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Volume Title: Foreign Trade Regimes and Economic Development: Israel

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Volume Publisher: NBER

Volume ISBN: 0-87014-503-7

Volume URL: <http://www.nber.org/books/mich75-1>

Publication Date: 1975

Chapter Title: The Exchange System and the Growth of the Economy

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Chapter URL: <http://www.nber.org/chapters/c4561>

Chapter pages in book: (p. 150 - 176)

Chapter 6

The Exchange System and the Growth of the Economy

Sources of economic growth include changes in both the amounts and productivity of the factors of production. The possible effects of the exchange system on the rate of growth will be discussed here in those terms.

It may be safely assumed that the effect of the exchange system on the size of the labor force is negligible: it is unlikely that this system could have any considerable impact—at least in the circumstances of Israel—on either the rate of natural increase of population, the amount of immigration (or emigration), or the rate of participation in the labor force. The present discussion will, therefore, be confined to the possible effects of the system on capital formation. The two sources of capital accumulation are domestic savings and the inflow of capital from abroad. Capital inflow is discussed in section i, below; domestic savings, in section ii. In the discussion of the probable effect of the exchange system on productivity, the focus will be on the impact of the severe quantitative restrictions of Phase I. The role of the exchange rate in the growth process will then be analyzed and, finally, the degree of openness in the development of the economy, that is, the growth of exports versus import substitution.

i. THE SIZE OF CAPITAL: FOREIGN INVESTMENT

The greater part of capital inflow into Israel has been derived from sources which may be said to depend very little, if at all, on normal profit motiva-

tions. This is true even of a source such as Government of Israel Development (formerly Independence) bonds sold abroad and, of course, other major sources such as contributions to the United Jewish Appeal, loans and grants from the U.S. government, and payments by the German government for reparations or personal restitutions. All these may be motivated, some strongly, by factors such as the rate of immigration to the country or the country's security situation, but not by expectations of private profit. To some extent, the size of capital inflow from these sources is conceivably also dependent on the domestic economic situation in Israel—the worse it is, the larger the inflow. In that sense, it may be said that the exchange system, through its effect on general economic conditions, might have an impact on capital inflow from these sources. But this is very indirect, and the degree of causal connection of this nature must in any event be very small. The investigation here is confined, therefore, to that part of capital inflow which may be assumed to respond to profit motivations, namely, to private foreign investment.

Exchange control and quantitative restrictions may be expected to affect private foreign investment mainly in two ways working in opposite directions. First, foreign capital may be attracted to specific industries if they are granted protection and their profitability is consequently raised. If import-replacing industries that are encouraged by grants of QRs attract foreign investment more than do export industries or industries that produce solely for the domestic market, the result would be a net increase in foreign investment. A case might be made for the claim that this was the situation in Israel, at least in the earlier years of its existence.

On the other hand, exchange control is likely to lead to a large measure of bureaucratic intervention in capital inflows from abroad and in investment decisions; it may also result in a high degree of uncertainty about the course of future events concerning such issues as capital repatriation or the stability of the degree of protection granted to each industry. These factors would tend to hinder capital inflow into the country. During the first half of the 1950s, this was indeed one of the main arguments voiced in Israel against the economic policy of that time.

Table 6-1 contains data on private foreign investment in Israel. It must be pointed out that the quality of these data is probably the poorest of all among the balance-of-payments estimates, although their accuracy has improved over the years. Estimates of reinvestment of profits are the worst component of the data on capital inflow from this source and are often no more than rough guesses; estimates for the period prior to 1955 are available, but are not presented here because they are believed to be completely unreliable and misleading, grossly overestimating the correct levels. There is almost no

TABLE 6-1
Private Foreign Investment, 1955-72

Year	In Millions of Dollars (1)	As Percentage of Total Investment in Israeli Economy (2)
1955	15.8	5.4
1956	17.6	6.0
1957	19.0	5.2
1958	13.8	3.4
1959	25.4	5.7
1960	53.4	10.9
1961	59.6	9.5
1962	92.7	18.6
1963	168.7	32.3
1964	169.4	24.9
1965	114.9	18.5
1966	104.3	20.9
1967	51.6	18.2
1968	41.9	7.8
1969	56.2	7.2
1970	44.4	4.4
1971	92.5	7.0
1972	183.3	11.7

SOURCE:

Col. 1—Balance-of-payments data for 1955-60 from Bank of Israel, *Annual Report*, various years; for 1961-67, *ibid.*, 1970, Table III/26; for 1968-72, from *ibid.*, 1972, Table 14/26.

Col. 2—Data in column 1 converted to Israeli pounds at current formal rate and divided by value of net investment in current prices. Formal rate from Table 5-1; net investment from Bank of Israel, *Annual Report*, various years.

doubt that, in these years, recorded private "foreign" capital was to a large extent domestically owned repatriated capital disguised as foreign capital because the latter was accorded special privileges.¹

The argument that QRs attract foreign capital to the protected industries could not be tested directly, for lack of data about the allocation of foreign investment by industries. From Table 6-1 it may be seen, however, that in the mid-1950s (and presumably in earlier years as well), the total size of foreign

private investment was very small—about \$10 million–\$20 million annually or roughly 5 per cent of total investment in the economy. It may be concluded that even if the grant of QR protection attracted foreign investment, the amount could not have been large enough to have had a significant impact on growth.

Foreign investment started rising, and assumed substantial proportions, only in the late 1950s. As may be seen from Table 6-1, in both absolute size and as a ratio to total investment, it was many times larger in the 1960s than in the 1950s. This could conceivably be explained by the process of liberalization, in line with the argument mentioned above: the effect of the largely liberalized exchange system of the 1960s was to reduce the obstacles to private capital inflow presented by the exchange-control system of the earlier period. Unfortunately, however, various other explanations could be given for the phenomenon, and it is hard to devise a method of refuting any of them, or to assign to each of them a measure of importance.

First, in Israel, the size of private foreign investment is without any doubt correlated with the country's security position. In the early and mid-1950s Israel's position on this score was considered to be problematical; only beginning in late 1957 or early 1958 did expectations of roughly a decade of relative peace start to prevail.² Another set of factors which might have attracted foreign investment was the greater heterogeneity of the economy as time progressed, the higher income level, larger and more varied supply of skills, etc., all of which may be assumed to facilitate foreign investment. It should also be noted that worldwide total private foreign investment has been rising rapidly.

To sum up, it may be deduced from available data that (a) during the era of stringent exchange controls and QRs, private foreign investment was negligible; and (b) in later years, private capital inflow increased very substantially, an event which may be explained by several economic factors and circumstances, one of which is the policy of liberalization.

ii. THE SIZE OF CAPITAL: DOMESTIC SAVINGS

Savings of Households.

Personal savings may be affected by the exchange system primarily in two ways. One is through the possible impact of the system on interest rates, which in turn may affect household savings. However, for the reasons noted below, it may be assumed that the size and structure of interest rates in Israel were very little influenced directly by the exchange system, although the rates were undoubtedly affected to a large extent by the economy's relationship with

the outside world. The other channel of influence of the exchange system on personal savings patterns could conceivably be through the mechanism of repressed inflation. If QRs, low prices, and rationing of imports are part of a general program of price control and rationing, they may conceivably lead to some forced saving. In Israel, this could apply to the early half of the 1950s, and particularly to the years 1950–51.

Data on savings in Israel are rather poor. As a rule, savings are derived as a residual (that is, as the surplus of domestic investment over the import surplus) and incorporate all the net errors of the national accounting estimates.³ Moreover, it follows that the separate components of savings are not estimated; household savings are, therefore, not known. Some estimates of magnitudes could have been constructed on the basis of consumer surveys, but even these are not available for the earlier part of the period. In Table 6-2, therefore, only savings as a whole (estimated as a residual) are presented.

TABLE 6-2
Ratio of Savings to GNP, 1950–65

Year	Ratio (per cent)	Year	Ratio (per cent)
1950	1.5	1958	-0.9
1951	8.2	1959	2.1
1952	-1.2	1960	1.7
1953	-5.3	1961	2.5
1954	-3.9	1962	-0.8
1955	-2.2	1963	-0.4
1956	-8.1	1964	-0.2
1957	-2.4	1965	-1.4

SOURCE: Nadav Halevi and Ruth Klinov-Malul, *The Economic Development of Israel* (New York: Praeger, 1968), Table 32. For further explanation, see accompanying text and note 3.

It appears that the economy's savings rate was indeed unusually high in 1950 and particularly in 1951. In view of the crude nature of the data, not much could be inferred from it; but it does appear likely that controls and rationing, which reached their peak in 1951, did indeed contribute to the "forced" creation of considerable personal savings.

Savings of Firms.

Hypotheses about the way in which savings of firms might be affected by the exchange system are not readily apparent, aside from the possible impact

through interest rates. Furthermore, empirical verification is, in the case of Israel, not really feasible, since there are practically no comprehensive, aggregate data on business saving. From various surveys and case studies, the general impression gained is that business saving in Israel is probably nil, or at least extremely low in comparison with normal patterns elsewhere.⁴ This pattern could not be attributed directly to the exchange system. It is most probably due to the structure of the long-term capital market in Israel, in which capital imports have played a dominant role, particularly in earlier years. Capital imports received by the government (or the Jewish Agency, which for the present purpose is rather similar to the government) at first constituted the major source of revenue in the government's development budget, which in turn was the major source of financing of domestic investments. Firms availing themselves of this financing enjoyed two advantages: first, they received it at a very low interest rate compared to what it would have been in a free market. And, second, they were not required to maintain a minimum level of net worth relative to the size of investment, as a firm seeking free-market financing would have had to do. The two normal motivations of business saving—namely, the high level of interest on borrowed capital, and the dependence of such borrowing on capital accumulation in the firm itself—were thus absent in the greater part of the Israeli economy. This financing mechanism has been in use since the establishment of the state of Israel, except that in recent years it has been less dependent on capital imports: a larger part of the government's resources for financing has been raised in the local market from pension funds, other institutions, and through some voluntary purchases of government bonds by the public. However, the manner in which funds have been lent to firms has remained basically unchanged, leaving them with little motivation to save and increase their net worth.

Government Savings.

Decisions about savings are part of the general scheme of government policies, and it would not be feasible to construct an even approximately reliable model of government behavior and the role of the exchange system in this scheme. In the case of Israel, however, one specific factor may be pointed out and even quantified, albeit in a most tentative way. As already noted several times in this study, the government of Israel is a major recipient of capital imports, mainly in the forms of sales abroad of Independence and Development bonds, the reparations payments from Germany (during 1953–63), and grants and loans from foreign governments (mainly the United States). To this should be added the income of the Jewish Agency from the United Jewish Appeal, which for the present purpose is almost equivalent to a government income. A rule of behavior to which the government has normally adhered is that government receipts from abroad are allocated to the development

budget.⁵ Since capital imports are recorded in the government's accounts at the formal rate of exchange, maintaining a rate below the equilibrium level leads to a *reduction* in the size of these receipts as expressed in local currency. This would be so even if the *effective* rate for foreign trade purposes were not below its equilibrium level: maintaining a rate higher than the formal rate by means of duties on imports and subsidies to exports implies, in effect, a net result in which part of the potential revenue in the development budget (from capital imports) is diverted, as revenue from tariff duties, to the current budget.⁶

In Table 6-3, column 1 contains one possible, and arbitrary, estimate of this revenue loss. The estimate is initially based on the assumption that the *average* effective exchange rate (EER) for value added in exports is the equilibrium exchange rate. This assumption facilitates the computations involved, but there is almost no doubt that it *underestimates* the level of the equilibrium rate and thus also the results in column 1.⁷ The figures shown in this column are derived by multiplying the excess of the EER for exports over the formal rate by the amount (in foreign exchange) of the capital inflow recorded as revenue in the development budget. The results are then put in perspective by comparing them with GNP (column 2) and net domestic investment (column 3). Although the size varies markedly in different years (naturally, it is smallest immediately after a formal devaluation and then rises gradually), it is as a rule rather significant. This impression is strengthened if the downward bias just pointed out is borne in mind and if it is noted that the estimate in column 1 is based only on the budget of the government proper, and not on the accounts of the Jewish Agency, in which a similar element is contained.⁸

It thus seems that maintenance of a below-equilibrium formal exchange rate was of some consequence in reducing governmental saving. It must again be emphasized that a calculation such as that presented in Table 6-3—based as it is on arbitrary assumptions—could not yield more than a general impression. Moreover, even such a tentative conclusion must be hedged by recalling that it is based on a mechanistic assumption regarding the government's method of operation, namely, that changes in the government's receipts from abroad are fully reflected in the development budget without any offsetting, discretionary changes by the government. To what extent such a mechanistic view of the government's decision-making process in this matter is correct would not be easy to determine.⁹

Importation of Investment Goods.

It will be recalled that, throughout the period of study and with only few exceptions, investment goods have been consistently imported at the

TABLE 6-3
Effect of Exchange Rate on the Development Budget, 1951-68

Year ^a	Loss of Revenue in Development Budget (mill. IL) (1)	Column 1 as Per Cent of	
		GNP (2)	Net Domestic Investment (3)
1951	5	0.8	3.3
1952	7	0.7	2.6
1953	36	2.6	12.2
1954	70	3.9	19.0
1955	3	0.1	0.5
1956	32	1.3	6.2
1957	59	2.0	8.9
1958	85	2.5	11.8
1959	104	2.6	13.1
1960	111	2.5	13.0
1961	156	2.9	13.8
1962	0	0	0
1963	8	0.1	0.5
1964	13	0.1	0.6
1965	18	0.2	0.9
1966	51	0.4	3.4
1967	87	0.7	10.3
1968	133	1.0	7.2

SOURCE:

Col. 1—Derived from the government's budgetary accounts, by the method explained in the accompanying text.

Cols. 2 and 3—Underlying data on GNP and domestic investment are in current market prices. GNP is from Table A-2; net investment, from Bank of Israel, *Annual Report*, various years.

a. Budgetary data, on which column 1 is based, are originally for fiscal years (April-March) and are applied here arbitrarily to calendar years.

lowest exchange rates, and most investment goods were usually free of tariff duties. Likewise, the process of liberalization from QRs was much faster and more comprehensive for machinery and equipment than for most other goods. The main argument submitted in Israel for this policy has been that it encourages investment and thus increases the stock of capital and accelerates the process of economic growth.

There is no doubt that cheap imports of investment goods raise the yield of investment projects, and thus increase the *demand* for investment. For this actually to lead to an increase of investment and capital, however, it must also induce an increase either of domestic saving or of capital inflow from abroad.

One possibility of such an effect occurring is that the increased demand will lead to a higher income and, with a positive (marginal) propensity to save, to higher savings. This would be the case, of course, where, without the added demand, the economy is below the full-employment equilibrium level. In Israel, however, full employment, usually with some inflation, has been the normal situation. And it is hard to believe, although the point cannot be easily verified, that without the extra push given to investment by the exchange system, aggregate demand would be low enough to lead to unemployment. Given relatively full employment, it may thus be assumed that the policy under consideration could lead to increased savings only at the expense of consumption.

It might be argued that the increased yield of investment projects leads to higher interest rates in the market, and that this may, in turn, lead to a reduction of consumption by households. The last link in such a reasoning is conceptually doubtful; but even if it were not, this argument would not be relevant for the case of Israel. Interest rates in Israel almost throughout its history have been little affected by market forces; and there has been almost no connection between long-term rates on business borrowing and most of the rates significant to households—either as borrowers or as lenders. It might be more plausible to expect business firms to increase their savings in response to the higher profitability of investment projects. It will be recalled, however, that this component of saving in Israel is believed to have been nil most of the time, although data to substantiate this impression are scarce. This by itself is not a proof that the effect of the profitability factor on business saving was also nil, since conceivably these savings might otherwise have even been negative. And without any feasible way of testing this hypothesis, I must rest the argument at that.

The low rate of exchange for imports of investment goods does clearly increase only one element of saving, namely, saving by the government. It works to offset part of the loss, just discussed, to the development budget because the importation of investment goods at low prices tends to increase the real value of allocations (grants or loans) from the development budget. Put differently: had tariff duties been imposed on imports of investment goods, part of the expenditure on these goods would have been used not to buy real assets but to pay the duties; and this part would have augmented the government's current budget, that is, public consumption rather than investment. Thus, this absence of duties has to be offset against the aforementioned loss in the development budget; that is, from estimates such as those in col-

umn 1 of Table 6-3, there must be subtracted the (assumed) difference between the equilibrium and formal rates of exchange multiplied by the (foreign-exchange) value of imports of investment goods.

Finally, it is necessary to ask whether the increased profitability of investment projects may not lead to the encouragement of private foreign investment, and thus increase the productive capacity of the economy. In principle, foreign capital inflow should respond favorably to increased profitability. But it should be pointed out that another important attribute of the exchange system was that private foreign investors were usually granted only the formal rate of exchange.¹⁰ Had a higher (say, the equilibrium) exchange rate been fixed for both capital transfers and imports of investment goods (for the projects contemplated by foreign investors), the net result should have been an *increase*, rather than a decline, in the profitability of projects undertaken by foreign investors.¹¹

iii. PRODUCTIVITY OF THE ECONOMY: EFFECT OF QUANTITATIVE RESTRICTIONS

There are several reasons for expecting the productivity of an economy to be low in a period of controls in general and of quantitative restrictions of imports in particular. The reasons are too well known to be discussed here at any length and will be surveyed only briefly.

First, of course, is the allocative inefficiency involved in a process in which prices and profits are largely disregarded as indicators for the use of resources and the channeling of investment, and are replaced by administrative decisions. This inefficiency may be assumed to be particularly great in a situation such as that of Israel in the early 1950s, where large-scale controls were imposed within a short period, without being preceded by a long learning period during which the administrative machinery might have gradually developed decision-making processes and rules to help reduce the misallocation involved in the arbitrary nature of the system.

The allocative inefficiency alluded to here is primarily a longer-term phenomenon that is concerned with the patterns of investment in the economy. We may, however, note also other factors, resulting from the frictions of a bureaucratic mechanism, which contribute more to shorter-term losses of productivity (although they, too, may eventually have long-term consequences).

One important source of such inefficiency is an inappropriate level of inventories. Since inventories of raw materials and other purchased inputs are not determined under a QR system solely by firms themselves, the latter often find themselves too short on inventories. In a developed (currently), or semi-

developed, economy such as Israel's, production in many industries is dependent on the availability of a large variety of purchased items, the exhaustion of any one of which may easily frustrate or even halt altogether the process of production. On the other hand, and for precisely the same reason, firms may be expected in such situations to try to maintain unusually large inventories. Since they cannot be certain, under a QR system, about the availability of current supplies of imported inputs, they tend to hold a higher stock of materials than they would under a price-regulated economy; and presumably some firms, not necessarily always the same ones, succeed in securing the higher level of inventories they desire. Thus, there are two opposite ways by which QRs can lead to losses of production due to the holding of nonoptimal levels of inventories: irregularities in production created by insufficient inventories; and waste of capital (as well as the cost of physical maintenance and protection of the materials) involved in keeping excessively high inventories.

Quite similar phenomena may be expected to be found in the case of fixed capital assets. On the one hand, plants stand idle, their construction uncompleted, because some of the necessary pieces of machinery and equipment or construction materials could not be secured, at least not on time. On the other hand, knowing the difficulties which must be met in trying to buy the required machinery, firms try to anticipate their needs far into the future, and to order machinery when the need for it is neither immediate nor quite certain. They may also buy machinery and equipment which are at least partly inadequate, either because they are so directed by the controlling authority or because these are available at a certain moment, and the firm does not see a reasonable chance of securing better equipment in the future. Thus, for two opposite reasons—inaccessibility of some capital assets and anticipatory stockpiling of others—part of the capital may lie idle.

For all these reasons, it may be expected that inefficiency and waste would be widespread when QRs are extensive; and that a shift to price determination of imports would lead, at the time of the shift, to a particularly large increase in productivity because this waste would be reduced. This effect on the rate of increase of productivity should diminish as the shift to price regulation is completed.

Empirical verification of this hypothesis is not easy. Accounts of these forms of waste in individual firms, or even whole industries, were frequent in Israeli newspaper reporting of the economic scene during the early 1950s. The feeding of chickens with bread (which was always kept cheap and in abundant supply) or the presence of rusted machinery lying in the backyards of plants became almost popular symbols of that period.¹² These, however, suggest the flavor of the time but give little indication of the extent of waste and inefficiency.

TABLE 6-4
Productivity of Resources, 1951-65
 (annual percentage rate of increase)

Year	Total Economy	Total Excluding Housing and Public Sector	Manufacturing	Agriculture	Transportation
1951	7.9	5.5	4.2	-11.5	22.8
1952	-2.3	-3.4	-20.6	11.8	-1.0
1953	-3.4	-3.6	-1.4	—	-8.5
1954	12.2	15.8	0.8	15.6	28.9
1955	6.8	10.0	6.6	-7.4	-1.0
1956	2.4	3.6	2.2	15.7	7.6
1957	1.8	2.8	-1.1	2.7	6.6
1958	2.0	3.4	6.7	12.3	2.0
1959	6.2	8.0	7.0	12.0	9.4
1960	2.8	3.6	3.8	1.0	7.0
1961	2.8	4.0	4.8	3.1	0.6
1962	3.5	4.8	-0.8	4.7	6.6
1963	3.4	4.5	5.9	11.0	2.9
1964	3.7	4.6	6.6	7.4	2.7
1965	0.6	1.2	6.2	-4.1	1.0
Annual averages					
1951-52	2.8	1.1	-8.2	0.2	10.9
1953-55	5.2	7.4	2.0	2.7	6.5
1956-65	2.9	4.1	4.1	6.6	4.6
1951-65	3.4	4.3	2.1	5.0	5.8

SOURCE: Calculated from A. L. Gaathon, *Economic Productivity in Israel* (New York: Praeger, 1971), Table A-12.

Table 6-4 is an attempt not to derive any precise estimate of productivity, but to test the hypothesis described above. The measure presented in the table was constructed by A. L. Gaathon, along Kendrick lines, to estimate productivity of total resources of the economy.¹³ The period from 1951 to 1965 (the earliest and latest years for which data about change in productivity are available) is divided into three subperiods: 1951-52—the peak time of the QR system; 1953-55—the main years of transition to price regulation; and 1956-65—the years following.

Among the series in Table 6-4, the most pertinent to the purpose at

hand are those given in columns 2 and 3. These data, relating to a selected part of the economy, are more appropriate than those in column 1, which cover the economy as a whole, since the former exclude residential housing (which cannot be neatly included in a meaningful estimate of productivity) and the public sector, in which productivity estimates are largely arbitrary. Among the major sectors of the economy, the factors affecting productivity and efficient allocation of resources are more likely to have an important impact in manufacturing (column 3) than in agriculture (column 4) or transportation (column 5). Agriculture during the earlier years was heavily affected by weather conditions; up to 1958, years of good and poor harvest alternated; and as it happens, the three-year period 1953-55 contains two years of poor harvest, greatly reducing the estimated average rise of productivity in these years. In transportation, on the other hand, estimates for the earlier years may be technically correct, but devoid of much meaning. For instance, the very impressive increase (23 per cent!) in productivity in this sector from 1950 to 1951 is obtained without taking into account the long lines and waste of time of consumers, with which much of this rise of productivity was involved.¹⁴

From most of the data in Table 6-4, particularly in columns 2 and 3, the impression gained is indeed in conformity with the postulated effect of QRs; namely, the rate of increase of productivity rose markedly from 1951-52, the peak period of QRs, to 1953-55, the period of rapid transition to the price mechanism as a means of regulating imports as well as other activities in the economy. For the economy as a whole (excluding housing and the public sector), the rate of increase of productivity was not as fast in the decade from 1956 to 1965 as in the transitional years, 1953-55—though this is not true for the manufacturing sector; and it was faster than in the period of controls, 1951-52. It should be recalled, moreover, as was emphasized in Chapter 2, that in the transitional period, 1953-55, the level of imports evidenced only a slight rise; in fact, there was a rather substantial decline in the ratio of imports to output. The rapid increase in productivity in those years thus *cannot* be explained by the removal of bottlenecks through an increased supply of imports.

It thus seems that these data conform to a-priori expectations about changes in productivity as the nature of the exchange system changed. It is tempting to go further and state that the causal connection between the two is thus verified or substantiated. This, however, would be a rather dubious inference, since the Israeli economy during its earlier years underwent fast and radical changes in size and structure. It should be recalled that the huge wave of immigration had subsided by late 1951. It is possible that increases in productivity in the first few years following this date occurred because immigrants, who made up a large fraction of the population, may have been placed

in jobs they were not suited to during the period of mass immigration, and later sought and found more appropriate occupations. In this, the newcomers were aided by their acquisition of the basic elements of the language and by their growing acquaintance with the organizational principles of the country, its institutions, etc., which at first they did not grasp at all. For the same reasons, those who did not relocate but stayed in the same plant or occupation were likely to increase their efficiency very rapidly in the first few years after migration. Factors other than adjustment of the labor force were also likely to work in the same direction. Thus, it is most probable that those who entered Israel during the period of the large wave of immigration found an economy with a very inadequate infrastructure, but this was rapidly corrected in the first few years after the wave subsided, thus removing important bottlenecks and facilitating the efficient use of resources. It may also be argued that the reason the economy could produce more in the period 1953–55 with fewer imports, may have been that the pattern of investment in earlier years was adjusted to the scarcity of imports.

For all these reasons, productivity should have been expected to rise rapidly in the years 1953–55 even without a change in the QR regime. Therefore, it cannot be claimed that the whole of the rapid rise which actually took place in those years should be attributed to the change in the exchange system. Unfortunately, there is no feasible way of distinguishing the various factors which contributed to the increased productivity of that time. Thus, it may only be stated that the hypothesis that a shift from QRs to price regulation of the economy leads to faster growth through increased productivity is at least not contradicted by the facts of the Israeli experience. More generally, it may perhaps be stated that the rapid growth of productivity during the transitional period was due to a “learning-by-doing” process; and that as part of this process the shift from QRs to price regulation represents a “collective” learning, reflected in the changing policy patterns.

iv. THE EXCHANGE RATE IN THE GROWTH PROCESS

The effects of growth on the exchange rate may be expected to be particularly strong in an economy with Israel's specific attributes—limited size, meager resources and, above all, the role played in it by capital imports and by the import surplus. We shall be concerned here not with the *structure* of the exchange-rate system, that is, with its discriminatory nature with respect to different industries and products, but rather with the over-all (i.e., average) level of the exchange rates for exports and imports.

There is some ground for expecting that economic expansion relative to the world as a whole leads to, and is conditioned upon, an increase in the

price of foreign exchange relative to domestic prices. If growth is "neutral" (neither export nor import biased), the terms of trade of a relatively expanding economy are expected to deteriorate. If, as is often assumed, with considerable justification, foreign demand for a country's exports is less elastic than foreign supply of its imports, the terms-of-trade effect of a devaluation would be expected to be negative (that is, the price of exports would fall relative to the price of imports), and the "required" worsening of the terms of trade could be achieved through a devaluation.

In Israel's case, probably due to the small size of its economy, no deterioration of the terms of trade took place, despite the rapid economic expansion (as mentioned in Chapter 1) which certainly surpassed that of the world as a whole and that of Israel's major trading partners. This result is apparent from the aggregate data on export and import prices presented in Table 6-5. These, it should be noted, are far from being perfect estimates; they are particularly deficient for the early and mid-1950s. Furthermore, they refer only to trade in goods and hence exclude services. Yet the general impression gained is probably reliable. It appears that the terms of trade of the country have been fairly stable, with fluctuations concentrated mainly in the early 1950s—the time of the Korean crisis and the years immediately following. There seems to be hardly any discernible trend, certainly not from 1954 on: the terms-of-trade index in the late 1960s and early 1970s is about at the level of the mid-1950s. Even the prices of exports in which Israel plays an important role in the world market—mainly citrus fruits and polished diamonds—appear not to have fallen in relation to the country's import prices (though this detail is not shown in Table 6-5), probably because the income elasticities of demand for these exports are rather high.

If both export and import prices rise to the same extent, the terms of trade are not affected, but the real value of any given size of a unilateral capital inflow is thereby reduced. Consequently, the country suffers a real loss and a deterioration of the over-all terms of its international transactions.¹⁵ Since import prices have actually increased over the period surveyed, this deterioration has indeed occurred. But, it should be noted, this deterioration is not in any way causally related to the process of growth. Also, the loss of the purchasing power of capital imports due to the increase in prices, although of some substance, is not very significant in relation to the main role played by capital imports for the problem at hand. This role deserves a few additional words of explanation.

Israel started out with an inflow of capital that was very high in proportion to the size of its economy. Suppose that the economy's growth, from that point on, is "neutral" in both production and consumption; that, with unchanged prices, the proportions of saving and of domestic investment do not change (i.e., are independent of the scale of the economy); and that the ex-

TABLE 6-5
Israel's Terms of Trade, 1950-71
(indexes of prices in dollars, 1950 = 100)

Year	Export Prices (1)	Import Prices (2)	Terms of Trade (ratio: col. 1 to col. 2) (3)
1950	100	100	100%
1951	107	120	89
1952	105	121	86
1953	99	108	92
1954	106	101	104
1955	111	109	102
1956	117	115	101
1957	121	124	98
1958	119	110	108
1959	107	107	101
1960	104	107	97
1961	105	103	102
1962	104	101	103
1963	109	102	106
1964	109	105	104
1965	113	107	106
1966	120	109	111
1967	118	109	108
1968	117	107	110
1969	123	112	110
1970	121	113	107
1971	125	115	108

NOTE: Discrepancies between figures in column 3 and ratios calculated directly from columns 1 and 2 are due to rounding.

SOURCE: 1950-55—Michael Michaely, *Foreign Trade and Capital Imports in Israel* (Tel Aviv: Am Oved, 1963; in Hebrew), Table 38.

1956-71—*Statistical Abstract of Israel*, various years.

ternal position of the country is initially in equilibrium. The economy will then remain in external equilibrium, with given relative prices, only if autonomous capital inflow grows at the same rate as the rate of expansion of the economy. If capital imports fail to rise to this extent, the economy's growth

pattern must move toward either an increase of exports (beyond the rate of growth of the economy) or import substitution, or a combination of both, so that the excess of the economy's demand for imports over its supply of exports will fail to expand at the same rate as the economy's growth. A policy which leads to a growth process biased in this way must be based on an increase in the relative price of foreign exchange. This may, of course, be done in a variety of ways: through a formal change of the rate, through manipulation of nonformal components, through measures such as QRs, governmental subsidies to investment in tradable industries, etc.

As is shown in Table 6-6, autonomous capital imports have indeed failed to expand in Israel as much as the economy's real product.¹⁶ With some substantial year-to-year fluctuations, this trend of relative decline seems to be quite obvious.¹⁷ For the external position of the country to remain in equi-

TABLE 6-6
National Product and Autonomous Capital Inflow, 1950-66

Year	GNP (1950 = 100) (1)	Autonomous Capital Inflow (1950 = 100) (2)	Col. 2 as Per Cent of Col. 1 (3)
1950	100	100	100
1951	130	139	107
1952	138	156	113
1953	136	139	102
1954	163	206	126
1955	185	168	91
1956	202	175	87
1957	220	161	73
1958	235	195	83
1959	265	199	75
1960	283	239	84
1961	312	282	90
1962	343	316	92
1963	382	299	78
1964	419	334	80
1965	457	296	65
1966	462	257	56

SOURCE: App. A, Tables A-2 and A-14.

Columns 1 and 2 are in constant prices; column 2 is derived by deflating current-dollar flows by the index of import prices in Table 6-5, column 2.

librium—or, alternatively, to stay at the same level of disequilibrium throughout the period—the relative price of the foreign exchange should have been rising throughout the period.

As may be seen from Table 6-7, which includes some data from the last chapter, the relative level of effective exchange rates did indeed go up very considerably over the period covered: by 1971 the level for both exports and imports was roughly two and one-half times that of 1950. It should be noted, however, that this trend of increasing PPP-adjusted EERs was not uniform throughout the period; on the contrary, two fairly distinct subperiods may be

TABLE 6-7
Effective Exchange Rates Adjusted for Purchasing Power Parity, 1950-71
(1950 = 100)

Year	PPP-adj. Export Rate (1)	PPP-adj. Import Rate (2)	Weighted Average of Cols. 1 and 2 (3)
1950	100	100	100
1951	103	95	96
1952	136	130	131
1953	159	139	142
1954	202	201	201
1955	212	247	241
1956	227	240	237
1957	243	246	245
1958	235	223	226
1959	231	223	225
1960	235	224	227
1961	220	206	210
1962	226	258	249
1963	215	245	235
1964	208	234	227
1965	196	224	215
1966	198	215	209
1967	210	215	213
1968	230	234	233
1969	235	242	240
1970	240	234	236
1971	244	244	244

SOURCE: Export and import rates are from Table 5-6. Weights for last column are annual data for value added of exports and imports for domestic use.

distinguished. The rates went up until the mid-1950s—1955 in the case of imports and 1957 in the case of exports—and from then on remained at a rather constant level, despite some fluctuations, which sometimes persisted for periods of several years each. By and large, this division into subperiods is consistent with the movement of the data in Table 6-6 on autonomous capital inflow.¹⁸ It may be seen there that the decline in the ratio of capital inflow to GNP went on from the beginning of the period until 1957.¹⁹ From then on until 1964, the ratio shows a few large fluctuations, but no downward trend; and only in 1965 and 1966 does the downward movement reappear.

A change in the price of foreign exchange will, of course, achieve the purpose of adjusting the economy to changes in the relative size of autonomous capital inflows only if it has a corresponding effect on the relative size of the import surplus. As will be recalled from the preceding chapter, and as can be seen in column 1, Table 6-8, below, this indeed has been the case: the relative size of the import surplus declined substantially during the 1950s and, with sometimes considerable year-to-year fluctuations, remained at a constant level in later years. On the basis of analysis in the preceding chapter, there is reason to believe that these trends were primarily due to changes in the relative level of the rate of foreign exchange.

v. EXPORT GROWTH AND IMPORT SUBSTITUTION

At least as interesting as the performance of the import surplus is the development of its separate components—imports and exports. Specifically, it is useful to determine how much of the reduction of the import surplus was achieved by reducing imports and how much by increasing exports. For a country in Israel's position, that is, starting out its economic expansion with a very large import surplus, such an investigation would provide a means of determining whether the process of growth was biased toward or against foreign trade. A related question, of course, is whether any bias that is found could be attributed to the operation of the foreign-exchange system.

Table 6-8 contains estimates of value added in exports (column 3) and imports for domestic use (column 5), obtained by assuming that the amount of each will be in the same ratio to GNP in the current year as it actually was in the preceding year. The figures in columns 2 and 4 are the actually observed values of these aggregates. The excess of actual exports over their "expected" value is a contribution to the reduction of the ratio of the import surplus to GNP; and the opposite is, of course, true of imports. These contributions are presented in columns 6 and 7 in absolute amounts and in columns 8 and 9 as ratios to GNP.²⁰

It appears from these figures that the period can be divided into two

subperiods: the 1950s up to and including 1959, and the 1960s and early 1970s up to and including 1971. In the 1950s, most of the contribution to the relative reduction of the import surplus came from the import side; the contribution due to the rise of exports was also positive, but much less significant in size. The dominance of imports in their impact on the development of the import surplus was, however, simply due to their overwhelming size in comparison with exports. In relation to their own size, as is shown by the data in columns 10 and 11, the contributions of exports and imports to the decline of the import surplus were quite similar—even slightly higher in exports than in imports. In this period, then, both exports and imports were involved in the process of reducing the import surplus.

During the 1960s, the relative increase in exports continued as before. The contribution of exports to the relative reduction of the import surplus was, on average, in the same ratio to the national product as it was in the 1950s. However, since the relative size of exports was gradually increasing, this meant a lower ratio of exports themselves, as may be seen in column 10. Imports, on the other hand, exhibited a relative *rise*; that is, they contributed to an increase of the import surplus rather than to its reduction. This trend was not as substantial as the opposite trend of the 1950s, but its existence cannot be doubted: from 1959 to 1971, imports rose over the increase which would have maintained the ratio of imports to GNP constant from year to year by about 6 per cent of GNP; or, put in a different way, the relative annual increase of imports over this period (average of the 1960–71 figures in column 11) was about 2 per cent of imports.

Looking back at columns 1 and 2 of Table 6-7, it seems that the difference in import trends between the 1950s and the 1960s could be explained by the difference in movement of the EERs. The remarkably large increase in the import rate until 1955 was sufficient to overcome the effect of relaxing the QRs and still have a substantial negative impact on the size of imports. It could be assumed, moreover, that the effect of such a substantial price rise on imports is not quickly consummated, but is spread gradually over several years. Thus, the relative decline of imports during the 1950s could well have been due to the increase in import exchange rates in the first half of the decade. In the 1960s, on the other hand, import rates remained fairly constant, with a few substantial year-to-year fluctuations. If relative prices of imports were the only determinant of imports, the size of imports (in relation to GNP) should have been about constant over this period. The slight increase in the ratio of imports to GNP over this period could conceivably be explained by the liberalization of the 1960s; but it could also be due to changes in taste or to above-unity income elasticity of demand for imports. As yet, not enough research on this issue is available to substantiate any conclusion.²¹

The performance of exports during the 1950s was also in line with the

1960	13.8	320	267	788	761	+53	-27	+1.6	-1.8	+19.9	-3.5
1961	15.4	359	355	937	872	+4	-65	+0.1	-1.7	+1.1	-7.5
1962	13.4	477	405	1,043	1,058	+72	+15	+1.7	+0.4	+17.8	+1.4
1963	11.2	563	533	1,089	1,165	+30	+76	+0.6	+1.6	+5.6	+6.5
1964	16.1	560	619	1,396	1,202	-59	-194	-1.1	-3.7	-9.5	-16.1
1965	13.7	646	599	1,408	1,491	+47	+83	+0.8	+1.5	+7.8	+5.6
1966	11.5	708	659	1,360	1,437	+49	+77	+0.9	+1.4	+7.4	+5.4
1967	8.6	772	717	1,266	1,377	+55	+111	+1.0	+1.9	+7.7	+8.1
1968	11.4	936	876	1,682	1,439	+60	-243	+0.9	-3.7	+6.8	-16.9
1969	14.9	949	1,046	2,038	1,881	-97	-157	-1.3	-2.1	-9.3	-8.3
1970	15.6	1,146	1,017	2,368	2,184	+129	-184	+1.6	-2.3	+12.7	-8.4
1971	9.4	1,615	1,247	2,415	2,575	+368	+160	+4.3	+1.9	+29.5	+6.2
1972	9.6	1,751	1,777	2,655	2,657	-26	+2	-0.3	+0.02	-1.5	+0.1

Note: For details of construction and sources, see accompanying text.

Source: Tables A-10 and A-13.

a. Excludes imports of military goods.

b. Obtained by subtracting the import component in exports from both exports and imports.

c. Positive sign denotes contribution to relative improvement of the surplus; negative sign, deterioration.

d. Assuming it was in the same ratio to GNP as in the previous year.

trend that would be expected in view of the movement of PLD-EERs for exports: an increase of exports accompanying a sharp rise of export rates. As with imports, the continued rise of exports in the late 1950s could possibly be explained by the rise of export rates a few years earlier: the latter rose sharply until 1954, and then mildly until 1957. The persistent rise of exports during the 1960s, however, can by no means be explained by price changes: just as with imports, the level of export rates was not rising during this period. It might be argued that the continued rise of exports in the 1960s was still a lagged effect of the rate increases of the 1950s. But this is most doubtful, on two grounds. First, it is unlikely that events of this kind would still be influential three to as long as fifteen (!) years later. And second, if the effect of the rate had persisted over this long period, it should have been reflected in imports as well as in exports, since there is no apparent reason for it to do otherwise.

One possible explanation of the development of exports during the 1960s may be the use of various measures of export encouragement which are not taken account of in the estimate of PLD-EERs for exports, either because they could not be quantified or because they are not constituents of the rate (since they do not depend on the size of exports). Some of these are devices used to encourage exports of goods produced in existing facilities. But mainly, these are measures which affect the allocation of new investment in favor of industries with high export potential.

The share of industries of varying export intensities in total manufacturing investment is shown in Table 6-9.²² It appears that the share of relatively export-intensive industries rose during the period from 1958 to 1969. An appropriate point of separation between "low-export" and "high-export" industries seems to be an export proportion of 10 per cent. Thus, the first ten industries listed are classified as low export, and the remaining eight, as high export.²³ In this classification, the share of the high-export industries in investment seems to have risen substantially during the years presented. But the trend of development is not uniform over the period and the selection of another dividing line for classification might have shown a weaker trend.²⁴ Such a trend may, of course, be due to measures or factors other than the government's investment policies, but it is difficult to find alternative explanations.

In summary, it appears that a distinction should be made between *levels* of protection of exports and import substitutes and *movements* of these levels. There seems to be no doubt that, even in the late 1960s and early 1970s, the level of protection afforded by the exchange system was considerably higher for import substitutes than for exports (see Chapter 4, section 3). In this sense, the government's policy, as expressed in the exchange system, has been biased toward import substitution. When policy changes over the years are considered, on the other hand, it appears that exports and import

TABLE 6-9
Share of Industries in Investment, 1958-69
(per cent)

Industry	Share of Exports in Industry's Sales, 1965	Share of Industry in New Investment (two-year averages)					
		1958-59	1960-61	1962-63	1964-65	1966-67	1968-69
1. Electrical and electronic equipment	1.8	2.6	1.6	2.2	2.7	6.0	4.9
2. Transport equipment	1.9	5.7	7.5	5.1	6.6	8.9	8.7
3. Metal products	2.6	4.8	4.1	3.9	5.2	4.7	7.8
4. Nonmetallic mineral products	4.1	4.1	7.6	7.5	8.5	7.9	2.9
5. Printing and publishing	4.3	2.8	1.8	2.0	2.6	1.3	2.3
6. Leather and leather products	4.9	0.5	0.3	0.3	0.6	0.7	0.5
7. Paper, cardboard, and their products	5.5	10.7	2.7	1.6	1.8	3.9	2.6
8. Basic metals	5.7	11.5	7.9	2.6	2.6	1.3	2.4
9. Food products	7.4	16.5	13.6	14.4	16.5	18.5	13.8
10. Wood and wood products	8.2	2.6	4.1	3.4	3.3	2.5	2.8
Total, lines 1-10		61.8	51.2	43.0	50.4	55.7	48.7
11. Chemicals	12.2	10.8	7.3	7.1	9.6	7.7	6.2
12. Machinery	12.7	2.1	2.2	2.1	2.7	3.8	6.3
13. Textiles	14.5	13.0	19.7	16.1	11.1	11.8	17.6
14. Rubber and plastic products	15.2	4.6	3.8	2.9	3.9	4.2	5.8
15. Clothing	16.4	0.9	0.7	0.9	0.7	1.0	1.7
16. Miscellaneous manufacturing	33.7	0.8	0.8	1.1	0.7	0.8	1.2
17. Mining and quarrying	49.1	5.8	14.0	26.4	20.7	14.5	12.2
18. Polished diamonds	99.0	0.2	0.3	0.4	0.2	0.5	0.3
Total, lines 11-18		38.2	48.8	57.0	49.6	44.3	51.3
Total, all industries		100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Yoseph Tawil, "Effective Exchange Rates and Investment in Manufacturing Exports" (M.A. diss., Hebrew University, 1973; in Hebrew), calculated from data in App. 1B.

substitutes were similarly encouraged during the 1950s. In the 1960s, the direction of policy change must have been biased toward exports: the growth process was biased toward trade.²⁵ This is probably explained, at least in part, by nonprice elements in the trade and exchange system. The slight relative increase in imports during these years, with rather stable EERs (as they are actually estimated), may possibly be due to the gradual relaxation of quantitative restrictions on imports, which during the 1950s had provided an

added motivation for import substitution, particularly of finished consumer goods. Similarly, measures taken by the government in its budgetary and long-term credit policies to direct investments toward export industries may provide an explanation of the growth of exports, during the 1960s, in addition to the encouragement resulting from relative changes in the exchange rate.

NOTES

1. See the discussion of "imports without payment" in Chapter 2.

2. This conclusion is supported by data on proceeds from tourist expenditures in Israel, the tourist inflow being also dependent to a large extent, it may be assumed, on the country's security position. These proceeds, as recorded in the balance-of-payments estimates, amounted to about \$5 million to \$6 million annually until 1957. In 1958, they increased to \$12 million; in 1959, \$16 million; 1960, \$27 million; 1961, \$30 million; 1962, \$38 million; 1963-66, \$50 million-\$55 million. The Six-Day War of 1967 materially changed the nature of tourism in Israel, leading to a jump in proceeds from this item in subsequent years.

3. An excess of the import surplus over domestic (net) investment is thus recorded as negative savings in the economy: this has been the case in most of the years recorded in Table 6-2 as well as in later years.

4. This is not true of households, for which consumer surveys find the patterns in the ratio of savings to disposable income to be rather similar to those observed in other middle- and high-income economies. It should be noted, however, that disposable income includes personal transfer payments from abroad, such as German restitution payments, which are not included as income in the national accounts. Consequently, personal consumption spending out of these transfer payments is recorded as dissaving. This treatment results in ratios of savings to GNP which are very low or even negative (cf. Table 6-2).

5. An important exception of the most recent years is U.S. military assistance, given in the form of long-term loans for the purchase of military equipment in the United States. *Technically*, these receipts too are recorded in the development budget, but there is no doubt that *causally* they are related to the size of military expenditures, which are part of the current budget.

6. The late Amotz Morag was first to point out this effect on the allocation of governmental income between the two parts of the budget. This is discussed rather extensively in his *Public Finance in Israel: Problems and Development* (Jerusalem: Magnes Press, 1966; in Hebrew), Chap. 4.

7. It will be recalled that on an earlier occasion the highest among the major export rates was used in this study to represent the equilibrium level, an assumption which, although also arbitrary, could be better defended.

8. The downward bias is partly offset by an element of government saving that is pointed out at the end of this section.

9. Once more, an obvious case in which this procedure was *not* followed is that pointed out in note 5, above: U.S. military assistance of recent years is definitely not regarded as a contribution to the development budget, although the revenue is recorded there; technically, this is reflected in transfers from the development to the current budget.

10. The most important exception was probably the transfer of capital through the imports-without-payment market, which was discussed in Chapter 2. Another, less significant, arrangement for transferring capital at above the formal exchange rate, which was carried out mainly in the 1950s, was through the purchase of "blocked accounts" in Israel, which were then released for investment. It was also possible to transfer capital by buying Development bonds below par in the New York market and selling them to the Israeli Treasury at their face value at the formal rate, but little use was made of this technique.

11. This analysis should not be taken as exhaustive of the government's policy in the area of foreign investment. Over most of the period, the government applied specific measures to encourage foreign investment that were independent of the foreign-exchange system. Most important was the "law of encouragement of (foreign) investment," under which an "approved" investment enjoyed certain rights, primarily accelerated depreciation and reduced corporate income tax, as well as a governmental commitment to permit the unhindered repatriation of invested capital and the transfer of profits.

12. A few illustrative case studies of the waste can be found in Alex Rubner, *The Economy of Israel* (London: Frank Cass, 1960), particularly the appendixes.

13. See A. L. Gaathon, *Economic Productivity in Israel* (New York: Praeger, 1971). The productivity measure is constructed to compare changes in real output with changes in real inputs, the latter being weighted by their respective shares in national income.

14. This is a well-known deficiency of estimates of productivity of the services sector in Soviet-type economies: disregard of the consumer's time leads to the relatively high measures of productivity normally found in these sectors in Soviet-type countries compared with free-market economies.

15. This would not be true to the extent that the nominal value of unilateral transfers may be assumed to rise with price rises; an obvious example is gifts in kind.

16. Table 6-6 contains data only through 1966, since the Six-Day War of 1967 has led to a radical transformation in this respect. Autonomous capital inflow has grown very substantially since 1967; but at the same time, an equally large increase of defense expenditures, to a large extent in foreign exchange, may be said to have led to a substantial structural change of the economy. An analysis starting with the assumption of "neutral" growth is, therefore, obviously inapplicable to these years.

17. It should be remarked that in 1950 and 1951, autonomous capital imports were actually higher than the figures on which the data in column 1 of Table 6-6 are based. As was mentioned earlier, in those two years, freed sterling reserves of roughly \$100 million were used. Since formally this is a use of short-term assets, they were not counted as autonomous capital imports, although for present purposes they should be so regarded. If those balances are taken into consideration, the relative decline of capital imports (column 3) over the period is even greater than indicated in the table. Using the same base as in the table, i.e., with the sterling-financed inflow excluded, the average relative inflow for 1950 and 1951 including the sterling inflow would be 128; the corresponding average for the figures in column 3 is 104.

18. Some portion of the relative rise of the foreign-exchange rate in the first sub-period (1950-57) may be explained as a correction of an existing overvaluation of the currency at the start of the period. But in 1950, the degree of disequilibrium of the rate could not yet have been high enough to account for any major share of the increase in the relative rate of almost 150 per cent between 1950 and 1957.

19. It should again be recalled that the indices for 1950 and 1951 were in fact higher because of the availability in those years of freed sterling balances (the indexes for 1950

and 1951 would be, respectively, 131 and 126). It should also be remarked that the increase of the ratio in 1954 is misleading: as was mentioned earlier, a large volume of short- and medium-term loans was raised in the United States in that year to build some foreign-exchange reserves and repay hard-pressing short-term loans. But since this "consolidation loan" was not raised directly by the Israeli government but by the Jewish communities in the United States, it is recorded as a unilateral transfer of capital to Israel. If these items are taken into account, the downward trend of the ratio from 1950 to 1957 is sharper than it appears to be.

20. In principle, the summation of the export and import figures of columns 8 and 9 for each year should yield the same result as the year-to-year changes which may be derived from column 1. The slight differences between the two are due to rounding.

21. In a study in progress conducted by Yehezkel Guttman, at the International Trade Workshop of the Hebrew University, a slight *decline* in the ratio of imports to income as income rises was observed in cross-sectional data.

22. These intensities are measured by the proportion of exports in the industry's product in a given year, 1965; but use of the 1968 proportions yields basically similar results.

23. Although use of the 1968 export intensities would somewhat change the ranking of industries, use of the 10 per cent dividing line would leave precisely the same industries in each class as the 1965 intensities.

24. The problem of arbitrariness of the classifications can be overcome by using Lorenz curves to compare the entire distribution year by year. Using this procedure, Tawil found evidence of the trend—Yoseph Tawil, "Effective Exchange Rates and Investment in Manufacturing Exports" (M.A. diss., Hebrew University, 1973; in Hebrew).

25. A bias toward trade development is indicated also in Halevi, "Devaluation," and Weinblat, "Effect of the Effective Exchange Rate."