Developments in Israel's foreign exchange market and the implications for the conduct of monetary policy and financial stability

By Andrew Abir[1]

Abstract

This paper looks at how developments in the microstructure of the foreign exchange market can impact monetary policy. It looks at the example of Israel as a small open economy where the exchange rate has an importance influence on inflation and the real economy. The paper identifies changes in the behaviour of the main agents in the foreign exchange market in recent years. It also illustrates how these developments can affect the interaction between external factors such as price action in international equity markets and flows in the foreign exchange market.

JEL classification codes: E58, F31, F32.

Keywords: FX market, capital flows, monetary policy.

[1] Abir is the Deputy Governor and member of the Monetary Policy Committee at the Bank of Israel.

Introduction

The dollar-shekel exchange rate is probably the most visible and best known price of any financial asset in Israel, reflecting both its historical importance as a nominal anchor and also its influence today on inflation and the real economy. If you stopped a random person on the street in Israel, the dollar-shekel exchange rate is probably the only financial variable they will be able to recite. In this short note, we will look at how developments in the structure of the foreign exchange market have affected the evolution of the exchange rate and its implications for monetary policy and financial stability.

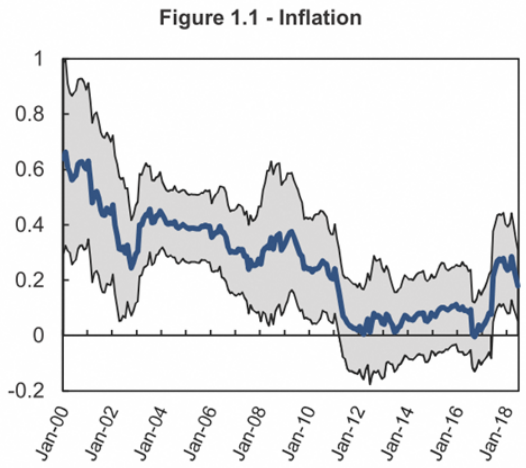
The foreign exchange market is by far the largest market in Israel in terms of turnover, dwarfing the fixed income and equity markets and has been free of controls for over two decades. Daily turnover in the onshore shekel foreign exchange market is around US$ 5.5 billion compared with US$ 0.3 billion in the equity market and US$ 0.9 billion in the fixed income market. In addition, the turnover in the offshore shekel foreign market is estimated to be at least the size of the onshore market. The size of the market in general and of capital flows in particular make it challenging for a central bank to predict how its monetary policy will be interpreted by the market. The flows that go through the market far exceed those that emanate from just the trade account. This has implications for how monetary policy is transmitted through the exchange rate into inflation and the real economy.

The relevance of the foreign exchange market for monetary policy

As in many small open economies, the foreign exchange market in Israel plays an important role in the transmission of monetary policy. Its relevance for monetary policy derives from the relatively high pass-through of the exchange rate into inflation and from the exchange rate's impact on the tradeable sector of the real economy. The pass-through from the exchange rate into consumer prices has diminished over the past two decades but remains important. Graph 1 below shows the estimate[2] for pass-through over a 48-month rolling window, falling from around 60% in 2000 to around 20% today.

[2] "Exchange rate pass-through to prices", *Selected Research and Policy Analysis Notes*, Bank of Israel Research Department, February 2019.

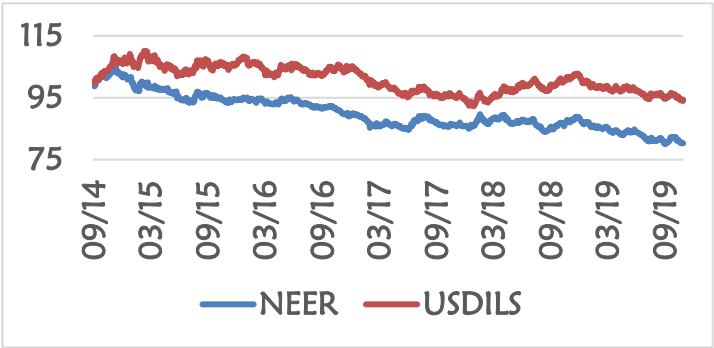
Exchange rate pass-through, 48-month rolling window 2000–18 Graph 1



Source: Bank of Israel, "Exchange rate pass-through to prices", Selected Research and Policy Analysis Notes, February 2019.

The very high pass-through up to the early 2000s resulted from the widespread practice of indexing prices to the dollar, particularly in the housing market, a hangover from the hyperinflation period in the first half of the 1980s. With the decline in inflation to low single digits and a period of considerable appreciation in the shekel exchange rate in the early 2000s, this practice of indexation disappeared, but there remains a marginally significant pass-through of around 10–20%. The appreciation of the trade-weighted shekel exchange rate over the past few years (Graph 2) has been one of the factors behind the consistent undershooting of the 1–3% inflation target.

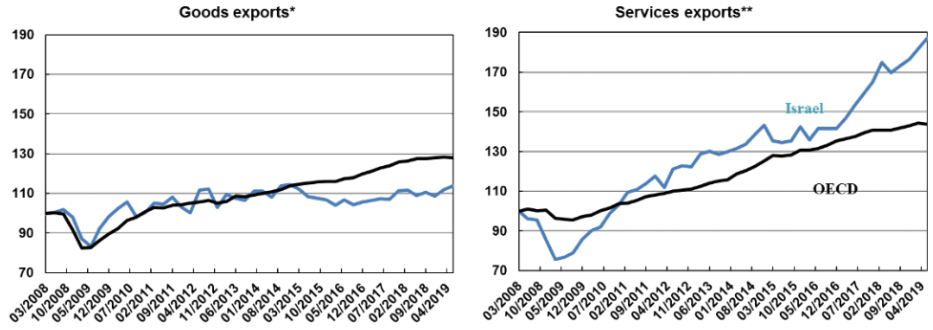
Shekel nominal effective exchange rate (NEER) and $/ILS (2014–19) Graph 2



Source: Bloomberg, Bank of Israel.

The currency's appreciation has also been a factor behind the somewhat sluggish performance (Graph 3) of goods, which have been more sensitive to the exchange rate because of lower margins and less pricing power. Service exports have continued to grow strongly, particularly in the high-tech sector, which has been less sensitive to exchange rate pressure.

Export growth in Israel compared with the OECD Graph 3



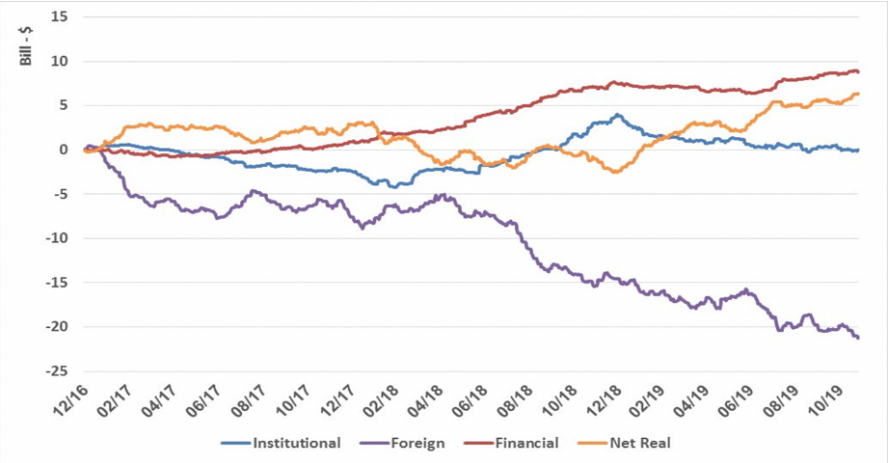
Source: Bureau of Statistics and OECD.

Structure of the foreign exchange market

The major participants in the foreign exchange market are corporate treasurers (importers and exporters), the institutional savings sector (pension funds, mutual funds and insurance) and foreign institutions. Each sector has different motives for transactions and has a differing sensitivity to changes in the exchange rate or in the interest rate. Therefore, information on the microstructure of the market and on real-time flows can be a helpful input into monetary policy deliberations. Accordingly, in June 2016, the Bank of Israel enacted a reporting requirement on financial transactions in the shekel foreign exchange and interest rate markets. The information, provided daily by market participants, enhance the Bank of Israel's ability to monitor and analyse the behaviour of different market segments and even that of individual players. The deeper understanding of market flows is a valuable ingredient for improving monetary policy and macroprudential tools.

The order requires domestic and foreign market participants with a daily turnover of at least US$ 15 million to report on any transaction in the shekel spot, forward and options markets. In addition, all shekel interest rate derivatives and inflation derivatives are included in this order. The order is helpful for identifying market participants who are very involved in certain instruments. If necessary, the Bank of Israel can approach the market participant in order to understand the motives behind the transactions. Graph 4 outlines recent flows in the foreign exchange market from the data provided under the reporting requirement.

Cumulative purchases of foreign exchange by sector Graph 4



Source: Bank of Israel.

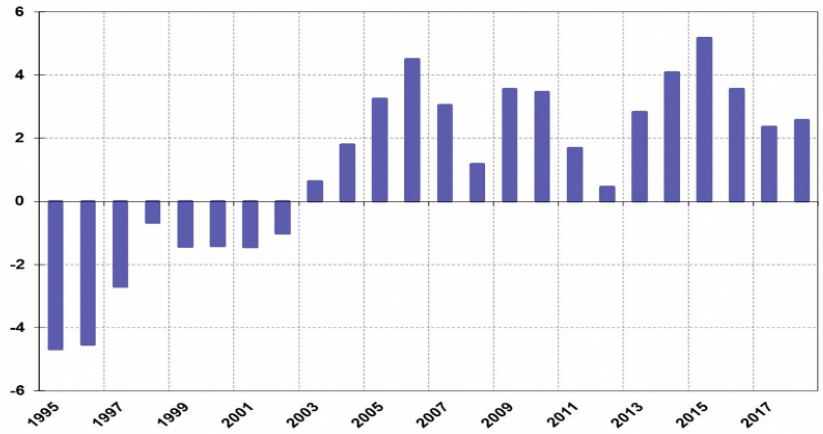
One can see that, after a period of relative stability, foreign institutions returned to being significant net purchasers of shekels from mid-2018 onwards. The detailed reporting allows us to better understand the nature of foreign demand for shekels. Thus, we are able to assess that short-term players, sometimes referred to as "speculators", who expect the shekel to further appreciate in the short run, were dominant since mid-2018. At the same time, domestic institutional investors and local financial agents were sellers of shekels in the second half of 2018.

Certain sectors are more sensitive than others to the exchange rate and monetary policy. For instance, flows related to FDI tend to be less sensitive to exchange rates and interest rates. Much of these flows are directed to the high-tech sector, where the margins or potential capital gains far outweigh concerns about exchange rate volatility or interest rate differentials. The funding for high-tech startups is predominantly from overseas and these companies then steadily sell some of the foreign exchange funding into shekels to pay for salaries and other local costs.

Implications of recent developments in the foreign exchange market

Two important developments over the last two decades have affected flows in the foreign exchange market. The first was the move from a structural deficit in the current account to a structural surplus (Graph 5).

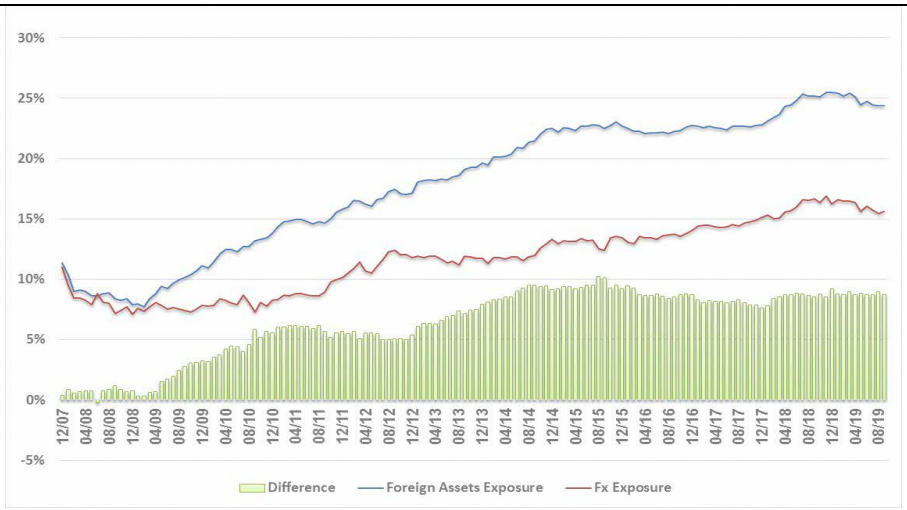
Current account as a percentage of GDP Graph 5



Source: Balance of Payments, Central Bureau of Statistics.

This move was accentuated in the present decade by the discovery of natural gas, which reduced Israel's dependence on imported energy. The second has been the liberalisation of capital flows, which has allowed domestic savers to access foreign capital markets. The institutional savings sector has been progressively increasing the percentage of its portfolios invested in foreign assets. As the domestic capital market is too small to absorb the flows from domestic savings, it has looked to allocate a growing part of its portfolio abroad. This development can be seen in Graph 6. Foreign assets now make up close to 25% of the overall portfolio, which, although low by international comparison, is still much higher than it was a decade or so ago. However, in terms of foreign currency exposure, the figure is lower at around 15%, as part of the allocation to foreign assets is hedged back into shekels.

Institutional investors' foreign assets as percentage of total assets Graph 6

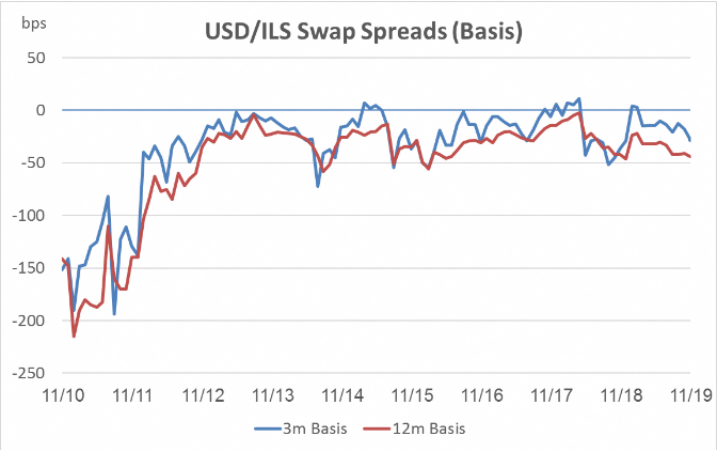


Source: Bank of Israel.

A number of factors influence the activity of the institutional investors in the foreign exchange market: the rate of accumulation of savings, their desired level of foreign assets and foreign exchange exposure, and the mark-to-market of the different classes in their portfolios. Since much of their foreign assets are allocated to the equity markets, large changes in the P&L on their overseas equity portfolio can lead to hedging changes in the foreign exchange market. An interesting example of this was the 20% correction in the S&P equity market at the end of 2018, which resulted in foreign exchange buying by institutional investors who had to provide margin to cover their losses in these markets and maintain their target equity exposure.

The institutional investor sector tends also to be more sensitive to interest rate differentials as this differential affects the hedging costs on their foreign assets. The interest rate differential is derived not only from the relative yield curves between Israel and the United States but also the basis in the cross-currency swap market, which has accentuated the interest rate differential in recent years. In general, a negative basis is the by-product of a scarcity of dollars in the foreign exchange swap market. Hedging of foreign assets by institutional investors is consequently made more expensive and can lead to a large cost for institutions that hedge part of their foreign asset holdings. This cost comes on top of the interest rate differential, as in recent years interest rates in Israel have been lower than in the United States. This also applies to foreign entities who are players in the local market but are not looking for real assets and are just making a play on the possible appreciation of the exchange rate or are planning to benefit from the positive carry (in periods where this is relevant). These foreign entities enter the market through foreign exchange trades and then roll over their exposure through swaps. Consequently, at times, the cross-currency basis can be an important cost for both these sectors. Graph 7 shows the development of the basis over time and highlights periods when the negative basis spiked.

Cross-currency basis in the shekel/dollar market Graph 7



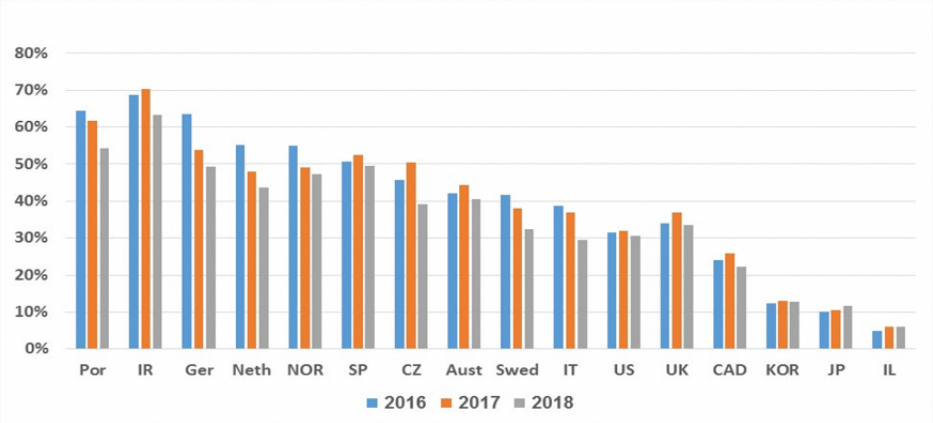
Source: Bloomberg.

The end-2010 spike in the cross-currency basis was accompanied by a rapid increase in activity in the foreign exchange swap market, which was triggered by speculative activity expecting further appreciation in the shekel as these agents rolled over their positions in the swaps markets. The central bank's intervention in the

foreign exchange market to reduce the pace of the shekel's appreciation may also have exacerbated the movement in the basis as it absorbed dollars from the local market. The ballooning volume of swap transactions in the Israeli banking system was seen as a potential systemic risk. To counter this, in January 2011 the Bank introduced a macroprudential measure imposing a reserve requirement on banks for foreign currency derivative transactions vis-à-vis non-residents. A 10% reserve requirement was applied to shekel/foreign currency swap transactions (FX swaps) and foreign currency forwards. The liquidity requirement made these trades less profitable by effectively reducing the yield on the swap transaction. At that time, the local interest rate was higher than the international rates, and the shekel was targeted as a carry currency. Thus, the reserve requirement also reduced the yield of the long shekel positions that were being rolled over in the swap market. The Bank re-assessed annually the necessity of the liquidity requirement and decided in October 2014 to cancel it as it had fulfilled its purpose. At that time, the activity in foreign exchange swaps had calmed down and the effectiveness of the liquidity requirement was in any case severely curtailed, as interest rates had fallen to 0.25%.

What is interesting is that the increase in the turnover of foreign institutions in the foreign exchange market has not been matched by an increase in their involvement in domestic capital markets. On an international comparison, the holdings of foreigners in the local capital markets are very low. (Graph 8). It will be interesting to see if the future inclusion of Israel in the WGBI index will change this.

Foreign participation in government bond markets — Graph 8



Sources: Bank of Israel, IMF.

While foreign involvement in capital markets remains low, foreign investors have reached dominant positions in other areas. One recent example has been the growth in the turnover from model-driven accounts. These are mostly offshore funds that trade in the shekel foreign exchange market based on technical models, predominantly momentum-driven. These may very well accentuate trends initiated by real flows. These flows are also probably less sensitive to interest rate differentials as they are mainly influenced by price action. Such flows, which are negatively perceived by the public as "speculative", might have undesirable effects on inflation and the real economy in the short run, but they are a typical feature of the floating exchange rate regime. As such, and as long as the floating exchange rate regime is deemed beneficial, one should be very careful when considering whether to curb these flows.

Conclusion

In small open economies, the microstructure of the foreign exchange market needs to be closely studied to understand how it affects the transmission of monetary policy. Obtaining data at the individual economic agent level is a key requirement for this. However, the raw data are insufficient. One needs to understand the motives of the different agents involved in the market and so good old-fashioned market intelligence still has a role to play.

The degree of sensitivity to the central bank's interest rate policy can be affected by changes in the microstructure of the foreign exchange market. Different agents are variously influenced and this can change over time. Similarly, changes in the size, liquidity and structure of the market are important for the implementation of other monetary tools of the central bank, such as direct intervention in the foreign exchange market. They will also affect questions such as the adequacy of foreign exchange reserves. As authorities liberalise their foreign exchange and capital markets, they need to be aware that they are entering into a new era of complexity that will make the life of the monetary authority more challenging.