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Alternative currency arrangements

for a new Palestinian state

by

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(Forthcoming in D Cobham and N Kanafani, eds, *The Economics of Palestine: Economic Policy and Institutional Reform for a Viable Palestinian State*, London: Routledge, 2004)

Abstract

Comparable economies to that of a new Palestinian state have mostly opted for a pegged exchange rate regime, but generally not a currency union or a currency board. The issue of a new Palestinian currency would bring only relatively small steady state seigniorage, but the transitional seigniorage gains would be more significant. Gravity models suggest the new state would do up to a third of its trade with the Eurozone, and rather less with Israel. Of the possible anchor currencies the US dollar and the euro are stable and suitable, but the Israeli shekel and the Jordanian dinar are not. Given the likely long run redirection of trade, the long run goal should be an (adjustable) peg to the euro, and this should be approached via the introduction of a new currency under a currency board, with the currency pegged initially to the shekel and later to the euro.

JEL classification: E52, E58, F41

I am grateful to Samar Maziad for research assistance on sections 2 and 5 of the paper.

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1 INTRODUCTION

There are a number of alternative currency arrangements and monetary frameworks from which a sovereign Palestinian state could choose. The first is a continuation of the status quo, under which three different currencies are used in the WBGS – the new Israeli shekel (NIS), the Jordanian dinar (JD) (used more in the West Bank than in Gaza), and the US dollar (USD) – with the former being used for most transactions, especially retail ones, and the latter two used more for savings deposits and for some durable goods transactions (Hamed, 1999); while the Palestinian Monetary Authority supervises the banking system but has no lender of last resort (LOLR) function. A second arrangement would be the creation of a new Palestinian currency, with the currency anchored – either under a currency board or under a fixed but adjustable parity – to the NIS, the JD, the euro or the dollar or, conceivably, some other currency or basket of currencies. A third alternative would be a currency union with Israel, while a fourth would be a currency union with Jordan. Finally, a new currency with a more or less flexible exchange rate and the ability to design and operate an independent monetary policy could be considered.

The question of what currency arrangement would be most suitable for a new Palestinian state is one where direct empirical research is difficult. Some good work has been done on earlier periods (between 1967 and the late 1980s, or for the Oslo years from 1994), but the experience of the last few years (since September 2000) is unlikely to throw much light on future conditions. Moreover, major changes in economic policy and economic development (notably in the direction of trade) can be expected during the first few years of the new state, and the optimal currency arrangement will depend on the characteristics of the Palestinian economy over some

more settled longer term. This paper does not therefore present major new empirical work, but it surveys previous contributions, gives some new context for the issue by looking at other comparable economies, provides some new data on the possible anchor currencies, and analyses the issues in terms of the optimal monetary framework more broadly understood, with reference to recent research on exchange rate arrangements, central bank independence, monetary policy and monetary integration.

Section 2 of the paper examines the currency arrangements which have come to be chosen by other economies which are as small and/or as open as that of the putative Palestinian state; it shows that most have chosen fixed, but not highly fixed, exchange rates, with separate currencies. Section 3 reviews studies of the amount of seigniorage which could be obtained from the issue of a new Palestinian currency; it suggests the steady state seigniorage gains would not be large. Section 4 looks at attempts using gravity models to identify the probable trade patterns of the future Palestinian state, as a way of identifying the optimal peg for a new currency; it finds that the largest share (but not an overwhelmingly large share) of Palestine's trade is likely to be with the European Union. Section 5 investigates the intrinsic suitability of the various possible anchor currencies; it argues that the euro and the dollar would be acceptable anchors, but not the NIS or the JD. Section 6 identifies the criteria which an optimal monetary framework should fulfil, and suggests a specific goal and a strategy for attaining it. Section 7 presents the conclusions.

2 CURRENCY ARRANGEMENTS IN SMALL OPEN ECONOMIES

As a starting point for the investigation it may be useful to identify the exchange rate regime preferences revealed in the choices made over time by economies comparable to that of an independent Palestinian state, bearing in mind the trend towards a 'polarisation' of exchange rate regimes discussed in, for example, Frankel (1999).[1] Table 3.1 presents some evidence on various relevant groups of countries in terms of the new classification of exchange rate regimes provided by Reinhart and Rogoff (2002), which uses data on the parallel market and other indicators to identify the regimes actually operated, rather than those which governments announce.[2]

Relevant comparators for Palestine would be small and open. A new Palestinian state is likely to have a population of 3-5 million,[3] a GDP (PPP adjusted, 2000 prices) of around US$8-12bn, [4] and international trade (imports plus exports) of at least 90% of GDP.[5] The first row of Table 3.1 presents the exchange rate regimes used in December 2001 by countries that are small in terms of population, where small is defined as below 10 million.[6] Of the 73 countries in the UNDP's *Human Development Report 2002* that come into this category, 14% were in a currency union or had a currency board, 25% had some other form of fixed rate, 27% had some form of crawling regime and 26% some kind of managed regime, while only 7% were freely floating and one was 'freely falling'. The second row focuses on a subset of these countries, those with populations nearer to the likely population of an independent Palestine, that is between 3 and 7 million; there is a small switch between the crawling and managed regimes, but overall the choice of regimes is not much different. The third row considers size in terms of GDP, with small taken as having a PPP adjusted GDP less than US$20 billion; for these 48 countries the percentage with a currency union or board was smaller while the percentage on a fixed rate was

higher, and 10% of countries were freely floating. The fourth row reports regimes for 48 countries that were highly open, in the sense that their exports and imports together accounted for 90% or more of GDP; here there were more countries with currency boards or in currency unions (the set included the five smallest members of the Eurozone), rather more on crawling and managed and less on other fixed pegs, and 6% with free floats. The final row of the table brings together the 21 countries which fit each of the criteria of smallness of population (below 10 m), smallness of GDP, and high degree of openness: of these countries 5% (Estonia) operated a currency board and 5% (Tajikistan) a free float, and the rest were distributed between fixed (38%), crawling (33%) and managed (19%) regimes.

[Table 3.1 near here]

Table 3.2 gives some more details on this common group of countries, with a view to highlighting any trends over time in the choice of exchange rate regime.[7] It shows for each country the regimes used in successive decades, and the final regime as used in Table 3.1. In the 1960s and early 1970s those countries that existed as separate countries (some were parts of the USSR or of Yugoslavia) were nearly all on a fixed rate, but later in the 1970s or in the 1980s and 1990s many experimented with crawling pegs and managed floats and, in a few cases, with free floats. By 2001, however, countries seem to have returned to nearer the fixed end of the spectrum: in 1990 14% of countries had fixed, 21% crawling, 50% managed and 14% free floating rates, but by 2001 those numbers had become 38% (plus 5% highly fixed), 33%, 19% and 5% respectively.[8]

[Table 3.2 near here]

Overall, these findings suggest that, for economies that can be considered broadly comparable to that of an independent Palestine, governments have never been keen on free floating and have become less so over time. There is not much enthusiasm for the other extreme, of a currency union or a currency board, but over time countries have tended to adopt harder pegs.

3 STUDIES OF SEIGNIORAGE IN PALESTINE

A pioneering attempt to estimate the scale of seigniorage in the WBGS was made by Hamed and Shaban (1993). They argued that the use of Israeli currency (notes and coin) in the WBGS provided a previously unrecognised 'mechanism of resource transfer from the Palestinians to the Israeli Central Bank' (p130). Given that no data were available for money holdings in the WBGS, they made two estimates: a low estimate which assumed that the ratio of Palestinian NIS currency holdings to GNP was the same as that in Israel; and a high estimate which assumed that, because of the low use of bank deposits in the WBGS (there was essentially no banking system serving the Palestinian population over the period), the ratio of Palestinian currency holdings to GNP was the same as the ratio of Israeli holdings of currency plus demand deposits to GNP. On this basis average seigniorage per year from 1970 to 1987 was 1.6% of Palestinian GNP on the low estimate and 4.2% on the high estimate. These are relatively large numbers; they reflect in part the fact that inflation in Israel (and therefore for the most part in the WBGS as well) averaged 88% per annum over this period.

Arnon and Spivak (1996a; see also chapter 6 of Arnon, Luski, Spivak and Weinblatt, 1997) estimated the seigniorage that might accrue to a Palestinian issuer of currency

as part of an evaluation of the introduction of an independent currency. They estimated demand for money (M1) functions for Syria and Egypt, with the inflation rate as the opportunity cost variable (given the absence or constancy of the interest rate), and obtained results for the two countries which were statistically indistinguishable. They made a minor adjustment to the parameter estimates to impose a unitary income elasticity of money demand, and then used the resulting function, with the assumption that the money multiplier was 1.5, to predict the demand for money in the Palestinian economy for different combinations of growth and inflation. They envisaged a long run share of the new currency in overall money which was inversely related to the inflation rate, and a phased transition towards that long run share. They then calculated the seigniorage which would accrue to the issuing authority under different growth and inflation scenarios. The maximum seigniorage occurs at an inflation rate of 5%. In this case the average seigniorage over the first five years of transition is 4.6% of GDP, and the long run steady state seigniorage is 1.2% p.a.

Hamed (1999) produced estimates of NIS seigniorage in the WBGS in the post-Oslo period (1994-98), in the context of an argument that Israel was continuing to extract resources from the WBGS ‘as a result of the failure of the Paris Protocol to include a seigniorage reimbursement provision’ (p9). He calculated a lower bound estimate on the basis of the assumption used by Hamed and Shaban (1993) for their low estimate, namely that the ratio of Palestinian NIS currency holdings to GNP was the same as that in Israel, but he argued that such an estimate was biased downwards because it took no account of the higher precautionary demand for cash in the WBGS (due to closures and other uncertainties) and the less frequent use of non-cash means of

payment in the WBGS. He therefore also calculated an upper bound estimate on the basis of the ratio of outstanding JD currency to GNI in Jordan, which would be biased upwards because it took no account of the use of the JD for cash payments for durable goods in the WBGS. On this basis the average per annum seigniorage was between 0.31% of WBGS GNI (for the lower bound) and 1.68% (for the higher bound).[9]

The most recent attempt to estimate seigniorage is that of Erickson von Allmen and Fischer (2001) who attempt to assess how much seigniorage is forgone by the Palestinian Monetary Authority (PMA) as a result of its not issuing a Palestinian currency and accrues to the central banks of Israel, Jordan and the US instead. Because they have already argued in their paper for a currency board, under which Palestinian currency issues would have to be backed by foreign exchange reserves, they define seigniorage as the interest earnings on those foreign exchange reserves.[10] They calculate the median ratio of currency to GDP for the 100 economies whose income per capita is closest to that of the WBGS, at 5.5%. That is used to generate an estimate of the amount of a new Palestinian currency which would be held, and at an assumed interest rate on the corresponding foreign exchange reserves of 5% this produces an estimate of seigniorage as 0.3% of GDP.

Some interesting comparative data can be found in a Bank of England study of 44 developing countries (Fry et al, 1996), which calculated the seigniorage revenue for these countries in each of three subperiods, 1979-83, 1984-88 and 1989-93. The authors emphasise the relationship between seigniorage and inflation, and report (p38) that central banks operating conservative monetary policies with a fair degree of independence typically produced seigniorage of 0.5 to 1.0% of GDP. In fact, for the

23 (country-subperiod) episodes in their sample in which inflation was ≤ 5% the average seigniorage was 0.53% of GDP; for the 32 episodes with inflation > 5% but ≤ 10% average seigniorage was 0.96%, and for the 30 episodes of inflation > 10% but ≤ 15% it was 1.27% (calculated from Fry et al, 1996, pp122, 131).[11]

In section 6 below it is suggested that the Palestinian state needs to aim for price stability in the form of inflation under 5%. The Bank of England study suggests that in that case the steady state seigniorage gains from the existence of a Palestinian currency would be, if anything, smaller than those estimated by Hamed (1999) or Arnon and Spivak (1996a), and closer to those estimated by Erickson von Allmen and Fischer (2001). Even at inflation rates of up to 10% they would not be large, either as a proportion of GDP or as a proportion of the overall expenditure or revenue of a Palestinian government.[12] The transitional gains from the issue of a new currency would be much higher, but it is arguable that the transitional period is one in which the pressure on the Palestinian budget is likely to be less acute, as the result of a foreign aid 'dowry' on the establishment of the new state.

4 TRADE PATTERNS

There is a substantial literature on the appropriate trade regime for a new Palestinian state, focused mainly on the choice between a customs union with Israel, a free trade agreement (FTA) with Israel or a non-discriminatory trade regime (eg Kanafani, 2001; World Bank, 2002; Dessus and Ruppert Bulmer, this volume). However, this research has little to say about the likely patterns of trade in terms of the destination of exports and the origin of imports, and it is those patterns that are important in considering the appropriate exchange rate regime and the appropriate anchor currency

(if any). The alternative technique which has been used by some researchers is that of gravity models of trade, which can be used to generate predictions of the pattern of trade to be expected for a country with the same characteristics as the new state on the basis of the relationships between characteristics and trade patterns for other countries.

The first application of a gravity model in this area was by the World Bank (1993, pp45-7 and Annex 3), which used as regressors the logs of GDP and GDP per capita in each country, the log difference in per capita GDP between countries (to capture the Linder effect), the distance between them, the area of each, and dummies for a common border, a common language, being an island, and membership of preferential trade arrangements (ASEAN, EEC, LAFTA). The equations were estimated for 1987-89 average annual data on 15 middle- to upper-income countries with substantial non-primary exports, and the results then used with data for Israel and the WBGS – the latter under varying assumptions about border, language and trade arrangements – to generate predictions about shares of trade between the WBGS and Israel. The results suggest that the existing concentration of the WBGS's trade with Israel was far above what would be expected on the basis of a common border and 'language' (interpreted as a proxy for a history of persistent economic interaction) and a free trade area, and even further above what would be expected on the basis of a common border only.[13]

Arnon et al (1997, chapter 4) used a simpler model with a limited number of regressors (the log of GDP in each country, the log of the distance between them, a common language dummy, an FTA dummy and the difference in per capita GDP between countries), estimated on 1991 data for 35 countries which included most

Middle Eastern countries, some Asian and Latin American countries, leading EU countries, the US and Japan. The results were then used to predict trade between the West Bank, Gaza Strip, Israel and Jordan for 1986/7 and 1992/3. When these predictions were set against the actual flows it was found that the predicted WBGS exports to Israel were below actual levels and predicted WBGS imports from Israel were even further below the actual levels; though these 'distortions' were somewhat smaller in 1992/3 than in 1986/7. Arnon et al interpreted their findings as implying that the 'captive market' effect – which acts to raise Israeli exports to the WBGS – was stronger than the 'proximity' effect - which acts to raise WBGS exports to Israel. Arnon, Spivak and Weinblatt (1996) used the same model but focused more on the potential for trade between these countries in the future; they predicted that trade between a new Palestinian entity and Israel would be much lower (than current levels) even if there was a customs union or free trade agreement between them. They also found that trade between Jordan and a new Palestinian entity, on the other hand, would remain relatively low, even in the case of a trade agreement.

For present purposes a more relevant study is that by Bannister and Erickson von Allmen (2001), which uses at its starting point the model of Al-Atrash and Yousef (2000) and aims to evaluate the potential for trade expansion under a new regime. The model uses additional regressors – population in each country, measures of trade restrictiveness, measures of transportation and transactions costs, and a landlocked dummy, but not GDP per capita in each country or the difference between them – and a larger range of countries (Israel, the WBGS, 18 Arab countries and 43 others that cover over 90% of trade with the Middle East), with data for 1995-97. Bannister and Erickson von Allmen apply the results of a base run to predict trade flows for the

WBGS, and find that WBGS exports to and imports from Israel are well above the predicted levels, while those to and from the rest of the world (mostly the US, European Union and Japan) are below predicted levels. Since these results come from point estimates with no statistical significance attached to them, the authors then re-estimate the model with dummies for WBGS trade with Israel and for WBGS trade with the rest of the world. In this case the coefficient on the former is positive but not significant, while that on the latter is negative and significant.[14] The authors interpret these findings as showing that 'no support can be found for the hypothesis that [Israel and WBGS] overtrade with each other' but the WBGS 'undertrades with the rest of the world' (p91).

These findings are somewhat surprising, since on their earlier results WBGS exports are predicted to be lower than actual by $203m to Israel but higher by $119m to the EU, by $32m to the US and by $20m each to Japan and Egypt, while imports are predicted to be $1552m lower than actual from Israel, but higher by $285m from the EU, $181m from the US and $76m from Japan: the differences in trade with Israel are very large.[15] Overall, the predicted pattern of trade implies that 32% of WBGS exports and 19% of WBGS imports should be to/from Israel (as against the existing 94% and 86%), 28% of exports (25% excluding the UK) and 38% of imports (32%) to/from the EU, 8% of exports and 18% of imports to/from the US, 5% of exports and 7% of imports to/from Japan, and 5% of exports and 2% of imports to/from Egypt.[16]

What is important here is not the historical issue of the extent to which WBGS trade was distorted by occupation, but the question of how and where Palestine will trade in the future. Bannister and Erickson von Allmen explain their initial results partly in

terms of the existence of a currency union between the WBGS and Israel, and recent research has found very large effects on trade patterns from currency unions (see Frankel and Rose, 2002; Rose, 2000, 2001; Mélitz, 2001). Insofar as the existence of a currency union is crucial to, but not allowed for in, these results, they cannot provide useful indications of what trade patterns are likely to develop in an independent Palestinian state, which may well choose another currency arrangement.[17] Even so, their results suggest the largest proportion of its trade – 35% – will be with the EU (30% excluding the UK which may stay outside the Eurozone), 22% with Israel, 15% with the US, and 6% with Japan. The greater importance of the EU than the US in trade is a general characteristic of Middle Eastern countries. It is not highlighted in the three main gravity model studies of the region – Al-Atrash and Yousef (2000), Blavy (2001) and Miniesy, Nugent and Yousef (2002) – all of which group trade with industrialised countries (North America, Europe and Japan) in the same category. However, Frankel and Rose (2002) report that for each of Egypt, Israel and Turkey there is more trade with the Eurozone than with the dollar zone, and hence predict that for each of them there would be much higher gains from joining EMU than from dollarisation.

5 ANCHOR CURRENCIES

There are four currencies which can be considered as possible anchor currencies under currency board or other arrangements, or even (in the first two cases) as candidates for currency union with a new Palestinian state: the NIS, the JD, the euro and the USD.

To serve as a good anchor, a currency needs first of all to be stable and credible. Stability has two main dimensions: inflation and the exchange rate. Table 3.3 presents some basic data on the *ex post* performance of the possible anchors over recent decades (given the absence of long runs of data on an aggregated basis, some of the Eurozone data is for Germany[18]). On inflation, it is clear that in the past the Eurozone (Germany) has experienced the lowest inflation of the four, followed by the US, then Jordan and lastly Israel; and the four are ranked in more or less the same order in terms of the volatility of inflation. Changes in nominal exchange rates follow broadly the same pattern,[19] while changes in real exchange rates (which are not available for Jordan) have been smaller for Israel (despite the high volatility of nominal exchange rates[20]) than for the US and the Eurozone.

[Table 3.3 near here]

A second criterion for a good anchor currency is that its country and that of the currency which proposes to peg to it should not be subject to asymmetric shocks. Arnon and Spivak (1996b; see also Arnon et al, chapter 6) used the Bayoumi and Eichengreen (1993) technique to identify transitory (demand) and permanent (supply) shocks in Israel, the West Bank, the Gaza Strip and Jordan over the period 1968-92. They found that the transitory shocks were generally not well correlated, except between Israel and the West Bank. But the permanent shocks between each of Israel, the WB and the GS were highly correlated, while those between any of these and Jordan were not. These findings are probably explicable in terms of the trade and other restrictions imposed by Israel on the occupied territories, and the rupture in trade links between them and Jordan. Whether the economies will continue to

experience correlated shocks in the future depends primarily on the extent of changes in trade patterns.

On both these criteria past performance is, of course, not necessarily a good guide to future performance. To shed some light on the latter, Table 3.4 presents some data taken from a recent survey carried out at the Bank of England of the monetary frameworks in some 90 countries (Fry et al, 2000). This survey used a wide range of evidence, including both published data and extensive questionnaire answers from the central banks concerned, and it tried to answer questions – eg about the focus of monetary policy – in partial and qualitative, rather than all-or-nothing, terms. In the absence of data for the Eurozone, data for Germany – which are sometimes more and sometimes less relevant – are given. The table also provides averages for the industrialised, transition and developing economies included in the study (27, 22 and 44 respectively).[21]

[Table 3.4 near here]

The first section of the table gives assessments of the short and medium term focus of policy. For the sample as a whole, industrialised countries on average focus heavily on both the exchange rate and inflation, while transition and developing countries put more emphasis on money as well. Israel (classified in this study as an industrialised country) is primarily an inflation targeter, despite its earlier emphasis on exchange rate targets (crucial to the stabilisation plan after the runaway inflation of the mid-1980s). Reinhart and Rogoff (2002, Appendix III) classify Israel from February 1991 as operating a de facto crawling band around the US dollar, and refer to ‘an ever widening band, which was 39.2% as of December 30, 2000’. Jordan has a strong

focus on the exchange rate, coupled with some focus on money – for which targets have been announced since 1992 – and less on inflation. Reinhart and Rogoff (2002, Appendix III) classify Jordan as operating a de facto peg to the USD since September 1995. The USA, on the other hand, has no focus on the exchange rate (and is classified by Reinhart and Rogoff as a free floater), but some focus on money (as of 1998; monetary target ranges ceased to be announced from 2000) and some on inflation. Other observers, eg Clarida, Galí and Gertler (1998) have tended to see the US as an informal inflation targeter. Germany is shown in the table as having a heavy emphasis on money, and a considerable part of that emphasis continues to be present in the 'monetary policy strategy' of the European Central Bank together with a focus on price stability (eg Angeloni et al, 1999; Issing et al, 2001);[22] the Eurozone is also a free floater.

Since different types of policy focus may work efficiently in different circumstances, and their effectiveness may depend heavily on the commitment of the monetary authorities, a more important aspect of whether a currency would be a desirable anchor currency is probably the institutional set-up. The Bank of England study, like those of Grilli, Masciandaro and Tabellini (1991), Cukierman (1992) and others, classifies the US Federal Reserve and the German Bundesbank as highly independent (and the ECB is usually taken to be even more independent than Germany). The Central Bank of Jordan (CBJ) is less independent than these three but above the average for developing countries, and the Bank of Israel (BoI) is a bit less independent again. On the other hand, the Federal Reserve is given as highly accountable, more so than the CBJ, while the BoI is supremely accountable and the Bundesbank (and, it is generally assumed, similarly the ECB) much less so. Finally,

the US Fed gives good explanations of policy, while those of the ECB are open to some criticism,[23] and the BoI and the CBJ lag behind.

Finally, it is useful to consider the business cycles in the four possible anchor countries. Figure 3.1 shows output gaps, derived from a simple regression of quarterly GDP on a linear and quadratic trend, for the Eurozone, the US and Israel. The Eurozone had a pronounced boom in the early 1990s, associated with German reunification, while the US had a deep recession in the early 1980s and a boom in the late 1980s. Since then, however, the cycles in the two have come more into line with each other. Israel, on the other hand, shows a much less smooth, indeed distinctly jerky, cycle which is not synchronised with either the Eurozone or the US. This exercise cannot be replicated for Jordan because of the lack of quarterly data, but Figure 3.2 shows the annual growth rates for each of the four countries. Again Israel's growth is more variable than that of the Eurozone or the US, but Jordan's growth rate is even more so, with extreme outliers in 1989 and 1992.

[Figures 3.1 and 3.2 near here]

Overall, it seems clear that the US dollar and the euro have to be considered as acceptable anchors in themselves (that is, without regard to the ship to be anchored). The Israeli NIS has been much less stable in the past, while its relatively low level of central bank independence suggests that it is not possible to be confident that the improvement of recent years will be sustained (and there are ongoing tensions between central bank and finance minister). Jordan also has a record of some instability, with a large devaluation in 1988/89, but its central bank is more independent than the developing country average.

6 OPTIMAL MONETARY FRAMEWORKS

An optimal monetary framework should maximise the growth and level of welfare in the economy concerned. In particular, there are four ways in which an ideal framework could contribute to this end. First, it should ensure price stability, understood as inflation of less than 5%.[24] Second, it should facilitate long run economic growth, by contributing to a stable and predictable macro environment. That implies that it should minimise domestic aggregate demand shocks, which includes preventing conflict between monetary and fiscal policy, and minimise external aggregate demand shocks, by ensuring stability and non-misalignment of the real exchange rate. Third, it should provide a credible commitment to price stability, in order to minimise the risk premium in long term interest rates. And fourth, it should provide a framework within which financial stability can be assured, which means, in particular, that there should be some provision for a lender of last resort (LOLR) function.

A new Palestinian state will start from a position in which there is no established central bank with a historical record that could induce credibility, and in which the fiscal policy institutions may be subject to strong political pressures. Such considerations have been widely taken to imply that an independent currency with a floating exchange rate would not be viable, at least in any near future, and that a highly fixed exchange rate operated by a currency board with minimal discretion would be desirable – eg Hamed (1999), Naqib (1999) and Erickson von Allmen and Fischer (2001).[25] This would imply a rather 'tougher' regime than those chosen in most cases by comparable (but 'older') economies, as reported in section 2. There are,

of course, some disadvantages as well as advantages associated with currency boards (notably the difficulty of making any LOLR function available), but Williamson (1995) has argued that currency boards are more suitable (and more likely) in small open economies, particularly when they start with low confidence.

However, the central problem here is that a currency board requires a reserve currency to be used as a peg.[26] The implications of sections 4 and 5 above are that there is no fully satisfactory peg for a Palestinian currency board, or for a more conventional fixed rate regime. On the trade side, the preference must be for a peg to the currency area with which the Palestinian economy does the largest share of its trade, in order to maximise the development of trade and its benefits in terms of growth. At the moment the largest share of WBGS trade is with Israel, but in the future, according to the results of Bannister and Erickson von Allmen (2001), it is likely to be with the EU. However, the share predicted remains, for example, well below the shares of trade that many Eurozone countries have with their currency union partners.[27] On the other hand, it seems likely that Jordan, and to a lesser extent Israel, will also tend to increase their trade with the EU, and that would reduce the risks associated with a peg to the euro.

With respect to the intrinsic characteristics of the possible anchors, the USD and the euro are more attractive anchors because they are much more stable than the NIS and the JD, and this is likely to continue. The fact that cyclical divergences between the US and the Eurozone have become rather smaller over the last decade might indicate that there is less danger of asymmetric shocks from a peg to one or the other, but this

convergence has not diminished the fluctuations in the exchange rate between the USD and the euro.

It should also be noted that the introduction of a new Palestinian currency is unlikely to be straightforward or rapid. The status quo in the WBGS involves three different currencies being used, and under the liberal economic arrangements usually envisaged for the new Palestinian state (and with workers continuing to commute to Israel and receiving wages in NIS) it is difficult to see how the comprehensive use of a new currency could be imposed. Its acceptance will have to be earned, as Arnon and Spivak (1996a, pp8-10) and Erickson von Allmen and Fischer (2001, p126) have recognised, and in a context of network externalities it is clear that established currencies exert a strong gravitational pull.[28]

In the absence of a peg which is clearly superior to the others, and in a situation where the introduction of a new currency will be far from easy, it might seem sensible to exercise caution: to wait and see how trade patterns develop, and to focus the new state's limited managerial and policy-making resources on other policy areas first. But the importance of currency unions for trade patterns, and the *de facto* currency union of the status quo, suggest that such caution would act as a drag on the desirable redirection of Palestinian trade flows. Some more decisive action is therefore necessary.

The obvious approach is first to identify the long run goal, and then to construct short run policy as a way of moving towards that goal. The evidence presented in section 4 suggests that the largest share of Palestinian trade will eventually be with the

Eurozone, while section 5 argues that the euro is intrinsically a suitable anchor currency. The long run goal should therefore be a (fixed rather than highly fixed) peg to the euro, operated by a central bank which has developed the competence and the credibility to use some discretion in monetary policy (notably to change the exchange rate parity in case of a severe asymmetric shock) and to act as a lender of last resort. That implies the introduction of a new currency, but this should be facilitated by its introduction under a currency board arrangement with an initial peg to the NIS; as the Argentinian example makes clear this will require sound fiscal as well as monetary institutions. Later, when trade patterns have begun to change and the Palestinian Monetary Authority has become more of a central bank, the peg can be switched to the euro,[29] and policy can become gradually less rigid as has happened in countries like Singapore and Hong Kong (Williamson, 1995; Naqib, 1999). This would eventually enable the central bank to operate some limited discretion for dealing with asymmetric shocks, and to act as a lender of last resort.

7 CONCLUSION

The evidence presented in this paper suggests that a new Palestinian state has initially no alternative but to opt for a relatively hard peg, with a low level of discretion in monetary policy. However, there is no fully satisfactory anchor currency, in terms of both the likely trade flows of Palestine and the intrinsic stability of the anchors. In addition, the introduction of a new currency in the Palestinian context where three external currencies are currently in use is likely to be difficult. However, there are strong reasons – connected not with the seigniorage gains, which are likely to be small, but with the impact on trade patterns – for moving away from the status quo of an informal currency union with Israel. The evidence suggests that in the long run the

Eurozone will become Palestine's most important trading partner, and the euro is a stable and suitable anchor currency. The long run goal should therefore be a monetary framework with a peg to the euro but some scope for short run discretion and for the operation of the LOLR function. In the short run Palestine should move towards this goal via the introduction of a Palestinian currency under a currency board, with a peg initially to the NIS but later to the euro.

NOTES

[1] For a wider ranging focus on developing countries see Fischer (2001) and ECB (2003a).

[2] Calvo and Reinhart (2002) had shown that in some cases announced regimes did not correspond well to governments' practices.

[3] Arnon and Kanafani (this volume) give the 2001 population of the WBGS as 3.3 million; a large immigration of refugees from Lebanon, Jordan, Syria and elsewhere following a full peace settlement could raise that figure to 4 million or more.

[4] Erickson von Allmen and Fischer (2001) give 1999 GDP for the WBGS (not PPP adjusted) as US$4.2 billion as against $7.5 bn for Jordan. The *Human Development Report 2002* gives Jordanian (Israeli) GDP in 2000 as $8.3 bn ($110.4 bn) (unadjusted) and $19.4 bn ($125.5 bn) (PPP adjusted). It seems likely that the WBGS price level is dominated by that of Israel (see Arnon et al, 1997, pp13-14), which means that the PPP adjustment would make a much smaller difference for the WBGS than for Jordan, though some increase over time from a population influx also needs to be considered.

[5] Bannister and Erickson von Allmen (2001) give data showing WBGS trade between 1980 and 1999 mostly in the range 100-120% of GDP. The ratio of imports to GDP might be lower for the new state, but the ratio of exports is likely to be higher.

[6] Countries with a population below 0.3 million are excluded as being too small to be useful comparators. Countries whose regimes are not classified by Reinhart and Rogoff are also excluded.

[7] The group includes countries with widely differing growth performances, from Cyprus, Equatorial Guinea, Guyana, Malta and Mauritius which had GDP per capita growth 1990-2000 of 3% p.a. or more, to Kyrgyzstan, Moldova and Tajikistan which all had sharply negative growth.

[8] Excluding from the later period those countries which did not exist as separate entities in 1990 makes little difference to the comparison.

[9] Israeli inflation over this period averaged 9.6%.

[10] See Williamson (1995, p20) for the argument that seigniorage should be calculated in terms of the return on the assets backing the currency issue, but that if currency is backed by domestic assets instead of foreign exchange its return might in fact be lower.

[11] For the three subperiods Jordan had seigniorage of 2.3, 1.4 and 4.3% respectively, with inflation of 9.1, 2.6 and 11.8%; while Israel had seigniorage of 1.6, 1.6 and 0.5%, with inflation at 118.4, 152.5 and 15.9%. The study's calculation of seigniorage uses the inflation tax (determined by the inflation rate) on the central bank's liabilities in reserve money, but also makes some adjustments for interest payments on bank reserves (see Fry et al, 1996, p34).

[12] It should be noted that the definition of seigniorage is not straightforward (see, for example, Bofinger, 2001, chapter 11), but the conclusion reached here does not depend on a particular definition.

[13] Their results suggest that WBGS imports from and exports to Jordan would be 2.2 and 3.9% of total WBGS imports/exports respectively in the first situation, and 5.8 and 6.4% in the second.

[14] The former is 1.45 for imports and 1.36 for exports, with standard errors of 1.25 and 1.27 respectively. The latter is –1.51 for imports and –1.59 for exports, with standard errors of 0.17 in both cases.

[15] Since the point estimates are roughly the same for each dummy, the difference in significance must be mainly the result of a difference in the variance of the dummy variables across observations. This will necessarily be higher for the WBGS-rest of world dummy since there are more observations where the dummy is equal to one, while for the WBGS-Israel dummy there is only one such observation. I am indebted to Chris Adam for this point.

[16] They also predict almost no change in WBGS imports to or exports from Jordan, at 1.2% and 3.8% respectively.

[17] An independent Palestinian state could also choose to open a seaport so that it would no longer be landlocked.

[18] Since the European Central Bank (ECB) was modelled partly on the Bundesbank future Eurozone performance is likely to be comparable to past German performance.

[19] The data for Jordan's exchange rate are against the USD rather than effective, and the latter – if it were available – would presumably have moved rather more: while the JD's rate against the USD remained at 1.410 from 1997 to 2001, that against the euro went from 1.244 in 1997 to 1.606 in 2000 and 1.576 in 2001 (data from Central Bank of Jordan website).

[20] In the mid-1980s this may be a reflection of the stylised fact that purchasing power parity holds more nearly in hyperinflations, but from 1986 it is probably more the result of the crawling band exchange rate regime which was operated.

[21] These (unweighted) averages were calculated from the distributions in Tables 4.1-6 of Fry et al (2000).

[22] Some authors have claimed that the Bundesbank was in practice more of an inflation targeter; see Bofinger (2001, section 9.2). The ECB's 'monetary policy strategy' is changing, albeit slowly, see ECB (2003b).

[23] See, for example, Alesina et al (2001) and Begg et al (2002).

[24] See Fischer (1994, section 2.3) and Bofinger (2001, section 5.2) for balanced discussions of the evidence on inflation and growth. The inflation targets of major central banks (the Fed, the ECB, the Bank of England, etc) are around 2-3%, and it is difficult to see what would justify a new Palestinian state having an objective that was significantly higher.

[25] An additional argument for fixity is that this might facilitate the avoidance of a Dutch disease problem arising from large (private and official) capital inflows in the first years of the new state.

[26] The choice of the appropriate peg seems not to have been widely discussed. Hamed (1999) favours a dollar peg on the grounds of JD and NIS instability, but recognises that this will expose the Palestinian economy to shocks arising from changes in the exchange rates of its main trading partners against the USD. Naqib (1999) does not seem to identify the appropriate peg for the currency board which he advocates for the short run, but (in company with Dabbagh, 1999) favours currency union with Jordan in the longer run. Erickson von Allmen and Fischer briefly discuss the choice between the NIS, the USD and the euro but present no conclusion.

[27] For example, in 1988 – ie at a relatively early stage in the process of European monetary integration – the 12 members of the European Community obtained 58% of their imports on average from other members, and exported 60% of their exports to them (Hitiris, 1991, p208).

[28] This is one reason why European governments opted for the 'institutional' rather than the 'currency competition' approach to monetary union (Gros and Thygesen, 1998, chapter 10).

[29] One way of handling this transition would be by fixing to a basket of the NIS and the euro and gradually reducing the weight on the former and increasing that on the latter. The main disadvantage of this proposal is the lower level of transparency (even if the weights are publicly announced).

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Table 3.1: Exchange rate regimes in small open economies

Category	number of countries in category	percentage highly fixed	percentage fixed	percentage crawling	percentage managed	percentage floating	percentage free fall
Small-population 1	73	14	25	27	26	7	1
Small-population 2	35	14	26	20	31	6	3
Small-GDP	48	4	38	27	21	10	0
Highly open	48	17	21	27	27	6	2
Common group	21	5	38	33	19	5	0

Categories (data from UNDP *Human Development Report*, 2002): small-population 1 = population (2000) ≥ 0.3 million, ≤ 10.5 mn; small-population 2 = population ≥ 3 mn, ≤ 7.5 mn; small-GDP = GDP in PPP US$ (2000) ≤ 20 billion; highly open = exports + imports > 90% of GDP (2000); common group = countries appearing in each of small-population 1, small-GDP and highly open.

Regimes (data from Reinhart and Rogoff, 2002): highly fixed = no separate legal tender and currency board; fixed = peg, de facto peg and horizontal band of +/- 2%; crawling = pre-announced crawling peg, pre-announced crawling band of +/- 2%, de facto crawling peg, and de facto crawling band of +/-2%; managed = de facto crawling band of +/- 5%, moving band of +/- 2%, managed floating; floating = freely floating; free fall = dual market, freely falling.

Table 3.2: Evolution of exchange rate regimes in common group

Country	Population	GDP PPP (US$ bn)	Openness (trade as % of GDP)	1960s	1970s	1980s	1990-2001	December 2001
Congo	3.0	2.5	121	A, C	C, D	D, C	C	C
Cyprus	0.8	15.8	93	A	A, B	B	B, A	A
Equatorial Guinea	0.5	6.9	153	A1	A	B, A	A	A
Estonia	1.4	13.8	172				C, A, A1	A1
Gambia	1.3	2.1	109	A1	A1	D	D, B	B
Guinea-Bissau	1.2	0.9	90	A1	A1, A	A, B	B, A	A
Guyana	0.8	3.0	208	A1, A	A	A, B, C	C, B	B
Honduras	6.4	15.7	98	A	A	A, C	C	C
Jamaica	2.6	9.6	99	A	A	A, B	B	B
Jordan	4.9	19.4	111	A	A	A, C	C, A	A
Kyrgyzstan	4.9	13.3	98				C, B	B
Lesotho	2.0	4.1	116	A1	A1	A	A	A
Macedonia, TFYR	2.0	10.3	107				C, A	A
Malta	0.4	6.7	217	A	A, C	C	C	C
Mauritania	2.7	4.5	98	A	A, B	B, C	C, B	B
Mauritius	1.2	11.9	131	B	B	B	B, A	A
Moldova, Rep. of	4.3	9.0	127				A, C, A	A
Mongolia	2.5	4.3	147				D, B	B
Nicaragua	5.1	12.0	121	A	A	D	D, A, B	B
Swaziland	0.9	4.7	147	A	A, C	C	C	C
Tajikistan	6.1	7.1	166				D, A, D	D

Notes: regime data from Reinhart and Rogoff (2002): A1: highly fixed = no separate legal tender and currency board; A: fixed = peg, de facto peg and horizontal band of +/- 2%; B: crawling = pre-announced crawling peg, pre-announced crawling band of +/- 2%, de facto crawling peg, and de facto crawling band of +/-2%; C: managed = de facto crawling band of +/- 5%, moving band of +/- 2%, managed floating; D: floating = freely floating; E: free fall = dual market, freely falling.

Table 3.3: Stability of potential anchor currencies (ex post)

	US – USD		Eurozone – euro*		Israel – NIS		Jordan – JD	
	mean	**s.d.**	**mean**	**s.d.**	**mean**	**s.d.**	**mean**	**s.d.**
Consumer price inflation (%)								
1973-82	8.8	2.6	5.2	1.4	66.2	39.8	11.6	3.6
1983-92	3.8	0.9	2.1	1.4	97.7	127.5	7.2	7.6
1993-2002	2.5	0.6	1.9	1.0	7.2	3.9	2.7	1.6
Change in nominal exchange rates (%)**								
1973-82	0.7	6.1	-0.6	5.6	n.a.	n.a.	0.3	5.4
1983-92	-2.7	7.6	1.6	6.0	-30.9	27.0	-5.5	11.8
1993-2002	2.1	4.4	-2.0	4.4	-4.2	6.0	-0.4	0.7
Change in real exchange rates (%)***								
1973-82	5.4	5.6	-4.8	6.0	n.a.	n.a.	n.a.	n.a.
1983-92	-4.0	7.0	2.0	5.1	0.2	5.0	n.a.	n.a.
1993-2002	2.0	4.9	-2.7	4.6	0.4	5.2	n.a.	n.a.

Source: *IFS*.

Notes: * data for inflation are for Germany rather than the Eurozone as a whole; **effective rates for USD, Euro and NIS, rate against USD for Jordan; *** relative normalised unit labour costs for US and Eurozone, relative consumer prices for Israel.

Table 3.4 Monetary framework characteristics

	Israel	Jordan	USA	Germany	Industrialised	Transition	Developing
Short and medium term policy focus							
Exchange rate focus	13	63	0	13	44	45	39
Money focus	0	25	25	88	17	34	34
Inflation focus	88	13	19	19	39	44	35
Institutional characteristics							
Independence	66	74	92	96	83	80	65
Accountability	100	75	83	17	71	83	65
Policy explanations	68	60	95	70	72	57	51

Note: scores range from a minimum of 0 to a maximum of 100.
Source: Fry at al (2000, Appendix III).

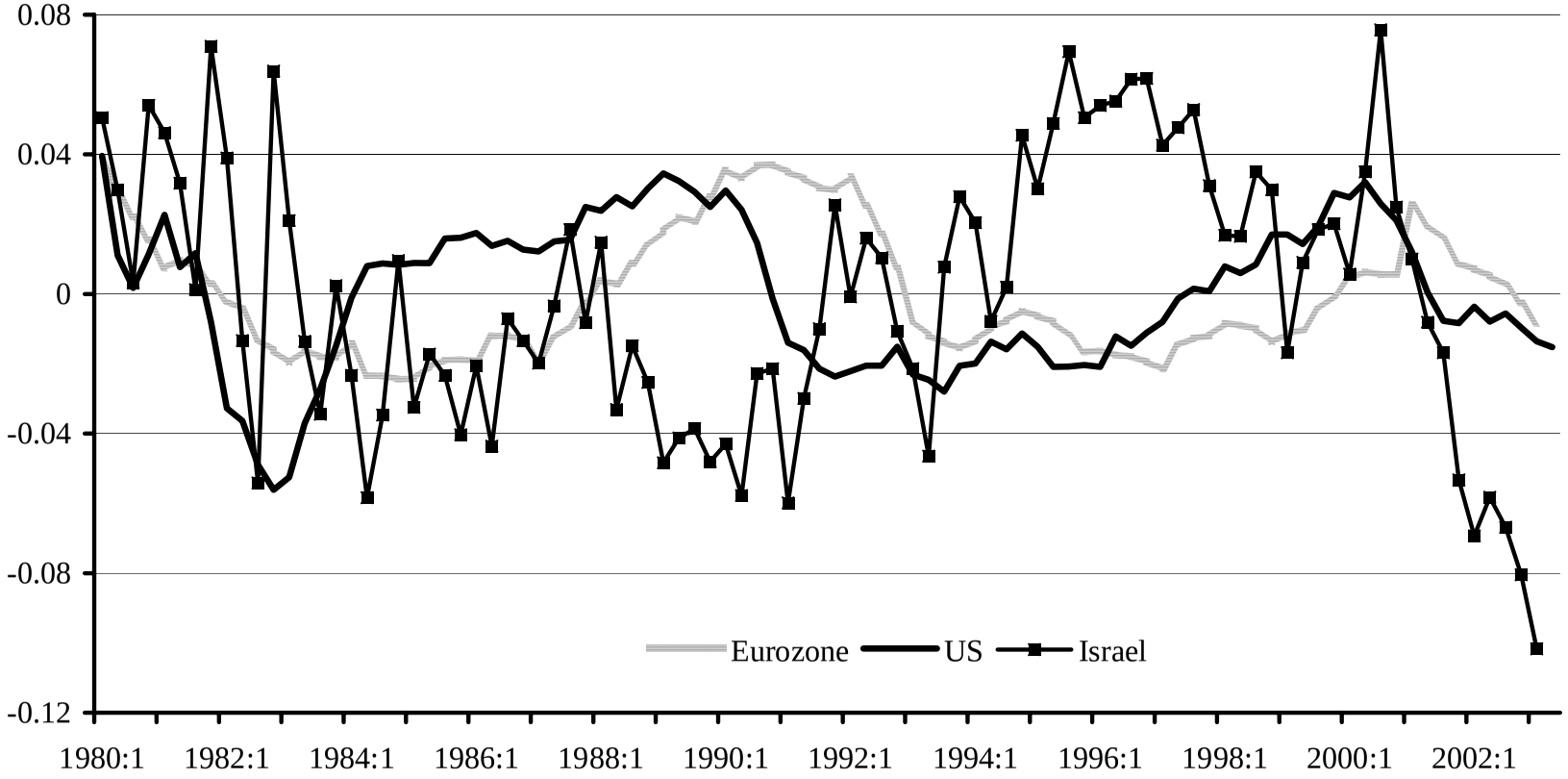

Figure 3.1 Output gaps in Eurozone, US and Israel

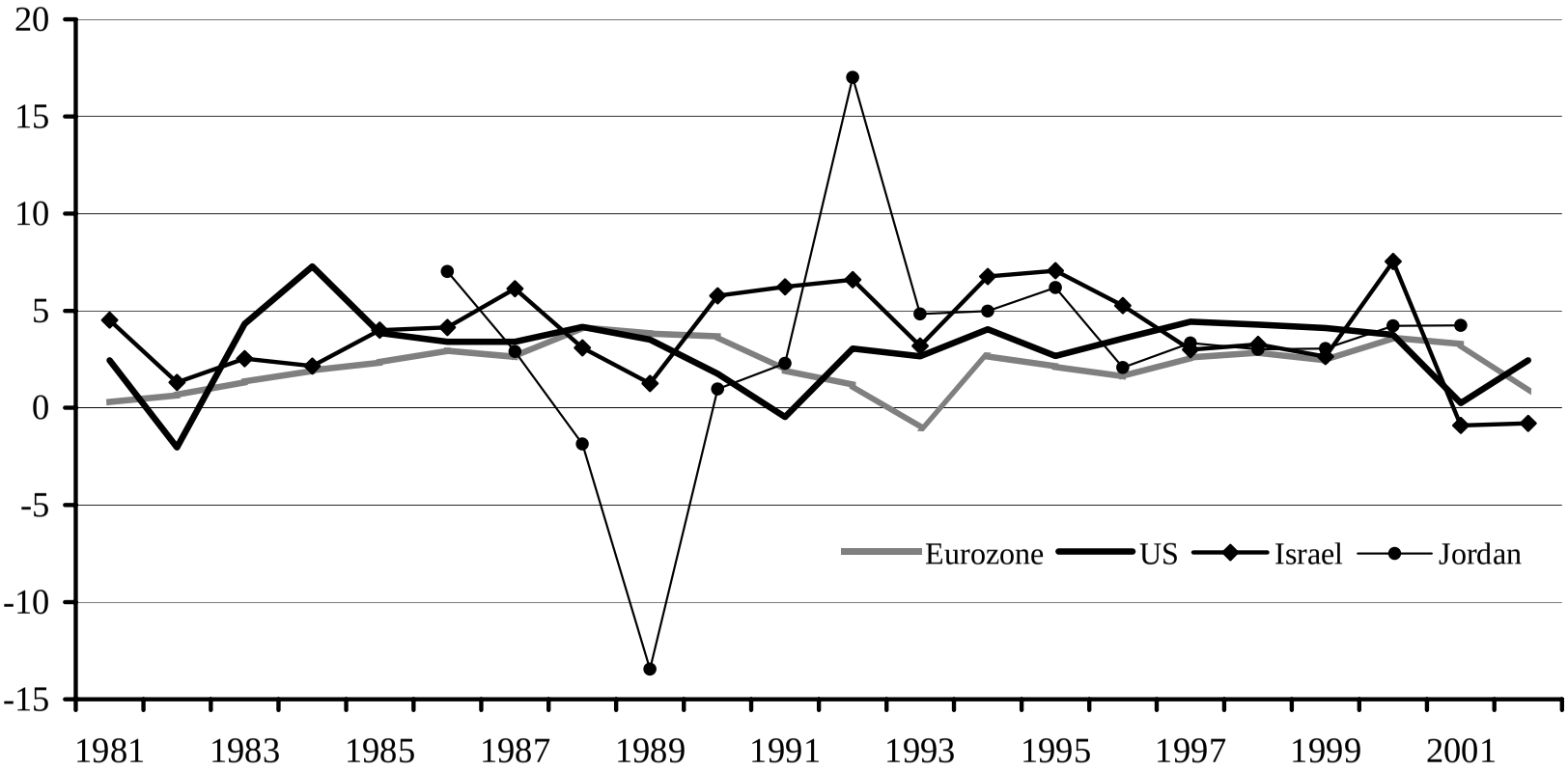

Figure 3.2 GDP growth in Eurozone, US, Israel and Jordan