The interaction between monetary and fiscal policy: insights from two business cycles in Israel

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Abstract

Comparing the two significant recessions Israel experienced over the last decade, we highlight the importance of sustained fiscal discipline and credible monetary policy during normal times for expanding the set of policy options available at a time of need. In the first recession Israel was forced to conduct a contractionary fiscal and monetary policy, whereas in the second one it was able to pursue an expansionary policy. The difference in the effect of the policy response between the two recessions is sizable: it exacerbated the first recession while it helped to moderate the second one.

Keywords: Fiscal policy, fiscal discipline, public debt, monetary policy, counter-cyclical policy, business cycles

JEL classification: E52, E62, H6

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[1] Bank of Israel. We thank Stanley Fischer and Alon Binyamini for helpful comments and Noa Heymann for her research assistance.

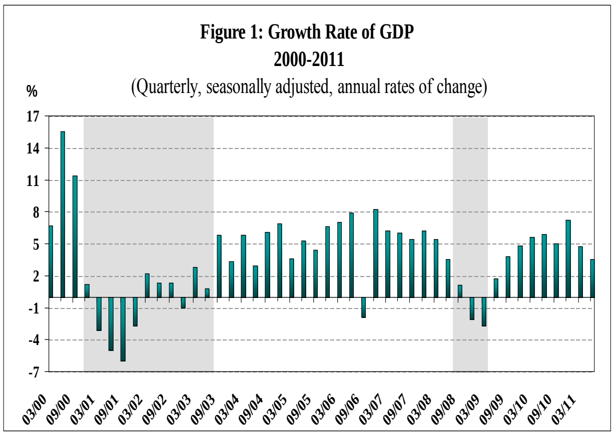
Introduction

Over the last decade Israel experienced two significant business cycles. The monetary and fiscal policy response to the recession at the end of the decade was very different from the response to recession of the early 2000s. In the earlier episode, following a steep rise in the budget deficit and a single 2 percentage point interest rate reduction, policy makers were forced to make a sharp reversal and conduct a contractionary policy in the midst of the recession. In the second episode, monetary and fiscal expansion was pursued until recovery was well under way. This note examines the factors behind the difference in the policy response to the two recession episodes.

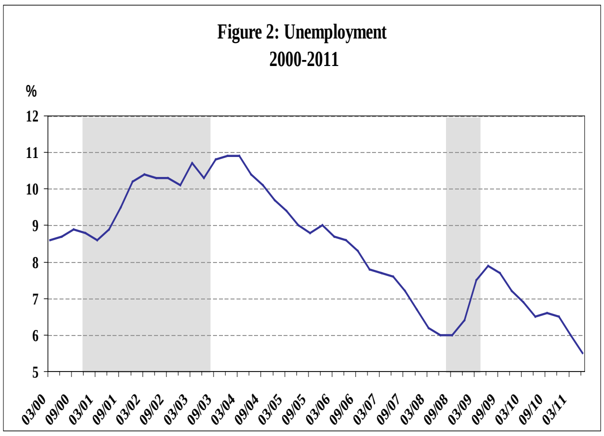
Comparing the two episodes, we highlight the importance of fiscal discipline and the reduction of public debt over time for allowing counter-cyclical fiscal and monetary policy during recessions. In particular, we show that the improved fiscal situation on the eve of the last recession, along with other factors, played an important role in allowing the Bank of Israel to pursue a highly expansionary monetary policy during the recent recession, which helped to moderate and shorten it. By contrast, the poor fiscal situation that preceded the previous crisis and too-sharp an instant interest rate cut that proved unsustainable not only prevented any monetary expansion during that crisis; it actually forced the central bank to raise its interest rate in the midst of the crisis. This actually exacerbated the recession. A rough estimate shows that the difference in the effect on GDP of the policy response between the two episodes was sizable.

Two recessions – different circumstances

During the years 2001-2003 Israel experienced its worst recession in decades, which included four consecutive quarters of negative GDP growth (Figure 1). The dramatic change in the state of the economy, which came after an exceptional 9 percent GDP growth rate in 2000, was due to the unpleasant combination of the burst of the global hi-tech bubble and a sharp deterioration in Israel's security situation (the *Intifada*). Unemployment rose sharply, peaking at about 11 percent (Figure 2), and began to decline only after about 3 years. The budget deficit peaked at almost 6 percent of GDP in 2003 (Figure 3), and the public debt, which was high to begin with, reached almost 100 percent of GDP that year (Figure 4).

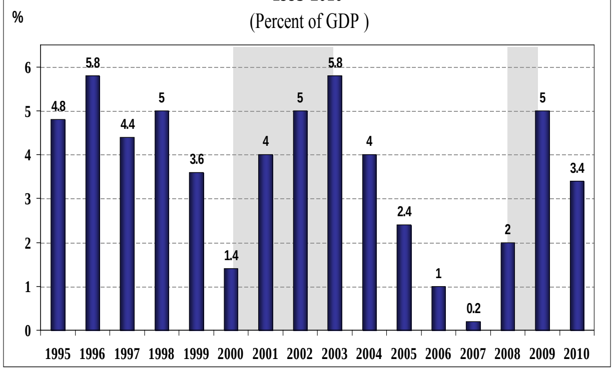


SOURCE: Based on Central Bureau of Statistics data.



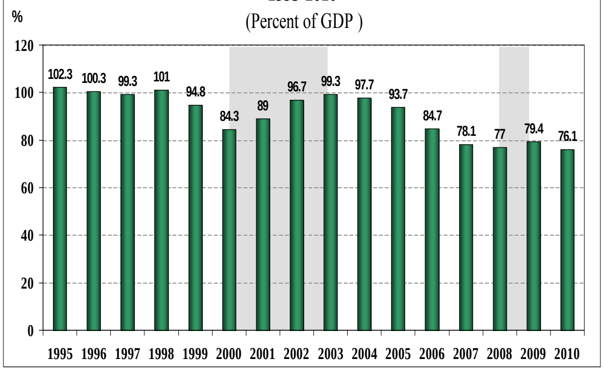
SOURCE: Based on Central Bureau of Statistics data.

Figure 3: Budget Deficit*
1995-2010
(Percent of GDP)



* The data refer to the deficit excluding the Bank of Israel's profits, and excluding credit extended.
SOURCE: Bank of Israel.

Figure 4: Gross Public Debt
1995-2010
(Percent of GDP)



SOURCE: Bank of Israel.

The 2008-2009 recession in Israel was somewhat different: it was due entirely to external factors – the global crisis – and was milder and shorter than the 2001-2003 recession. In particular, growth was negative for only 2 quarters, and the rise in unemployment, while quite sharp, was short-lived: it peaked within just 3 quarters and started declining thereafter. It should be emphasized, however, that it is only in retrospect that we can characterize the outcomes of the recent crisis as milder. The shock to real activity in Israel may have been not much smaller than in the previous recession, and the shock to its financial markets was certainly larger. The fact that, ex post, the recent crisis in Israel turned out to be milder than the previous one, and milder than feared in real time, is in part due to the more aggressive policy pursued in Israel, and in part to the success of policy measures abroad in containing the crisis.

Several important differences in the circumstances under which the two recessions evolved should be noted:

The relative nature of the shock: As noted, in 2001 Israel faced a unique combination of shocks such that it was hit more severely than the rest of the world and its relative risk increased. In contrast, the core of the recent crisis did not include Israel, and in many respects it fared better than most advanced countries during the recession. For example, the fall in exports and in GDP in Israel in 2001 was much larger than in the advanced economies, whereas in the 2008-2009 crisis Israeli exports decreased by roughly the same as in the advanced economies and GDP fell considerably less (Figures 5 and 6). Notably, while sharp declines in housing prices and housing investment played a major role in the development of the recent crisis in the US and other advanced economies, demand and prices in the Israeli housing market rose during 2009. This rise was partly driven by the Bank of Israel's interest rate cuts and reflected the desired transmission of its expansionary monetary policy to the construction sector and, through it, to the economy at large.[2] The considerable pressures for an appreciation of the shekel during much of the recent crisis, which the Bank was trying to moderate by purchasing foreign currency, also reflected Israel's relatively favorable position at that time.

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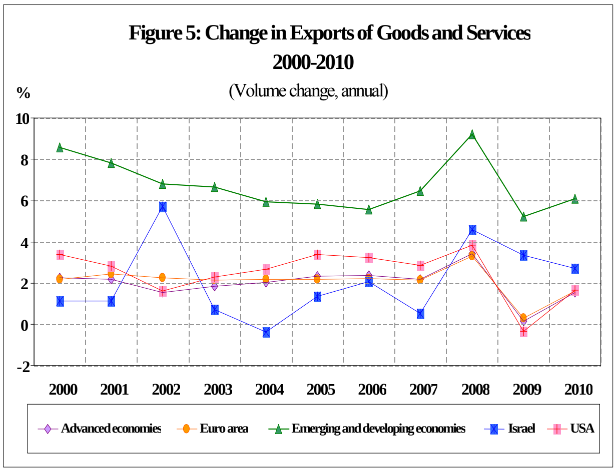
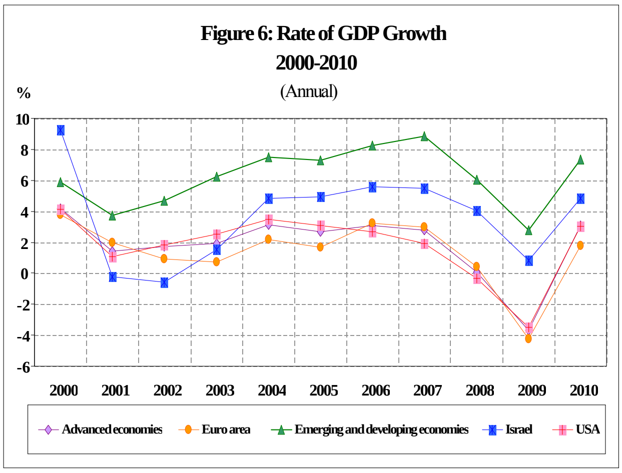
[2] Activity in the Israeli housing market slowed down at the peak of the crisis (late 2008 and the beginning of 2009), but accelerated thereafter. The acceleration during 2009 stood in sharp contrast to the falling real prices and low level of activity in this market in the preceding decade.



SOURCE: IMF World Economic Outlook, September 2011.



SOURCE: IMF World Economic Outlook, September 2011.

World policies: Low interest rates and substantial monetary and fiscal expansions around the world during the recent crisis made such policies in Israel more feasible and acceptable to financial markets. This is particularly true regarding the very low *level* which the interest rate in Israel reached. However, the low levels of interest rates abroad do not tell the entire story, since it is not just the level that was much lower in Israel during the recent recession compared with the 2001-2003 one. Figure 11 shows that the interest rate differentials were also much lower. This reflects a decline in Israel's risk premium and underlines the importance of the improvement in its particular situation compared with the 2001-2003 episode, over and above the global circumstances.

The state of the economy in the years preceding the crisis: The recent crisis hit Israel after about 5 years of exceptionally high growth (about 5 percent a year). This was robust and sustainable growth[3] in the sense that it was driven by strong fundamentals: strong export growth driven by world demand and sound macroeconomic policy, which included both fiscal discipline and monetary credibility, as well as structural reforms. Growth rates in the years preceding the previous recession were slower[4] and were not sufficiently based on strong fundamentals and fiscal discipline.

The current account and IIP: As in other respects, Israel's current account on the eve of the last recession was in much better shape than in the run-up to the 2001-2003 recession (Figure 7). Israel had been running a deficit on that account prior and during most of that recession, while it has had a substantial surplus since 2003. These accumulated surpluses also resulted in an improved IIP at the onset of the recent crisis, which increased Israel's resilience to the crisis. In fact, Israel's net foreign liabilities have neared zero since 2008. In particular, it has held a positive and growing net asset position in debt instruments since 2003 (Figure 8).[5] However, it is noteworthy that neither of the two crises were essentially balance-of-payments crises. Moreover, the current account deficit at the onset of the previous recession was not large (1.6 percent of GDP) and followed a trend of decline in those years. Hence, the importance of the balance of payments notwithstanding, this is

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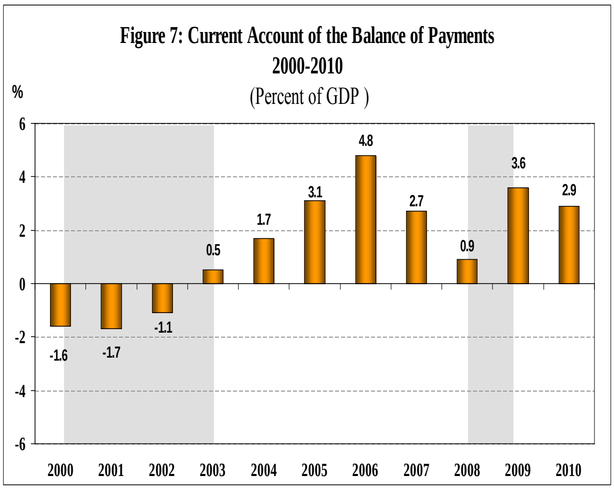
3 Absent the global crisis the robust growth could have to continued, though likely at somewhat lower rates as the economy was gradually shifting from a cyclical expansion to long-term growth.

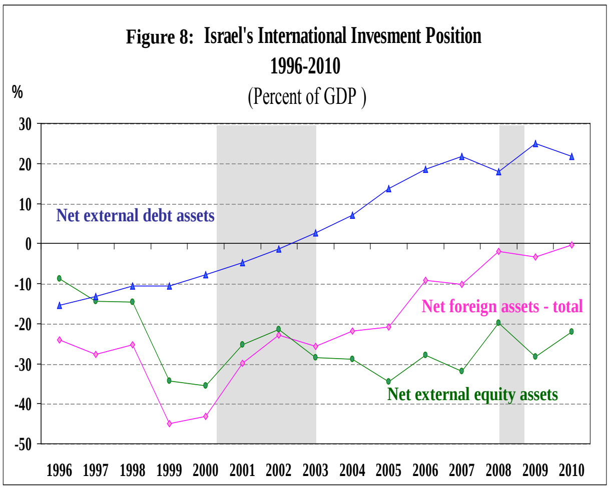
4 As noted the spectacular growth in 2000 was exceptional and unsustainable. It collapsed at once at the end of that year.

5 The position in debt instruments has been shown to be particularly associated with debt crises around the world. See the IMF World Economic Outlook Sep. 2011. Box 1.5.

apparently not the major difference between the two crises in regard to the economy's situation.



SOURCE: Balance of Payments, Central Bureau of Statistics.



SOURCE: Bank of Israel.

Real time perception of the severity of the crisis: Beyond the objective circumstances described above, differences in the real time assessment of the severity of the situation also contributed to the different policy responses. The dramatic events in global markets as the recent crisis evolved, combined with the tremendous uncertainty and concerns over the potential deterioration, pointed to a possibility that this crisis would be substantially worse for Israel than the 2001-2003 one. As policy makers had to act under such uncertainty and react in a timely and preemptive manner, this real time perception played an important role in motivating the aggressive policy response in Israel. The fact that, ex post, the recent crisis in Israel turned out to be milder than feared is in part due to the more aggressive policy pursued in Israel, and in part to the success of policy measures abroad in containing the crisis.

A different policy response

The different circumstances noted above notwithstanding, both recessions were deep enough to require a significant counter-cyclical fiscal and monetary policy response. However, such policy was pursued only in the 2008-2009 recession.

In the first recession, the increase in the budget deficit (Figure 3) brought about by the fall in economic activity caused yields on government bonds to soar in 2002-2003 (Figure 9) as financial markets were reluctant to finance the growing debt. Thus Israel was forced to pursue a procyclical fiscal policy, cutting public spending drastically. This is well illustrated by the decrease in the cyclically adjusted budget deficit[6] during 2001-2002 (Figure 10). The excessively sharp cut in the Bank of Israel interest rate – 2 percentage points at once – turned out to be unsustainable (Figure 11). Thus, the response of financial markets, for example the rise in yields and the depreciation of the shekel, forced the Bank to raise its interest rate sharply in the midst of the recession by about 5 percentage points within a few months and maintain it at a high level for a considerable period of time.

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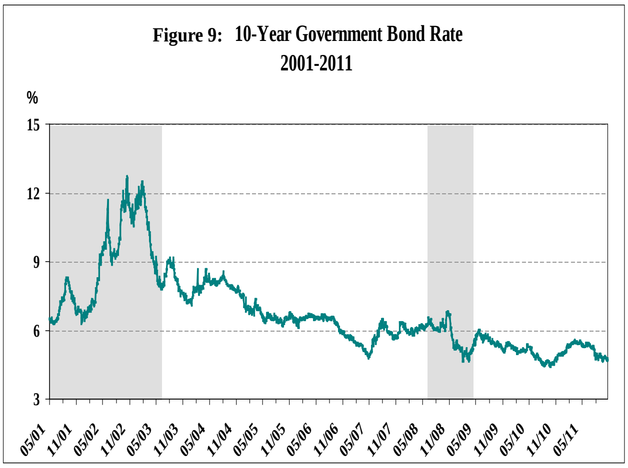
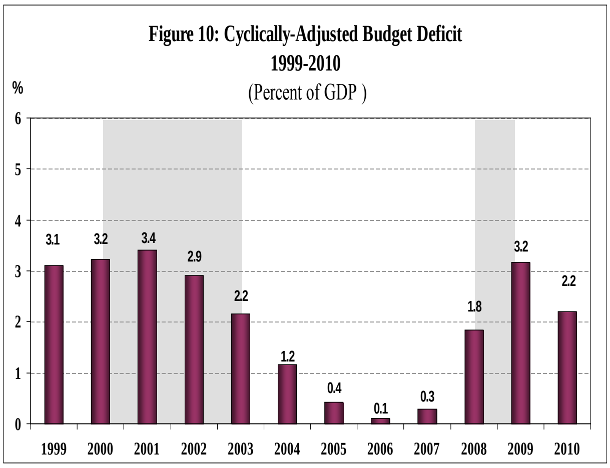
[6] The adjustment is based on the tax revenues that could be expected if GDP were currently at its potential level.



SOURCE: Bloomberg.



SOURCE: Bank of Israel.

The recent recession looks very different in terms of fiscal and monetary policy. This time the government did not have to cut total spending at all, and in fact let the tax-revenue automatic stabilizers act in full, allowing the budget deficit to rise to 5 percent of GDP in 2009, in line with the decline in tax receipts.[7] This was reflected in a rise in the cyclically adjusted budget deficit during 2008-2009 (Figure 10), which was exceptional in view of previous recessions in Israel in which policy was typically procyclical.[8] The policy was well received by the financial markets, as reflected in the relative stability of government bond yields in 2008 (which even declined somewhat at the beginning of 2009), in sharp contrast to their surge in 2002.

The difference in monetary policy between the two episodes is perhaps even more striking. The Bank of Israel responded to the recent crisis with an unprecedented monetary expansion. Starting in October 2008 the Bank cut its interest rate by 3.75 percentage points bringing it to 0.5 percent in April 2009, its lowest level ever (Figure 11). In contrast to the sharp rate cut at the end of 2001 which proved unsustainable, this time the Bank was able to maintain the rate at its near-zero level, and started raising it in September 2009 in view of the rapid improvement of the economic situation and the resumption of growth, not because of pressures from the financial markets. As the monetary rate approached its near-zero level, the Bank also started implementing quantitative easing by purchasing government bonds in the secondary market. At the same time, the Bank continued its purchase of foreign currency. The Bank had begun these purchases about a year earlier as a preemptive measure to moderate the appreciation of the shekel, which could prove particularly harmful to Israeli exports when combined with the contraction in world demand associated with the global recession. These measures, which were quite unthinkable during the previous recession and would have probably had a major destabilizing effect on financial markets at that time, did not invoke any irregular reactions in the markets during the last recession. As noted, yields remained relatively steady in 2008-2009.

The evolution of the exchange rate provides a further illustration of the difference between the two episodes (Figure 12). Following the interest rate cut at the end of 2001, the shekel depreciated sharply, and remained at its highly depreciated level for more than a year, despite the sharp increase in the interest rate which followed immediately after its attempted

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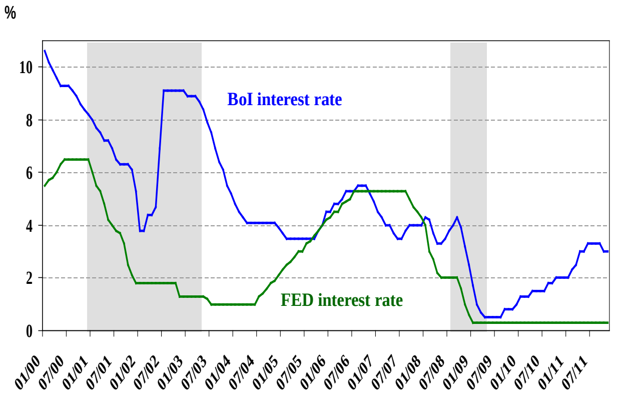
7 Governments in Israel tend to raise the rates of indirect taxes (mainly the VAT) during recessions. In that respect even the 2008-2009 recession was no exception, as described in Strawczynski and Weinberger (2011). However, unlike in previous recessions, this increase was explicitly designed to allow a corresponding increase in expenditure, and not to offset the effect of the automatic stabilizers.

8 The cyclicality of fiscal policy in Israel is discussed in Strawczynski and Zeira (2007).

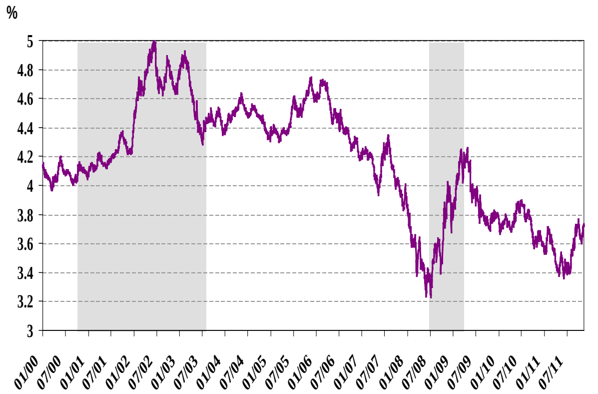
cut. This underlined the inability to pursue a monetary expansion at the time, due in part to the fiscal situation and the undermined credibility of monetary policy. In contrast, during the recent recession not only did the Bank cut the interest rate and narrow the rate differential with world rates, it also purchased substantial amounts of foreign currency in order to induce a depreciation of the shekel and support exports. The sharp depreciation of the shekel during the second half of 2008 and the beginning of 2009 reflected these purchases, as well as a change in the perception of markets regarding the resilience of the domestic economy to the global recession.[9]

Figure 11: BoI and FED Interest Rate
2000-2011



SOURCE: Bank of Israel.

Figure 12: The Nominal Shekel/Dollar Exchange Rate
2000-2011



SOURCE: Bank of Israel.

Why was the policy response so different?

The difference in the policy responses between the two crises, which were both severe enough to call for counter-cyclical fiscal and monetary measures, raises the question as to why a policy like the one undertaken in the 2008-2009 recession was not feasible in 2001-2003. In other words, why were financial markets willing in 2008-2009 to accept fiscal and monetary policy which they would by no means tolerate in the 2001-2003 recession?

We argue that initial conditions at the onset of the crisis are crucial for understanding this difference. As noted above, Israel entered the recent crisis in a much better position in terms of the state of the economy. The different nature of the crises and the global environment are also important in this respect. However, the most important factor is probably the difference in the state of fiscal and monetary policy on the eve of the two crises. In the recent crisis Israel reaped the benefits of several years of sound macroeconomic policy, particularly in terms of persistent fiscal discipline, which was crucially lacking at the onset of the previous crisis, and in terms of the credibility of its price stability target, which had been established over time.

[9] It should be noted that the pass-through of exchange rate movements to the consumer price index had declined over time in Israel (due in large part to reduced indexation of housing prices to the shekel/dollar exchange rate). Thus the depreciation during the recent crisis exerted much less inflationary pressure than it did in the 2001-2003 recession. This mitigated the need to strike a balance between the benefits of depreciation for exports and its inflationary costs.

Fiscal policy: In the years preceding the recent crisis, Israel pursued a very disciplined fiscal policy.[10] It avoided substantial increases in public spending despite its rapid growth, and used the large cyclical tax revenues and receipts from privatization to reduce public debt. The budget deficit declined steadily between 2003 and 2007 (the budget was almost balanced in 2007), as did even the cyclically adjusted one until 2006 (Figures 3 and 10). Thus the public debt decreased from almost 100 percent of GDP in 2003 to 77 percent in 2008 (Figure 4).

Such fiscal discipline was lacking in the years preceding the 2001-2003 recession, and the government was not making much progress in terms of fiscal consolidation at the time. During 1995-1999 the budget deficit was around 4-5 percent of GDP, and public debt was around 100 percent of GDP, showing no real signs of embarking on a downward path.[11] Thus Israel entered the crisis in 2001 with alarmingly high public debt, a poor fiscal reputation and a troubling outlook for its fiscal standing. This state of things made it particularly vulnerable to shocks. As soon as the economy was hit by (a combination of) shocks and the deficit increased due to the fall in tax revenues, yields surged, as did the exchange rate. In fact, policy makers lost all degrees of freedom: they were forced to tighten fiscal policy and more than offset the effect of the automatic stabilizers. The problematic fiscal circumstances reflected on monetary policy as well: in view of these circumstances, financial markets were also reluctant to tolerate a monetary expansion.

Monetary policy: Despite considerable fluctuations in actual inflation during 2003-2007, inflation expectations remained relatively stable and almost entirely within the inflation target range during that time (Figure 13). This reflects the degree of credibility that monetary policy had established in those years. This credibility played an important role in allowing the highly expansionary monetary policy during the recent crisis without jeopardizing the stability of prices and financial markets: in spite of the sharp interest rate cut, the quantitative easing, and actual inflation exceeding the upper bound of the target range during the crisis, inflation expectations remained within the target most of time and their fluctuations were smaller than those of actual inflation.[12]

Such credibility of monetary policy had not been sufficiently established by the time the 2001-2003 recession hit Israel. During the second half of the 1990s Israel was still proceeding with its disinflation process. While inflation had been lowered substantially in those years, in fact falling below the inflation target, inflation expectations remained as volatile as actual inflation and credibility had yet to be consolidated (Figure 13). Under these circumstances, the unduly sharp single rate cut at the end of 2001 undermined credibility. Building on the credibility established in recent years and spreading the rate cut over several months, the Bank was able to sustain a much larger cumulative rate cut (3.75 percentage points) during the 2008-2009 recession.[13]

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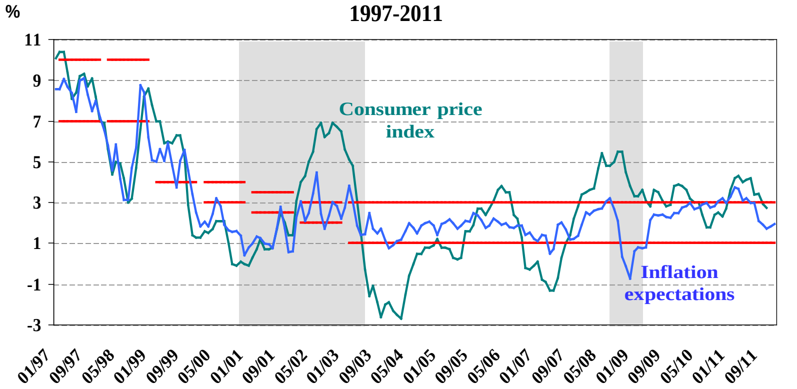
[10] Brender (2009) studies Israel's fiscal policy during 1985-2007 and concludes that during those years only two periods, 1985-1992 and 2002-2006, can be characterized as episodes of sustainable consolidation.

[11] The sharp decrease in public deficit and debt in 2000 is not a reflection of fiscal consolidation but rather the (short-lived) result of the exceptional (and equally short-lived) GDP growth rate in that year. Moreover, as Brender (2009) notes, the government actually raised the deficit target for that year and introduced several expansionary policy initiatives.

[12] In fact, inflation expectations at the end of 2008 and the beginning of 2009 fell below the lower bound of the range, reflecting in large part fears of the crisis and its potential deterioration. A major concern of monetary policy at that time was indeed to prevent a deflationary spiral.

[13] The intolerance of financial markets to the 2001 rate cut was due to additional factors. This cut was supposed to be a part of a package deal in which the government was to take immediate measures to reduce its deficit. However, it did not. It also appears that the interest rate had been kept too high for too long and that a more gradual reduction over time might have turned out to be more sustainable. The surprising and dramatic 2 percentage point cut took markets by surprise and seemed like a breach in policy.

Figure 13: Inflation over Past 12 Months, Inflation Target and Inflation Expectations*
1997-2011



* Expectations derived from the capital market.
SOURCE: Bank of Israel.

An illustrative estimate of the effect of the different policy responses

In this section we provide a rough estimate of the effect of the policy response in each crisis. We estimate the (counterfactual) cumulative loss of GDP that would have been caused by the exogenous factors absent any policy response, and compare it to the actual cumulative loss of GDP.[14] We attribute the difference between the two losses in each episode to the effect of the policy response (fiscal and monetary) in that episode.

The main exogenous factors affecting GDP growth in the 2001-2003 recession were the *Intifada* and, to a lesser extent, the slowdown in world trade. In the 2008-2009 recession, the decline in world trade was the major exogenous factor, and an additional important factor was a wealth effect driven by the decline in the value of financial assets, which affected the purchase of durable goods.[15] We calculate the effect of world trade on GDP in each episode drawing on the unit elasticity of Israeli exports to world trade, which has been found in many studies, and applying the share of exports in GDP as well as the value added of exports that were relevant in each period. The loss of GDP due to the *Intifada* is calculated using estimates published by the Bank of Israel (2001-2003) in its annual reports. The effect on GDP of the decline in the purchase of durables arises mainly through import taxes. This is because a substantial part of these goods in Israel are imported and the significant taxes on these imports are part of GDP in accordance with national accounting conventions. We thus estimate the loss of GDP due to the loss of these tax revenues. The actual loss of GDP in each recession is calculated as the cumulative difference between potential and actual growth during the respective period.

The results of our calculations are reported in Table 1. The first two columns show that the 2001-2003 recession was more severe than the 2008-2009 one in terms of both the magnitude of the exogenous shocks (the first column) and the actual loss of GDP (the second column). However, for our purposes, the main point is given by the last column: in the 2001-2003 recession the actual loss of GDP was 1.5 percentage points larger than the loss attributable to the exogenous shocks. That is, the contractionary monetary and fiscal

[14] We consider the years 2001 through the first half of 2003 for the first recession, and the third quarter of 2008 through the second quarter of 2009 for the second recession.

[15] Credit constraints affecting consumers and the housing market were relatively mild in Israel during the 2008-2009 recession.

policy response at that time exacerbated the crisis. The opposite was the case in the 2008-2009 recession: the expansionary policy response to this crisis helped moderate its effect on the economy, so that the actual loss of GDP is estimated to have been 0.9 percentage points smaller than the loss that would have been caused by the shocks absent a policy response.

Our calculation probably underestimates the loss of GDP caused by the exogenous shocks in the recent recession since we do not account for all of their financial effects, such as the increase in the cost of credit for firms. This implies that the contribution of the policy response to mitigating the crisis in Israel in 2008-2009 was probably larger than reported in Table 1.

Table 1

The effect of shocks and policy on GDP in the 2001-2003 and 2008-2009 recessions

Cumulative effect, percent of GDP

	Loss of GDP due to exogenous shocks	**Actual loss of GDP**	**Policy effect on GDP**
2001-2003	7.6	9.1	-1.5
2008-2009	5.1	4.2	0.9

A separate calculation using the Bank of Israel DSGE model for the Israeli economy yields similar results.[16] It shows that implementing the contractionary policy of the previous recession during the 2008-2009 recession would have resulted in a loss of 2.6 percent of GDP. The DSGE calculation further implies that about three quarters of the loss are due to monetary policy, and the remaining loss to fiscal policy. Our calculation, which derives the effect of policy as a residual, does not allow for such decomposition between monetary and fiscal policy.

Looking ahead – confronting the looming crisis

The possibility of a second global crisis triggered by the current events in Europe raises the question whether Israel can repeat its monetary and fiscal policies that seem to have worked well in the recent crisis. The answer is not straightforward.

As noted, Israel was affected relatively mildly by the 2008-2009 crisis and has recovered rapidly, enjoying growth rates that were higher than in most advanced countries. It avoided the large increases in public debt which many advanced countries experienced during the crisis, and has also maintained fiscal discipline since emerging from the crisis. Hence, in terms of debt- and deficit-to-GDP its situation compared with other advanced economies has improved in recent years. It has also accumulated substantial amounts of foreign currency reserves in recent years. Additionally, it has raised its interest rate several times in the last two years, while most advanced counties have left it at a very low level. All this would seem to suggest that Israel has ample room to pursue fiscal and monetary expansion – allowing

[16] We thank Alon Binyamini for providing this calculation. The MOISE DSGE model is described in detail in Argov et al. (2012).

automatic stabilizers to increase the deficit and bring its interest rate back to a near-zero level.

However, several circumstances have changed since the last crisis. It seems that in view of lessons learned from fiscal policies in the recent crisis, the debt crisis in Europe and the state of public finance in the US, global financial markets are less tolerant to budget deficits than they were in 2008-2009. Combined with the risk of contagion among markets, Israel's fiscal performance in recent years may not suffice to allow it to increase the deficit by as much as it did in the recent crisis.

Concluding remarks

The experience Israel has had with two recessions over the last decade provides an interesting example regarding the interaction between monetary and fiscal policy, and the conditions under which policy makers can pursue counter-cyclical policies. The main lessons are that favorable initial conditions and sound macroeconomic policy during normal times expand the set of policy options available to policy makers at a time of need.

In this note we have focused on fiscal and monetary policy but the lesson applies more generally: good policy in good times pays off handsomely in bad times. Good policy in that respect means sustained fiscal discipline during the upside of the business cycle, which credibly aims at an acceptable level of the public debt-to-GDP ratio and pursues a steadily declining path of this ratio over time, along with monetary policy that promotes price stability. Such policy is awarded by the tolerance of financial markets to fiscal and monetary expansion during a recession: yields, risk premia and the exchange rate remain reasonably stable as the central bank cuts the interest rate and the automatic stabilizers are allowed to act, temporarily raising the budget deficit and the public debt. Our calculation shows that the effect on GDP of such a policy response can be sizable.

Looking ahead in view of current developments abroad, Israel is relatively well positioned to confront another crisis. It has some room to increase the deficit and cut the interest rate.

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