particularly heavily during the end of the 1980s. The windfall made it possible for Egypt to run a current account deficit that was on average two to three times the norm.

This accelerated foreign dissavings reflected the increased perceived creditworthiness of Egypt, possibly based on the perception that the windfall would persist, and growth in often politically-motivated official credits. Egypt's experience is broadly consistent with the view that creditors tend to lend procyclically, rather than counter-cyclically. Instead of saving the windfall income abroad, Egypt accumulated a substantial foreign debt of approximately $50 billion by 1988.[8] However, unlike other heavily indebted countries, Egypt borrowed largely from official creditors and often on very concessionary terms. Eighty percent of Egypt's long-term debt was owed to official creditors, mainly bilateral, and the average maturity of Egypt's total loans between 1980-85 was 25 years at an average interest rate of 7.5 percent.

The foreign dissavings that occurred during the windfall largely reflected the activities of the public sector. Very few private sector agents in Egypt are in a position to borrow on international capital markets. However, the Egyptian private sector is known to have substantial foreign asset holdings abroad. Reliable estimates of the size of these asset holdings are not available. The net foreign asset position of the public and private sectors in Egypt based on data from the IMF's International Financial Statistics are presented in Figure 3. The graph confirms that the private sector tended to accumulate foreign assets after the windfall while the public sector maintained a negative net foreign asset position throughout the period. Data available on cross border bank deposits of non-banks resident in Egypt are available after 1981. These indicate the degree to which agents accumulated foreign assets during the windfall and

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8/   Roughly half of this accumulated debt has since been forgiven by Egypt's creditors though the Paris Club.

began to draw down foreign assets when the oil price fell in 1986.[9] An additional crude proxy of private foreign assets is net errors and omissions in the balance of payments, depicted in Figure 4, along with U.S. liabilities to Egypt. Here too, the evidence points to increased foreign asset holding by the private sector during the windfall period. Thus, the private sector was better able to smooth the windfall income over time by accumulating foreign assets.

The way in which private agents saved domestically changed dramatically over the period. Private agents were permitted to hold foreign exchange accounts in Egypt under Law 64/1974 and Law 97/1976. As a result of these changes associated with the open door policy, there was a shift in asset holding out of Egyptian pounds and into foreign exchange, largely U.S. dollars which were held abroad by the domestic banking system. Private foreign exchange deposits held in the domestic banking system grew by over 50% per annum on average between 1978-82. The resulting "dollarization" of the economy served to shift investment intertemporally.[10] This was in response to the higher returns to foreign assets in the context of low, often negative, real interest rates on savings held in Egyptian pounds, rising world interest rates, growing domestic inflation, a depreciating parallel exchange rate, and uncertainty.[11] By the mid-1980s, foreign exchange deposits accounted for 40% of total liquidity.[12] Deposits in LE also grew, although at a much slower pace, despite the negative real interest rates.[13] This shift in favor of assets denominated in foreign exchange meant that the monetary authorities' control over domestic liquidity was reduced, tax revenue capacity was weakened, and the efficacy of exchange rate policy was diminished.

4.   The Government Budget

Egypt is a classic "high absorbing" country with limited oil reserves and a rapidly growing population. Thus it is not surprising that the government's propensity to spend its windfall income was high, especially after decades of being subject to a foreign exchange constraint. Table 6 presents the actual and counterfactual government budget for the period 1974-87. The counterfactual assumes that the pattern of revenues and expenditures as a share

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9/   IMF, International Financial Statistics.

10/   For a more detailed analysis of the portfolio aspects of Dutch disease in Egypt, see De Macedo, 1982.

11/   El-Erian's econometric analysis shows that the most important determinants of currency substitution in Egypt over the 1979-86 period were expectations of exchange rate depreciation and political uncertainty. El-Erian, 1988.

12/   El-Erian, 1988.

13/   Foda explained this growth of deposits in domestic currency as resulting from the expansion in the money supply, the increased use of banks by the public, the tax exempt status of deposits, and the shortage of readily accessible alternative investments. Foda, 1982, p. 23.

of GDP in 1974 prevailed throughout the period. The resulting counterfactual budget was constructed by applying 1974 government budget shares to counterfactual income. The windfall to the government budget is derived as the difference between the actual and the counterfactual budget. Table 6 gives an indication of the magnitude of the windfall to the government budget. For much of the 1980s, the windfall almost doubled the government's revenues and expenditures when compared to the counterfactual. Over the entire period, the government tended to not only spend its entire windfall, but to over-spend it. Deficits continued to be substantial over the entire windfall period.

The major source of windfall revenue was oil, which was reflected in the public sector surplus. Other important sources of government revenue during the boom were trade taxes in the years 1974-1979, which increased with higher levels of importation under the more liberal trade regime, and increasing business profits, which grew with the re-emergence of the private sector after the introduction of the open door policy in 1974.

While the government's windfall revenue came largely from tradables, its expenditure was on both tradables and nontradables. By the early 1980's, when windfall revenues were substantial, government expenditure on investment was the most rapidly growing part of the budget. The largest share of this public investment (about half) went to the public sector industry, much of which was protected and oriented toward the domestic market. Thereafter, the most important area for public investment was infrastructure--particularly transport and communication, electricity and, to a lesser extent, housing (see Figure 4).

The government's wage bill did not increase by a large amount, despite the fact that about one-third of the labor force is nominally employed in the public sector as a result of the government's policy of guaranteeing employment for all graduates. The absence of a further increase in government employment was a reflection of the low and declining real wages paid by the public sector and increased employment opportunities in the private sector.

The consumer subsidy bill also absorbed a large proportion of the windfall revenue from 1980/81 to 1981/82. Almost half of this subsidy bill went to cover the costs of maintaining artificially low domestic prices for imported wheat and flour. In addition, domestic energy prices for most consumers were a fraction of world prices during the period and represented a loss of potential export revenues to the public sector.[14] By the end of the windfall period, current expenditures became more important as some of the subsidies were phased out. Investment, however, continued to absorb a large portion of windfall revenues.

The resulting government deficit was largely financed domestically through the banking system and through the social security surplus. The government was able to avoid rapid

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14/ Domestic petroleum prices in Egypt averaged one-third of the world price during the windfall period. The exception to this was private sector firms established under the investment promotion legislation, Law 43, who were required to pay world prices for their energy to offset preferential treatment on taxes, customs, duties, etc.

inflation by accumulating arrears, exploiting, money illusion among savers and sacrificing the enforceability of foreign exchange controls.[15] Egyptian savers continued to hold domestic assets, despite their negative real returns because of restrictions on immediate conversion of Egyptian pounds into U.S. dollars, some risk associated with the parallel market owing to periodic crackdowns on foreign exchange dealers, high transactions and insurance costs associated with holding other types of assets (like gold or real estate). There was also some apparent money illusion over the period, in part perhaps, because of poor information and the lack of access to the formal financial system of some parts of society.

The debt accumulated by the public sector is depicted in Table 7. A counterfactual has been constructed on the assumption that the government's debt as a share of counterfactual GDP remained at its 1974 level of 65 percent. The resulting debt associated with the windfall was substantial and rose steadily over the boom period. Roughly one-half of Egypt's accumulated debt over the period was associated with the windfall. This pattern of debt accumulation only partly reflected the increase in perceived creditworthiness of Egypt in the eyes of foreign creditors. Since Egypt's debt was owed largely to official creditors, decisions about lending were often politically motivated.

5.   Aggregate Capital Formation

How much of the windfall was invested? Figure 5 depicts capital formation as a share of GDP in the public and private sectors over the windfall period. Although the public sector remained the primary investor in the economy, both the private and public sectors experienced considerable growth during the windfall period. This was especially the case between 1982-84, when the aggregate investment rate was 30 percent. With the collapse in the price of oil in 1986, however, private investment virtually ceased, although the government was able to maintain public capital formation above 20 percent through continued borrowing.

The investment attributable to the windfall is presented in Table 8. Counterfactual investment was derived as the sum of counterfactual domestic savings (from Table 4) and counterfactual foreign dissavings (from Table 5). The final column, which shows the investment associated with the windfall, gives an indication of how important the boom was for capital formation in the economy during this period. Relative to the "normal" levels of investment, the foreign exchange windfall enabled an increase in capital formation of often several orders of magnitude. For much of the first half of the 1980s, the windfall enabled a doubling, and in some years, a tripling of the normal rate of investment in the economy.

15/   For a detailed analysis, see Giugale and Dinh, 1990.

5.1 Public Investment

The distribution of public investment across economic sectors is depicted in Figure 6. Much of the public investment that did occur went toward the rebuilding of Egypt's decaying infrastructure. The social returns to this infrastructure investment, although difficult to quantify, appear to have been fairly high. Egypt's infrastructure had been neglected for decades and there is some econometric evidence that it had significant crowding in effects on private investment.[16] This crowding in of private investment as a result of public investment in infrastructure was accompanied by crowding out in financial markets where government borrowing resulted in rationing of private borrowers. Public investment in infrastructure also fueled inflation of nontradeable prices, particularly of land and construction, for all agents in the economy.

Public investment in tradables, largely agriculture and petroleum, did not grow substantially. However, capital formation in non-financial public enterprises did increase. Because the activities of these public enterprises was highly protected, their output is largely nontradable. Unlike the investment in infrastructure where the economic returns may have been high, the returns from these public enterprise investments were very mixed. Some, such as the petroleum companies, were profitable, but many public industries generated negative economic rates of return.[17] Estimates by the World Bank for the period 1973-1983/84 indicate the marginal productivity of capital in public sector industry was approximately 5%, the ICOR was 19 and the total factor productivity change was only 1.37%.[18]

5.2 Private Investment

The recovery of private investment after 1974 depicted in Figure 5 was partly in response to the liberalization and investment incentives associated with the open door strategy, but was also strongly motivated by increased demand associated with the foreign exchange boom. Although the rate of private investment in Egypt appears fairly low compared to industrial countries, it is about average for low and middle income countries where private investment's share of GDP is around 10%. Moreover, in Egypt's case, it is important to consider the historical context in which all medium and large scale private sector firms were nationalized during the 1960's. Also, the official statistics for private investment tend to underestimate capital formation in the small holding agricultural and informal sectors because of measurement problems. Therefore, in terms of other developing countries and in Egypt's own historical terms, the recovery of private investment was significant.

16/   Shafik, 1992.

17/   Hansen, 1988.

18/   World Bank, 1987, pp. 24-26.

Data on the sectoral disaggregation of private investment as a share of total private investment is available up to 1982 because of a special report prepared for Parliament in 1985. The figures, reported in Table 9 provide insights into the relative profitability of different economic activities. Table 9 excludes the booming petroleum sector, which absorbed a large share of total private investment as a result of investments in services to the oil industry after 1974. The first column shows not much change in the sectoral share of agriculture except for a sharp rise in 1981-82 which probably reflects growing private investment in capital intensive land reclamation projects in response to government incentives. However, aggregate data on private investment in agriculture are likely to be unreliable in an economy where most of the agricultural sector is based on small peasant holdings. Within the agricultural sector, there was a shift away from tradables, such as cotton and rice, toward nontradables, particularly to the import-substituting, protected livestock sector and to goods produced for home consumption.[19] The sectoral share of industry rose from an all time low of 1% of total private investment in 1968 in the wake of the nationalizations to an all time high of 42% in 1980.

Private investment in housing as a share of the total experienced an enormous decline - from absorbing 50% of total private investment in 1974 to as little as 9% in 1980. This decline in housing investment is in relative, not absolute terms. In fact, the level of private investment in housing grew considerably based on censuses from 1976 and 1986. The desirability of investment in housing was caused in part by government policies, in particular rising inflation and government subsidies to building materials and housing loans.[20]

The figures for private investment in construction give some indication of the boom in construction activity with the infitah. In addition to increased private demand for construction, the boom was fueled by government contracting of large scale projects, largely in infrastructure, to the private sector. Prior to the open door policy, the private sector was restricted to small scale projects, while large contracts were awarded exclusively to public sector construction companies.

To evaluate the behavior of private investment more directly in Dutch disease terms, the sectors have been aggregated in Figure 7. Agriculture and industry have entered

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19/   Commander, 1987.

20/   The government's subsidies to the housing sector were intended to address the perceived housing shortage, but actually fueled the construction of housing units that were inflation hedges and would remain empty. During the 1980-86 period an average of 211,000 new housing units were constructed each year in urban areas. In rural areas the annual average was 171,000 per year during the 1975-86 period. Yet, 17% of the urban units and 14.5% of the rural units were empty at the end of 1986. This implies that, using a conservative estimate of $5000 per unit, there are $9 billion of idle, unproductive assets held in the form of empty housing in the Egyptian economy. Note that the fixed rental, pro-tenant laws discouraged the rental of unfurnished units, despite the fact that there is substantial unfulfilled demand for housing. These controls meant that the monthly rent for a large flat in Cairo's most expensive residential neighborhood can be roughly the same as the cost of two cups of coffee in a local hotel. Handoussa, 1987 provides a useful summary of the evolution of investment in housing.

separately as potentially tradable, construction has been disaggregated and the nontraded sector consists of transport, finance, housing, and services. Only two observations from the 1980s are available so the results must be considered tentative, especially given the lags in the investment process.[21] The available evidence shows that in the early part of the windfall from 1974-80, the agricultural and industrial sectors gained relative to nontradables. However, after 1980 when oil revenues became substantial, both agriculture and industry experienced declining shares of private investment while non-tradables' share rose sharply. The construction sector experienced some increase in its share of private investment from 1977-80, declined in 1981, and was on an upward trend thereafter.

6.   Labor Movements and Wages

In addition to the spending effect that results from a windfall, there is a resource movement effect that results from the rising marginal product of labor in the booming sector. Assuming that labor is intersectorally mobile, workers are expected to move out of the lagging and nontradables sectors into the booming sector. The effect on real wages is indeterminate since wage earners consume nontradables. In the case of an oil boom, or any other type of enclave-based boom, there is no major effect on labor markets because of the small number of fairly skilled laborers needed in the petroleum industry.[22] The existence of income from remittances also had consequences for labor movements and real wages.

The growth in employment was substantial during the windfall period, particularly in nontradables. Overall labor force growth was 2.4% over the same period.[23] Employment in the construction sector grew by 9.5% per year between 1973-82, while employment in services grew by 4.6%. In the import substituting manufacturing sector, employment grew by 2.9%, reflecting the expansion of capital-intensive industry. In contrast, employment in the tradable agricultural sector fell by 1.1%, despite an 11% increase in real wages in the sector over the period. The excess demand for labor in the agricultural sector was often met by female and child labor that was frequently underreported or unreported.[24] Much of the male agricultural labor shifted to urban construction where wage growth was even greater than that which occurred in agriculture.

21/   Attempts were made to extend the private investment series beyond 1982 by deriving private investment as the residual from total and government investment. Because of different categorizations used, it was not possible to arrive at a plausible time series.

22/   In Egypt's case, only 0.2% of the labor force was employed in the petroleum sector. This proportion remained constant during the windfall. Shura Council, 1985 and the Ministry of Planning.

23/   Assaad and Commander, 1990.

24/   Commander, 1987.

The growth in employment was fueled by the public sector which expanded by over 3.5% per annum between 1973-82, providing over half of the net increase in employment.[25] This was not wage-induced, but reflected the policy of guaranteed employment of all graduates and the non-pecuniary benefits (such as status, job security, free medical care and privileged access to subsidized goods and services) associated with government employment. This growth in public employment during the boom effectively served as a mechanism for transferring some of the public sector's windfall to private citizens. The demands of public sector employment were often minimal, providing substantial scope for second jobs. As the windfall subsided, the government was forced to reduce its annual recruitment of graduates from about 110,000 to less than 30,000.[26] This was achieved not by eliminating job guarantees for graduates, but by increasing the queuing time prior to appointment to between 5-6 years. Employment in the formal private sector, defined as firms with over ten workers, also grew by 4.5%, but still constituted only 3% of total employment.[27] Open unemployment during the period ranged between 3-5%.[28]

The sectoral distribution of labor did shift away from tradables and in favor of nontradables in response to the windfall, as evidenced by the data in Table 10. The data include both public and private formal sector employment, and thus underestimate small-scale and informal sector activities. If counterfactual sectoral employment shares were hypothesized to be the same as in 1974 (for the sake of consistency with other counterfactuals), the windfall seems to have resulted in a clear shift in employment along Dutch disease lines. The most significant changes were in agriculture, industry, and services. The steadily declining share of the agricultural sector can be explained in part by technology and growing mechanization in agriculture over the period. It is difficult to disentangle the secularly declining trend of agricultural employment form that associated with the windfall. The evidence from the other sectors is perhaps more interesting. The rising labor shares of nontradable industry and services are significant and the labor force in the construction sector virtually doubled during the boom. Most of the other sectors experienced very little change in their labor share including the booming petroleum enclave, where expansion was very capital intensive.

Table 11 considers the evolution of average wages across sectors for selected years using the 1974 as the base year. Not surprisingly, the sector in which wages were growing the most rapidly was the booming mining sector. But petroleum employed a very small fraction of

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25/   Handoussa, 1992, p. 5.

26/   Handoussa, 1992, p. 6.

27/   Assaad and Commander, 1990, p. 11.

28/   Assaad and Commander, 1990, p. 12.

the labor force -- less than 1 percent -- and did not have many spillover effects on the rest of the economy. The only other sectors in which wages consistently rose more rapidly then the index of total wages were agriculture and construction. The explanation for the rapid increase in wages in both the agricultural and construction sectors in Egypt was a petroleum-based construction boom. In the case of the construction sector, the boom resulted in an increase in the relative price of nontradables, particularly nontradable capital. The domestic construction boom associated with the windfall fueled higher prices which were driven in part by rising labor costs, which increased fourfold between 1970 and 1980 (Table 12). In the case of agricultural wages, the explanation lies in the migration of large numbers of rural laborers to urban construction and, perhaps more importantly, to the construction sectors of the neighboring oil exporting countries. A recent survey of emigration found that 35.8% of returned migrants during the period 1974-84 worked in the construction sector while abroad.[29] An increasing number of these international migrants came from rural areas. In the early 1970s when emigration was largely to Libya, only 30% of Egyptian migrants were from rural areas. By the late 1980s, when Iraq emerged as a major labor importer, over 50% of Egypt's migrants came from rural areas. This increase in rural emigration for construction put substantial upward pressure on agricultural wages.

7. The Goods Market: Did Relative Prices Change?

A number of price indices for the Egyptian economy are presented in Table 12. The indices are labeled according to whether they would be considered tradable or nontradable or both. The table also provides official and parallel market exchange rates to give an indication of the different prices faced by the public and private sectors.

An analysis of the price effects of the foreign exchange windfall in Egypt are complicated by the existence of widespread subsidies alongside hidden indexation. For example, the official index of petroleum and fuel prices in the wholesale price index shows no sign of the 260% increase in world energy prices in 1973/4 and the 60% increase in 1979/80 because of subsidies to domestic consumers of energy. However, private firms established under the investment promotion legislation enacted in 1974 were generally required to pay world prices for their energy. The index for construction may also be an underestimate since there was a large parallel market for cement and other building materials during the period. At times, the parallel market price of cement was as high as 225% of the official selling price.[30]

Similarly, the housing index, a frequently used proxy for nontradables, displays very little movement over the period because rents have been fixed in perpetuity in Egypt since

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29/ Assaad, 1991 citing results from the Egyptian Emigration Survey carried out in 1985 under the auspices of the National Population Council.

30/ Interview, Suez Cement Company, December 1987.

the 1960s. However, the "key money", a one-off illegal payment required before moving into a rented dwelling, has risen steadily in response to growing demand for housing. This inflation in de facto housing costs caused by rising key money payments is not reflected in the official price index for housing.

The price indices provide strong evidence of Dutch disease and construction boom effects during the boom with prices of nontradables, particularly nontradable capital, rising relative to tradables. Prices in the construction sector rose faster than any other price in the economy. Services prices, also a nontradable, increased relative to the aggregate price level. The relative price of tradables, as measured by the import price index and the price of capital goods imports, fell relative to the GDP deflator. Figure 8 depicts relative prices of services (non-tradable) to all importables and to imports of capital goods. The shift in relative prices in favor of non-tradables is apparent during the windfall.

Evidence on agricultural land prices from survey evidence also reveals the rise in nontradable prices in the economy. In a survey of 1000 rural households in three villages in Egypt, Adams found that the average price of a feddan of agricultural land increased by 500%, from LE 2000 to LE 12,000, between 1980 and 1986.[31] This reflected rates of return on agricultural land that averaged about 9.5% over the same period. In contrast, rates of return on most small farmer crops in Egypt, most of which were tradable, were negative during the windfall period.[32] These negative rates of return to much of tradable agriculture reflected, among other things, the low procurement prices imposed by the government for selected crops.

8.   The Control Regime
8.1   Foreign Exchange Controls

The foreign exchange regime in Egypt prior to 1987 has been described as one in which a number of different "pools" served the foreign exchange needs of different borrowers. There were a few, relatively unimportant and highly overvalued exchange rates that were used only for accounting purposes on transactions such as barter agreements with the Eastern Europe and the Soviet Union. The "Central Bank rate" of LE 0.70 = $1 was used only by the government for transactions such as the importation of key commodities, mostly food, which were sold to consumers at subsidized prices. The revenue for this government rate came from rents that the government extracted from petroleum and cotton exports as well as from Suez Canal revenues. The "commercial bank rate" of LE 1.35 = $1 was also essentially a government rate which was used to finance lower priority public sector imports with revenues derived from tourism and remittances. The parallel market rate, which varied considerably over time, was

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31/   Adams, 1991, p. 719.

32/   Adams, 1986.

supplied largely by remittances and, to a lesser extent, by tourism revenues not exchanged through official channels.

The existence of a foreign exchange windfall enabled the government to maintain unrealistic official exchange rates for a prolonged period. Over time, however, the parallel market became increasingly legal as the government instituted policies to attract migrant remittances back to the country. The parallel market was officially recognized in 1973 when the government created a legal free market for certain imports. By the mid-1970s, a greater number of transactions were permitted through the parallel market, thereby achieving an effective depreciation. The private sector was permitted to import though the "own exchange" system established in 1974/5. Egyptians were permitted to hold foreign currency accounts under Law 97 of 1976, and to engage in foreign exchange transactions.

Subsequent policies attempted to restrict the parallel market as the government experienced foreign exchange shortages in the mid-1980s. These attempts, which included various import bans and restrictions on private foreign exchange accounts, were fairly unsucessful at reducing the foreign exchange contraint. By May 1987, some public sector transactions were also conducted at the parallel market exchange rate after an exchange rate reform that was agreed upon with the International Monetary Fund. Subsequent reforms have effectively unified the exchange rate at the parallel market price.

8.2   The Financial System

Between the nationalizations and the end of 1974 there were four public sector commercial banks, two specialized public sector banks, and two offshore banks. After the 1974 liberalization, there were 43 commercial banks, 31 business and investment banks, 21 specialized and 2 offshore banks by 1984.[33] The plethora of financial institutions was in response to the growing needs of the private sector and, perhaps more importantly, to the highly profitable structure for banking services provided by the Central Bank's schedule of fees and commissions. The schedule was originally designed to protect the profitability of the public sector commercial banks that would, in theory, lend on the basis of developmental rather than profitability objectives. However, the government managed the public sector banks on a more or less commercial basis since their inception. Because profitability became an important criterion in evaluating the performance of the public sector banks, there is no evidence that they distributed loans in any more or less socially desirable way than do the private banks. With the infitah,

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33/   For a survey of the evolution and operations of the banking system, see Foda, 1985.

private banks could take advantage of the approximately 6% margin over their cost of funds allowed for by the Central Bank's regulations.[34]

Egypt, like many developing countries, used Central Bank administered interest rates that are below market levels for loans in domestic currency.[35] Real rates of interest on domestic loans were negative throughout the windfall period. Loans in foreign currency are at world market rates.[36] Not surprisingly, this spawned considerable arbitrage since private agents preferred holding LE denominated debt to that in foreign currencies while they prefer assets denominated in foreign exchange over LE.

Subsidized interest rates for agricultural and industrial loans were intended to encourage investment in these sectors. In practice, these especially low rates meant that banks, both public and private, preferred making loans to the more lucrative commercial sector rather than to higher risk projects in agriculture or industry. While a 6% margin is generous for "safe" lending such as short term trade transactions, banks would require much higher returns to embark on the kinds of long-term investments in manufacturing that the government sought to encourage. Thus, the government's interest rate policy had the effect of discouraging investment in tradable agriculture and industry in favor of commercial transactions.

In addition to financing trade, the banks were heavily involved in exporting capital abroad. A report of the Central Auditing Authority found that only 42% of total Law 43 bank deposits were invested in local projects; the remainder were held with correspondent banks abroad.[37] This was made possible by the financial liberalization that was brought about by the government's interest in attracting the foreign exchange earnings of migrant workers. Through Laws 64/1974 and 97/1976, the government permitted the holding of foreign exchange domestically and facilitated transfers from abroad through "free accounts for non-residents" available through bank branches located near large concentrations of migrant workers.[38] Egyptian migrants were also encouraged to subscribe to special bond issues on favorable terms.[39] These foreign exchange accounts were also made available to domestic residents through both the public

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34/   This is in contrast to the approximately 2% margin for banks in most developed countries on loans to regular clients.

35/   The government has committed itself to liberalizing interest rates in 1991.

36/   The interest rate on loans in foreign exchange reflects international prices. Most institutions lend foreign exchange at approximately 2% over 6 month LIBOR for the short- and medium-term.

37/   Note that the public sector banks also tended to hold their foreign exchange holdings abroad. Waterbury, 1983, pp. 149-150. Foda also found that banks in Egypt were net placers of assets abroad, implying a fair degree of liquidity in foreign exchange. Foda, 1982, p. 6.

38/   See IMF, 1990, pp. 142-143.

39/   Serageldin et al, 1983.

and private sector banks. Thus, the structure of interest rates and financial regulations served to discourage investment in potentially tradable agriculture and industry. However, the expansion of the financial system and the possibility of holding foreign exchange accounts encouraged savings, particularly foreign savings, because of the low returns offered on domestic assets.

During the mid-1980s, new financial institutions emerged that sought to circumvent the Central Bank's low administered interest rates on domestic assets. These were so-called Islamic financial funds which operated like venture capital firms or mutual funds, paying depositors on the basis of the profitability of their portfolio, rather than with a fixed rate of interest. These funds were unregulated and uninsured, but were able to mobilize substantial savings with exceptionally high rates of return, ranging from 20-40%. Many savers began shifting their domestic assets away from the formal banking system toward the Islamic funds.

The Islamic funds played an important role in buying foreign exchange from migrant workers and in holding domestic assets accumulated during the windfall. Although no balance sheets were published, it was widely believed that their investments were concentrated in currency speculation, gold, real estate and a small number of industrial projects. As the size of their holdings grew (some estimated their total assets were valued as high as $5 billion), the government became increasingly concerned about their activities. In 1988, reporting requirements and a regulatory structure were imposed on the Islamic funds, triggering numerous bankruptcies. This episode in parallel financial markets resulted in massive losses for depositors, many of which were small savers. But is also caused a major change in the expectations of Egyptian savers and investors.

8.3   The Trade Regime

The import regime in Egypt was liberalized substantially after the launching of the open door policy. The private sector import licensing system was abolished in 1975 and a negative import list of 28 commodities was established in its place. In 1977 this was modified with the introduction of an open general licensing system. Reductions in import duties and a broadening of exemption from duties was instituted in 1980. The increased openness of the economy was reflected in the growth of imports from about one-quarter of GDP in the early 1970s to about one-half of GDP in the early 1980s. Exports also grew, from 15% of GDP in 1972/3 to 44% by the late 1970s; however, this largely reflected gains in the petroleum sector.

Although the trade regime was fairly liberal during the windfall period, the industrial sector could still get protection through tariffs and quotas, often on an ad hoc basis. This was facilitated by an amendment to Law 43/1974 that allowed investments that produced import substitutes to reap the gains of the incentives and subsidies under the infitah legislation originally intended exclusively for export-oriented activities. Many private investors obtained

guarantees of quantity controls as preconditions to their investing.[40] These factors, combined with the entrepreneurial learning, growing confidence and the lags inherent in the investment process, meant that by the early 1980s, private investors began to shift from importing commodities to domestic production of import substitutes under protection.[41] In general, the private sector tended to invest in those areas where tariffs were high or where there were quantity restrictions on imports - such as construction materials, luxury goods, clothing, engineering and assembly operations.

In the Egyptian case, the protection to industry was not instituted specifically in response to the foreign exchange windfall, but had existed since the 1960s as part of the government's encouragement of import substitution. Within the industrial sector, there existed a tremendous range of effective protection across industries and between individual firms. A World Bank study of domestic resource costs and effective protection in 1983 found that private sector firms within the same industrial sector had effective rates of protection that ranged from negative to highly positive values.[42] In general, the study found that food products had negative rates of effective protection while textiles, metals and engineering and building materials showed positive rates of protection in ascending order. However, there was considerable variation in domestic resource costs within industries and between individual firms within an industrial sector.

The availability of protective tariffs for the industrial sector became particularly useful when the combined effects of the foreign exchange windfall and the infitah facilitated greater investment in both the public and private sectors by affecting demand, costs and mark ups. Interestingly, the effective protection given to the private sector was higher than that for the public sector, reflecting the private sector's ability to set its output prices at the levels implied by the structure of tariffs. By the mid-1980s the government began to revert to a more restrictive trade regime -- a negative import list was reinstated and an "Import Rationalization Committee" was established. These restrictions on imports were in large part a response to the slowdown in the foreign exchange windfall.

9.   The Control Regime and the Windfall

The previous analysis provides strong evidence on the existence of Dutch disease and construction boom effects in Egypt. Relative price movements indicate a rise in the price of nontradables relative to tradables and they show an increase in the price of nontradable capital goods relative to other prices during the windfall period. This is evident in both the data on

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40/   See Shafik, 1992.

41/   Shafik, 1989 provides a number of examples of firms that made this transition from importing to domestic production under protection.

42/   World Bank, 1983.

output prices and on wages. The movement of capital and labor also indicate fairly classic Dutch disease effects with the nontradable sectors gaining relative to tradables. The construction sector experienced some of the most extreme shifts -- with a doubling of investment and employment alongside a fourfold increase in prices. There also emerged a parallel market for construction materials and a widespread deterioration in building standards to save on costs.

While the real economy largely followed the pattern identified by construction boom theory, the control regime sometimes served to suppress these effects. Specifically, the rise in the price of the booming sector was offset by substantial domestic energy subsidies. The decline in the price of tradables was counteracted by the granting of protection to the industrial sector, which became a de facto nontradable. The rise in the price of nontradables such as housing was constrained by the policy of fixed rents. The boom in construction prices was restrained by government subsidies in the form of credit and inputs to respond to a perceived shortage of housing and infrastructure.

Some of these policies existed prior to the windfall and were not a part of a concerted effort by the government to avoid relative price changes during a temporary boom. The initial motives behind the liberalization of the control regime was not the foreign exchange windfall. However, the existence of a foreign exchange boom provided momentum and a new rationale for the reform process. For example, the opportunity cost of the subsidy required to maintain domestic energy prices at artificially low levels increased in proportion to the rise in world oil prices during in the 1970s. The increased demand for housing was manifested in rapid growth in the amount of 'key money' required to occupy a fixed rent dwelling. In rural areas, land prices rose rapidly as returning migrants sought to translate their temporary windfalls into fixed assets. The number of firms interested in taking advantage of the availability of protection for industrial investments increased substantially. And an open financial system became more important when the economy had to smooth windfall income intertemporally. In general, the control regime was better at repressing construction boom effects when the activity was exclusively in public hands, such as energy pricing and the trade regime. Where the private sector played an important role, such as in housing, construction, and in foreign exchange and financial services, demand spilled over into parallel markets.

Just as the boom facilitated an economic opening, the bust resulted in efforts to restrict imports, control foreign exchange markets and restore government price controls. Parallel markets -- in goods, foreign exchange and financial services -- were repressed. These recidivist tendencies made it more difficult for the economy to manage the downside of the windfall.

10.   Conclusions

Unlike foreign exchange booms that are concentrated in one particular sector, the windfall in Egypt affected the economy through a variety of channels and its consequences were

the result of the actions of both private and public agents over a fairly long period of time. The public sector's use of the oil windfall implied a perception that the shock was a permanent one. There was little public sector savings, although there was an increase in public investment, some of which was financed by borrowing. The returns to this increase in public investment were mixed. Some of the windfall was also used to sustain a growing subsidy bill from artificially low prices for certain foodstuffs and energy and to maintain an overvalued official exchange rate. Private sector consumers were the major beneficiaries of the subsidy program, although the public sector also consumed subsidized energy; the public sector was the sole beneficiary of the overvalued exchange rate. In general, the government was not very successful at shifting the boom intertemporally nor at investing the windfall income optimally.

The private sector increased both its consumption and its investment during the windfall period. High consumption levels in part reflected the permanent nature of some of the windfall for the private sector. However, individual migrant laborers experiencing a temporary windfall did have a higher propensity to invest their remittance income than did non-migrant households. Private capital formation rose rapidly in response to the combination of the windfall and investment incentives. Private firms also took advantage of the government's willingness to provide protection for rent-seeking purposes. Private production decisions reflected a shift in favor of using tradable inputs to make nontradable outputs. This was in response to the extremely profitable opportunities offered under the open door policy's incentive structure and served to concentrate the boom, especially in terms of the demand for non-tradable capital goods. Although the relative size of the private sector did expand as a result of this protection, the firms that evolved were uncompetitive by international standards. Nevertheless, unlike the public sector, the private sector did save some of its windfall income, particularly in the form of foreign assets. This was made possible by the changes in the control regime adopted by the government to attract the foreign exchange earnings of migrant workers. This was the one area in which the policy response to the shock contributed to improved management of the temporary foreign exchange windfall.

These private savings, most of which were held in foreign exchange, helped to shift the boom intertemporally. What was damned as "unnationalistic capital flight" in the 1970s and 1980s, may be a major hope for investment financing during the 1990s. What will be crucial will be the creation of an incentive structure that encourages the repatriation of capital into investment in tradable activities.

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TABLE 1

Table I: Egypt - Magnitude of Trade Shocks - Levels and Growth Rates
(in millions of US Dollars)

Shock	1974	1975	1976	1977	1978	1979	1980/81	1981/82	1982/83	1983/84
Oil	187	289	644	720	802	1878	3179	3329	2807	2957
Growth Rate		0.55	1.23	0.12	0.11	1.34	0.69	0.05	-0.16	0.05
Remittances	189	366	755	897	1761	2445	2855	1935	3165	3931
Growth Rate		0.94	1.06	0.19	0.96	0.39	0.17	-0.32	0.64	0.24
Aid	140	361	598	931	1202	997	1402	1464	1172	1428
Growth Rate		1.58	0.66	0.56	0.29	-0.17	0.41	0.04	-0.20	0.22
Suez Canal	0	85	311	428	514	589	780	909	957	974
Growth Rate			2.66	0.38	0.20	0.15	0.32	0.17	0.05	0.02
Toorism	265	332	464	728	702	601	712	611	304	288
Growth Rate		0.25	0.40	0.57	-0.04	-0.14	0.18	-0.14	-0.50	-0.05

Notes:
Oil export revenues only reflect Egypt's share, not that of foreign companies.
The category "aid" reflects official loans and grants.

Source: World Bank

TABLE 2

Table 2: Egypt: Taxonomy of Shocks

Shock	Beneficiary	Expected Duration	
		Individual	Society
Oil-Quantity (1975)	Public	Temporary	Temporary
Oil-Price (1979)	Public	Temporary	Temporary
Remittances (1979)	Private	Temporary	Permanent
Aid (1979)	Public	Permanent	Permanent
Suez Canal (1975)	Public	Permanent	Permanent
Tourism (1979)	Public/Private	Permanent	Permanent

TABLE 3

Table 3: Egypt - Magnitude of the Oil Shock

	Production million metric ton	Quantity Shock metric ton	Oil Price US$ per metric ton	Import Price Index	Price shock Net Oil Revenue US$	Price shock Real Net Oil Income US$	Price shock Present Value US$	Quantity Shock Net Oil Revenue US$	Quantity Shock Real Net Oil Income US$	Quantity Shock Present Value US$
1974	7.5	0.0	83.3	66.3	624.8	942.4	856.7	0.0	0.0	0.0
1975	11.7	4.2	82.0	63.4	609.6	961.5	794.6	349.9	551.9	456.1
1976	16.6	9.1	88.1	62.2	703.5	1131.1	849.8	758.1	1218.8	915.7
1977	20.9	13.4	93.4	66.1	836.5	1265.6	864.4	1116.4	1688.9	1153.5
1978	24.4	16.9	94.2	76.1	889.8	1169.3	726.0	1407.9	1850.1	1148.8
1979	26.3	18.8	135.8	90.0	2004.8	2227.5	1257.4	1566.2	1740.3	982.3
1980	29.0	21.5	222.7	100.0	4665.7	4665.7	2394.2	1791.2	1791.2	919.2
1981	31.6	24.1	250.4	98.1	5904.6	6018.9	2807.9	2007.8	2046.7	954.8
1982	33.5	26.0	226.3	92.6	5415.0	5847.7	2480.0	2166.1	2339.2	992.0
1983	36.8	29.3	205.1	92.7	5107.8	5510.0	2124.4	2441.0	2633.2	1015.2
1984	41.4	33.9	200.8	91.6	5486.8	5990.0	2099.5	2824.2	3083.2	1080.6
1985	43.2	35.7	194.9	90.1	5440.4	6038.1	1923.9	2970.0	3296.3	1050.3
1986	44.0	36.5	194.9	90.1	5535.2	6143.4	1779.5	3040.8	3374.9	977.6
1987	44.0	36.5	194.9	90.1	5535.2	6143.4	1617.8	3040.8	3374.9	888.7
1988	44.0	36.5	194.9	90.1	5535.2	6143.4	1470.7	3040.8	3374.9	807.9
1989	44.0	36.5	194.9	90.1	5535.2	6143.4	1337.0	3040.8	3374.9	734.5
1990	44.0	36.5	194.9	90.1	5535.2	6143.4	1215.4	3040.8	3374.9	667.7
1991	44.0	36.5	194.9	90.1	5535.2	6143.4	1104.9	3040.8	3374.9	607.0
1992	44.0	36.5	194.9	90.1	5535.2	6143.4	1004.5	3040.8	3374.9	551.8
1993	44.0	36.5	194.9	90.1	5535.2	6143.4	913.2	3040.8	3374.9	501.7
1994	44.0	36.5	194.9	90.1	5535.2	6143.4	830.2	3040.8	3374.9	456.1
1995	44.0	36.5	194.9	90.1	5535.2	6143.4	754.7	3040.8	3374.9	414.6
1996	44.0	36.5	194.9	90.1	5535.2	6143.4	686.1	3040.8	3374.9	376.9
1997	44.0	36.5	194.9	90.1	5535.2	6143.4	623.7	3040.8	3374.9	342.6
1998	44.0	36.5	194.9	90.1	5535.2	6143.4	567.0	3040.8	3374.9	311.5
1999	44.0	36.5	194.9	90.1	5535.2	6143.4	515.5	3040.8	3374.9	283.2
2000	44.0	36.5	194.9	90.1	5535.2	6143.4	468.6	3040.8	3374.9	257.4
Total	616						34067.6			18847.9

Notes: Oil production only includes the Egyptian share; partners' shares are excluded.
Source: World Bank data and author's calculations

TABLE 4

Table 4: Egypt - Actual and Counterfactual Consumption
and Savings (in real 1980 LE)

Actual

	Consumption Levels		Consumption As a Share of GDP		Savings GDP Share	Actual Income	Windfall Income
	Private	Public	Private	Public	Total		
1974	7157	1985	0.79	0.22	-0.02	9948	942
1975	6558	2583	0.67	0.26	0.07	10808	1513
1976	6782	2753	0.63	0.26	0.11	11867	2350
1977	8157	2427	0.68	0.20	0.12	13269	2955
1978	8505	2621	0.66	0.20	0.14	14137	3019
1979	10167	2424	0.71	0.17	0.12	16475	3968
1980	11411	2585	0.72	0.16	0.11	20406	6457
1981	11577	3131	0.71	0.19	0.10	22389	8066
1982	12303	3059	0.67	0.17	0.16	24095	8187
1983	12800	3368	0.66	0.17	0.17	25023	8143
1984	13764	3747	0.66	0.18	0.16	26714	9073
1985	14693	3795	0.66	0.17	0.17	28223	9335
1986	15127	3822	0.68	0.17	0.15	28451	9518
1987	15479	3733	0.67	0.16	0.17	29317	9518
1988	14636	3758	0.62	0.16	0.23	29938	9518

Counterfactual

	Counter factual Income	Counter Private Consumpt	Counter Public Consumpt	Windfall Private Consumpt	Windfall Public Consumpt	Counter Factual Savings	Windfall Savings
1974	9006	6034	2341	1123	-356	564	-701
1975	9295	6227	2417	331	166	583	122
1976	9518	6377	2475	405	278	587	615
1977	10314	6911	2682	1246	-255	633	786
1978	11118	7449	2891	1056	-270	696	1145
1979	12507	8380	3252	1787	-828	720	937
1980	13949	9346	3627	2065	-1042	650	1094
1981	14323	9597	3724	1980	-593	581	1081
1982	15908	10658	4136	1645	-1077	704	2181
1983	16880	11310	4389	1490	-1021	796	2549
1984	17640	11819	4587	1945	-840	816	2397
1985	18889	12656	4911	2037	-1116	900	2798
1986	18933	12685	4923	2442	-1101	895	2464
1987	19798	13265	5148	2214	-1415	956	3005
1988	20420	13681	5309	955	-1551	999	4401

Notes: Net public savings have been calculated as current
receipts minus current expenditures (including interest
payments and subsidies).
Source: World Bank data and author's calculations

TABLE 5

Table 5: Egypt - Actual and Counterfactual Foreign Savings
        (LE millions)

	Actual		Counterfactual	
	Current Account Deficit	As a Share of GDP	Current Account Deficit	Windfall Foreign Dissavings
1974	161	0.02	450	-289
1975	662	0.07	465	198
1976	329	0.03	476	-147
1977	612	0.05	516	96
1978	706	0.05	556	150
1979	1290	0.09	625	665
1980	1022	0.06	697	325
1981	1537	0.09	716	821
1982	2516	0.14	795	1720
1983	1441	0.07	844	597
1984	2119	0.10	882	1237
1985	3421	0.15	944	2477
1986	5007	0.22	947	4060
1987	3706	0.16	990	2716
1988	2970	0.12	1021	1949

Source: World Bank and author's calculations.

TABLE 6

Table 6: Egypt - Summary of Government Budget

Actual in nominal terms, LE millions

	1974	1975	1976	1977	1978	1979	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Total Revenue	1184.0	1524.0	2015.3	2755	3306	3684	7373	8322	9749	10371	11312	12792	13500
of which:													
Indirect taxes	485.0	692.0	907.0	1416	1421	1672	2355	2821	3282	3714	3930	4067	4482
Foreign trade	231.0	400.0	537.8	979	920	905	1329	1573	1644	1920	1907	1808	1906
Direct taxes	251.0	330.0	415.6	551	726	870	1824	1702	1918	1649	1993	2453	2392
Business profit	143.0	195.0	277.6	387	538	656	1506	1578	1788	1486	1800	2131	2065
Public sector surplus	338.0	364.0	573.9	652	1012	875	2700	2950	3553	2830	2740	3212	2729
Total expenditure	2073.0	3015.0	3280.0	4169	5559	7097	10555	13205	14497	16804	18477	21637	22207
of which:													
Current expenditure	949.0	1352.0	1670.0	1701	2037	2495	3691	4722	5416	6586	7630	8384	8832
Subsidies	410.0	622.0	434.0	650	710	1352	2166	2909	2054	1988	2007	2989	1653
Investment	597.0	900.0	980.0	1549	2311	2547	3766	4541	5020	5518	6556	8261	9024
Overall deficit	-889.0	-1491.0	-1264.7	-1413.6	-2252.7	-3412.9	-3182.4	-4883.0	-4748.0	-6433.0	-7165.0	-8845.0	-8707.0

Actual expenditure as a share of GDP in nominal terms

	1974	1975	1976	1977	1978	1979	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Total revenue	0.27	0.29	0.30	0.33	0.34	0.29	0.45	0.48	0.47	0.43	0.40	0.39	0.35
of which:													
Indirect taxes	0.11	0.13	0.13	0.17	0.15	0.13	0.14	0.16	0.16	0.15	0.14	0.12	0.12
Foreign trade	0.05	0.08	0.08	0.12	0.09	0.07	0.08	0.09	0.08	0.08	0.07	0.05	0.05
Direct taxes	0.06	0.06	0.06	0.07	0.07	0.07	0.11	0.10	0.09	0.07	0.07	0.07	0.06
Business profit	0.03	0.04	0.04	0.05	0.05	0.05	0.09	0.09	0.09	0.06	0.06	0.06	0.05
Public sector surplus	0.08	0.07	0.09	0.08	0.10	0.07	0.16	0.17	0.17	0.12	0.10	0.10	0.07
Total expenditure	0.48	0.58	0.49	0.50	0.57	0.56	0.64	0.76	0.70	0.70	0.65	0.65	0.58
of which:													
Current expenditure	0.22	0.26	0.25	0.20	0.21	0.20	0.22	0.27	0.26	0.27	0.27	0.25	0.23
Subsidies	0.09	0.12	0.06	0.08	0.07	0.11	0.13	0.17	0.10	0.08	0.07	0.09	0.04
Investment	0.14	0.17	0.15	0.19	0.24	0.20	0.23	0.26	0.24	0.23	0.23	0.25	0.24
Overall deficit	-0.20	-0.29	-0.19	-0.17	-0.23	-0.27	-0.19	-0.28	-0.23	-0.27	-0.25	-0.27	-0.23

TABLE 6 (continued)

Table 6 (cont.): Egypt - Summary of Government Budget

	1974	1975	1976	1977	1978	1979	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Counterfactual government budget in nominal terms													
Total revenue	1145.2	1301.1	1490.8	1767.5	2111.5	2897.4	3857.3	4170.0	4925.3	5609.4	6588.8	7430.9	8581.8
of which:													
Indirect taxes	469.1	533.0	610.7	724.0	864.9	1186.9	1580.1	1708.1	2017.5	2297.8	2699.0	3043.9	3515.4
Foreign trade	223.4	253.8	290.9	344.8	411.9	565.3	752.6	813.6	960.9	1094.4	1285.5	1449.8	1674.3
Direct taxes	242.8	275.8	316.0	374.7	447.6	614.2	817.7	884.0	1044.1	1189.2	1396.8	1575.3	1819.3
Business profit	138.3	157.1	180.1	213.5	255.0	349.9	465.9	503.6	594.9	677.5	795.8	897.5	1036.5
Public sector surplus	326.9	371.4	425.6	504.6	602.8	827.1	1101.2	1190.4	1406.0	1601.3	1880.9	2121.3	2449.9
Total expenditure	2005.0	2278.0	2610.1	3094.7	3696.8	5073.0	6753.6	7301.0	8623.4	9821.3	11535.9	13010.3	15025.4
of which:													
Current expenditure	917.9	1042.9	1194.9	1416.7	1692.4	2322.4	3091.7	3342.3	3947.7	4496.1	5281.0	5956.1	6878.5
Subsidies	396.5	450.5	516.2	612.1	731.2	1003.3	1335.7	1444.0	1705.5	1942.5	2281.6	2573.2	2971.7
Investment	577.4	656.0	751.7	891.2	1064.6	1461.0	1945.0	2102.6	2483.4	2828.4	3322.2	3746.8	4327.1
Overall deficit	-859.8	-976.9	-1119.3	-1327.1	-1585.4	-2175.5	-2896.3	-3131.0	-3698.1	-4211.8	-4947.1	-5579.4	-6443.6
Windfall government budget - differences between actual and counterfactual													
Total revenue	38.84	222.90	524.53	987.87	1194.84	786.35	3515.45	4152.00	4823.71	4761.56	4723.22	5361.14	4918.19
of which:													
Indirect taxes	15.91	159.03	296.34	692.27	556.39	484.62	774.82	1112.85	1264.46	1416.21	1231.05	1023.11	966.65
Foreign trade	7.58	146.15	246.95	634.55	507.85	339.70	576.83	759.43	683.07	825.59	621.52	358.23	231.68
Direct taxes	8.23	54.18	99.57	176.60	278.19	255.86	1006.27	817.99	873.87	459.84	596.22	877.71	572.71
Business profit	4.69	37.86	97.55	173.72	283.38	305.75	1040.42	1074.36	1193.14	808.51	1004.23	1233.52	1028.51
Public sector surplus	11.09	-7.43	148.33	147.82	409.54	47.86	1598.73	1759.58	2146.96	1228.66	859.08	1090.69	279.12
Total expenditure	68.01	736.98	669.89	1074.34	1862.17	2023.72	3801.59	5903.98	5873.59	6982.74	6941.07	8626.72	7181.58
of which:													
Current expenditure	31.13	309.14	475.12	284.29	344.62	172.64	599.26	1379.66	1468.28	2089.92	2348.96	2428.02	1953.50
Subsidies	13.45	171.45	-82.23	37.53	-21.16	348.66	830.66	1465.00	348.45	45.54	-274.59	415.81	-1318.74
Investment	19.58	243.96	228.32	657.67	1246.75	1086.04	1820.64	2438.39	2536.56	2689.59	3233.79	4514.19	4696.85
Overall deficit	-29.16	-514.08	-145.36	-86.46	-667.32	-1237.37	-286.13	-1751.98	-1049.87	-2221.18	-2217.85	-3265.58	-2263.39
Memorandum items:													
GDP Deflator	46.6	51.3	57.4	62.8	69.6	84.9	100.0	101.1	110.1	119.1	132.2	144.0	162.4
Actual GDP (nominal)	4339.0	5218.0	6727.0	8344.0	9795.0	12705.0	16497.0	17320.0	20781.0	24170.0	28504.0	33132.0	38356.0
Perm GDP (real 1980)	9005.7	9294.6	9517.8	10314.4	11117.6	12506.8	14136.0	15115.5	16393.9	17260.2	18264.7	18911.0	19365.6
Perm GDP (nominal)	4196.7	4768.1	5463.2	6477.4	7737.8	10618.3	14136.0	15281.8	18049.7	20556.9	24145.9	27231.8	31449.7

Source: Ministry of Finance, World Bank data and author's calculations.

TABLE 7

Table 7: Egypt — Actual and Counterfactual Debt
(in nominal terms)

	Actual			Counterfactual	
	Public Long-term Debt	Private Debt	Public Debt/ Counterfact Income	Public Debt	Windfall Debt
1974	2969	107	-0.70	2751	0
1975	4958	107	1.05	3081	1877
1976	6120	126	1.13	3526	2594
1977	8720	149	1.34	4224	4496
1978	11040	154	1.42	5059	5981
1979	12996	252	1.22	6910	6086
1980	16767	322	1.20	9067	7700
1981	20322	367	1.40	9403	10919
1982	23716	557	1.36	11374	12342
1983	26308	733	1.31	13057	13251
1984	28534	696	1.23	15135	13399
1985	32927	1037	1.21	17680	15247
1986	36042	1263	1.18	19937	16105

Source: World Bank and author's calculations.

TABLE 8

Table 8: Egypt - Actual and Counterfactual Investment

Actual

	Savings	As a Share of GDP	Current Account Deficit	As a Share of GDP	Investment	As a Share of GDP
1974	-180	-0.02	161	0.02	-19	0.00
1975	706	0.07	662	0.07	1368	0.14
1976	1202	0.11	329	0.03	1531	0.14
1977	1419	0.12	612	0.05	2031	0.17
1978	1842	0.14	706	0.05	2548	0.20
1979	1656	0.12	1290	0.09	2946	0.21
1980	1744	0.11	1022	0.06	2767	0.18
1981	1662	0.10	1537	0.09	3199	0.20
1982	2885	0.16	2516	0.14	5401	0.30
1983	3345	0.17	1441	0.07	4786	0.25
1984	3213	0.16	2119	0.10	5331	0.26
1985	3697	0.17	3421	0.15	7119	0.32
1986	3359	0.15	5007	0.22	8366	0.38
1987	3961	0.17	3706	0.16	7667	0.33
1988	5401	0.23	2970	0.12	8371	0.35

Counterfactual

	Savings	Windfall Savings	Current Account Deficit	Windfall Foreign Dissavings	Investment	Windfall Investment
1974	564	-701	450	-289	1014	-990
1975	583	122	465	198	1048	320
1976	587	615	476	-147	1063	468
1977	633	786	516	96	1149	882
1978	696	1145	556	150	1252	1295
1979	720	937	625	665	1345	1602
1980	650	1064	697	325	1347	1389
1981	581	1081	716	821	1297	1902
1982	704	2181	795	1720	1499	3901
1983	796	2549	844	597	1640	3146
1984	816	2397	882	1237	1698	3634
1985	900	2798	944	2477	1844	5275
1986	895	2464	947	4060	1842	6524
1987	956	3005	990	2716	1946	5721
1988	999	4401	1021	1949	2020	6350

Source: World Bank data and author's calculations

TABLE 9

TABLE : SECTORAL PRIVATE INVESTMENT AS A SHARE OF TOTAL PRIVATE INVESTMENT, 1974-82

YEAR	AGRICULTURE	INDUSTRY	HOUSING	CONSTRUCTION	FINANCE	TRANSPORT	SERVICES
1974	0.08	0.19	0.50	0.01	0.02	0.12	0.08
1975	0.05	0.24	0.43	0.01	0.01	0.24	0.02
1976	0.04	0.35	0.27	0.04	0.01	0.04	0.21
1977	0.09	0.36	0.24	0.05	0.01	0.04	0.20
1978	0.07	0.36	0.19	0.11	0.01	0.07	0.19
1979	0.09	0.38	0.22	0.12	0.01	0.07	0.12
1980	0.09	0.42	0.09	0.09	0.02	0.08	0.21
1981	0.24	0.24	0.36	0.01	0.01	0.04	0.09
1982	0.16	0.20	0.49	0.05	0.04	0.03	0.03

NOTE: NUMBERS MAY NOT SUM TO 1.00 IN ANY PARTICULAR YEAR BECAUSE OF ROUNDING OF FIGURES.

SOURCE: SHURA COUNCIL, 1985.

TABLE 10

Table 10 : Egypt: Sectoral Labour Force as a Share of Total Labour Force, 1974 - 88

Year	Agriculture	Industry	Housing	Construct	Electricity	Utilities	Trade & Finance	Transport	Services
1974	0.46	0.12	0.02	0.03	0.004	0.005	0.10	0.04	0.22
1975	0.44	0.12	0.01	0.05	0.004	0.005	0.10	0.04	0.22
1976	0.42	0.12	0.01	0.05	0.005	0.006	0.11	0.04	0.23
1977	0.42	0.12	0.01	0.05	0.005	0.006	0.11	0.04	0.24
1978	0.40	0.13	0.01	0.05	0.005	0.006	0.11	0.04	0.24
1979	0.39	0.13	0.01	0.06	0.006	0.006	0.11	0.04	0.24
1980	0.37	0.12	0.01	0.06	0.005	0.006	0.12	0.04	0.26
1981	0.36	0.13	0.02	0.06	0.005	0.006	0.11	0.04	0.28
1981/82	0.39	0.14	0.02	0.04	0.006	0.006	0.10	0.05	0.26
1984/85	0.37	0.15	0.02	0.03	0.006	0.006	0.10	0.05	0.27
1986/87	0.36	0.14	0.02	0.05	0.006	0.006	0.10	0.04	0.27
1987/88	0.36	0.15	0.02	0.05	0.006	0.006	0.10	0.04	0.27

Note: After 1981/82, Data on the Labour Force in the Petroleum Sector are Included Under Industry.

Source: Shura Council 1985, and Ministry of Planning.

TABLE 11

Table 11: Egypt - Index of Average Wages by sector, selected years (1970=100)

	1970	1975	1977	1982	1984	1985	1987
Agriculture	100	136	267	444	630	890	890
Mining	100	172	284	620	914	780	920
Manufacturing	100	130	181	445	606	617	809
Construction	100	140	191	411	718	733	888
Transport	100	161	174	372	483	593	667
Finance	100	109	136	323	411	469	605
Services	100	139	167	320	486	510	673
Total	100	132	184	418	580	620	760

Source: CAPMAS, "Employment, Wages and Hours of Work," various issues; cited in
Zaytoun, 1991.

TABLE 12

Table 12: Egypt - Price Deflators (1974=100)

	GDP	Imports (LE official	Capital Goods Imports (LE)	Other Services	Construction	Housing
	(T/NT)	(T)	(T)	(NT)	(NT)	(NT)
1974	100	100	100	100	100	100
1975	110	76	114	112	156	100
1976	124	73	121	113	186	99
1977	137	74	130	133	211	100
1978	151	84	140	152	235	101
1979	185	100	157	173	267	103
1980/81	224	120	176	199	320	101
1981/82	244	120	176	233	370	102
1982/83	264	128	192	244	408	112
1983/84	294	133	199	277	433	119
1984/85	320	140	212	314	473	130
1985/86	361	172	270	346	515	142
1986/87	401	219	367	380	543	150

Note: There is a break in the import price indices in 1980/81 because of a change from a calendar to a fiscal year basis.

Sources: World Bank and CAPMAS, Statistical Yearbook, various issues; Pick's Currency Yearbook, various issues, IMF, International Financial Statistics.

FIGURE 1

Egypt: Terms of Trade Index
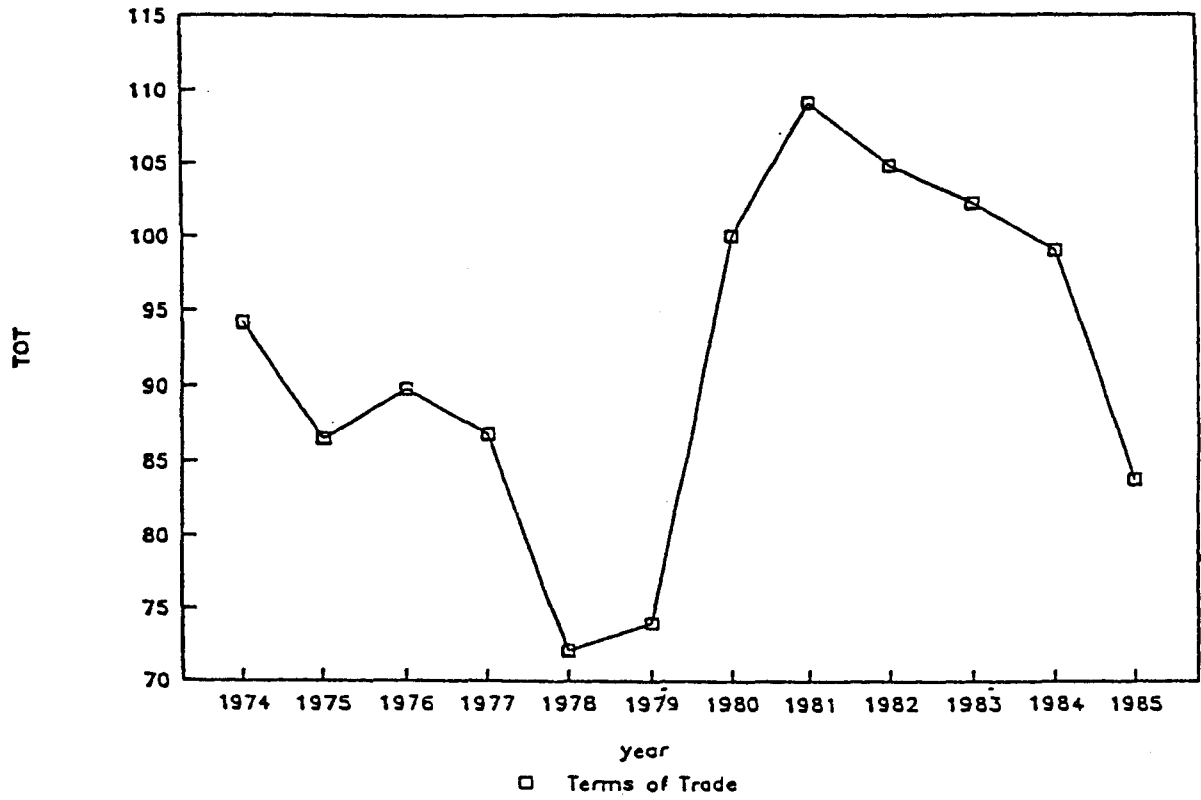
Source: World Bank

FIGURE 2

Egypt: Magnitude of the Oil Shock
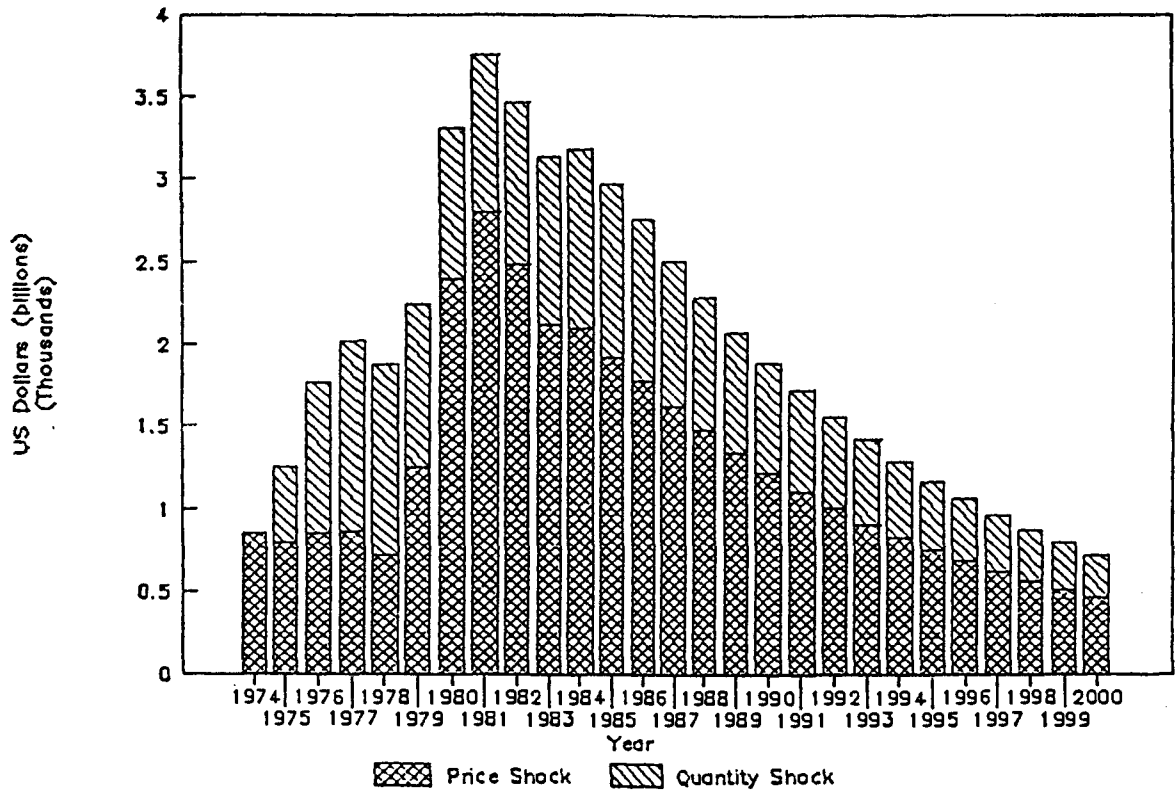
FIGURE 3

EGYPT: NET FOREIGN ASSET POSITION
PUBLIC AND PRIVATE SECTORS
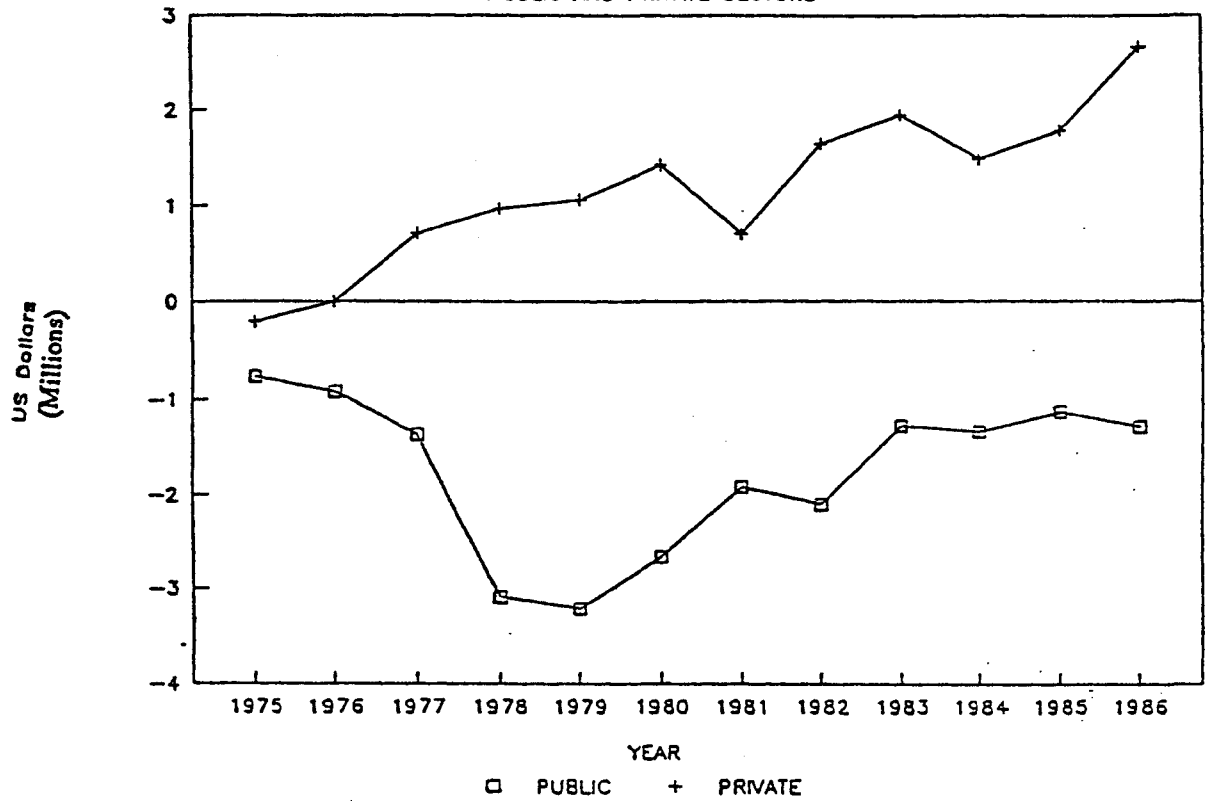
Source: IMF, International Financial Statistics

FIGURE 4

Capital Flight

Balance of Payments—Errors & Omissions
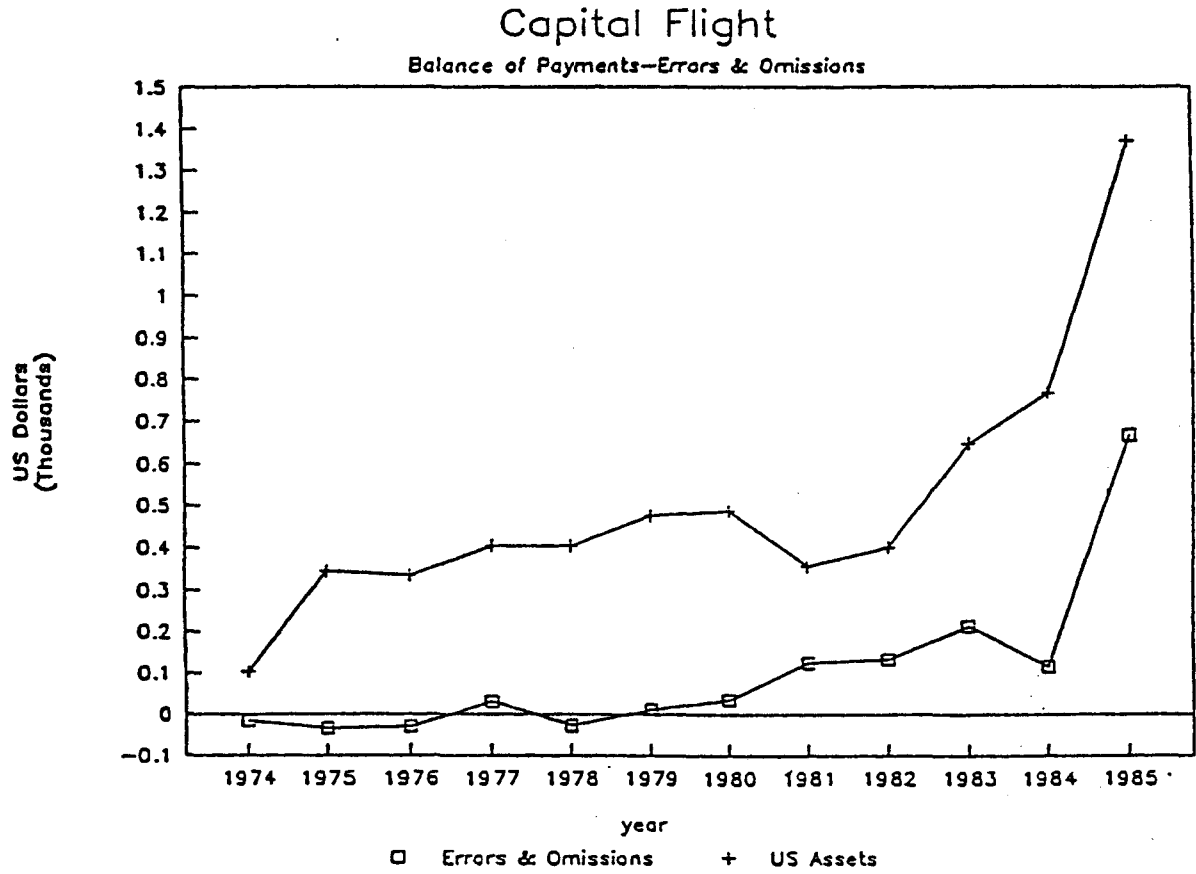
Source: IMF, International Financial Statistics

FIGURE 5

REAL GOVERNMENT AND PRIVATE INVESTMENT
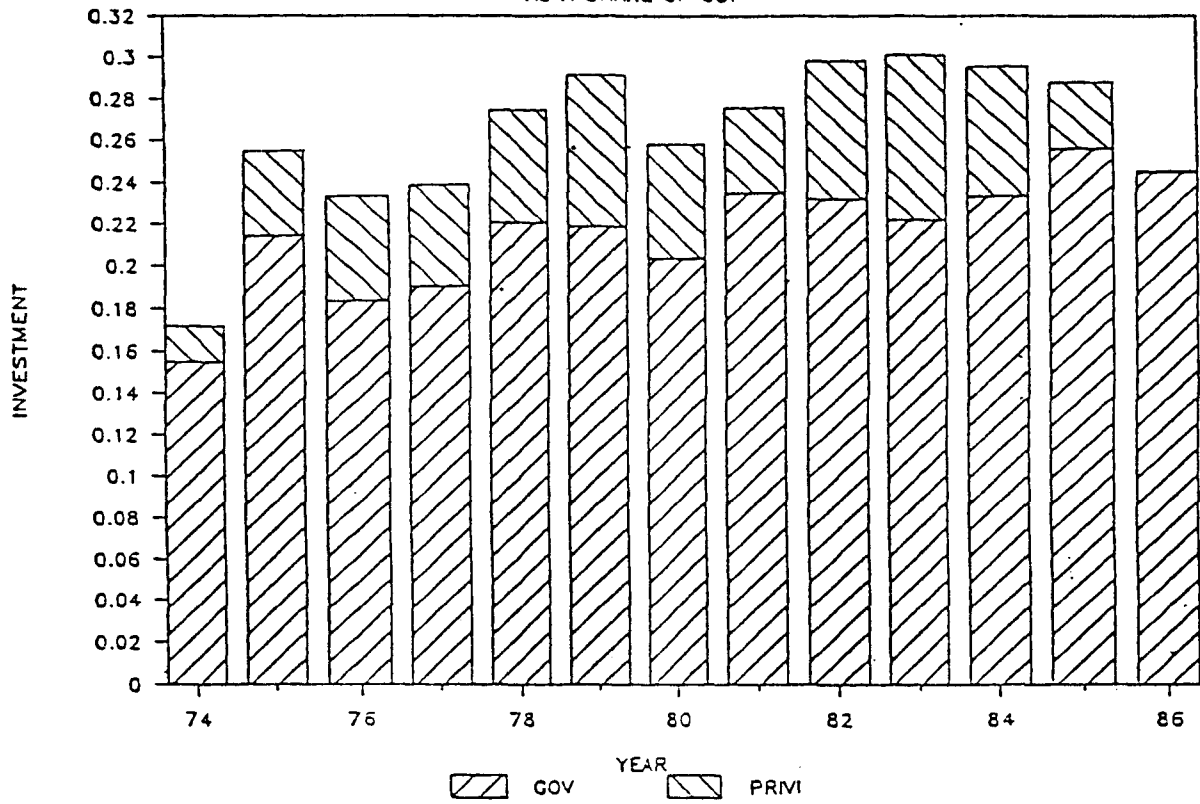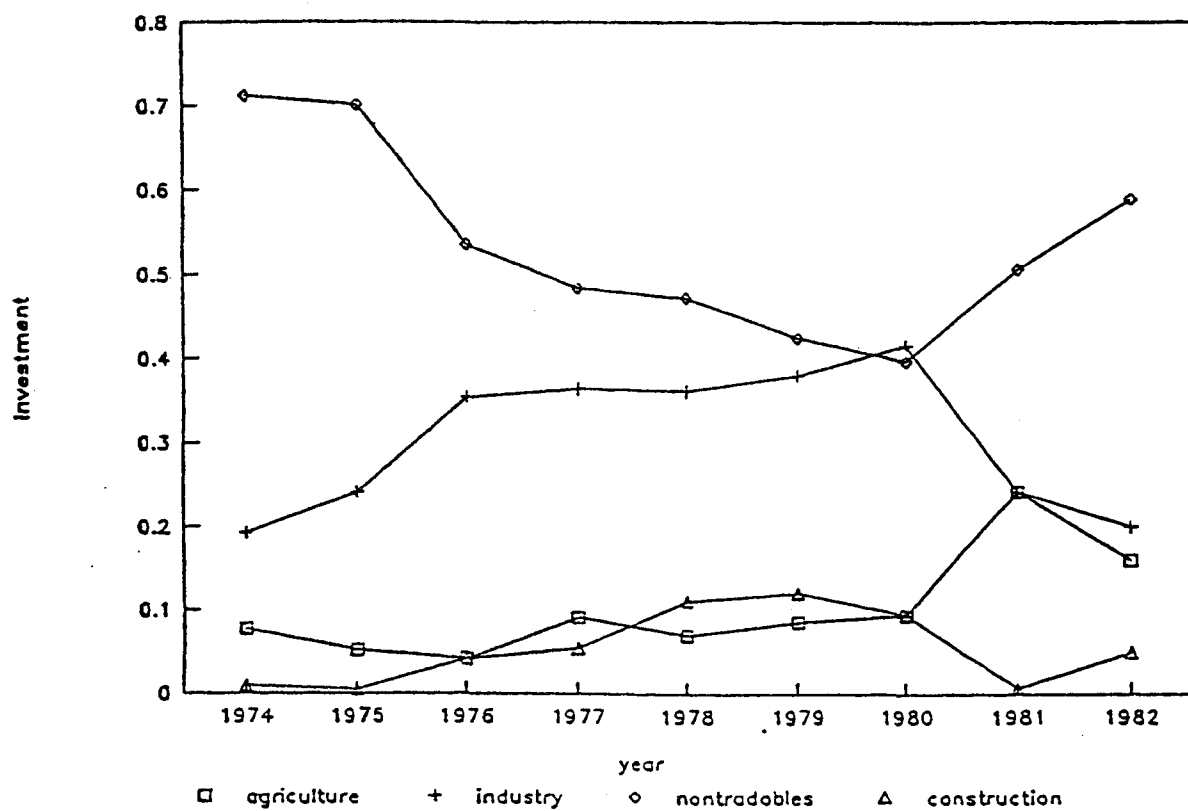
AS A SHARE OF GDP

Source: World Bank

FIGURE 6

COMPOSITION OF GOVERNMENT INVESTMENT
(REAL TERMS, SHARE OF GDP)
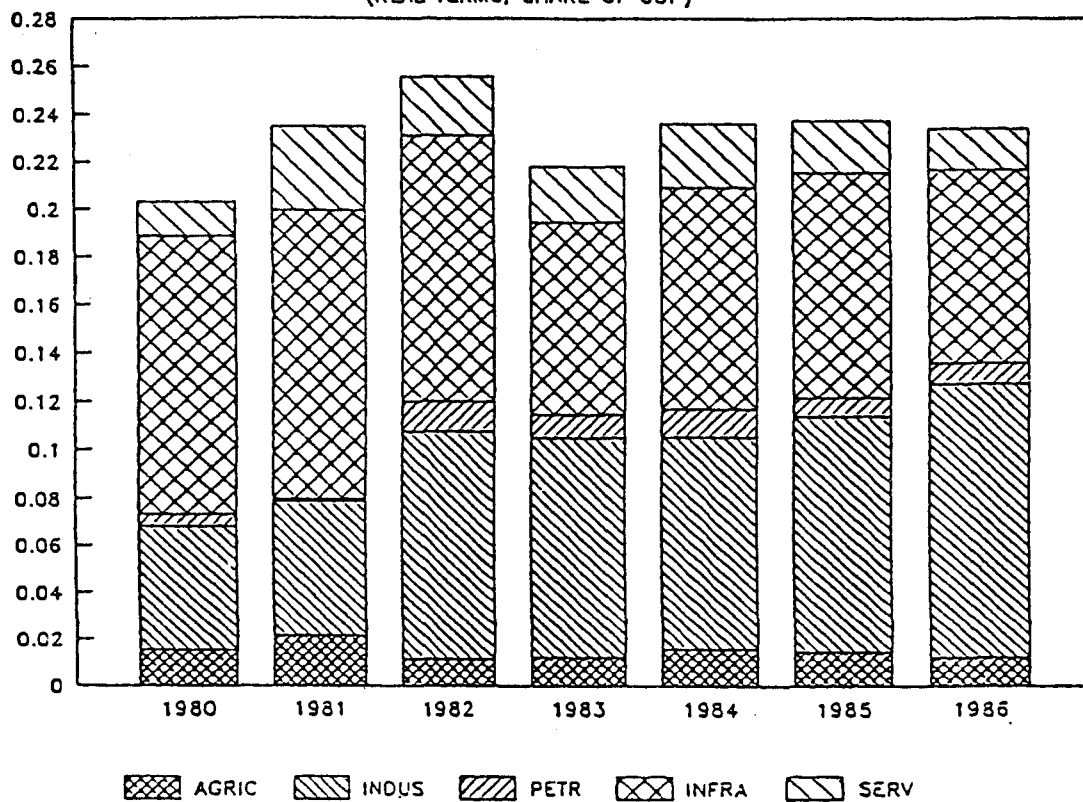
Source: World Bank

FIGURE 7

Sectoral Private Investment Shares

Source: Shura Council, 1985.

FIGURE 8

Relative Prices

Nontradables to Tradables
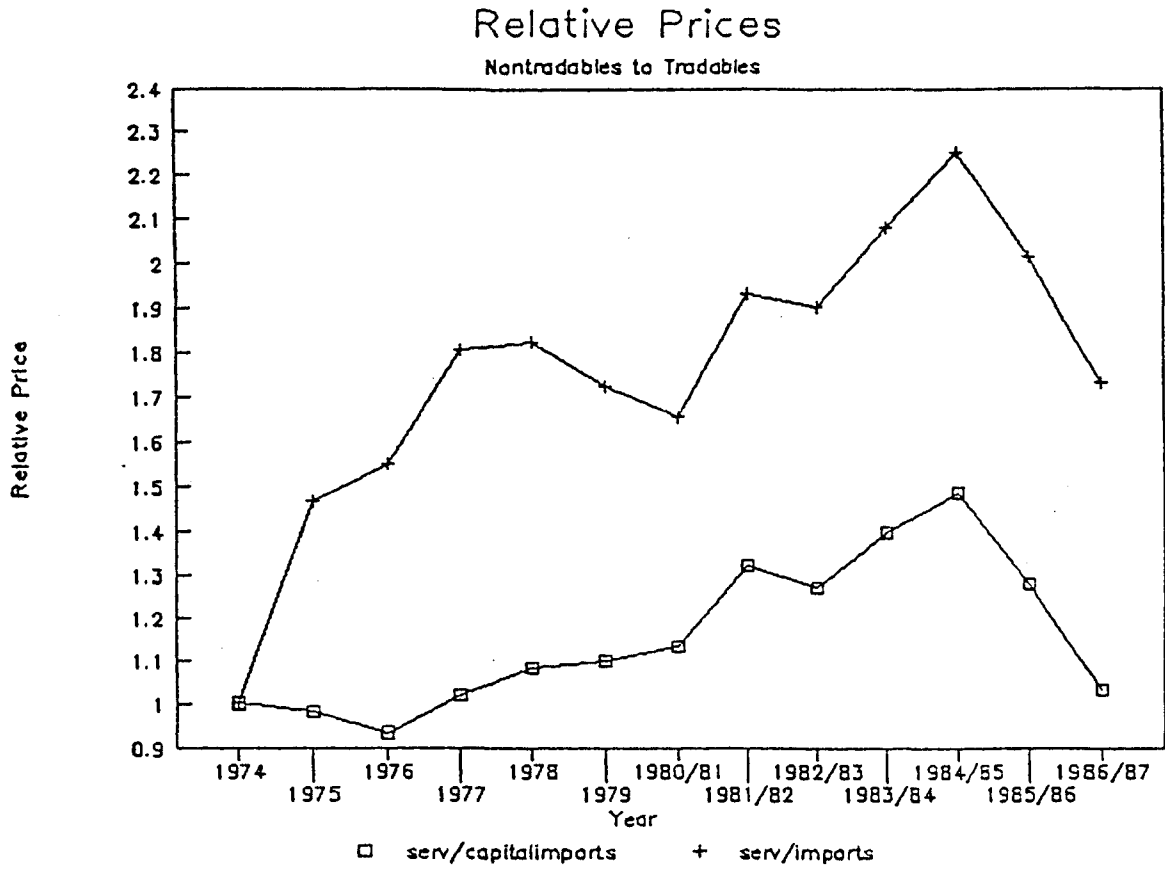
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