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Israel's Stabilization Program

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A disinflation strategy that involved eliminating the fiscal deficit and changing the rules of the government-labor game reduced inflation in Israel from more than 400 percent a year in 1984 to a low 20 percent a year in the third year of the program.

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The stabilization program Israel launched in July 1985 combined orthodox fiscal and monetary policies with a heterodox incomes policy.

The orthodox elements included a sharp reduction in the fiscal-operational deficit — 8 percent of GNP in the first six months — and tight monetary policy.

The heterodox element was to freeze wages and prices and peg the exchange rate to the U.S. dollar. Wage and price controls were relaxed in 1986 and 1987, leaving exchange rate policy (later pegged to the basket of currencies) as the anchor in the new system.

The national coalition government succeeded in neutralizing pressures for deficit

spending. Under government pressure, employers' organizations and organized labor reached a wage agreement in July 1985 that prevented substantial unemployment. This approach — not intended for use in normal times — proved effective in administering shock treatment.

The result? At the end of the program's third year, inflation is running a low 20 percent annually, compared with more than 400 percent in 1984.

Whether stabilization will survive the November 1988 elections remains to be seen.

The stabilization programs in Argentina (in 1985) and Mexico (in 1988) were similar in the initial stages to Israel's.

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Introduction

Israel's stabilization program, which was launched in July 1985, was of the "heterodox" variety, namely one which combined orthodox elements with incomes policies. The orthodox part consisted of a sharp reduction in the fiscal (operational) deficit, of the order of 8% of GNP in the first six months, and a very tight monetary policy during this period. The heterodox component took the form of an initial wage-price freeze which, together with pegging the exchange rate to the U.S. dollar brought about a sharp reduction in inflation - from around 15% per month in the first half of 1985 to 3.5% in August-September and to 1.5-2% later on. Under the pressure of the government the workers' and employers' organizations reached a wage agreement in July 1985 which signified the public's support for the program. Prices were made more flexible and controls were gradually removed in the course of 1986 and 1987.

Israel was not alone in following this type stabilization strategy. The Austral program in Argentina (1985) and the recent stabilization policy in Mexico (1988) are of a similar variety, at least as far as the initial stages are concerned. It is also very likely that future stabilization programs in chronic inflation countries will adopt a basically similar approach. The interest in the Israeli stabilization program extends therefore beyond its domestic implications. This is especially the case since the program has been doing quite well so far (as will be described below).

Israel's stabilization program is nearing now the end of its third year and inflation is still running at a low level of about 20% annually, as compared with over 400% in 1984. Disinflation is not supported any more by the comprehensive system of price controls which characterized the initial phase and the coverage of controls returned to its normal level. The main nominal anchor in the system is the exchange rate which was practically fixed relative to the basket of currencies since the last devaluation of January 1987.

The year 1987 witnessed acceleration of growth in the economy which was not accompanied by any marked deterioration in trade account phenomenon which undermined many exchange rate based stabilizations. The current account was practically balanced in 1987 and reserves were at record high levels compared with recent years. The public sector's budget remained nearly balanced and the government initiated a number of reforms in the area of direct taxation and capital market regulations which, together with price stability, contributed to the recovery of domestic investment after years of decline.

On a different level, price stability has become a political asset which none of the major parties in the four-year-old coalition government would wish to damage. In spite of the nearing elections the two major partners in the coalition have acted more as watchdogs to each other, rather than as competitors in over spending in their respective ministries.

In this paper I shall try to analyze the major factors which made the transition to low inflation possible. We shall deal with such issues as the role of the U.S. aid and of domestic fiscal adjustment, of monetary and exchange rate policies and of the change in the rules of game concerning government-labor interactions. The paper will focus on the evaluation of the

program from the 1987 perspective without devoting much space to the initial heterodox shock which was described in various other papers. 1/

From the point of view of this objective the data which summarize the developments in 1987, which have now become available, are particularly useful. This is so since this was the first year in which the economy can be said to have recovered from the heterodox shock of July 1985 and adjusted to the low inflation environment.

A related topic with which we shall be concerned is the evolution of the disinflationary policies in the course of the program. Here again the 1987 data will help us in disentangling the transitory from the more lasting elements of the Israeli disinflation strategy.

In the final part of the paper we shall deal with the policy dilemmas which face the government at the present stage of disinflation. In spite of the rosy picture of 1987 one cannot ignore some problematic features of the program. One disturbing fact is that the fixed exchange rate policy followed in the past year and a half has not succeeded in reducing the level of the crawling inflation and consequently a process of real appreciation has been taking place continuously. This may have contributed to the recessionary symptoms in the first half of 1988.

One of the main merits of the Israeli stabilization was its ability to avoid a heavy cost in terms of unemployment by adopting a well-coordinated heterodox program based on a great degree of cooperation with organized labor. However, while this approach proved to be effective in administering the shock treatment it is not intended to be used in the same way in normal times. It is especially after the big achievement of bringing down inflation from a very high level that the public suspects that the government will not fight to eliminate a low inflation step. This, however, may set an expectational pattern which may lead to unstable developments.

Much of the success in stabilization was due to the formation of the national coalition government which succeeded in neutralizing pressures for deficit spending and wage increases. As the November elections are approaching the ability to maintain the foregoing framework is put under severe stresses the outcome of which is still unknown. These pressures are already reflected in the preliminary indicators which show an increase in the domestic fiscal deficit since the last quarter of 1987.

The policy issues involving the low inflation step and the real appreciation will be discussed towards the end of the paper. I shall begin with a brief summary of nominal and real effects of disinflation as viewed from 1987 perspective.

I. The Current State of Stabilization

1. The nominal System

For the past two and a half years inflation has been running at an annual rate of about twenty percent. In the immediate period following the July 1985 heterodox shock, over 90% of the consumer's basket was under price controls, in a framework of a wage-price freeze designed to break inflationary inertia. However, as a result of the decontrol process which started in the beginning of 1986 the coverage was reduced to 46% in January 1987, while by the end of that year only 20-25% of the consumers, basket was still under control. This corresponds to the traditional level of price controls which covers some basic foodstuffs, government services and government controlled monopolies. Thus at the present stage controls (or the threat of their reimposition) play only a minor role in keeping inflation at a low level.

The basic nominal anchor which supports the program is the exchange rate. Although the exchange rate with respect to the basket of currencies has been held practically fixed since January 7 the government is not committed to maintain the exchange rate indefinitely at the present level. In principle, the government retains the option of realigning the exchange rate with the development in nominal wages if it will deem it necessary; this option has not been exercised, however, in the past 18 months.

Since the beginning of the stabilization program the public's credibility in the government's commitment to avoid inflationary shocks has increased. One sign of this development is the average low level, and lack of trend, in the black dollar premium (see fig. 1).

The reduction of inflationary expectations following the initiation of the program is of course reflected in the sharp reduction in nominal interest rates which is commensurate with the reduction in inflation (see table 1). While the nominal interest rates on shekel deposits stabilized at the level of actual inflation the interest rate on credit lines in the domestic market (denominated in shekels) stabilized at a higher level. The meaning of the large spread ^{2/} in interest rates (table 1) is not fully understood but it presumably reflects mostly factors not related to inflationary expectations (one of these are monopolistic practices by the highly concentrated banking system and another is tight monetary policy with respect to activities in the domestic market).^{3/}

The increase in the weight of nominal (non-indexed) liquid assets is a common expression of the reduction in inflationary expectations. The continued growth of M_1 and M_2 relative to GNP (see table 2) indicates a growing confidence in the increased price stability.

It must be stressed that the foregoing indicators reflect basically short term attitudes and do not say much about the robustness of the nominal system to shocks. Some indication in the latter direction was the surprisingly small effect of the January 1987 devaluation (of ten percent) on the acceleration of inflation in the course of the year. One of the reasons for this phenomenon was the 'cooperative' nature of this devaluation to which we shall return later on.

Another indicator for the robustness of the nominal system concerns the length of nominal contracts. The most significant indicator in the area is the structure of the cost of living agreement. Here rather slow progress has been made, the main aspect of which was the increase in the trigger level of inflation for COLA purposes from a cumulative 4% to 7% from mid-1986.^{4/} Some further progress in this direction is expected with the new collective wage agreement.

In financial markets lengthening of nominal contracts is found in many areas. For example, there is a shift to longer term (non-indexed) time deposits and there appears a greater tendency by firms to use fixed-time loans rather than overdraft facilities. The length of consumer loans extended by firms has also increased significantly. The general impression is that the length of nominal contracts is increasing continuously but at a moderate pace.

2. Real Effects of Disinflation

The transition to the low inflation plateau has been achieved with a surprisingly small increase in unemployment which reached 6% in 1987 (dropping from 7% in 1986) compared with 5% in 1984. The fact that unemployment did not increase much during the first stage of stabilization (comprising 6-9 months), in spite of the extremely tight monetary policy, constitutes one of the main successes of the heterodox approach. This was

achieved by breaking inflationary inertia due to lagged wage indexation by means of a wage-price freeze (thus preventing a rise in real wages when the exchange rate was stabilized), and by reaching an agreement with labor for a temporary reduction in real wages during the first stage.

The first stage was also characterized by a sharp reduction in the domestic fiscal deficit (which turned into a surplus in 1986) which calmed down the financial markets and constituted a first step in establishing credibility in the program.

The second stage, which coincided roughly with 1986, was characterized by a sharp recovery of domestic demands (8.5% in real terms) without a corresponding increase in output (real GNP grew only by 3.3%). This was a surprising development in view of the elimination of the fiscal deficit. The consumption boom associated with this stage and the related developments will be analyzed more fully later. The rise in demands was accompanied by a marked real appreciation and an increasing import surplus in constant prices, which were characteristic features of many unsuccessful exchange rate based stabilizations.

However, this pessimistic phase reversed itself in 1987 when the growth of domestic demands tapered off to 5.8% while output, which began to adjust to the new environment, responded more vigorously to demands with GNP increasing by 5.2%. The rate of real appreciation slowed down considerably indicating a possible convergence to a lower real exchange rate, which may, however, not be sustainable (we shall return to this point later).

The import surplus continued to grow in dollar terms but this reflects to a large extent the weakening of the dollar. Measured at constant prices the import surplus grew in 1987 at about the same rate as GNP, while measured in current prices the ratio of the import surplus to GNP rose moderately (from 6 to 7 percent).

It is especially noteworthy that output of the business sector was growing at an accelerated rate for the past three years reaching an exceptionally high rate (7%) in 1987. This was accompanied by an unprecedented growth in total productivity (compared with the past fifteen years) which accounted for more than half of the growth of output (table 1).

Most economists tend to attribute this remarkable growth performance to the reduction in inflation, to the contraction of the relative size of the public sector and to the reforms undertaken in 1987. The drop in inflation reduced producers' uncertainty with regard to relative prices and shifted activities from the financial to the productive sphere. This process took place both within firms as well as on industry level through a change in the distribution of the labor-force in favor of the non-financial sector.

The government contributed to the process by freezing the number of employees in the public sector, so that practically the entire increase in the labor-force in 1986 and 1987 was absorbed by the business sector (see AR 87,^{5/} p. 73). In addition the government took the first steps in reforming the structure of direct taxes which resulted in a reduction of personal income tax rates as well as corporate tax rates ^{6/} (for details see AR 87, chapter on the public sector). These reforms may have contributed to the continued rise in productivity and to output growth. In addition, price stability and the reduced corporate tax rate stimulated the upsurge of investment in the business sector in 1987. The latter process was further encouraged by some initial, but important, steps in the direction of liberalizing capital markets.

There are some indications of a weakening of the growth momentum in 1988 as is shown by preliminary evidence from demand and production data as well as from the behavior of imports and commercial bank credit. It is

therefore not clear as yet whether the growth performance of 1987 was a transitory phase rather than a take off point for growth in a stable environment.

If the recessionary indications represent a real underlying problem then the question is to what extent are these developments due to the policies adopted in the course of the program and in particular to the fixed exchange rate policy pursued in the past 18 months. We shall return to these issues later on when we shall discuss current policy dilemmas.

II. The Change of Regimes

The Inflationary Regime

In order to analyze the factors that brought about the change of regimes which characterized the transition to the low inflation economy we must review briefly the forces behind the inflationary process prior to 1985. This process was associated with two basic interrelated mechanisms.

One of these was related to the balance of payments crises of 1974, 1979, and 1983 which were partly due to external causes (the Yom Kippur war and the two oil crises) and partly to faulty exchange rate policies (the attempt to reduce the rate of devaluation in 1982-1983 without a fiscal adjustment). The policy reactions to these crises entailed severe nominal shocks which could not be confined to level-shocks to prices but were instead transformed to long term increases in the inflation level [on this see Liviatan and Piterman (1986)].

One of the channels through which the foregoing mechanism operated was related to the need to reduce the real wage in order to cope with the

external crises in a setting of highly indexed wages. Under the circumstances prevailing at the time the method which seemed suitable to deal with the situation was to erode the real wage by stepping up the rate of devaluation and the rate of inflation of government controlled prices which acted as a trigger for general inflation. This mechanism was especially evident in the balance of payments crises of 1979 and 1983. We may note that under a system of full wage indexation a given permanent reduction in the real wage requires a permanent increase in the inflation plateau [these issues are discussed more fully in Liviatan (1986_b)].

The main lesson from the foregoing developments was that attempts by the government to erode the real wage by stepping up inflation led to an ever increasing inflationary spiral. This brought up the idea of dealing with inflation by means of a cooperative strategy.

This solution became potentially possible with the formation of the coalition government in 1984 which represented both labor and right-wing parties. The new anti-inflationary policy at the end of 1984 took the form of a social pact (or "package deal") to control wages and prices. The policy failed, however, because it was not part of a coordinated nominal policy and, more importantly, it was not supported by a sufficient fiscal adjustment [see Liviatan (1986_b)].

Another lesson from the foregoing inflationary process is that in a highly indexed economy one cannot deal with inflation under stresses in the balance of payments because the adjustment in the real wage, which is ordinarily required in this type of situation, invites inflationary measures. A sound external position is therefore a prerequisite for conducting a disinflation program.

So much for the mechanism associated with handling of balance of payments crises in an indexed economy. The other mechanism was associated with the domestic fiscal deficit. The latter deficit affected the inflationary process in a rather roundabout way. In particular, the revenue from money creation was always rather small - around 2% of GNP. [In fact it remained around this level after stabilization in 1986-87 (see table 3)].

The large fiscal deficits were financed instead by indexed government debt which the public accepted willingly (much of this can be explained, presumably, by Richardian equivalence considerations). Thus, till the early 1980's the fiscal deficit did not exert a direct inflationary pressure. However, the growing ratio of domestic debt to GNP approached a level (about 1.3) beyond which it became difficult to finance the public deficit through new debt.

This was reflected by the growing proportion of the deficit which had to be financed by the sale of foreign exchange to the public in 1983 and 1984 (see table 3). The capital flight associated with this process led to foreign exchange difficulties even when the current account improved in 1984. This state of affairs led to expectations of a further stepping up of the rate of devaluation which intensified the pessimistic view about the ability to control inflation. As a result of these developments it became clear that any disinflationary program must stop completely the growth of the public debt, which implies a balanced budget. Only in this way could the government restore confidence in its ability to service the debt and avoid a foreign exchange crisis.

2. The Change in the Rules of the Game

In the new regime which followed the July 1985 heterodox shock the government abandoned the policy of using devaluations in a one-sided manner in order to regulate real wages. Instead the government established what appears to be a fixed exchange rate policy over long steps which implicitly enables carrying out maxi-devaluation within the framework of a social contract.

The first devaluation in this regime was the initial one of July 1985. The cost push effects of this devaluation were sterilized by means of an agreement (following heavy government pressure) to suspend the COLA system for three months, in the framework of a wage-price freeze, accompanied by an agreed temporary reduction in real wages (as mentioned earlier).

The only formal devaluation initiated by the government in the posts stabilization era was in January 1987. The purpose of the devaluation was to correct the excessive increase in real wages in the course of 1986. However, unlike the one sided policies in the pre-stabilization period it was carried out this time in cooperation with the General Organization of Labor (the Histadrut) and the organization of employers.

In this "package deal" the workers agreed to give up half of the COLA payment due in March 7/ and the government reduced the employer's contributions to the national insurance by a similar amount. This sterilized the cost effect of the devaluation through the COLA system. The remaining direct cost effects were supposed to be absorbed by the employers.

The use of the foregoing strategy, which was facilitated by the fiscal surplus, prevented the creation of a possible wage-price spiral so that the low inflation plateau was not disturbed. [see table 13].

We may infer from this experiment that the government is most reluctant to carry out one sided devaluations. If this type of policy can be

repeated in the future then Israel seems to have solved the extremely difficult problem of adjusting the real wage by a nominal devaluation in a highly indexed setting without raising the inflation plateau. It is doubtful, however, whether the same method can be implemented on a long term basis under changing political conditions. This is a question which one cannot answer at the present stage.

The Focus on the External Position

The foregoing change of regime which required a stable exchange rate policy could not have taken place without relying on a sound external position. With a continuing pressure on the exchange rate, or with strong speculative waves, such a policy would not be credible and it would not have been possible to secure the workers' cooperation in maintaining stability. It is therefore important to focus the analysis on the external position.

Indeed we can see in table 1 that all the conventional indicators of the external position show a dramatic improvement with the stabilization in 1985. The chronic current account deficit was reversed to a large surplus in 1985 and 1986 and remained approximately balanced in 1987. The import surplus, as percent of GNP, declined (table 2). Foreign exchange reserves increased and the net external debt was stabilized in dollar terms and declined as percent of GNP. Thus, it appears that the requirement that nominal stabilization should rely on a sound external position was fulfilled.

Since the transformation in the external position is considered to be such a crucial aspect of stabilization we have to investigate the internal and external developments which brought about the change. We shall try to distinguish between temporary and permanent aspects of the changes which have taken place and differentiate between substantive aspects and appearances.

The factors which affect the external position include exchange rate policy, foreign aid, fiscal and monetary policies and various exogenous developments such as changes in terms of trade. These factors may influence domestic absorption and therefore the import surplus. In addition foreign aid influences unilateral transfers which are part of the the current account. The foreign exchange reserves are potentially affected, among other things, by exchange rate stabilization, foreign aid and various expectational considerations (not unrelated to the aforementioned set of factors).

4. The Effect of Stabilizing the Exchange Rate on Reserves

Any policy which reduces inflation drastically by pegging the exchange rate tends to influence the foreign exchange reserves of the central bank because of the increased demand for money which induces capital inflows. However, in the case of Israel this mechanism was of minor significance because the central bank enabled the public to convert its dollar linked deposits into domestic money at a fixed rate of exchange.

Table 3 shows that the big initial shift in portfolio in favor of domestic money in the second half of 1985, amounting to 11% of GNP, took place without changing the base of M_3 ,^{8/} implying that the entire portfolio shift was accomplished by an exchange of domestic assets only. This suggests that the change in reserves cannot be explained simply by the change in the asset portfolio as a result of disinflation. The causality runs in the other direction - it is the improvement in reserves which facilitated disinflation.

The stabilization of the exchange rate may also have important effects on the real variables (consumption and investment) to the extent that it is considered to be temporary. We shall return to this aspect later.

5. The Role of U.S. Aid

One of the factors which helped to bolster the foreign exchange reserves of the Bank of Israel was the special U.S. grant of 1.5 billion dollars (divided into two equal installments in 1985 and 1986). This may account for most the increase in reserves over the stabilization period (see table 1) if we take into account that the additional increase in 1987 was due to the developments following the devaluation of January of that year.

It is conceivable that reserves would not have increased and that the grant would be spent, say, on consumption. However, because of the temporary nature of the grant we expect it to be added to savings without affecting the flow of total consumption (Private plus government) in the economy, as permanent income theory would predict. This aspect is one of the reasons for the bulge in the current account in 1985 and 1986.

In spite of the foregoing consideration the reserves may not have increased because of capital flight resulting from lack of confidence in the program. However, the very boost to reserves made the program more credible. Thus, the special grant performed the role of a financial "safety net" which did not have to be used in practice. Clearly, the special grant does not represent any fundamental change but it proved to be very effective in providing the required confidence for the exchange rate policy.

It is also important to note that the special grant was conditional on Israel's implementation of a serious program which had to involve measures which could potentially stop inflation. It is because of this nature of the grant that it might have tipped the scales in favor of a drastic program. Thus, the significance of the special grant goes far beyond its dollar value.

Another factor which affected the current account was the change in U. S. policy with respect to the form of financing its military aid to Israel, whereby long term loans at an annual rate of 0.9 billion dollars (close to 4 of GNP in 1985 were replaced by grants.^{9/} Unlike the special grant, this represented a change of a permanent nature which stopped the growth of the public debt to the U.S. government which constituted the major component of Israel's foreign debt. The U.S. decided on this move at the end of 1984 and it was implemented independently of the stabilization program.

Taken by itself this factor can account for two thirds of the improvement in the current account GNP ratio between 1981 - 1984 and 1987, which amounted to 6 percentage points of GNP (see table 2). One obtains the same proportions by computing the improvement in terms of current dollars. It is therefore important to look more thoroughly into the significance of this change, especially from the longer run perspective. As we shall see there are strong reasons to believe that the importance of this factor has been exaggerated.

It may be noted that Israel's debt to the U.S. government cannot be regarded as an ordinary commercial debt. In fact, it has been argued that the U. S. civilian (non-defense) grant was used de facto to finance the debt service. Indeed, the data in table 4 show that the civilian grant adjusted over the years to the increased debt service leaving a small surplus of 100-200 million dollars annually.

In view of this consideration it is useful to look simply at the net financial resource transfer through U.S. aid (grants plus debt service minus new loans). Alternatively, one may look at the net resource transfer minus direct defense imports (considering these as tied). Table 5 shows that there has not been any drastic change in these flows in the post-stabilization period (the improvement can amount to at most 11% of GNP).

The foregoing considerations may suggest that the relevant indicator to look at for the purpose of the issue in question is not the current account but rather the, basic account, which is the sum of the former and long term capital imports (this corresponds to a "balance of payments", which includes short term capital flows and the change in central bank's reserves). Measured in current dollars the "basic account". shows an improvement in 1987 as compared with 1981-1984 of about 200 million dollars, which can be contrasted with an improvement of about 1.2 billion dollars in the current account. Thus, from the point of view of the basic account there has not occurred any fundamental change in the external position.

Indeed, if it is true that the improvement in the current account is due mainly to the switch to grants then it is an indirect piece of evidence that this change did not increase the economy's permanent income. Otherwise the change would increase total (private plus public) consumption so as to offset most of the effect of the increased grants on the current account.

The foregoing discussion is not meant to claim that the switch to grants was not significant at all. Surely it reduced the uncertainty concerning the continuation of the U.S. accommodative policy to the growing debt service and presumably had a favorable effect on the attitude of the financial markets to Israel's borrowing possibilities.

The foregoing analysis seems to suggest that the switch to grants had a greater effect on Israel's liquidity position than on its permanent income (assuming that the increased debt service was to be financed by additional grants). Indeed, if we look at the basic account in table 1 we see that Israel was not in any fundamental difficulties in its balance of payments before the stabilization. It seems that it was mainly the cyclic deteriorations in the balance of payments, and the policy reaction to them, that led to the acceleration of inflation.

6. Real Aspects of Fiscal Policy

The basic facts concerning the cut in the domestic fiscal deficit are summarized in table 6. Comparing the stabilization period 1985-1987 ^{10/} with the pre-stabilization period 1980-1984 we find that the fiscal deficit of the public sector (in the operational sense) was cut by 8.6% of GNP about half of which are net taxes and the rest is public consumption (public sector investment varied very little). Comparing 1987 with 1980-1984, we still find that the cut in the fiscal deficit, 11% of GNP, is again divided roughly in half between net taxes and public consumption. ^{11/}

In spite of the sharp decrease in disposable income in 1985, following the tax hike, and regardless of the fact that disposable income regained its 1984 level only in 1987, private consumption did not respond to this situation, but rather started an upward surge which took an extreme form of a 14% rise in 1986 and 7% in 1987.

The question which arises in view of these developments are the following: Why did not consumption respond to the increase in taxation? Why did it in fact rise remarkably when real disposable income remained depressed for three years? Is there any connection between the increase in private consumption and the reduction in public consumption?

It is quite clear that private consumption need not respond to the drop in disposable income in 1985 (see table 1) because this shock effect may have been considered as temporary. This is understandable in view of the fact that most variations of net taxes in Israel were of a temporary nature, being related to election cycles (as in 1981 and 1984), to unexpected jumps in inflation which eroded temporarily the tax base as a result of the Tanzi effect (as in 1984), and so on. The reaction of the private sector to these

variations has been by an large in line with the permanent income theory, or with the Richardian equivalence approach. Figure 2 shows quite clearly the remarkable negative correlation between public and private saving over the past 15 years.

However, while this type of reaction may explain lack of response to the initial shock it cannot explain the increase in consumption, relative to GNP (table 10) when disposable income continued to be depressed. In the following discussion I wish to explore several theories which might explain the apparent contradiction between the private consumption boom and the contractionary fiscal policy.

a. One interpretation centers on the assumption that people perceive the exchange rate stabilization as being temporary, i.e. as a period of low inflation to be followed by a resumption of inflation. Suppose that in this setting, modelled by Calvo (1987), consumption of liquidity services and ordinary consumption are complements (this is also considered by Obstfeld (1985). Then ordinary consumption will rise in the stabilization period when consumption of liquidity services is cheap. This factor operates regardless of the time path of fiscal deficits.

Another feature of the (presumed) temporariness of stabilization is related to the tendency to increase the purchase of durables, as has been noted by Dornbusch (1985). Indeed one observes a large increase in purchase of durables in 1986 (table 9). However one should note that this followed two years of a low level of purchases following an earlier boom. One should also note that non-durable consumption (which constitutes about 90% of total consumption) rose by 10% in 1986 and by 7% in 1987, which shows that the consumption boom is not confined to durables.

In the Calvo model the stabilization of the exchange rate should also raise the trade deficit, which was not the case in Israel (table 10). This is explained, in part, by the reduction in public consumption which matched the increase in private consumption (comparing 1981-94 with 1987, Table 10). Thus fiscal policy with respect to public consumption offset the expansionary effect generated by the (presumably) temporary exchange rate stabilization.

b. An alternative interpretation, which is referred to briefly in AR87 chapter 2, takes an opposite view of expectations. Thus suppose that people really believe that stabilization is here to stay and they also believe in the permanence of the cut in public consumption. Assume further that people use public consumption as an indicator of their permanent level of net taxes.^{12/} This can be justified on the basis of the greater stability of public consumption relative to net taxes (see table 7).

Now it may be assumed that people expected the stabilization to be based on the elimination of the fiscal deficit. On the basis of past experience they may have thought that the balancing of the budget will be achieved by a rise in net taxes. In practice, however, half of the cut in the fiscal deficit was in the form of a reduction in public consumption. Since the latter is an estimate of permanent net taxes people found themselves with higher permanent disposable income which induced them to increase their consumption, in spite of the fact that their measured disposable income went down. To put it differently, permanent disposable income went up because the increase in taxes was less than expected. It should be noted that this theory explains not only the emergency of the consumption boom but also its magnitude, which should be roughly equal to the decline in public consumption.

According to this interpretation the reduction in public consumption appears to be the cause of the consumption boom so that on the whole fiscal policy was neutral with respect to the import surplus.

What was then, in retrospect the benefit of cutting the fiscal deficit through public consumption instead of making the full adjustment through taxation? One of the advantages in making the adjustment through public consumption is that in a world of uncertainty the latter form is a more credible way of convincing the public of the permanence of the fiscal adjustment, which has favorable effects on the financial position of the economy.

Secondly, unlike the model of Ricardian equivalence, taxes are distortionary. This is especially the case in Israel whose gross tax rate is among the highest in the world. Raising taxes still more is most undesirable. Thirdly, the cut in the relative size of the public sector made it possible to divert the entire increment to the labor force to the (nonfinancial) business sector, thus contributing to a more desirable form of growth.

c. An additional interpretation can be given on the basis of the distributional aspect of stabilization. AR 87 points out that the stabilization program brought about a sharp increase in net (disposable) wage rates in 1986-87. This was so because the gross real wage rate increased sharply in these years (especially in 1986) while the rates of direct taxation on labor income actually fell [this was offset by a sharp increase in the taxation of non-wage incomes in 1986. (See AR87 ch. 5)]. The dominant factor was however, by far, the increase in gross wages.

Table 8 shows that the decline in the net wage rate (per employee post) was mild in 1985 and the increase was sharp in 1986 compared with total disposable income (table 1). Assuming that the marginal propensity

to consume out of wage income is higher we obtain a possible explanation of the consumption boom. In fact table 8 shows that net wages and consumption were quite closely correlated in the 1980's. 13/

According to this interpretation the change in the income distribution in favor of labor outweighed the effect of a reduction in total disposable income as far as private consumption is concerned. However, was the increase in gross wages (which was the dominant features of this process) an independent factor or was it due to demand pressures generated by the exchange rate stabilization? The answer to this question is not quite clear (we shall return to this issue later).

d. It has been pointed out that the greater sense of security which came with stabilization tended to increase private consumption. But, as is well known, the effect of uncertainty (as is the effect of the interest rate) on consumption is ambiguous.

I would suggest that the different interpretations given above should not be considered as mutually exclusive. Thus it might well be the case that in the early phase of stabilization the public was much more skeptical and behaved according to the Calvo model and then, as the program gained more credibility, the more optimistic interpretation took over. To the extent that wage pushes were important they can be added to the other interpretations.

7. Financial Aspects of the Fiscal Adjustment

The foregoing discussion suggested the possibility that the fiscal adjustment did not have an appreciable effect on total domestic demand and consequently did not affect the import surplus. However, the elimination of the domestic fiscal deficit had a most significant effect on the financial markets by restoring the confidence in the government's ability to service the

debt. This renewed confidence reduced the threat to the reserves of the central bank and provided a firm support for the fixed exchange rate policy.

One indicator of this transformation is in the composition of deficit finance (see table 3). Prior to stabilization the proportion of foreign exchange sales increased rapidly till it reached 8.6% of GNP in 1984 (this accounted for two thirds of the deficit compared with one quarter in 1982) However, after stabilization these net sales fell gradually to zero.

Another indicator is the behavior of the derived capital import of the private sector, which measures the excess of the current account over the sales of foreign exchange to the private sector. This measure indicates that the capital exports, which characterized 1984 and the first half of 1985 turned into capital imports from the second half of 1985 (see table 12). Similarly "errors and missions" of the private sector indicate an intensification of capital flight in 1983 through the first half of 1985, a process which stopped abruptly in the second half of 1985 and did not reappear since.

The foregoing discussion suggests that the main role of the fiscal adjustment was in its effect on the financial markets rather than on the trade account.

8. Domestic Investment and Monetary Policy

The offsetting effects of private and government consumption imply that national saving out of GNP was not affected in any significant manner by the stabilization program. This means that the improvement in the trade account was related almost entirely to the reduction in the investment/GNP ratio. One can see in table 10 that the improvement in the trade account/GNP ratio matches the reduction in the investment /GNP ratio.

The fall in investment cannot be considered as an autonomous development. The decline in investment in fixed assets began in 1984 and it was part of a policy of improving the trade balance in the wake of the crisis which followed the abandonment of the policy of slowing down the rate of devaluation in 1983. This was accomplished by tightening monetary policy which led to an increase in the real interest rate (see table 1) and to an improvement in the trade account.

The tighter monetary policy following the initiation of the stabilization program in 1985 raised short-term interest rates on free credit to the domestic market even more. This policy discriminated against finance of domestic activity since interest rates on loans to exporters were not affected appreciably. In particular, this policy hit hard construction activity where the interest component in costs is relatively higher. Thus in 1985 and 1986 investment in residential construction dropped 12 and 8 percent respectively in real terms (AR87, p. 31). Since construction accounts for more than 40% of total gross investment we may infer that tight monetary policy played a significant role in cutting investment.

In 1987 there was a recovery of domestic investment following the surge in economic activity but the level still remained below normal. Real interest rates on credit lines to the domestic market still remained very high (about 2.5% per month). Although these high rates on loans, which exceed by far the deposit rates, are considered excessive by the Bank of Israel, yet the fact remains that they hamper construction activities and perhaps other forms of investment as well.

Since the ratio of capital to output has been falling in the past three years and since real interest rates are expected to fall in the future one may expect a recovery of investment in the years ahead with a possible

negative effect on the trade balance. However, with improved confidence in the economy this need not create difficulties since higher investment will contribute eventually to future output and exports.

9. Summing Up the Influences on the External Position

Table 10 sums up the changes in the import-surplus, following stabilization, in terms of domestic uses. When we compare 1987 with the 1981-1984 average, in terms of current ratios to GNP, we find that private and public consumption roughly offset each other, with the changes being in the order of 5.5% of GNP. This means that the improvement in the trade account by about 3.5% of GNP is "explained" mainly by the cut in investment.

The foregoing comparisons which are based on ratios of various variables to GNP, measured in current prices, may be problematic when the exchange rate is considered as overvalued (as might be the case in 1987 as a result of the fixed exchange rate policy). In this case the import surplus will be downward biased. In order to check this point we carried out the same comparisons using constant price variables as computed by the Central Bureau of Statistics. The results are summarized in table 11. They show essentially the same picture as the current price ratios and therefore do not require additional comment.

According to one of the earlier interpretation the reduction in public consumption generated an increase in private consumption which offset the effect of the former on the trade account. The improvement in the trade account is then attributable mainly to the tight monetary policy which brought about a reduction in the investment/GNP ratio. Therefore this improvement cannot be considered as being due to fundamental changes.

Indeed, the most significant change in the external position was of financial rather than of a "real" nature (meaning the trade account and related measures). This was the elimination of the constant injection of liquidity through the large fiscal deficits which threatened to lead to recurrent financial crises, especially in the foreign exchange markets.

If the changes in the current account were not fundamental, does it mean that the present state of affairs is not sustainable? Not necessarily. First, as we noted earlier, it is not quite clear that the state of the balance of payments in the pre-stabilization era was not sustainable. Secondly, even if a fundamental improvement was indeed required it may still take place in the future with the stimulus of growth provided by a stabilized economy and by the benefits of reforms in the tax structure and in the capital markets.

III. Evolution of Policies in the Course of Stabilization ^{14/}

1. Fiscal Policy

Since the beginning of the stabilization program till the end of 1987 the government maintained consistently a virtually balance budget with domestic deficit running at about 1% of GNP. The persistent behavior was maintained both with respect to direct domestic public sector demands and net taxes. However since the last quarter of 1987 through the second quarter of 1988 there are indications that the public sector deficit is increasing. This is based on estimates of the central government's domestic deficit, calculated on a cash basis from the Bank of Israel accounts. According to these estimates the domestic deficit in the last three quarters (including real interest payment on the public debt) was around 4% of GNP. While this

reflects, probably, the temporary stresses due to the oncoming elections it may exert a destabilizing influence on the delicate balance achieved by the program.

We have mentioned earlier that in 1987 there was a change in taxation policy with the introduction of the reform in direct taxes (see footnote 6). Taken by itself this would have reduced the government revenues by 3% of GNP (AR87 estimate). However, the increased efficiency in tax collection due to the low inflation (the Tanzi effect in reverse) offset the foregoing tendency so that the share of net taxation in GNP remained unchanged.

2. Monetary Policy

In spite of the fixed exchange rate regime the government used monetary policy in an active manner throughout the program. This was made possible by the tight controls on capital flows. At the beginning, monetary policy contained domestic activity and discouraged capital flight through very high real interest rates for loans to the domestic market (even if we assume high values for inflationary expectations). Figure 3 shows the significant spread between domestic and foreign interest rates (adjusted for devaluation) which existed since nominal interest rates stabilized in the first half of 1986. It can be seen that this spread remained constant even when the black market premium fell significantly.

One of the manifestations of the central bank's active stance was the tight monetary policy implemented in the beginning of 1987 in order to prevent an acceleration of inflation following the January devaluation. This exercise raised domestic interest rates (figure 3) and induced large capital inflows, in spite of controls, which reversed themselves later in the year when expectations of devaluation were revived. Thus although capital flows limited the possibility of conducting monetary policy, yet the controls on these flows left enough room to use the policy quite effectively.

In the course of the program there was a shift from using commercial bank credit as an intermediate target to a wider concept - net domestic credit (NDC). This shift seems justified in a fixed exchange rate regime where the focus is on foreign exchange reserves. With NDC being defined so as to satisfy the equation:

$$\text{Money} = \text{NDC} + \text{reserves}$$

one may regard the targeting of NDC, given "Money", as targeting reserves.

The concept of money chosen for this purpose is M_3 which includes M_2 plus deposits linked to foreign exchange (PATAM), ^{15/} the reason being that the demand for M_3 is more stable than for M_1 or M_2 (see table 2). As a result of this targeting real bank credit was allowed to grow ^{16/} fast while real M_3 growth was restricted. In fact M_3 relative to nominal GNP declined slightly between 1986 and 1987 (see table 2). While this policy indicates an effort to keep reserves from falling it does represent at the same time an accommodating monetary policy towards inflation which continued at a rate of 20% per annum. We may infer therefore that the basic nominal anchor was the exchange rate; monetary policy provided indirect support for this anchor by guarding foreign exchange reserves but not directly by setting nominal targets of NDC or for money.

2. Exchange Rate Policy

In the first stage of stabilization the exchange rate was pegged to the U.S. dollar in an act which symbolized the new era of stability. Once the weakening of the dollar became an anticipated phenomenon this policy was implicitly one of planned devaluation at a slow rate, which amounted to a devaluation of 16% with respect to the basket of currencies in the first year of the program. ^{17/}

Since August 1986 the exchange rate was pegged to the basket of currencies and since then it was devalued by 10% in January 1987 and by about 3.5% till the first quarter of 1988. On the whole, since the third quarter of 1985 till the first quarter of 1988 the exchange rate of the basket was devalued by 35% while the consumers price index rose by 56%. Since it is unlikely that this difference will be allowed to widen or even to persist one may infer that the emerging exchange rate policy is one of long steps (many people expect the next devaluation within the framework of some agreement to sterilize, at least partially, its effect in the cola.

The authorities clearly rejected the policy of a crawling peg based on mini-devaluations. This is motivated by the objection to legitimize the crawling inflation and also by the desire not to commit oneself to any rate of inflation before the post-stabilization conditions become clearer. A floating exchange rate is unthinkable in the present situation because the economy is still highly indexed and therefore very susceptible to nominal shocks and secondly because under the latter regime it is more difficult to reach an understanding with labor about wage policy.

IV. Policy Dilemmas

1. The Low Inflation Step

In the early stages of the stabilization program, when inflation fell to 1.5-2 percent per month it was thought that this is a temporary phase. However, as time passed and inflation showed no sign of falling further it became clearer that economy is on some low inflation step of about 20% annually (see table 13). What could be the reason for having an inflation in excess of the industrialized countries when the budget was balanced and the central bank had ample reserves?

The theory of inertia due to staggered prices does not seem to be an appropriate explanation since in this case we should observe a declining trend for inflation. Similarly, the wage price spiral due to lagged indexation adjustment was neutralized by the controls and the package deal at the beginning of the program.

One of the explanations offered for this phenomenon was the exchange rate policy followed in the first year. As noted earlier, by pegging the exchange rate to the dollar when the latter was weakening, the shekel depreciated relative to the basket of currencies by 16% in the first year. ^{17/} This may have put the economy into an expectational orbit of about 20% inflation.

Why did the authorities not peg the shekel to the basket of currencies immediately when it became known that the dollar was likely to continue weakening? It is argued that maintaining a fixed exchange rate with respect to the basket would imply an absolute reduction in the exchange rate of the dollar. This would require an absolute reduction in the prices of exports to the dollar area. If wages and prices of inputs exhibit downward rigidity then this may entail unemployment (See Bruno and Piterman (1987)). However, this argument still does not explain why prices, in a post-stabilization environment, should exhibit greater rigidity than in the industrialized countries, which somehow overcame these difficulties.

An alternative explanation for the low inflation step is that people do not expect the government to fight in order to reduce further what appears to be a low inflation level after the big achievement of reducing inflation from a high level to the present one. Therefore they expect the government to accommodate wage and price increases which do not exceed critical level. One cannot explain why the critical level is around 20% per year but one may

mention that a low inflation step of this order of magnitude has been observed in other successful stabilizations in chronic inflation countries (as was the case following the 1964 stabilization in Brazil, or in Chile in the 1980's).

In support of this argument we may note that the only method which seems to have worked so far in reducing inflation in a sustainable manner was neither monetary nor exchange rate policy but rather the heterodox shock of July 1985. However, one cannot expect realistically that the government can mobilize the political power to repeat the same steps to subdue a low inflation, which by itself is considered as a big victory. Moreover, the very fact that the government used controls and package deals to avoid unemployment when it reduced inflation undermined its credibility to accept a recession as part of its disinflationary effort, which reduces the effectiveness of monetary policy. In view of these considerations the public expects the government to accommodate moderate wage and price increases, which puts the government in a difficult dilemma.

The danger in accommodating the low inflation step is that the process of maintaining domestic inflation above the world level for a long time is likely to be unstable. It is difficult to reduce the degree of wage indexation when it is known that the economy faces recurrent jumps in the exchange rate (with uncertain timing). So the system remains susceptible to other big nominal shocks which are bound to come sooner or later and rock the low inflation step. On the other hand, a non-accommodative policy may imply a period of unemployment which is not acceptable politically. It seems therefore that the dilemma of the low inflation step is some form of the old trade-off between inflation and unemployment. In orthodox stabilization (using a monetary crunch) this issue appears immediately while in a heterodox stabilization it emerges at a later stage.

2. The Issue of Real Appreciation

One of the disturbing features of the stabilization program is the continuing real appreciation, amounting to 15% between 1985 and 1987 (see table 1). This is generally a feature of exchange rate based stabilizations which are heading towards a crash. However, ordinarily the real appreciation is associated with a sharp rise in the import surplus which is not quite the case in Israel.

In the course of the stabilization program the import surplus as percent of GNP (in current prices) rose by 1.5 percentage points in 1986 and by 1% in 1987). This does indicate a worsening of the import surplus but not at an alarming rate. We also recall that the level of the import surplus in 1987 was still far below the pre-stabilization period.

We may look alternatively at a comparison based on quantity measures of domestic uses and of GNP (the indifference between these being the import, surplus). These indicators show that while in 1986 the growth of domestic uses exceeded GNP by 5%, the excess dropped to 0.5% in 1987. This difference and some additional considerations suggest that we should deal separately with 1986 and 1987 (extending into 1988).

One of the accepted interpretations of the fast rate of real appreciation in 1986 is the foregoing growth in domestic demands which presumably originated from the greater sense of security which followed the success of the program in its initial phase. (An alternative interpretation could be provided by the Obstfeld-Calvo approach). This is the demand pull interpretation of the real appreciation in 1986.

It has been pointed out, however, that the increase in demands in 1986 followed a year of most depressed domestic demand (see table 10). Comparing the quantity levels of domestic uses (relative to GNP) in 1986 with earlier years we find that the level of domestic demands in the latter year was about the same as in 1984 and much lower than in 1983 while relative prices of exports and imports were much lower in 1986. These facts suggest that the real appreciation in 1986 may be due to cost pushes from the labor market after the relaxation of wage controls.^{18/} This view is supported by the sharp rise in labor costs in 1986 and by the fact that unemployment was higher than in 1983 and 1984 (see table 1).

The demand-side view of the real appreciation in 1986 does not explain much about the continued real appreciation in 1987 because the growth in latter year was balanced.^{19/} The wage push theory is also problematic because it does not seem to be consistent with the remarkable growth of output in the business sector and the drop in unemployment. The upshot of the foregoing discussion is that it is difficult to explain the behavior of the real exchange rates or the real wage in the post-stabilization period by means of the balance between domestic uses and GNP. Explanations based on cost push considerations are not particularly illuminating either in view of the accelerated growth in 1987.

An alternative approach to the issue of real appreciation could be based on the idea that stabilization has brought about a structural change in the financial and productive spheres which changed the equilibrium real exchange rate. For example, the improved liquidity position of the economy may have reduced precautionary demand for foreign exchange by the private sector. Given the restrictions on capital flows this may have caused a real appreciation. A similar conclusion can be obtained if the reduction in

uncertainty had a relatively larger impact on productivity in the sector of tradeables. The reduction in government's domestic purchases of tradeables may have worked in the same direction. However, the verification of these hypotheses requires detailed research.

If the real appreciation was in fact due to structural changes then it need not be a cause of concern. There are however reasons to believe that part of the real appreciation can be attributed to unduly strong attachment to the fixed exchange rate policy in face of inflationary expectations of the type described in the proceeding section.

In order to clarify this point we may suppose that in the course of 1986, and especially since the pegging of the exchange to the basket of currencies in August, people were expecting a corrective devaluation at some uncertain (but not very distant) date.^{20/} The actual devaluation (of 10%) took place in January 1987. Therefore the expected labor costs in 1986 were lower (especially in the second half) than the observed ones and the opposite is true of the real exchange rate. Therefore the data exaggerate the real appreciation in 1986. The correction in real wages and relative prices brought about by the devaluation can be seen in table 14.

The same consideration continued to work even more forcibly in 1987 because then the exchange rate was practically fixed with respect to the currency basket while domestic inflation continued unabated. This led to a rise in real wages and drop in relative prices of exports and imports during the year following the devaluation in the beginning of 1988 nor after that till this day (July 1988).

According to this view there is really no contradiction between the balance growth in 1987 the real appreciation because the expected real exchange rate may have remained constant. Indeed, as figure 1 shows, the

black dollar premium rose continuously after the devaluation in the beginning of the year till many people began to believe that devaluation will be postponed (perhaps till after the November elections).

While in the January 87 devaluation the workers accepted a (temporary) cut in real wages it seems that it was not possible to repeat the same agreement in the beginning of 1988 because of the approaching general elections. Hence employers realized that real wages are indeed higher than previously expected and the opposite was true for the real exchange rate. The realization that real wages may stay at a high level for some time may explain the recessionary tendencies in the economy in the second quarter of 1988. 21/

The foregoing analysis brings out a weakness of the present regime of "agreed devaluations" - namely that their implementation is restricted by the political conditions regardless of the economic necessity. The dilemma is that returning to one sided devaluations when the economy is still highly indexed may bring back the old wage-exchange rate spiral. The way in which this dilemma will be solved is one of the key issues for the continuation of disinflation.

FOOTNOTES

- 1 See Bruno (1986) and Liviatan (1986a)
- 2 The spread with respect to nominal (ex post) dollar linked loans for domestic activity was considerably smaller. The latter interest rate remained about 1-1.5 percentage points above inflation in monthly terms. Even this represents a large spread, especially if we take into account that the expected nominal rate on these loans exceeded the actual one because the same thing applies to devaluation (especially in 1987).
- 3 Interest rates on loans to exporters were kept close to international levels.
- 4 In addition, the degree (percentage of compensation) of wage indexation was reduced from 80% to a range between 70-80% depending on the time which elapsed between consecutive COLA payments.
- 5 We shall use this notation for Bank of Israel Annual Report 1987 (Hebrew), with similar notation for other years.
- 6 Within the framework of the tax reform the income tax rate on undistributed corporate profits was reduced from 61 to 45 percent. As for personal income tax, the two highest steps of the tax rates - 50 and 60 percent - were abolished, with the maximum rate being reduced to 48% (however a temporary surcharge was imposed on the latter bracket which raised it to 53% till December 1987).
- 7 One form of compensation for the workers was the government's obligation to freeze prices of a number of "basic" commodities till April 1988.
- 8 The base of M_3 consists of the money base (base of M_2) plus the reserve requirements of the private banks (deposited in the Bank of Israel) against foreign exchange linked deposits of the private sector. Since the latter require a 100% backing of reserves (again in the form of foreign exchange linked deposits), the shift towards non-linked deposits following disinflation, created excess reserves which were partly sterilized by raising reserve requirement on shekel deposits.
- 9 Total U.S. government aid to Israel in 1984 was about three billion dollars which consisted of 1.8 billion in military aid (half of which was a grant) and 1.2 billion dollars as a "civilian" (non-defense grant). Note that the change from loans to grants does not affect the net resource transfer in the short run and therefore should not be reflected in the changes in the foreign exchange reserves.
- 10 Strictly, the stabilization period began in July 1985 but in fact a partial fiscal adjustment took place in the first half of this year.
- 11 Two other facts about the fiscal adjustment are worth noting. Comparing 1985-87 with 1980-84 in terms of average ratios of GNP we find that

domestic defense expenditures decreased by 2.6 percentage points of GNP while civilian public consumption was reduced by 1.5 percent of GNP. Thus most of the cut in public consumption did not compete directly with private consumption. On the revenue side, net direct taxes, as % GNP, were not affected by stabilization so that the entire increase in net taxes took place in indirect taxes.

- 12 When the government's budget is intertemporally balanced $w_t \bar{G} = \bar{T} - r b$ where \bar{G} and \bar{T} are the permanent flows (proper weighted averages) of government consumption and taxes as seen at time t , b is the stock of the public debt at t and r is the interest-rate. Permanent disposable income is then given by $\bar{Y} - \bar{G} = \bar{Y} - \bar{T} + r b$ where \bar{Y} is permanent national income.
- 13 It should be pointed out however that the variations in 1981 and 1983 in both variables were related to direct policies of slowing down inflation.
- 14 On these issues in the first two years see Bruno and Piterman (1986).
- 15 This implies that NDC is the sum of net domestic credit to the government and to the private sector provided by the Central Bank and the private banking system.
- 16 The growth in domestic bank credit was offset by a contraction of net-domestic credit to the government. Thus the government continued to borrow from the public for non-fiscal reasons (the justification for this policy is not clear.
- 17 Comparing their quarters of 1986 and 1985.
- 18 One of the manifestations of the wage push were the large increases in the minimum wage, which continued at a slower pace in 1987.
- 19 In the sense that domestic uses increased in the same proportion as GDP (in constant prices).
- 20 It is the variation in expectations about the timing of devaluation which may cause inexplicable movements of the black dollar premium.
- 21 Part of the recessionary tendency may perhaps be attributed to the consequences of the political unrest in Israel's occupied territories.

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Table 1
Economic Indicator 1981 - 1987

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	annual change (%) in real terms						
I. <u>Demands, Outputs and the Labor Markets</u>							
1. Real disposable income	14.2	-2.6	2.8	8.7	-11.1	2.8	7.3
2. Private consumption	12.0	7.7	8.3	-6.8	0.5	14.2	8.1
3. Public consumption, (excl. defense imports)	1.4	2.9	2.2	1.5	-1.0	-3.5	1.8
4. Gross investment in fixed assets	3.7	5.1	12.6	-11.3	-7.8	-1.6	13.7
5. Gross domestic product (GDP)	3.8	1.0	2.6	2.4	3.7	3.3	5.2
6. Total domestic uses (Const. prices excl. defense imports)	6.5	7.2	7.0	-4.7	-2.2	8.4	5.8
7. GDP business sector	4.7	0.0	3.1	2.8	5.0	5.3	6.9
8. Total productivity (business sector)	3.0	-1.0	-0.1	-0.3	4.1	3.0	3.4
9. Real Wage rate	11.1	-0.9	4.7	-2.5	-6.8	11.6	8.2
10. Real labor cost per unit of output (business sector)	-1.6	6.8	5.4	-5.6	0.7	8.4	3.0

11. Unemployment rate	5.1	5.0	4.5	5.9	6.7	7.1	6.1
\$ billion, current prices							
II. <u>Balance of Payments</u>							
1. Current Account	-0.9	-2.0	-2.1	-1.1	-1.1	0.8	-0.3
					(0.3)^	(0.0)^	
2. Unilateral transfer	2.9	2.6	2.9	3.4	5.1	5.4	4.8
3. Import surplus (excl. defense)	2.1	3.0	3.8	3.3	2.1	2.7	3.4
4. Basic account	0.3	-0.8	0.3	-0.4	1.2	1.3	0.1
					(0.4)^	(0.5)^	
5. Net external debt	13.4	15.6	18.3	19.7	19.3	19.2	19.2
6. Net international reserves	3.8	4.3	3.8	3.3	3.8	4.9	6.0

Index 1980 = 100							
7. Relative price of exports	98	93	91	92	92	82	77
8. Relative price of imports	96	91	85	87	93	83	80

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
9. Terms of trade	102	107	111	107	107	110	107
III. Prices and Interest Rates (%)							
				Monthly change (%)			
1. Consumer price index	6.0	7.2	9.3	15.2	9.1	1.5	1.3
2. Wholesale price index	6.2	7.5	9.7	15.2	8.0	1.2	1.6
3. Exchange Rate (basket of currencies)	5.6	6.2	9.4	15.7	8.4	0.5	1.1
				Monthly (%)			
4. Interest rate on loans	8.7	7.6	9.0	19.8	15.3	4.0	4.0
5. Interest rates on deposition	N/A	N/A	N/A	14.5	8.4	1.3	1.4

Source: Bank of Israel Annual Reports (AR) and data base of Research Department.

I.1: Including transfers from abroad.

I.4: For economy as a whole. Deflated by CPI

II.1: Defense imports include always advances for purchases in order to smooth these import data.

II.9: Of exports and non defense imports (exc. capital services).

III.3: Bases on five currencies.

III.4: Overdraft facilities for domestic market activities (in domestic currency).

III.5: CD rate.

^ Excluding special US grant.

Table 2

Economic Indicators as % of GNP

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
I. <u>Fiscal (public sector)</u>							
1. Domestic deficit	13.2	10.2	7.3	16.6	7.3	1.4	1.2
2. Total deficit	15.4	12.1	7.8	19.0	2.2	-2.8	0.1
3. Gross taxes	42.6	45.5	46.1	38.2	45.1	48.4	47.6
4. Net taxes	18.5	24.5	26.2	18.3	27.7	32.4	32.1
5. Net external debt	38.0	38.0	42.0	50.0	51.0	39.0	34.0
6. Net domestic debt	122.0	125.0	120.0	128.0	138.0	130.0	121.0
II. <u>Monetary</u>							
1. M1	3.9	3.4	2.8	1.9	2.3	4.0	5.0
2. M2	5.7	6.1	6.3	5.4	9.4	13.8	18.6
3. M3	19.0	19.6	20.7	23.3	25.1	23.4	25.2
4. Total bank credit		23.5	21.6	20.8	23.3	25.1	30.8
5. Net domestic debt	NA	NA	8.7	12.8	16.2	13.4	12.0
III. <u>International</u>							
1. Import	9.6	10.9	12.1	9.7	4.5	6.1	7.0
2. Current account	-4.0	-8.3	-7.9	-6.8	4.8	2.9	-0.8
3. Net external debt		62.0	65.0	76.0	(1.7)	(0.4)	53.0

Source: Bank of Israel Annual Report and data base of Research Department

I.1: Based on real interest rates.

I.2: Domestic plus foreign

II.3: M3 = M2 plus deposits linked to foreign exchange.

II.5: Net domestic credit to private and public sectors, defined to satisfy $M_3 = \text{net domestic credit plus foreign exchange reserves of the Bank of Israel.}$

III.1: Excluding defense imports.

^ Excluding special US grant.

Table 3

Domestic Deficit of Public Sector and Its Financing (% of GNP)

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>		<u>1986</u>	<u>1987</u>
				<u>whole</u> <u>year</u>	<u>2nd</u> <u>half</u>		
1. Domestic deficit	10.0	6.0	12.3	9.3	6.0	3.9	2.7
<u>Compositon of Deficit Financing:</u>							
2. Change in M ₃ base	2.6	7.6	3.9	0.9	-0.4	-0.5	1.7
2a. (addition to the base of M ₃)	1.7	2.3	3.0	6.5	10.6	1.9	2.7
3. Net increase in domestic debt	5.3	-6.3	0.0	4.6	5.3	3.2	3.1
4. Sale of foreign currency	2.6	6.3	8.6	4.8	2.2	2.5	-0.1
5. Interest on monetary base	-0.6	-1.6	-0.2	-1.1	-1.0	-1.4	-2.0

Source: AR87, p. 224

1. Includes real interest payment on domestic debt.
2. M₃ = M₂ plus foreign exchange-linked deposits.
3. Includes also changes in the balance of monetary loan to banks (treated as a negative monetary base.

Table 4

Debt Service and Civilian Grant
Million \$

	<u>1977-</u> <u>1981</u>	<u>1982-</u> <u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1. Debt service to U.S. government	495	883	1,055	1,079	1,129
2. Civilian grant	625	1,100	1,200	1,200	1,200
3. (2) - (1)	130	217	145	121	71

Source: AR86, AR87.

- (2) Civilian grant excludes special U.S. grant of \$750 million in 1985 and 1986.

Table 5
Net US Aid
Millions \$

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1981-</u> <u>1984</u>	<u>1985-</u> <u>1987</u>
1. Net Financial US aid	1,871	1,595	1,805	2,174	2,080	2,391	2,122	1,861	2,198
2. (1) minus direct defense imports	76	57	650	465	198	540	395	312	378

Source: Bank of Israel Annual Reports.

(1) Excludes special grant of 1985 and 1986. Referred to in text as "net Financial resource transfer" (grants plus debt service minus new loans).

Table 6
Public Sector Consumption, Investment, and Net Taxes,
(%) of GNP

	(1) <u>1980-</u> <u>1984</u>	(2) <u>1985-</u> <u>1987</u>	(3) <u>(2) - (1)</u>	(4) <u>1987</u>	(5) <u>(4) - (1)</u>
Public consumption (domestic)	32.2	28.2	-4.1	27.4	-4.9
Public investment	3.2	3.1	-0.1	3.5	0.3
Net taxes	23.5	27.9	4.4	29.7	6.2
Domestic deficit	12.0	3.4	-8.6	1.2	-10.9

Source: AR87, p. 90.

Table 7
Net Taxes and Public Consumption, 1981 - 1984
(%) of GNP

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
1. Net taxes	18.5	24.5	26.2	18.3
2. Public consumption (domestic)	32.4	32.6	31.8	32.7

Source: AR87, pp. 90, 98.

Table 8

Real Wage Per Employee and Per Capita Consumption

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
				<u>Annual rate of change (%)</u>			
1. Per capita consumption	10.5	5.7	6.1	-8.6	-1.0	12.5	6.3
2. Real wage (gross)	11.1	-0.9	4.7	-2.5	-6.8	11.6	8.2
3. Real wage (net)	15.2	-2.9	3.1	-6.8	-2.2	13.5	7.7

Source: AR87, ch. 4.

2. and 3.: Private and public sector.

Table 9

Durable and Non-durable Consumption

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1. Durable purchases as percent of total consumption	9.7	8.5	10.6	11.0
2. Annual increase (%) in constant prices:				
a. durable purchase	-31.5	-0.7	47.1	12.6
b. non-durable consumption	-2.5	0.7	10.2	7.6

Source: AR87, p. 28

2. is in current prices.

Table 10

Components of GNP in 1981 - 1987
(% of GNP [current prices])

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1981-</u> <u>1984</u>	<u>(7) - (8)</u>
1. Private consumption	55.1	56.7	58.2	55.5	57.7	60.9	61.9	56.4	+5.5
2. Public consumption (domestic)	33.2	31.1	30.7	32.1	28.4	26.1	25.9	31.8	-5.9
3. Gross Investment	21.3	23.1	23.2	22.1	18.4	19.1	19.2	22.4	-3.2
4. Import surplus	9.6	10.9	12.1	9.7	4.5	6.1	7.0	10.6	-3.6
5. Gross nat. saving out of GNP	11.7	12.2	11.6	12.4	13.9	13.0	12.2	12.0	0.2
6. Current account	-4.0	-8.3	-7.9	-6.8	4.8	2.9	-0.8	-6.8	6.0
7. Gross nat. saving (total)	17.3	14.8	15.3	15.3	13.6	16.2	18.4	15.6	2.8

Calculated from data base of Research Department of Bank of Israel

4. Converted dollar values to shekel by average official exchange rate for each year. Same calculation used for nominal GNP. Import surplus excludes direct defense imports.

Items (1), (2) and (5) add up to unity. $(1) + (2) + (3) - (1) = (4)$. $(7) = (3) + (6)$

Table 11

Domestic Uses as Percent of GNP in Constant Prices

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1981-</u> <u>1984</u>	<u>(7) - (8)</u>
1. Private consumption	56.9	60.7	64.1	58.3	56.6	62.5	64.3	60.0	4.3
2. Public consumption	30.5	31.1	31.0	30.7	29.3	27.4	26.5	30.8	-4.3
3. Gross investment	20.5	23.3	25.0	22.7	19.6	20.7	20.4	22.9	-2.5
4. Total domestic uses	107.9	115.1	120.1	111.7	105.5	110.6	111.2	113.7	-2.5

Source: Research Department, Bank of Israel, Data Base. Line 4 minus 100 yields the import surplus (excluding defense imports) in constant prices relative to GNP.

Table 12
Balance of Payments of the Private Sector, 1981 - 1987
(millions \$)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>		<u>1985</u>	<u>1986</u>	<u>1987</u>
					I	II			
1. Current account	-434	-1,395	-2,069	-1,442	-217	-51	-268	-769	-940
2. Basic account	-489	-1,515	-1,000	-1,269	-254	-40	-294	-616	-609
3. Errors and omissions	38	40	-1,022	-418	-433	197	-236	231	161
4. Purchase of foreign exchange from Bank of Israel	380	512	1,588	2,000	677	105	782	659	99
5. Derived Capital import	54	883	480	-558	-460	54	-406	110	840

Source: Years 1981-1984: AR86, p. 202; 1985: AR85, p.225;
1986 - 1987: AR87, p. 189
The data from the different annual reports are not fully consistent with each other because of revisions.

Table 13
Selected Prices Indices, 1985-1988, Quarterly
(annualized rates of change (%) within period)

	<u>1985</u>				<u>1986</u>				<u>1987</u>				<u>1988</u>
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
1. Consumer price index	221	362	247	29	8	30	13	30	19	16	10	19	18
2. Controlled prices ^a	456	464	416	-2	9	46	13	10	22	14	16	9	13
3. Industrial price index	205	233	203	33	16	22	11	12	32	14	18	20	17
4. Exchange rate NIS/currency basket	241	279	126	14	8	8	5	3	60	-1	0	7	2

Source: AR86, p. 51 and AR87, p.50

a. The index of controlled prices comprises some 'basic' foodstuffs and public utilities. It covers about 20% of CPI.

Table 14

Nominal and Real Exchange Rates 1985 - 1988

	Schekel exchange rate against		Relative price of exports ^{a/}	Relative price of imports ^{b/}	Real Wages rate per unit of output ^{c/}
	Dollar	5-curr. basket			
	(1)	(2)	(3)	(4)	(5)
I	0.733	0.572			89.1
II	1.015	0.827			83.9
III	1.487	1.273	115	110	75.5
IV	1.481	1.329	113	107	80.0
1986					
I	1.486	1.387	108	104	96.7
II	1.485	1.420	97	97	101.2
III	1.491	1.481	98	100	97.2
IV	1.489	1.445	97	99	104.9
1987					
I	1.601	1.660	101	103	100.3
II	1.597	1.679	95	94	102.8
III	1.608	1.678	94	96	102.9
IV	1.573	1.697	94	96	113.1
1988					
I	1.575	1.717			116.7*

Source: AR87, p. 53, 179.

a/ b/ Prices of exports and imports in domestic market relative to price index of domestic uses.

c/ In industry. Deflated by dollar price of industrial export at effective rate for export.

* Preliminary.

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