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Israel's Balance of Payments: From Deficits to Surpluses Leonardo Leiderman and Victor Bahar

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Abstract

Israel's balance of payments changed dramatically between 1995 and 2015. These years mark a period of transition from deficits to surpluses in the current account. Among the factors behind this reversal were a sound macroeconomic policy, the global boom in high-tech industries, and the discovery of natural gas on Israel's coast in the Mediterranean Sea. The transition reflects an increase in the national saving rate and a decline in the rate of national investment. While these important changes were taking place, the financial account of the balance of payments also shifted due to various structural changes, such as the completion of foreign exchange market liberalization and a shift to a floating exchange rate regime. Due to the foregoing developments, Israel has become a net lender to the rest of the world. In this paper we analyze and quantify these major changes and assess the extent to which the existence of current account surpluses be considered as a sustainable phenomenon.

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1 Introduction

When discussing current account reversals, the typical case considered in the literature is that of an emerging market economy that, due to adverse shocks, shifts from surpluses to deficits; see e.g. Milesi-Ferretti and Razin (1997)². Things might become more complicated for such an economy if and when the foregoing developments are accompanied by a sharp reduction in foreign capital inflows. In this case, the adjustment mechanism is expected to work through nominal and real exchange rate depreciation, together with a decline in the level of economic activity as well as imports. This adjustment is often rapid and volatile, and could also feature a credit crunch, corporate failures due to currency mismatches in their balance sheets, a speculative attack on the currency and a banking sector crisis.

Israel's current account reversal has been in the opposite direction: from deficits to surpluses. Historically, the 1960s and 1970s exhibited large deficits in the current account of the balance of payments, due to the need to build the country's infrastructures and, at the same time, to put together and maintain a large and modern defense force. These processes demanded high levels of real investment, of defense imports and of public sector spending. The main difficulty in these years was to find the foreign currency resources needed to finance the large deficit in the current account, a difficulty often termed by economists as Israel's balance of payments "problem." The main resources were donations and loans from world Jewry and from the US government. In those years, there was also a sharp discussion of the issue of Israel's "economic independence."

The deficits in the current account worsened in the early 1980s, mainly due to expansionary fiscal and monetary policy, an exchange rate regime that did not match the conditions of the economy at that time, and the lack of effective supervision of the banks and the financial system. Thus, in the mid-1980s, the Israeli economy experienced a fiscal crisis together with an acceleration of inflation to a three-digit level, significant

² The literature includes papers like Adalet and Eichengreen (2007), de Mello et.al (2010).

devaluations in the local currency, a banking crisis, and low credibility of the economic policies in the eyes of the public.

By mid 1985 a new stabilization plan was introduced with the aim of restoring confidence and stability to the Israeli economy. In the first years following the introduction of the stabilization program, the deficit in the current account declined markedly, but toward the mid-1990s, against the background of the absorption of the wave of immigration of more than one million people from the former Soviet Union, it returned to dimensions that could potentially damage the stability of the economy. This time, economic policy reacted quickly in order to prevent the development of a crisis. Later on, in the second half of the 1990s, there was even a gradual improvement in the current account, to the point of a shift to surpluses in 2003.

Together with this current account reversal we saw a change in the attitude of Israeli and foreign investors vis-à-vis the Israeli currency: the confidence in the ILS (Israeli Shekel) increased, the informal dollarization, or de-facto indexation to the dollar, declined, and Israel's credit rating was improved. Israeli investors began to view the shekel as a stable currency, and at times even moved to hedge the currency risk of their foreign investments. In addition, foreign investors increased their investments in Israel, Israel became a net lender to the world, and the returns on net overseas assets (e.g., interest receipts, dividends, capital gains, etc.) contributed to the consolidation of surpluses in the current account.

2 The current account of the balance of payments

2.1 Theory: two main approaches

The prevailing approach in theoretical and empirical analysis of the current account until the 1980s was the IS-LM model for an open economy, known in the literature as the Mundell-Fleming model. The typical framework postulated imports and exports equations that were included in a common IS-LM model. In spite of its popularity, the framework

turned out to be less useful for analyzing the impact of a rise in the price of oil, like in the 1970s or the Latin American debt crisis of the 1980s.

In light of a growing dissatisfaction with the existing model, in the course of the 1990s there was a shift toward the intertemporal approach to the current account of the balance of payments; see e.g. Obstfeld and Rogoff (1996).

Unlike the Mundell-Fleming model, which analyzes the current account in terms of import and export ad-hoc equations, the intertemporal approach focuses on analyzing the current account in terms of the gap between national saving and national investment. As is known from the national accounts, the surplus in the current account is identical to the surplus of national savings over national investment.

The intertemporal model analyzes savings and investment decisions as the result of an optimization process by the various economic agents. The approach also emphasizes the existence of a dynamic intertemporal budget constraint.

A prominent example of the implementation of the intertemporal approach is the formulation of the national saving function in the spirit of an optimization model, such as the permanent income theory of private consumption. Given an exogenous shock, as e.g. a decline in the economy's GDP due to a decline in productivity, the predictions of the model depend, inter alia, on the degree of persistence of the shock. With consumption smoothing as a common result from this framework, if perceived as transitory, this shock will lead to a reduction in savings which in turn will lead to a rise in the current account deficit. Yet, to the extent that this shock is perceived as permanent, it would result in a permanent decline in private consumption, with little impact on savings and the current account position. Along these lines, one could analyze the impact of temporary and permanent changes in fiscal policy parameters, in foreign shocks, and so on.

In this chapter, we focus empirically on both the gap between savings and investment and the behavior of exports and imports to discuss the experience of the last two decades.

2.2 Current account – key developments

In the mid-1990s, the deficit in the current account of the balance of payments became one of the main macro-economic risk factors of the economy. In 1994-1996, the deficit

rose to a level of about 4.5 percent of GDP. The deficit was perceived as worrisome both by its size relative to the past and by international comparisons that suggested, especially after Mexico's Tequila Crisis of 1994, that when deficits get close to 5% of GDP, this may be a leading indicator for a balance of payments crisis in the near future. At that time, monetary policy turned to a contractionary stance with the aim of dealing with inflationary pressures. High interest rates attracted capital inflows from abroad, and the central bank intervened to attenuate the extent of real exchange rate appreciation. Yet intervention was only partial and could not avoid some degree of real exchange rate appreciation. Since 1997, the current account deficit began to contract and turned into a surplus in 2003. The surplus has been maintained over the years, and in 2015–2016 it reached an average high level of 4.5 percent of GDP.

The current account consists of three parts: the goods and services trade account, the primary income account (focusing on income from labor and capital) and the secondary income account (free remittance transfers). In the period reviewed, the turnaround in the current account was mainly a result of a change in the trade account (goods and services), namely, the average annual growth rate of exports was higher than that of imports. The primary income account was responsible for part of the overall current account improvement, but the surplus in the net secondary account soon fell by three percentage points of GDP, and thus partially offset the increased surplus in the goods and services account (Table 1).

The gradual reduction of the current account deficit was accompanied by a real appreciation of the domestic currency during the period considered.

Table 1. The current account, percent of GDP

	1995	2000	2005	2010	2015
Exports of goods	20.3%	23.1%	29.3%	23.1%	19.0%
Imports of goods	28.0%	26.0%	31.6%	23.7%	20.1%
Trade in goods (net)	-7.7%	-2.9%	-2.3%	-0.6%	-1.1%
Exports of services	8.3%	12.1%	12.5%	10.2%	12.3%
Imports of services	8.7%	9.3%	10.4%	7.6%	8.2%
Trade in services (net)	-0.4%	2.8%	2.2%	2.5%	4.1%
Trade in goods and services	-8.1%	-0.1%	-0.1%	2.0%	3.0%
Primary income (net)	-2.8%	-6.2%	-0.9%	-1.8%	-1.0%
Secondary income (net)	6.0%	4.9%	4.4%	3.3%	3.1%
Current account	-4.9%	-1.4%	3.3%	3.5%	5.1%

Source: Central Bureau of Statistics

2.3 The trade account

The goods and services account went from a deficit of 8.1 percent of GDP in 1995 to a surplus of 3.0 percent of GDP in 2015. It was the main factor accounting for the reversal in the overall current account position (Table 1). The shift included both the goods account and the services account. Total exports increased during this period by an average annual volume of 5.1 percent, while total imports increased by 3.8 percent. The terms of trade (that is, the ratio of export prices to import prices) of Israel showed ups and downs during the period reviewed, mainly as a result of fluctuations in import prices, especially of imported energy sources. It happens that the current account surplus persisted even when energy prices were relatively high, and clearly the terms of trade were not a key factor in the shift to surpluses. However, in the last few years of the period under review, the economy has enjoyed a sharp improvement in trade conditions thanks to a decline in world energy prices.

Exports of goods and services

An examination of exports' growth during the period under study shows that it is not significantly different from that of world trade. Furthermore, the correlation between the

two is high, and most studies have not ruled out the hypothesis that exports' elasticity in relation to world trade volume is unitary. Yet, it is important to emphasize that the composition of exports has changed significantly during these years, with the weight of the high-tech and services industries increasing over time.

An important development in the second half of the 1990s was the breakthrough of the internet and more generally ICT around the world, and the Israeli economy was probably among the biggest winners. Foreign companies set up development and production centers in Israel, and some Israeli start-ups were sold to foreign companies. Exports of high-tech goods increased by an average dollar rate of 8.7 percent per year during that time, and service exports also jumped thanks to technology and software industries as well as R&D and start-up companies. The share of exports of services in total exports rose from 29 to 39 percent.

Significant changes also occurred in the geographical distribution of export destinations. In the late 1990s and early 2000s, the globalization process accelerated, China joined the World Trade Organization (December 2001), trade restrictions were reduced, and the rapid growth of emerging market economies led to a surge in demand for goods and services. For example, Israel's exports to emerging markets in Asia rose from a low of \$2.5 billion in 1995 to about \$17 billion in 2015. The geographical distribution of exports became more diversified, with a decline in the share of Europe and the United States. This diversification has reduced the vulnerability of the economy to negative shocks in one of the regions.

The Start-Up Nation in Action: Selling Start-Ups and the Balance of Payments

The second half of the 1990s featured a wave of start-up sales to overseas investors. These deals were worth billions of dollars, and therefore had a marked impact on the balance of payments. For example, in 2000, Chromatis was sold to Lucent, in return to Lucent shares worth \$4.8 billion. Another example is NDS, which was sold to Cisco for \$5 billion in 2012. These sales led to significant revisions in Israel's national accounts because now these had to recognize an activity with added value that previously wasn't known. The way in which these transactions should be properly recorded in the balance of payments is not a clear-cut issue: on the one hand, a purchase of an Israeli company

by a foreign company can be defined as direct investment in Israel and be included in the financial account. On the other hand, this is not a standard company. The assets of such a company are usually intangible, and in many cases, they become part of the production process of the acquiring company. In these cases, some or all of the services could be registered as exports (for example, of research and development services).

The classification has a large accounting effect on the various sections of the balance of payments. If the transaction is classified as export of services, the surplus in the current account of the balance of payments will increase. Conversely, if the transaction is classified as a sale, direct investment in Israel will increase. From an economic point of view, the classification of start-ups in the balance of payments has no significance, of course, and it does not affect the net debt or asset position vis-à-vis the rest of the world. From 1998-2015, the annual contribution of start-up sales to exports and the current account of the balance of payments averaged about 0.3 percent of GDP. Volatility between years was high, and in 2000, on the eve of the burst of the Dot Com bubble, the contribution to the current account stood at a record 1.3 percent of GDP.

Imports of goods and services

The increase in imports of goods and services in 1995–2015 was more moderate than that of exports - an average increase of 3.8 percent per year, similar to the rate of GDP growth. Import growth was also lower than that of developed countries, which averaged about 5.0 percent during these years. The relatively slow increase in imports was the result of two main factors. The first is the import of oil, whose volume has increased at a very moderate rate of about 1.5 percent per year, given the shift to natural gas and streamlining energy use, as will be explained below. The second factor that explains the moderation of the growth of imports is the structure of the economy's growth: the weight of the service industries has been growing at the expense of manufacturing, especially the output of traditional sectors and the construction industry. These service industries are not capital-intensive or raw materials intensive, so imports of inputs (excluding fuels) increased by an average annual rate of only 3.6 percent. In contrast, consumer goods imports rose an annual average of 5.7 percent.

The effect of natural gas and energy prices on the current account

Throughout most of its existence, Israel was dependent, almost completely, on imported energy products. In years when world energy prices were high, for example, during the oil crisis of the 1970s, the value of imports reached high levels, such as 8 percent of GDP, and this was a major component of the current account deficit.

At the beginning of the period reviewed, the Israeli economy's energy sources were mainly oil (including diesel and fuel) and coal, which were used for both electricity generation and for transportation and industrial use. Therefore, the value of energy materials imports was greatly influenced by world energy prices, and in particular the price of oil. For example, in 1998, when the world oil price got down to \$10 per barrel of Brent, the value of energy imports dropped to 1.6 percent of GDP. On the opposite direction, ten years later, in 2008, oil prices rose to \$140 per barrel, and the import of energy materials rose to 6.0 percent of GDP. Energy prices therefore had a very large impact on the current account of the balance of payments.

Over the period, the intensity of energy use in production decreased significantly, as there was a rapid growth of service industries, as well as more efficient use of energy sources and more economical vehicles and appliances.

In 1999, the first natural gas reservoir in Israel, referred to as Noa, was discovered near the Ashkelon coast by Partnership Yam-Thetis. After the initial discovery, further drilling was carried out, and in 2000 the Mary reservoir was discovered. These two reservoirs (Yam-Thetis reservoirs) contained together approximately 34 BCM of natural gas. Following the discovery of natural gas, the electricity company began a gradual transition process of turning the energy sources from fuels to natural gas, in parallel with the gradual deployment of pipelines for natural gas distribution in Israel.

Beyond the gas sources from the Yam-Thetis reservoirs, natural gas was also imported from Egypt, which got to Israel in an extension that split from the Arab gas pipeline. Under the agreement with Egypt, signed in 2005, Israel undertook to purchase 7 BCM of gas per year for 20 years, and the gas price was set at \$3 per gas unit (MMBTU). Egypt's natural gas began flowing to Israel in February 2008 - just when energy prices in the world were very high: the price of oil in 2008 got to an average of almost \$100 a barrel. The

combination of Egyptian gas and a subsequent drop in world oil prices led to a decrease of about two percent of GDP in Israel's energy imports in 2009.

In early 2011, the pipeline that provided natural gas from Egypt to Israel was the subject of a terror attack, and gas supply was completely halted for more than a month. About a month later, the gas supply resumed, but another explosion occurred in the transmission pipe, and the supply was stopped again. Even when it was renewed, the quantities supplied were lower than the contractual obligations. The gas pipeline sabotage continued until, in April 2012, Egypt's state gas company announced the cancellation of its agreement with Israeli gas company EMG. Increased use of the Yam-Thetis reservoirs led to almost depletion of the stock of gas in them as early as 2011, and so it implied the increased use of expensive diesel fuel and oil for electricity generation. Energy import costs soared in 2012 to 6.2 percent of GDP.

In 2009, the Tamar reservoir was discovered off the coast of Israel, with a stock of approximately 256 BCM. Production of gas from Tamar began in April 2013, and since then natural gas consumption has grown rapidly. Natural gas has become the main source of electricity generation in the economy (about 60 percent in 2015), and the ratio of imports of energy materials to GDP fell to less than 2 percent in 2016. The fall in world oil prices during these years also contributed to a decline in the value of imports. It is estimated that the Tamar output can provide the needs of the Israeli economy for a period of two decades.

In December 2010, the Leviathan gas reservoir was discovered. The reserves in it are estimated at 540 BCM, which is more than double the reserves of the Tamar reservoir. The stock of gas in these two reservoirs and other small reservoirs discovered ('Karish' and 'Tanin') raised the possibility of exporting some of the gas output in the future. The natural gas sector has become a source of internal political controversy on a number of issues - exports versus maintaining gas reserves in the sea for future generations, the nature of gas companies' taxation, the proper use of tax receipts and royalties, the price of gas and electricity, and more. Public committees were established to determine the rate of exports (the "Tsemach Committee") and taxation ("the Sheshinsky Committee"), and public controversies delayed the development of the reservoir by 2017.

To some extent, it can be argued that gas discoveries brought about a version of the Dutch Disease. Namely, a real exchange rate appreciation that could damage other, non-energy, export industries³. In 2014, the Law for 'Citizens Fund' was enacted, according to which the proceeds from the levy on the profits of the oil companies will be transferred to a Sovereign Wealth Fund. The latter will invest these funds and transfer money to the state fund according to defined criteria.

It has also been decided that the fund will start operating in the year in which the proceeds from the levy on profits will exceed ILS 1 billion (estimated in 2020). The main purpose of the fund is to create a more equitable intergenerational distribution of natural gas incomes. It is also intended to reduce the impact of the Dutch disease on the exchange rate, since its funds will only be managed in foreign currency. The fund's income depends on the profits of the companies and the price of gas. The Bank of Israel has estimated that the total revenues for the fund are expected to reach ILS 348 billion by 2040.

The extent to which the Tamar gas discoveries contributed to the improvement in the current account of the balance of payments depends on the alternative cost of using natural gas. The use of natural gas has largely replaced the use of coal, whose prices fell by about 30 percent between 2012 and 2015, and oil, whose prices fell by about 50 percent. It is clear, therefore, that Israel's energy imports would have been reduced anyway, due to lower energy prices in the world.

In 2013, the Bank of Israel began acquiring foreign currency in the market to offset the effect of natural gas on the balance of payments. The calculation of the effect of natural gas on the balance of payments is in relation to the alternative prices of natural gas from Tamar, and therefore it is an estimate of the contribution of natural gas to the current account surplus (an estimate on the high side, since some of the gas receipts are returned abroad as payment for production services and overseas companies profits). As part of the policy framework for offsetting the effect of natural gas on the balance of payments, the Bank of Israel purchased \$7.5 billion from 2013 to 2015, and in 2016-2017 the acquisitions are expected to add up to \$3.3 billion. As a result of the fall in energy prices,

³ A notion which was used originally to describe the damage caused to the Dutch traditional export industries as a result of the big gas reservoirs founded in the sea in 1959

ex-post the economic contribution of natural gas to the current account was not relatively high. This will of course change if and when global energy prices rise, or when natural gas exports from Israel begin.

2.4 Primary income

In this account there are two main components: a. Compensation of employees, i.e. wages paid to Israelis for their work abroad (a flow that describes foreign currency inflows to Israel), or foreign workers employed in Israel (a foreign currency outflow); b. Investments income – rents, dividends, capital gains, interest, reinvested profits, etc.

At the beginning of the period under review, the primary income balance was at a deficit of 2.8 percent of GDP. The deficit rose to 6.2 percent of GDP in 2000 and then declined to stabilize at around 1 percent of GDP in 2014–2016.

The most notable changes in this account were the investments' incomes. These are volatile and dependent on financial markets, interest rates, and the like. They also depend on the volume of assets abroad of Israelis and of foreigners' in Israel, and these have changed significantly, as the surplus of assets over liabilities has grown considerably over the years. For example, the weight of receipts from overseas financial investments in total GDP has increased two-fold, from 1.6 percent of GDP in 1995 to 3.0 percent of it in 2015.

2.5 Secondary income (formerly called unilateral transfers)

Secondary income describes flows for which there is no compensation for a product or service, nor do they create a liability or asset- as opposed to capital flows in the financial account. The component of secondary income in Israel is sizeable relative to other countries, although its weight in GDP is declining: in the mid-1990s, net secondary income accounted for about 6 percent of GDP, and has since declined to about 3 percent in the final years of the period reviewed.

The weight of two items has greatly diminished over the years: aid from the United States stood at 2.7 percent of GDP in the mid-1990s, falling to 1.1 percent in 2016.

Compensations from Germany fell in the same period from 0.9 percent of GDP to 0.3 percent. As for US aid - at the beginning of the period it stood at about \$3 billion a year, which was divided into military aid of \$1.8 billion and civilian aid of \$1.2 billion. Over the years, civilian aid was reduced up to its elimination in 2008, while military aid increased. An aid agreement signed with the US in 2008 stipulates that, starting in 2009, aid will reach an average of about \$3 billion per year for ten years. In addition to the amounts specified in the agreements, Israel received additional specific grants - for example, following the Iraq war in 2003, and participation in financing the "Arrow rocket" development. The increase in GDP in dollar terms has resulted in a continuing decline in the weight of US aid in domestic product. From a balance of payments perspective, most aid funds are used for military procurement in the United States, with no major impact on the current account. The question of the necessity of military assistance has often come up in the country and in the United States, as Israel is the largest recipient of aid from the US government, despite being a developed country that enjoys a large surplus in the current account of the balance of payments.

2.6 Investment, saving and the current account

It is common to analyze the current account of the balance of payments also through its mirror image - the gap between national saving and national investment. If we look at the two endpoints in the period reviewed - 1995 compared to 2015 - we can see in Table 3 that the transition from a deficit to a surplus reflected a decrease of 5.5 percentage points in the investment ratio from total income⁴, and a 3.6 percentage point increase in the savings ratio from total income. This means that, in terms of the accounting identity, the economy has saved more and invested less (as shares of total national income). The change in the investment-savings gap reflects the change in the current account of the balance of payments. An examination of the economic reasons for a decline in the

⁴ Total income is GNP at the representative exchange rate plus net transfers from abroad to individuals plus transfers from abroad to the public sector minus interest payments to abroad.

investment ratio and an increase in the savings ratio can shed additional light on the trends behind the current account reversal and their potential durability into the future.

Table 3. Investment, saving and the current account
Percent of total income

	1990	1995	2015	Change in percentage point
Investments	17.7	25.1	19.6	-5.5
Savings	17.8	20.6	24.2	3.6
Private	-3.3	19.9	23.6	3.7
Public	21.1	0.7	0.6	-0.1
Current Account	0.1	-4.5	4.5	9.0

Source: Bank of Israel

The first half of the 1990s was the period of absorption of the immigration wave from the former Soviet Union. During this period, the weight of investment increased to a record level of about 25 percent of total national income. At the same time, the rate of public and private savings fell. The combination of large government budget deficits and current account deficits created, mainly in 1995-6, a phenomenon known as 'twin deficits.' In retrospect, the major deficits in this period can be understood in terms of the great economic challenge of that time - the absorption of the massive immigration wave. The increase in investment was considered then a must, in order to adjust the capital stock, including the housing stock, to the expanded population. Under the influence of the immigrant absorption process, private and public savings rates decreased.

Things began to change in 1997. Monetary and fiscal restraint policies led to a fall in domestic demand and a marked slowdown in growth. As a result of these factors, as well as due to the full effects of the wave of immigration in the early 1990s, the investment rate of total economic income in the two years 1997-1998 decreased by 2.5 percentage points. At the same time, the overall savings rate rose slightly, due to a sharp reduction in the government's budget deficit.

In 2003, the economy featured a surplus in the current account for the first time since 1990. The recession in the previous two years, which originated in the second "intifada"

and the burst of the dot-com bubble in the United States and its impact on the Israeli high-tech industry, continued to reduce the ratio of investment to total income. The private savings rate offset the decline in public savings. The percentage of total investment out of national income remained stable at about 20 percent by 2015. By contrast, the savings rate continued to grow, bringing the current account surplus to 5.1 percent of GDP in 2015.

Is the above savings and investment picture different from the world? We examined the average levels of investment and savings since the beginning of the current decade, a period when the current account surplus was stabilized, relative to the United States and Eurozone countries (Figure 2). The results show that the rate of investment in GDP in Israel is similar to that in the United States and Eurozone countries, but the savings rate in Israel is considerably higher than that of the United States and higher than the average Eurozone countries, although the variance among these countries is high.

These findings seem to contradict the widely held view that the level of investment is low relative to other developed countries, but some characteristics that may change the picture should be considered: a. The level of investment in the comparison countries has declined following the most recent global crisis, and has not recovered since. Israel has not experienced a crisis during these years, which is particularly evident in housing investments. b. The level of GDP per capita in Israel is still lower than in the United States as well as the average of Eurozone countries, so we would expect a higher level of investment than these countries. c. The growth rate of the Israeli population is faster, and therefore requires more investment in houses and infrastructures.

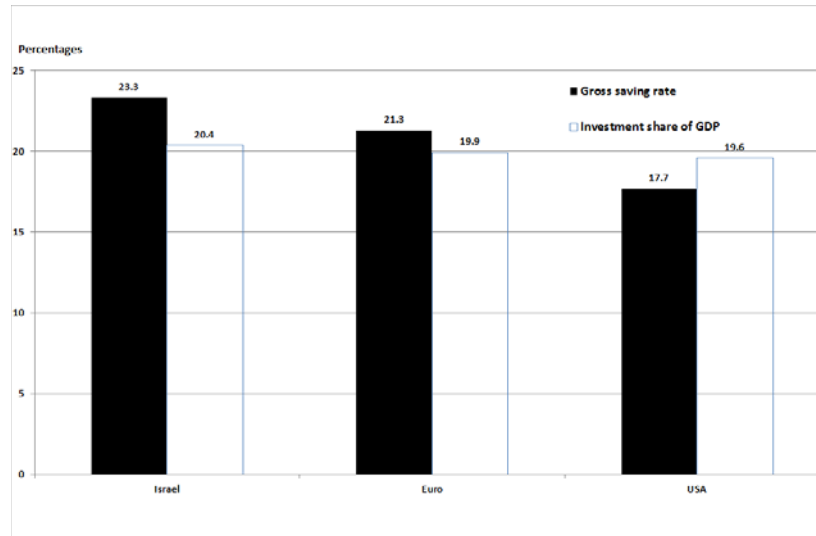
If the economy does indeed suffer from sub-investment relative to other countries, the question still arises as to why this situation was generated, as there was no shortage of funding that could be used to increase investment. A possible answer lies in budgetary constraints regarding the level of government investment that is lower than desired, a situation that is reflected in poor transport infrastructure, high density in schools and hospitals, and the like. As for private investment, it may have been influenced by a high degree of uncertainty - a result of the security situation, and / or excess regulation and a multiplicity of bureaucratic processes. Investments were also possibly affected by the

growth composition: high-tech was the main growth factor of the economy, and these industries do not usually require much physical capital.

The savings rate, as mentioned, is high relative to the comparison countries. According to economic theory, saving rates depend on a wide range of factors - demographic, economic and cultural - as well as on economic policy. On the demographic factors, it is common that a high proportion of working age people in total population positively affects the savings rate. In Israel, the share of the elderly population is lower than in the developed countries, but the proportion of children is higher, and the overall dependency ratio (non-working-age population to working-age population) is high, and thus in itself does not support a high saving rate. On the economic factors, higher housing prices in Israel may create a kind of 'compulsory savings:' home buyers are usually faced with relatively high mortgage repayments, thus reducing their disposable income. Another argument is that the public's purchasing power following the fall in energy prices in recent years (gas discoveries and the decline in world oil prices) was not seen by the public as permanent, so the disposable income was not directed to consumption but to savings. As for policy factors, pension arrangements in Israel were changed in the twenty years reviewed. We had a move of the private sector to accrual pensions at the beginning of the period, followed by a shift of public sector employees to accrual pensions. Also, there was a gradual increase in the retirement age for men and women in 2004, and the beginning of mandatory pensions in 2008. These factors had probably a marked impact on savings rates in Israel.

Figure 2. Investments and savings share in GDP

Average for the years 2010-2016



Source: OECD, Bank of Israel

2.7 Israel becomes a net lender to the rest of the world

While the balance of payments is expressed in terms of flows, it is also important to look at the status of the economy's assets and liabilities vis-à-vis the rest of the world. A position of a current account deficit usually creates liabilities (or decreases in assets) to the rest of the world. A country with a surplus in the current account accumulates assets (or reduces its liabilities) toward the rest of the world. The balance of assets and liabilities vis-à-vis the rest of the world is therefore affected by the balance of payments movements, but also by revaluations of these balances due to changes in asset prices and liabilities and the value of currencies. The assets and liabilities of the economy toward the rest of the world are generally classified between debt instruments, such as deposits, credit, bonds, cash and foreign currency reserves held by the central banks, and investment instruments like shares and real estate.

In 1995, Israel had net liabilities to the rest of the world (international investment position, including all investment instruments), accounting for 27 percent of GDP. At that time, the country's net external debt (including debt instruments only) stood at 17 percent of GDP. The current account deficit began to decline during these years, but net liabilities continued to grow, reaching about 40 percent of GDP in 1999. The weight of external

debt in GDP had already begun to decline during these years, against the background of the real appreciation of the shekel. The transition to surplus in the current account in the beginning of the 2000's accelerated the decline in the weight of net liabilities, until it reached a surplus in 2006. Net assets reached a level of 34 percent of GDP in 2016.

From 1995 to 2016, Israel's net assets vis-à-vis the rest of the world increased by \$135 billion. Overall, the current account surplus and capital account⁵ together account for about 75 percent of the increase in the balance of assets. The remainder is accounted by the revaluation of asset balances and liabilities due to price changes and exchange rates⁶.

In terms of net asset composition, the most notable change was the large accumulation of foreign exchange reserves in the Bank of Israel: these increased from about \$7 billion in 1995 to \$98 billion at the end of 2016.

Israel is in a relatively small group of countries characterized by such a large surplus of assets on net international creditor position, with Norway, Saudi Arabia, Switzerland, Japan, Germany and the Netherlands. These countries, as a rule, have a very high level of per capita GDP, and some of them have accumulated surplus assets thanks to exports of oil or natural gas.

3 The financial account

The balance of payments financial account describes the capital flows for which there is no compensation for a product or service, including payments for capital and labor. The movements in the financial account create an asset or liability of the economy towards the rest of the world. The main components of the financial account are direct

⁵ The capital account represents mainly capital flows related to immigrants. They are not part of the current account, nor the financial account.

⁶ We disregard statistical discrepancies

investments, the investments in securities, other investments (deposits and credit types) and the change in the central bank's foreign currency balances.

The balance of payments financial account is largely a mirror image of the current account, so if the current account went from a deficit to surplus, then the financial account went from surplus to deficit, which means that Israel has become a net investor in the rest of the world. However, the changes in the financial account went far beyond the change in the overall balance sheet: capital flows to and from Israel changed their order of magnitude. For example, direct investment by foreign entities in Israel increased from \$1.4 billion in 1995 to \$11.5 billion in 2015, and investments in Israeli securities portfolios increased from \$154 million to nearly \$10 billion a year. These changes were the result of globalization and intensification of international capital movements, the flourishing of the local high-tech industry, an improvement of Israel's political and economic status, foreign exchange market liberalization and economic policy.

One conclusion from the analysis is that contrary to popular opinion, which emphasizes the influence of overseas investors on financial capital flows and the exchange rate, we find that Israeli investors' weight was much greater.

3.1 Liberalization of financial markets

Like several other small open economies, liberalization processes in the financial markets in Israel began in the late 1980s, after the economy recovered from the inflationary episode of the first half of the decade and shifted toward economic stabilization. A previous liberalization attempt, in 1977, failed because of disastrous macroeconomic conditions, and the withdrawal from that liberalization attempt was rapid. In contrast to the 1977 liberalization program, a gradual reform strategy of the measures was chosen at this time. The first phase was the abolition of the restriction on long-term capital imports by Israelis. In the second stage, long-term capital export restrictions were eliminated, first on financial investments and then on direct investments by the business sector. Short-term capital flows were still limited, due to concerns about financial stability.

Formal liberalization was announced in April 1998. The headline of the joint Ministry of Finance and the Bank of Israel's press release summarizes the following: "All foreign-currency restrictions on households and the business sector are abolished, except for those applicable to institutional investors and derivatives transactions of nonresidents." During this period there was tax discrimination on overseas investments and this was not eliminated. The fear of a rapid capital flight from the country also prevented the restriction from institutional investors at this time, which was completely removed only in 2003.

It should be noted that on the eve of the liberalization announcement, there were almost no restrictions on foreign residents' activities, except for restrictions on short-term investments and derivatives. Direct investments by nonresidents were not limited, including real estate investments and long-term securities investments.

The early estimates were that opening all channels would result in a marked increase in capital flows in both directions, an increase in exchange rate volatility and a growing exposure to macroeconomic shocks. Of these assessments, it can be asserted, with the benefit of hindsight, that the first was indeed fulfilled, but of course, it must be taken into account that in the background other factors also worked beyond liberalization. The assessment of the exchange rate volatility was not really met, and in the case of increasing exposure to shocks, it probably materialized in part toward the end of the period.

3.2 Foreign Direct Investment (FDI)

As mentioned above, there were no restrictions on direct investment by foreign entities in Israel, and yet their level was relatively low in the first half of the 1990s. In 1995, these investments stood at about 1.3 percent of GDP. Globalization was still in its infancy, and the volume of direct investment relative to GDP in Israel during this period was no different from the global average and lower than for emerging markets in Asia.

The combination of globalization progress and the rapid developments in the high-tech sector boosted direct investment in Israel to about 6 percent of GDP in 2000, on the eve

of the Nasdaq bubble burst in the United States. Foreign direct investment in Israel exhibited relatively high volatility - the result of a number of large Israeli companies' exits or sale to overseas investors. In both the 2001 episode of burst in the Nasdaq bubble and in the global financial crisis of 2009, the volume of direct investments in Israel declined. Among the most prominent foreign investments in Israel in our sample period were the establishment of a major computer chip factory in Kiryat Gat by Intel, the acquisition of Iscar by Berkshire Hattaway, and Google's acquisition of Waze.

As mentioned, liberalization in the foreign currency market also opened to Israelis the possibility of FDI outflows. The fear that Israelis would massively transfer their savings abroad did not materialize, and in most years the volume of direct investment by Israelis abroad was lower than that of foreign investment in Israel. Out of the investments abroad by Israeli entities, we find the pharmaceutical company Teva, which acquired foreign companies by sizeable amounts.

3.3 Exchange rate policy, monetary policy and short-term capital flows

Short-term capital flows consist mainly of investments in securities, deposits and the undertaking of various types of credit. These movements are particularly sensitive to business cycles, risks and economic policies. As previously indicated, most of the restrictions on capital movements were removed by 1998, when inflation was still relatively high, and the exchange rate moved along within a crawling currency band.

For the purpose of analyzing capital flows, we use the following conceptual framework. Let us define:

FA - the surplus in the financial account except the change in foreign currency reserves. (i.e., a positive FA indicates net capital inflow).

CA - The current account balance.

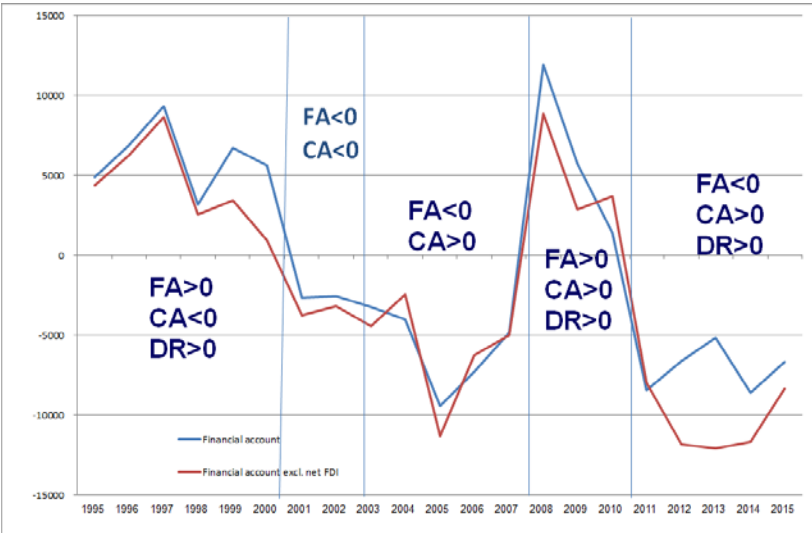
DR - The increase in foreign exchange reserves in the central bank.

Proper balance of payments accounting ensures that, assuming away errors and omissions, the following equality is maintained:

$$FA = DR - CA$$

The period from 1995 to 2016, was divided into five subperiods (or episodes) according to the prevailing characteristics of capital flows. As Figure 3 shows, net direct investment did not affect the trends of total capital flows, so in fact movements in FA mainly reflected short-term capital flows. We turn now to a discussion of each one of the episodes.

Figure 3. The financial account



Source: Central Bureau of Statistics

Episode 1: From the second half of the 1990s to 2002- current account deficit and capital inflows

Monetary policy in these years was intended to curb inflation. As mentioned above, restrictions on capital flows have gradually been removed, the high interest rate spreads between domestic and foreign interest rates remained high. This attracted capital inflows and the Bank of Israel was forced to defend the lower limit of the crawling currency band by purchasing foreign currency from the public. In order to sterilize the effect of the purchases on the money supply, the Bank of Israel issued an increasing amount of short-term T- bills. In 1996-1997 foreign currency reserves increased as a result of the Bank of Israel's purchases to about \$12 billion, i.e. more than doubled in that short period of time. Basically, this episode illustrated once again the well-known "impossible trinity" from the existing literature: a situation in which relatively free capital flows have a hard time to coexist with a semi-fixed exchange rate and a relatively autonomous domestic monetary policy. Eventually, the authorities started to increase the amplitude of the exchange rate band, thus moving toward a semi-flexible exchange rate regime. At that time, imposing restrictions on capital flows were considered, but eventually the widening of the exchange rate band made this redundant. It was expected that by expanding the width of the currency band, investors will probably see an increased degree of exchange rate risk in their activities, thus probably reducing the attractiveness of short-term speculative flows

It turns out that most of the short-term capital inflows during this episode originated from domestic players. That is, domestic corporations found it attractive to borrow from banks in foreign currencies, at relatively low interest rates, and banks "imported" the funds for these loans from abroad. In the late 1990s, foreign currency credit reached about 35 percent of total credit in the economy. Looking at foreign investment, for example in government bonds and Treasury bills, we can see that in the second half of the 1990s, they did not exceed one percent of the total stock of bonds and Treasury bills. No doubt, at that time the domestic business sector took a significant degree of exchange rate risk. Most probably, the business sector assumed that the risk of sharp currency depreciation was not high at that time.

Even when considering global crisis events, such as in 1998 - when Russia defaulted on its debts, the LTCM hedge fund collapsed, and there was a sharp reduction in capital

inflows to emerging market economies, most of Israel's capital inflows remained unchanged due to their high dependence on local businesses.

In summary, episode 1 was typical of many emerging economies, facing the "capital inflows problem" (analyzed by Calvo, Leiderman and Reinhart (1996)). While Israel was not part of the global emerging markets crisis, the degree of vulnerability was high, mainly due to the mismatch between the currency denomination of assets and liabilities in the balance sheet of many corporates. A sharp depreciation of the shekel during this period could have caused many business entities to fail to meet their foreign currency debt repayments, with negative implications for the soundness of the banking system.

Episode 2: Recession and a rise in country risk

In 2001, the financial stability of the economy deteriorated as a result of a combination of two events: the burst of the Nasdaq bubble and a sharp deterioration of the security situation in Israel. The recession led to a rapid increase in the government's budget deficit and in public debt, together with a marked depreciation of the shekel. The credibility of economic policy weakened during this period, and households and business entities diverted some of their investments abroad. The central bank did not intervene in the foreign exchange market, but responded through monetary policy. The sharp depreciation of the ILS during this period changed the exchange rate risk perceptions of economic agents, who gradually reduced their exposure to foreign currencies.

Episode 3: Current account surplus and an increase in overseas financial investments

In the second half of the first decade of the 2000s, international financial market integration processes accelerated. Institutional investors began diverting a growing portion of their financial investments abroad, a phenomenon perceived by many as indicating that at least some of the home bias⁷ had been reduced. The leap was in 2005: Investments in securities abroad reached \$8 billion (in terms of flow), compared with about \$3 billion in the previous two years.

⁷ Home bias describes the tendency of investors to prefer their local markets, which are more familiar

The central bank's interest rate during this period was similar to the Fed funds rate, and in part of the period it was even lower. At the same time, the yield curve in Israel was steep, so foreign investors showed interest in investing in shekel bonds, but actual inflows were relatively low.

Episode 4: Global Crisis, Major Foreign Exchange Purchases of the Bank of Israel

The global financial crisis of 2008 posed a new challenge for policymakers - how to deal with foreign currency inflows that did not necessarily reflect a surplus in the current account. These capital movements were, partly at least, the result of an increased resilience of the Israeli economy - including the banking and financial systems - to the world's turmoil. Against this background, the Bank of Israel returned to foreign currency purchases, for the first time since 1997, with a view to moderating the real appreciation of the shekel, at least in the short term. In March 2008, the Bank of Israel announced a plan to increase foreign exchange reserves to \$35-40 billion through a \$25 million purchase per day.

Although Israeli investments in foreign securities portfolios continued during this period, this time, due to the continued strengthening of the shekel, institutional investors chose not to significantly increase their exposure to foreign currency through currency hedging operations, made through foreign and domestic banks. Buying overseas securities while hedging the currency is equivalent to taking foreign currency credit for the purpose of acquiring overseas securities, which means import of capital in parallel with capital exports, and therefore should not affect the exchange rate. The side effect of the hedging operation was large purchases of T-bills by foreign banks. (In the exchange swaps, the foreign bank gives foreign currency and receives ILS, the foreign bank buys T-bills with the ILS he received. At the end of the transaction, the foreign bank sells the T-bills and convert the ILS back to foreign currency at a predetermined exchange rate). In 2011, foreign investors held more than one-third of the T-bills balance. It is difficult to know which part of the T-bills acquisitions was part of the foreign exchange swaps transactions carried out by foreigners and what part was their real exposure to the ILS. It is reasonable to believe that most T-bills purchases was part of a currency swap transactions, meaning

that foreign banks did not expose themselves to the ILS, rather than took advantage of the local need for foreign currency liquidity (high basis swap spreads⁸).

This spread gives foreign banks the possibility of low-risk profit (in this case - the risk of the issuer of the T-bills). In July 2011, the Bank of Israel abolished the tax exemption for nonresidents for their investments in short-term debt instruments, and also imposed a liquidity requirement on swap transactions. As a result, foreign holdings in T-bills gradually diminished. Therefore, it can be estimated that most foreign purchases of T-bills during this period were not for “speculative” purposes.

Episode 5: Increase of current account surplus and capital outflows; The Bank of Israel continues to purchase foreign currency.

Over the period, the surplus in the current account of the balance of payments increased as a result of a decrease in the cost of energy imports. Institutional investors channeled a growing portion of their overseas savings, but continued to partially hedge the currency so that their foreign exchange exposure remained fairly stable. The appreciation pressures on the ILS intensified and the central bank continued to increase its foreign currency reserves, and lowered its policy rate to almost zero.

4 Conclusions and the outlook ahead

Against the backdrop of sound macroeconomic policies in the last two decades, the ongoing improvement in the current account of the balance of payments has contributed to strengthening the economy and reducing its vulnerability to shocks. Even during periods of major geopolitical stress and/or external crises, we have seen no massive outflow of foreign currency or speculative attacks on the ILS.

Among the key findings from this research are:

⁸ Intuitively it can be explained by interest rate on the USD in the local market, that is higher than the interest rate on the USD in the USA.

- The current account reversal, from deficits to surpluses, in the period reviewed was the result of global factors, such as the accelerated growth of world trade and in particular the global boom of high-tech industries, along with local factors, including a shift to a more disciplined and sustainable macroeconomic policy.
- The consolidation of the surplus in the current account occurred alongside a real appreciation of the shekel for much of the period under study.
- In terms of national savings and investment, the improvement in the current account reflected a decrease in the investment rate and an increase in the savings rate out of total economic income. Internationally, Israel's relatively high savings rate stands out, while the investment rate is similar to that of developed countries.
- The fall in world energy prices and the production of natural gas from the Tamar reservoir had a significant impact on the large current account surpluses starting in 2013. Among these two factors, the effect of lower energy prices was the dominant one.
- At variance with other country cases, domestic Israeli investors had a crucial role in determining the strength and direction of short-term capital flows recorded in the financial account. The direction of these capital flows has changed over the years, starting with tight domestic monetary policy and capital inflows via domestic borrowing in foreign currencies, and on to a situation of private sector capital outflows, mainly by institutional investors in the second half of the first decade of the 2000s.
- Of the various episodes in the financial account in the last two decades, only in the second half of the 1990s (episode 1) we witnessed a clear case of the “hot money” phenomenon, including intensive activity of carry trade players, in the backdrop of a high domestic-foreign interest rate differential.
- Over time, institutional investors increased their exposure to overseas investments, and the extent of currency hedging their positions changes frequently over time, and has become a key factor in determining the exchange rate dynamics of the ILS, especially in the short run.

Is Israel's shift to a current account surplus country a permanent phenomenon? Here we offer a few insights on this challenging question:

- National Saving - Saving rates depend largely on institutional, economic, and cultural factors that do not change very quickly. Moreover, changes in the pension system in Israel continue to support a high savings rate. The retirement age of women in Israel is still low compared to the rest of the world, and its gradual rise can contribute even more to the savings rate. Several studies abroad have shown that the saving rate tends to rise in countries where income distribution is more equitable. Accordingly, a policy that would work towards a more equitable distribution of income could also increase the saving rate. The Israeli sovereign wealth fund that is expected to emerge in the coming years creates a kind of forced savings on the government, preventing the use of these funds to finance current spending.
- National investment - the trends here are less clear. On the one hand, the trend in the world in recent years has been the decline in the weight of investment in GDP, especially in developed countries, where productivity has fallen. Some believe that this trend is unlikely to change anytime soon (e.g., according to Larry Summers' 'secular stagnation hypothesis'). However, in Israel there is no doubt that the low level of infrastructures, especially transportation, requires an increase in their investment in the future.
- Natural gas – The outlook here is positive in that sooner or later Israel is expected to be an exporter of natural gas. Furthermore, the dependence on imports of oil, and hence on world oil prices, can be expected to diminish over time.
- International investment position - A large surplus of assets over liabilities supports the continued improvement in the national income level, especially if and when world interest rates will start to rise.
- Technological advantage - The technology industries have made a big contribution to consolidating the surplus in the current account. Having said that, Israel's world status of a "start-up nation" will continue to be challenged by other countries.

In conclusion, world developments, domestic policies, and natural gas discoveries have all worked toward a transition from current account deficits to surpluses. Looking ahead, there is of course no guarantee that current account surpluses will be a permanent feature of the economy. Yet, from a medium and long-term perspective, Israel's economic fundamentals are consistent with a continuation of the current surpluses. Having said this, if for some reason or another, the economy goes into a prolonged period of current account deficits and the current currency appreciation pressures are replaced by depreciation pressures, as long as macroeconomic policies are sound and the sovereign risk is kept at low and reasonable levels, there should be no major difficulties in financing such deficits.

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