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ABSTRACT

This paper examines questions related to possible capital account liberalisation in the Mediterranean countries. First, we provide an overview of the extent to which these countries have capital controls along with their exchange rate regimes and some basic macroeconomic aggregates. Second, we examine the case for capital account liberalisation, along with the prerequisites for successful liberalisation. Here we consider issues such as sequencing and possible benefits of synchronisation. Finally, we examine the experience with capital flows – both FDI and other capital flows. We explain these flows and use the past experience of these countries to draw some conclusions for the successful opening up of the capital account.

Keywords: capital account liberalisation, Mediterranean countries, capital flows
JEL Classification: F32, F21, F36

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1. Introduction

The purpose of this paper is to examine the issues and challenges surrounding the question of capital account liberalisation in the so-called Mediterranean countries (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, The Palestinian Authority, Syria and Tunisia).

Capital account liberalisation can bring significant benefits to a country including increased access to international capital markets, greater FDI inflows and greater discipline in the exercise of economic policy. However, experience has shown that capital account liberalisation is not without its problems and challenges (Eichengreen and Wyplosz, 1993; Eichengreen, Rose and Wyplosz, 1995; 1996; Begg *et al*, 1999; Gibson and Tsakalotos, 2004; 2005). We propose to explore these questions by examining the specific experience with capital flows in these countries as well as by drawing on the vast literature that has now been built up around the topic of external financial liberalisation.

There are three main conclusions. First, the literature suggests that countries have a lot to gain from liberalisation. It will help to reduce the volatility of investment and growth and promote risk sharing. Second, the experience of these countries with non-FDI private capital flows indicates the importance of sound macroeconomic policies. Furthermore, whilst up until now contagion has not featured greatly in their experience, liberalisation in other regions suggests that this is unlikely to continue. Countries should therefore be prepared to deal with the challenges that liberalisation will throw up. Finally, there is scope for national and regional policies that could help boost FDI flows in these countries. Moreover policies can increase the effectiveness of the FDI attracted in terms of the benefits for the host economies.

The rest of the paper is structured as follows. In section 2 we present some stylised facts on capital flows, the extent of controls on capital movements, the type of exchange rate regime along with some basic macroeconomic aggregates for these countries. The aim of this section is to identify both similarities and differences between countries. Section 3 outlines the case for capital account liberalisation while section 4 examines the prerequisites for successful liberalisation, focusing explicitly on issues such as sequencing and the possible benefits that might be had from synchronised liberalisation.

In section 5, the problems and challenges of liberalisation are addressed. To this end, we seek to explain the actual capital flow experience in these countries since the early 1990s. The focus is on capital flows excluding foreign direct investment (FDI) and, to the extent that we can given the data available, flows associated with either the government or the monetary authorities. The role of the exchange rate regime along with macroeconomic conditions and possible instances of contagion are examined. This reflects the factors which have been identified in the literature as being important in determining the likelihood of a country experiencing either large capital inflows or speculative attacks.

Section 6 focuses on FDI flows. The rationale for their separate examination is that they are quite different from the other private capital flows of section 5. We catalogue the extent of FDI at present and focus on the factors which influence FDI. Some conclusions are also presented on the potential for inward FDI to increase, something which could provide a useful boost to growth along with positive externalities for other sectors of the economy.

Finally, section 7 offers some concluding remarks in the light of the previous analyses.

2. The Mediterranean countries: some stylised facts

We begin by trying to draw out a few stylised facts for the Mediterranean countries. With the focus of the paper being on capital flows and capital account liberalisation, it is useful to examine the history of the monetary and exchange rate regimes operated by these countries along with the situations vis-à-vis the extent to which capital flows are liberalised. At the same time, we provide some information on the general macroeconomic performance from the early 1990s onwards in an attempt to set the scene for the rest of the paper.

Table 1 catalogues the history of exchange rate regimes in the region. What stands out clearly from the information given is that all countries have had or still do have a pegged exchange rate of some kind. Indeed, if we take all 9 countries in Table 1 and classify each year for each country as being characterised by some kind of pegged exchange rate or not, then only 13% of the sample observations can be considered as having a floating or managed-floating exchange rate. Over time, the

move is towards less rigid exchange rate regimes; the majority of countries, however, still operate some kind of peg.

Some history of controls on capital movements in 9 Mediterranean countries is to be found in Table 2 and an index of capital controls is shown in Figure 1.[1] All countries, except Lebanon, had a fairly extensive system of controls in place in the early 1990s. Israel and Jordan have by and large liberalised capital flows while the general trend in the other countries, with the exception of Lebanon, is for varying degrees of liberalisation; in some countries extensive controls still remain in place. One interesting factor which emerges from a matching of the information in Tables 1 and 2, is the fact that two of the countries with more liberalised capital flows also moved towards a more flexible exchange rate (Egypt and Israel). Jordan, however, remains with its effective peg to the dollar.

When examining capital flows, it is useful to distinguish two main types: private flows and those related to government or monetary authorities' borrowing/lending. Within private capital flows, the breakdown into FDI flows and other private capital flows is also useful. The rationale for breaking capital flows up into these three parts is two-fold. First, part of our interest lies with the impact of capital flows on macroeconomic policy making. The fact that the government/monetary authorities could try to offset the effect of private sector flows on the rest of the economy (by undertaking mirror-image transactions), suggests that a better measure of the pressure on macroeconomic policy comes from an examination of private capital flows only. Second, the division of private flows into FDI and other flows stems from the fact that (as we discuss in greater detail below) FDI flows are usually seen as longer-term and hence result from long-term decisions about the productive capabilities of the country whereas other flows can be more speculative in nature.

Figures 2a-2f and Figure 3 provide a graphic account of various measures of capital flows as a proportion of GDP[2] for those countries for which data exists in the IMF's *Balance of Payments* statistical source.[3] Each graph includes the various

[1] This index of capital control intensity aims not only to provide a comparison for individual countries over time, but also between countries. Details of its construction are given in Appendix 1.

[2] Our focus is on net flows because our primary interest in this paper is the impact of capital flows on macroeconomic management.

[3] An alternative source of statistics on capital flows is the World Bank *World Global Development Finance Report*. However, the data provided there is rarely more complete than that of the IMF source used here. Moreover, the emphasis in the World Bank data is on long-term net resource flows and

measures with errors and omissions and without errors and omissions. In countries where capital controls are extensive, errors and omissions can help to identify hidden capital flows or contain what has been called in the literature "capital flight" (Cuddington, 1986). Indeed it is clear from the figures that there is some systematic behaviour in the errors and omissions data, especially for Jordan (pre-liberalisation) and Israel. Overall, however, the effect of excluding errors and omissions does not seem to have much of an impact on the basic trend in net capital flows and quantitatively their magnitude is rather small compared to the general level of net flows.

A similar conclusion can be drawn for the impact of including or excluding government/monetary authorities flows – it does not materially affect the conclusions we draw about the nature of net capital flows. By contrast, the removal of net flows of FDI, whilst not affecting the overall trend or volatility of net capital flows, does tend to shift the volume of net capital inflows downward – often by around 1-2 percentage points of GDP.

Normally it is desirable to have quarterly data or, even better, monthly data on net capital flows. However, for this group of countries data frequency is a problem – quarterly data is available for only Jordan and Israel. Quarterly (or even monthly) flows are usually more revealing for the following reason. Since net capital flows can often reverse quickly, annual data tends to smooth the flows and therefore hide substantial difficulties which might have been experienced over any particular year. Thus, for example, an exchange rate peg which might have become increasingly non-credible could lead to large outflows which are quickly reversed to inflows once the expected devaluation of the exchange rate takes place.

A comparison of Figures 2b, 2c and 3 illustrates that the extent of the problem here is not great. To take the case of Israel, we can identify two periods – a number of years in the mid-1990s with strong net capital inflows and the experience of 2003 with quite significant net outflows. These periods are clearly evident even in the quarterly data where the direction of the flows shows quite a bit of persistence. This persistence implies that annual data does not smooth out the interesting patterns that

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transfers and is more suitable for an examination of, for example, the growth implications of capital flows. On this issue, see Laureti and Postiglione (2005) who examine the effect of different types of capital inflows on growth in these countries. The results however are poor, with only portfolio bond flows and short-term debt flows having a positive effect on growth.

might have been evident throughout the year. The same conclusion can be drawn (if not even stronger) for Jordan.

The figures suggest that net capital flows are often large (regularly of the order of 5% of GDP; occasionally reaching 15% and even 20% or more). These magnitudes are similar to those found in the new EU member states (see Gibson and Tsakalotos, 2004) and also to Greece and Portugal prior to their entry into the euro area (Gibson and Tsakalotos, 2005). Net capital flows of that magnitude are certainly of interest in that they can and do have important effects on macroeconomic policy management.

One way in which net capital flows can complicate macroeconomic policy is through their effect on changes in the monetary authorities' foreign exchange reserve holdings. Thus inflows can raise reserves and hence base money contributing to excess liquidity in the domestic financial system; outflows can cause reserves to fall and make an exchange rate peg difficult to defend. Table 3 provides some simple correlations between capital flows and changes in reserves for the whole period and periods distinguished according to the exchange rate regime in place. What is very interesting is the strong negative correlation between flows and reserves. This contrasts strongly with the experience of the southern European EU member states (Greece, Portugal and Spain, Gibson and Tsakalotos, 2005) and the new EU member states (Gibson and Tsakalotos, 2004). The experience of these other countries was clear – capital flows and changes in reserves were positively correlated overall and more so during periods of more fixed exchange rates. For the Mediterranean countries under examination here, it appears to be the current account which drives changes in reserves (see last column of Table 3).

Finally, in this section we want to provide some stylised macroeconomic facts for the Mediterranean countries. Macroeconomic conditions affect not only private non-FDI flows, but also FDI flows. Tables A1-A5 in Appendix 2 provide some basic aggregates (where available from IMF's *International Financial Statistics*). Table A1 suggests a common growth pattern – growth rates were on average higher but quite variable in the 1990s; since the turn of the century growth rates have fallen somewhat. This decline in growth rates has also been accompanied by a systematic decline in inflation across the whole region to levels which could be considered to be consistent with price stability (especially for countries at their level of development). Egypt in 2004 is an outlier, although the sharp rise in inflation presumably reflects the quite

extensive depreciation of the Egyptian pound over the last few years and especially since the peg was effectively abandoned in 2002.

Government budget deficits cannot be said to have improved along with inflation; more importantly, there is no clear trend across the region. Table A3 suggests that a number of countries have significant budgetary problems although comparable data across countries is difficult to come by and makes inter-country comparisons of levels difficult. Finally, it is probably not an exaggeration to say that the current account position of most countries (with the notable exception of Lebanon) is eminently sustainable.

3. The case for capital account liberalisation

Capital account liberalisation should be seen as an instrument to improve the credibility of the policy environment in order to foster greater capital inflows. For the majority of Mediterranean countries, their level of development suggests that they should be importers of capital – in the presence of capital shortages, the rate of return on physical capital should be higher than in other countries. While many countries are willing to accept foreign direct investments (with the possible exception of those destined for "sensitive" sectors), they are loath to allow outward capital flows, or what is deemed as "speculative" capital inflows, such as portfolio investments. Nonetheless, the full liberalisation of all capital flows could help to reassure markets about the direction of policies[4]. For a foreign investor the ability to "exit" a market with low costs is as important as the ability to enter it in the first place.

In general, we can distinguish two motives for a country to open up its capital account: first to attract the capital necessary to finance investments; and, second, as a risk-sharing instrument to smooth out country-specific idiosyncratic shocks. Countries in the region need foreign capital for both these reasons. To assess the likely benefits for Mediterranean countries, in the rest of this section we compare them with a "control group" of countries that include all the Mediterranean members of the EU,

[4] An example of the importance of full capital account liberalisation in reassuring the markets was Greece's response to balance of payments pressures in 1994. Following a change of government, doubts about the future path of policies prompted capital outflows. Instead of trying to tighten capital controls, the government proceeded to the full liberalisation of capital flows, a move that helped reassure markets and stop the outflows.

plus Portugal and Ireland, the latter being a country that in many ways resembled the EU Mediterranean countries until recently.

The *per capita* income of the Mediterranean countries (with the exception of Israel) lags significantly behind that of southern European EU members. More interestingly, growth rates have also been lower, leading to divergence, rather than convergence to advanced economies' levels (Figure 4). Due to some extent to the lower diversification of these economies, but also as a result of geopolitical tensions in the region, the variability of their growth rates has been significantly higher than that of their European neighbours (see Table 4) making it all the more important for these countries to have recourse to risk-sharing opportunities, such as foreign capital flows.

The importance of uncertainty for these countries can be gauged from their investment performance. While the investment ratio has been sufficiently high, averaging about 20 percent of GDP in recent years, investment growth has been quite volatile – in fact, about 1½ times more volatile than in the control group of countries (see Table 5). Moreover, we can note that the Mediterranean countries have attracted relatively few foreign direct investments (FDI). Faced with heightened uncertainty, foreign investors have scaled back their investments and demanded higher returns. We return to this issue in section 6 of the paper.

The absence of risk-sharing opportunities in the Mediterranean countries is evident from the fact that their investment has been constrained by domestic savings. In the absence of adequate data for an analysis along the lines of Feldstein-Horioka (1980), we look at the current account deficit, which by definition should be the difference between domestic saving and investment. A look at the current account of these countries is quite informative. The overall picture that emerges is that countries in the region have had low and relatively stable current account deficits (Table A4). Indeed, some countries such as Algeria and Libya have had chronic current account surpluses, implying that they are capital exporters (mainly a consequence of their energy exports), despite their comparatively low level of development.

The implication is that despite significant output variability they have made little use of international capital markets to smooth domestic spending. Essentially, they have sought to finance their domestic investment mainly through domestic savings. It

is reasonable to argue that this "stop-go" environment has had detrimental effects on their economies, since it forces investors to be myopic, leads to the abandonment of ongoing projects when finance dries up and does not allow the accumulation of "learning-by-doing" capital.

If the costs of capital account controls have been high in the past in terms of constraining investment, they are likely to be even higher in the future. The investment needs of the countries in the region have increased recently due to two developments, the enlargement of the EU and the expiration of the Multi-Fibre Agreement, both of which have worsened their competitive position. They will thus have to embark on a significant effort to modernize and upgrade their industries, which will require significant investments.

It thus appears reasonable to expect that opening up the capital account will allow countries in the region to achieve higher rates of growth and share risks internationally[5].

4. The path to capital account liberalisation

While countries in the region will benefit by setting the target of eventual capital account liberalisation, it should be pointed that an abrupt liberalisation could carry significant risks of destabilisation. Indeed experience has shown that there is an optimal path of economic liberalisation (McKinnon, 1982; 1991) and there is now widespread consensus on what that optimal path should look like.

Most of the countries in the region are in the very early stages of external liberalisation. Three countries (Algeria, Libya and Syria) are not yet members of the WTO, while trade liberalisation has been limited for most of the others. For the two countries for which detailed information is available, Egypt and Morocco, the average import tariff rate for non-agricultural products is estimated at 21 percent and 30 percent respectively, compared with an EU average of about 5 percent. In addition, one country (Syria) has not yet accepted the (admittedly limited) obligations of Art. VIII of the IMF regarding the liberalisation of current payments.

[5] A possible caveat to the argument that uncertainty/volatility can be reduced by access to international capital markets is that inflows tend to be drawn to areas where these countries have a comparative advantage. This, in turn, increases dependence on a few export items and might exacerbate cyclicality of income.

The first step should be the liberalisation of the current account, for otherwise the burden of adjustment in the face of shocks would fall predominantly on the capital account. It is important that liberalisation of trade take place before either domestic financial or external financial liberalisation since tariffs distort relative prices. If financial markets are liberalised yet prices remain distorted, then finance will be attracted to artificially-profitable sectors and a misallocation of resources will ensue. More generally, trade and current account liberalisation would help reassure investors about the process of liberalisation.

Capital account liberalisation also requires a liberalised domestic financial sector. If external financial liberalisation occurs before domestic interest rates have been adjusted to world levels, then large capital outflows would ensue. In addition the domestic financial system should exhibit a certain degree of maturity so that it is in a position to understand the risks inherent in a liberalised environment and develop appropriate strategies. It is not only financial institutions but also non-financial companies and individual consumers that face the risks arising from the increased volatility of interest rates and/or exchange rates. A developed financial sector should be able to provide a range of products to protect consumers of these products from such risks. The evidence is that up to now there has been limited domestic liberalisation. This can be seen from the fact that real interest rates have remained stable and negative in many cases for prolonged periods. A developed financial market can also help policy-making in a liberalised environment. Trying to sterilise even modest financial flows in a thin market for government securities could have significant destabilising effects and may eventually prove to be impossible. Thus, in parallel with, or even before, external liberalisation, governments should embark on liberalising domestic markets and developing a sufficiently deep bond market by offering realistic market-based interest rates.

Related to the optimal path to capital account liberalisation is the issue of the necessary conditions that need to be satisfied in order to ensure the success along the path. In this respect it is widely acknowledged that a stable macroeconomic environment is an important requirement (McKinnon, 1991). The experience of the Asian Crisis has also highlighted the importance of establishing high standards in bank supervision practices in order to ensure financial stability (Goldstein, 1998). Moreover, the well known policy “trilemma” between free capital flows, fixed

exchange rates and monetary policy independence[6] implies that the choice of exchange rate regime needs to be carefully considered as it will have important implications for the ability of a country to effectively exercise an independent monetary policy.

A final issue that has more recently been raised in the literature is whether there is anything to be gained by regional coordination of the liberalisation process. Begg *et al* (1999) argue that capital mobility increases more with simultaneous liberalisation across a number of countries. That is, the absolute level of capital flows (both inflows and outflows) increases significantly. This conclusion follows from their examination of capital flows and liberalisation in Western Europe (1980s) and Asia (1990s). Thus simultaneous liberalisation could cause a regional shock and make capital flows more volatile in the region.

However, unilateral liberalisation by one country is no panacea. The liberalising country may confer negative externalities on others by absorbing capital flows from its neighbours. Most of the Mediterranean countries are usually seen as belonging to the same risk class and face in many respects similar shocks. As a first step, it might be useful to promote the regional trading of fixed-income securities, for example, by creating regional markets for such instruments and by coordinating their issuance. This could help deepen the market, and familiarize both domestic savers and foreign investors with the new opportunities.

5. Problems and challenges of capital account liberalisation

If capital account liberalisation can bring about potential benefits, it should not also be forgotten that it raises a number of challenges for macroeconomic policy making, especially in countries with some form of exchange rate peg or where the monetary authorities care about the level of the exchange rate. Such countries frequently suffer from periods of large net capital inflows (excess credibility) or large net outflows (speculative attacks). Both complicate the conduct of macroeconomic policy considerably.

[6] Obstfeld, Shambaugh and Taylor (2004) provide empirical evidence on the relevance of this "trilemma".

Excessive net capital inflows can arise in the presence of excess credibility. Excess credibility exists if the exchange rate target is highly credible, whilst, at the same time, the monetary authorities are pursuing a tight monetary policy in order to lower inflation. The problem can be compounded further if the government has a relatively loose fiscal policy. The result is that domestic interest rates are higher than the foreign rate plus the expected depreciation of the domestic currency. Such a situation encourages large net capital inflows, as nonresidents take advantage of high rates of return and residents borrow abroad, both with little perceived foreign exchange risk.

Net capital inflows, however, have consequences for the domestic money market. If the country is to keep its exchange rate target and prevent nominal appreciation of the currency, it has to intervene and sell domestic currency in the foreign exchange market. This causes foreign exchange reserves to increase. As a result the monetary base increases and an excess supply of liquidity in the interbank market at prevailing interest rates is generated. This can undermine the attempt to disinflate or to maintain inflation at acceptable levels. Such problems were common in southern European countries such as Greece, Portugal and Spain during the period of macroeconomic convergence before entry into the euro area (Gibson and Tsakalotos, 2005). In some periods, the increase in reserves as a consequence of capital inflows was substantial suggesting that the above scenario was indeed common in practice.

Excessive net capital outflows can be equally problematic for macroeconomic policy. A sudden withdrawal of capital can undermine an exchange rate peg as the monetary authorities find it increasingly difficult to maintain the credibility of the current exchange rate in the face of declining foreign exchange reserves. If successful the speculative attack may lead to the peg being abandoned, thus undermining the credibility of the monetary policy strategy being pursued. A rapid depreciation of the currency can also have negative consequences for inflation.

In the light of the implications of net capital flows for the conduct of macroeconomic policy, it seems important that we attempt to discover their determinants. In this section, the focus is on private net capital flows excluding FDI. The relevant literature falls into two groups, namely that which examines the determinants of net capital flows and that which looks explicitly at speculative attacks

(in the latter case the focus is on countries with an exchange rate peg/target of some kind). We can divide the factors which are usually considered in the literature into two groups. First, there are the macroeconomic determinants (inflation, money, interest rates, growth, budget deficits); second, there is the impact of contagion, either via fundamentals or through psychological effects (examples of the latter include the impact of the SE Asian crisis in 1997 and the Russian crisis in 1998).[7]

Given the data limitations and the extent of net flows observed, the main focus here is an examination of the determinants of net capital flows in general. Ideally, this requires quarterly data on private net capital flows excluding FDI flows[8]. Unfortunately, as we say in section 2, data on quarterly flows is limited and the breakdown of the financial account in the IMF *Balance of Payments* data is often not sufficient to extract only private flows. Thus we confine our main analysis to the annual data. More specifically, we estimate the following equation[9]:

$$KF_{it} = \alpha_i + \beta ERR_{it} + \gamma \Delta P_{it} + \delta \Delta lny_{it} + \varepsilon GB_{it} + \eta FI_{it} + \zeta \Delta M_{it} + \kappa r_{dit} + \lambda r_{fit} + \mu KK_{it} + \nu Russia_t + \xi Asia_t \quad (1)$$

where KF_{it} are net capital inflows (excluding FDI) into country i at time t as a proportion of GDP; ERR_{it} is a dummy indicating some form of pegged exchange rate regime; ΔP_{it} is inflation (the change in the CPI); Δlny_{it} is the rate of growth of real GDP; GB_{it} is the government balance as a proportion of GDP; FI_{it} is the ratio of M2/GDP which attempts to examine whether the degree of financial system development influences capital flows; ΔM_{it} is broad money growth which could influence inflation expectations and hence net inflows; r_{dit} and r_{fit} are the domestic and foreign (US) interest rates, respectively[10]; KK_{it} is the index of capital control intensity

[7] For a comprehensive review of the literature in this area, see Gibson (2003), Gibson and Tsakalotos (2004; 2005).
[8] We examine FDI flows separately in the next section. Whilst FDI flows can equally complicate the conduct of macroeconomic policy, their long-run nature tends to imply that the determinants of such flows are rather different.
[9] The absence of data on the stock of assets held abroad by residents or the stock of domestic assets held by non-residents prevents us from estimating a full portfolio model which includes a long-run relationship between asset stocks and their determinants. Rather we have to be content here with focusing on the short-run dynamics of net capital flows. Given our interest in the interaction between capital flows and macroeconomic policy, this is perhaps not too serious a drawback.
[10] We test for the significance of both the interest rates in levels and first differences. A portfolio model of net capital flows would suggest that changes in interest rates should affect flows and not their levels.

presented in Figure 1; $Russia_t$ is a dummy capturing the potential effects of the Russian crisis of August 1998 (it takes a value of 1 during the third and/or fourth quarter of 1998); finally, $Asia_t$ is a dummy capturing the possible effects of the Asian financial crisis (it takes a value of 1 during the third and/or fourth quarters of 1997). The time period examined runs from 1990 to 2003 (with the actual time span for each country depending on data availability). We experiment with various lags since often net capital flows are responding to data which refers to a previous period.

The results for various estimation methods are given in Table 6; we treat the countries as a panel and run a fixed effects regression, since our interest is not so much in the detailed experience of individual countries but rather the general experience of the group as a whole. This is not to deny that specific country effects are present. The fact that the fixed effects are highly significant in all the models considered testifies to this (see F tests in Table 6). The preference for a fixed effects model over a random effects model is clear from the Hausman test provided for model 2.

Model 1 includes five countries (Egypt, Israel, Jordan, Morocco and Tunisia; there is no domestic interest rate for Syria for the period) for which there exist annual data on net capital flows excluding FDI flows. Model 2 provides a parsimonious version of model 1 where insignificant variables have been deleted (hence Syria is now included in the sample). The results suggest that sustained growth has a positive impact on net capital inflows whereas government deficits tend to encourage net outflows. Higher inflation reduces net inflows as expected as does our proxy for expected future inflation, the rate of growth of broad money. The degree of financial development (as represented by M2/GDP) appears to affect capital flows negatively; that is, as the level of financial development rises, so there is a tendency for countries to experience net capital outflows. This is perhaps not surprising – with financial development comes an increasing sophistication on the part of investors which is likely to lead to their seeking to diversify their portfolios by investing abroad. In the initial period after liberalisation this can cause significant outflows until equilibrium is reached.[11] Capital controls help to support net inflows or reduce net outflows

[11] The M2/GDP ratio exhibits quite a lot of variability over time (see table A5 in Appendix 2) hence multicollinearity with the fixed effects is not considered to be an issue. We note, however, that - in line with our expectations - for some countries there is considerable negative correlation between the financial development proxy and the capital controls intensity index. Nevertheless, we do not consider

reflecting the fact that most controls in this group of countries were directed at outflows. Whilst domestic and foreign interest rates have the expected signs, they are not significant. Finally, the impact of the exchange rate regime is also highly insignificant (perhaps reflecting the fact that our sample is heavily biased in favour of country-years where some form of exchange rate peg was in operation).

The results tend to support the view that macroeconomic fundamentals are important determinants of net capital flows. Interestingly, there is little effect from contagion either from the SE Asian crisis or the Russian crisis of the late 1990s. This contrasts strongly with the result for the new EU member states (Gibson and Tsakalotos, 2004) or the southern European EU member states (Gibson and Tsakalotos, 2005). It probably reflects the somewhat disparate nature of the countries in the sample and the fact that, until recently, interest in the countries as a group from the international capital markets has been limited. By contrast, the southern European EU member states and, in turn, the new member states were important destinations for emerging market investment. The experience of these latter two groups of countries probably has much more to say about the likely future experience of the Mediterranean countries; we cannot assume, that is, that contagion is not something that will affect these countries in the future.

One potential criticism of the estimation technique used is that it does not control for the possible endogeneity of growth and the index of capital controls. Net capital inflows could increase growth and may also provoke a response by the authorities that takes the form of tightening or loosening controls on capital movements. In model 3 we re-estimate model 2 using panel instrumental variables techniques. The results are qualitatively similar to those of model 2, although the significance of the coefficients falls somewhat.

Finally, Table 7 presents the results of model 4 which considers whether the determinants of net capital flows differ according to whether there is a net inflow (positive net capital flow) or a net outflow (negative net capital flow). To this end, we construct two dummy variables taking, respectively, a value of 1 when there is a net inflow or a net outflow. The results suggest that the direction of the effect of any one explanatory variable is the same irrespective of whether the country is experiencing a

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this to be a serious drawback for our estimation results given that both variables turn out to be significant.

net inflow or outflow. Thus, an increase in the rate of growth of broad money reduces net inflows when they are positive and when they are negative (equivalent in the latter case to an increase in outflows).[12] Whilst the direction of the effect of any particular explanatory variable does not change, an interesting result is that the magnitude and significance of the results often can. Thus growth tends to increase net flows when they are inflows; an increase in growth when there are outflows has no significant effect. Similarly changes in inflation tend to have a larger impact on net flows when there are net outflows rather than net inflows[13].

In conclusion, therefore, the results provide quite a bit of support for the importance of sound macroeconomic policies for avoiding excessive net capital flows, whether they be inflows or outflows. There is little evidence that the Mediterranean countries experienced contagion, at least over the period under consideration here.

6. Foreign direct investment flows

FDI flows need to be considered separately from other capital flows for a number of reasons.[14] Firstly, FDI flows have different characteristics: they are of longer-term nature, they mainly depend on the real characteristics of the host economy and they do not exhibit excessively erratic patterns caused, for example, by contagion effects. Secondly, they differ in terms of the consequences they have on the host economy: in addition to the impact on monetary conditions and exchange rate dynamics that is shared by all capital inflows, they affect investment and employment as well as having potentially significant secondary spillover effects that improve the

[12] The only exception to this is the case of the dummy for an exchange rate peg (not reported). While not significant, a peg both increases net inflows and net outflows as would be expected. The insignificance can perhaps be attributed to the existence of capital controls which were more intense overall during pegs.

[13] We also redefined the dependent variable as a binary variable and ran two logit regressions. The first examines the case of "large" net capital outflows (where "large" is defined, for each country, as the mean net capital flow minus half a standard deviation of net capital flows) compared to all other net flows; the second the case of "large" net inflows (defined as the mean net capital flow plus half a standard deviation of net capital flows). The results (available on request from the authors) are consistent with the above findings, although they are only weakly significant. Thus higher inflation and a more developed financial system increases the probability of a large net outflow while increased intensity of controls on capital movements decrease the probability of a large net outflow. Increases in growth and the government surplus increase the probability of large net inflows as does an increase in the intensity of the capital control index (probably reflecting the fact that most controls are on outflows). Increased financial development reduces the probability of a large net inflow.

[14] Bosworth and Collins (1999) show that the distinction of FDI from other capital flows is also supported by the data.

growth performance and potential of the economy. There is, however, a further reason to distinguish FDI flows from other capital flows, namely that, in view of the potential benefits outlined above, most of the countries under review have already liberalised FDI inflows.[15,16] This gives us the opportunity here to examine the success these countries have had in attracting FDI.

Benefits and risks of FDI

From the perspective of the Mediterranean countries, the most prominent benefit of FDI, as indicated in section 3, is that it can provide them with the funds necessary to finance the investment required to boost growth. The importance of this role notwithstanding, particularly in economies where growth is constrained by the amount of capital available and where it is important to minimise the consumption sacrifice required to finance investment, FDI can potentially provide significant additional benefits. Foreign investments, particularly in greenfield projects, can become valuable channels for the transfer of technology, know-how and modern management practices (Findlay, 1978; Wang and Blomström, 1992). Moreover, according to this argument, to the extent that foreign-owned firms have linkages with local firms, there can be significant externalities or spillover effects that lead to an overall increase in the level of technology, skills and efficiency in the host economy (see for example Lim, 2001). New growth theory highlights the importance of the adoption of new technology as a principal factor determining the rate of growth of a developing country (see, for example, Balasubramanyam *et al,* 1996). The transfer and diffusion of technology is therefore a potentially important function of FDI, particularly in the Mediterranean region where the level of technology, as measured by most relevant indices, remains relatively low (with the notable exception of Israel; see Figure 5). Further potentially beneficial effects of FDI relate to the consequent increase in competition in the local market through the entry of new market participants and the drive towards restructuring the economy on a more efficient basis, an issue also particularly pertinent to most countries in the Mediterranean region due to the relatively large presence of the public sector in several of these economies (Petri, 1997). Finally, foreign investment can help host economies increase their access to world markets, particularly to the market of the source country (OECD, 2002).

[15] Some controls still remain in force in Lebanon and Libya, see table 2.
[16] Outward FDI is still subject to restrictions in most of the countries under consideration, however the scope of this paper will be limited to inward FDI.

Nevertheless FDI can also be associated with some risks or costs. Large foreign companies, in some cases, abuse their dominant market position and attempt to influence host country political developments (Findlay, 1978). Moreover, large investors may be able to achieve considerable concessions from host country governments as an incentive to invest there and/or practice transfer pricing in such a way so as to minimise their local tax burden thereby extracting most or all of the benefits from the externalities of the investment (Demekas *et al*, 2005). Additionally, FDI may increase the volatility of balance of payments flows due to the pattern of flows it involves (a large, one-off inflow and then a series of outflows related to profit or capital repatriation). Finally, the restructuring of the economy previously cited as a benefit may have undesirable distributional implications, while the entry of large foreign competitors may crowd smaller local participants out of the market, thereby reducing rather than increasing the degree of competition (UNCTAD, 2004; OECD, 2002).

Although this is by no means an uncontroversial issue, most views seem to be converging to the position that, from a theoretical perspective, the overall effect for the host economy is positive. Indeed this view is shared by policymakers in a number of developing countries who have elevated the improvement of their economies' performance in attracting FDI to a prominent place in the economic policy agenda. Empirical research tends to support this hypothesis, although again dissenting views are not lacking.[17] For developing countries in particular, Borensztein *et al* (1998) investigate the effect of FDI on growth in 69 economies and conclude that a one percentage point increase in FDI flows results in an increase in the host country growth rate by 0.4 – 0.9 percentage points.

The data from the Mediterranean countries *prima facie* confirms the existence of a positive relationship between the stock of FDI an economy has received and its growth rate (Figure 6), although the direction of causality is not clear. Bouklia-Hassane and Zatla (2000) investigate this relationship in the countries of the region more formally using panel estimation techniques and find a positive albeit not very significant effect of FDI (as a percentage of GDP) on growth. When they enlarge the

[17] See Lim (2001) and Borensztein *et.al.* (1998) for a survey of the empirical literature on the effect of FDI on growth. Rodrik (1999) provides a dissenting view.

cross-section dimension of the panel to include 54 developing economies, the relationship becomes highly significant. The authors interpret this as possible evidence of the existence of a threshold effect and of the importance of the level of human capital in affecting the effectiveness of FDI.

The FDI performance of the Mediterranean countries

Since the early 1990's there has been a surge of FDI flows to developing countries, which from approximately $21.4 billion per annum on average during the 1980s were almost six times higher at $121.8 billion on average in the 1990s. The Mediterranean countries, as a group, have not however been able to benefit accordingly from this, since average annual total flows into the region increased only by a factor of three, from $1.1 billion during the 1980's to $3.3 billion in the 1990's. As a result, the region's share in total FDI received by developing countries has diminished significantly, from a peak of 10.7% in 1985 to merely 2.1% in 1996, although this downward trend appears to have reversed since then and Mediterranean countries have started to gradually regain some of their lost share (Figure 7). The region's rather disappointing performance in attracting FDI is also reflected in the FDI-to-GDP ratios (Figure 8), which are consistently the lowest among other developing country groups. It is noted, however, that the performance of the Mediterranean region in attracting FDI does not necessarily reflect the efforts made by the countries in this area to increase foreign investment, particularly in recent years. We shall revisit the issue of the determinants of FDI later.

The overall picture, nevertheless, masks quite diverse performances by the countries in the region (Figure 9). Morocco, Jordan, Israel and Tunisia have FDI-to-GDP ratios that are considerably higher than the regional average and are on an upward trend. Egypt on the other hand, which used to attract the largest FDI flows in the area, is on a downward trend. To gauge the performance of the countries in the region we compare it to the potential of these economies (figure 10), using the respective indices reported in UNCTAD (2004).[18] This confirms that, for the period 2000-2002, Morocco, Tunisia, Jordan and Israel were doing well in attracting FDI, with the former two performing above their potential. While Algeria and Syria were

[18] To measure performance we use the Inward FDI Performance Index, which is calculated as the ratio of a country's share in global FDI to its share in global GDP. To measure potential we use the Inward FDI Potential Index, which is an unweighted average of 12 structural variables for each economy. See UNCTAD (2004) for the list of the variables used.

not very successful in attracting FDI during this period, Egypt, Lebanon and Libya were even performing below their economies' potential.

The foreign investors into the region mainly originate from Europe, the United States and, to a lesser degree, Arab countries. European investors are predominant in Egypt, Lebanon, Morocco, Syria and Tunisia while substantial investment from the United States is attracted by Algeria and Israel (Petri, 1997). The European Association Agreements that have been signed by the Mediterranean countries in the region[19] were expected to act as a catalyst in boosting European investment into the region further. However their effects across the region as a whole have so far been limited, possibly due to the increased competition the region faces in attracting European FDI from Central and Eastern European countries that have been a major target in recent years for European investors (Alessandrini and Resmini, 2000).

In terms of the sectors that receive incoming FDI, several patterns are evident. Inflows attracted by Algeria, Egypt and Syria mainly relate to energy and mining. Tourism is important in Tunisia, Morocco, Jordan and Egypt. Egypt, Tunisia and Morocco also attract FDI directed to basic manufacturing and infrastructures. Finally Israel receives substantial FDI relating to electronics and other high technology sectors. Petri (1997) argues that the composition of FDI in the region tends to limit the benefits of the investment flows in terms of technology transfer and export market development. More specifically, the partner composition seems to lack investors with factor proportions not too dissimilar to those of the region, while the sectoral composition lacks production-oriented investments that could increase the region's integration into international production networks.

Factors affecting FDI

The poor performance of the Mediterranean countries in attracting FDI raises the following questions: what factors are responsible for this and what can policymakers in these countries do to improve the flow of FDI to their countries? To address these questions we need to examine the determinants of FDI.

The importance of the factors affecting inward FDI depends on the strategic objectives of the investors. It is thus useful to distinguish the following types of FDI:

[19] All the Mediterranean countries have entered into European Association Agreements, with the exception of Libya.

horizontal FDI, where the investor primarily seeks to penetrate the local market – historically this was the dominant type of FDI internationally – and vertical FDI, where the investor seeks to minimise production costs. More recently the following FDI strategies have also been identified: export platform FDI where the investor establishes a local production base to supply the neighbouring markets (Ekholm *et al* 2003) and production fragmentation FDI where the production of the finished good occurs in many locations internationally, each one responsible for one stage of the process (see eg Baltagi *et al* 2004). Alessandrini and Resmini (2000) argue that while FDI flows to the Mediterranean countries in the previous two decades were mainly aiming to overcome custom protectionism, i.e. they were of the Horizontal type, the strategies of investors are gradually changing.

The issue of identifying the factors affecting the size of FDI flows into an economy has been addressed quite extensively in the empirical literature.[20] Here we focus on the factors that have been recognised as particularly relevant for the Mediterranean countries.[21]

In most of the empirical research into the determinants of FDI internationally, a dominant role is assigned to "gravity" factors, i.e. the size of the market of the host economy – usually measured in terms of output, output *per capita* or population – and proximity to the source country.[22] However, in the research that is specific to the Mediterranean region, gravity factors do not turn out to be significant, suggesting that other factors are the main determinants of FDI flows in this area.

A factor that has repeatedly been identified in the literature as important is the degree of the host country's openness to trade (Bouklia-Hassane and Zatla, 2000; Sekkat and Veganzones-Varoudakis, 2004). These studies also share the conclusion that the stock of physical infrastructure that is available in the economy is a principal determinant of FDI flows. Furthermore, lack of reform in terms of foreign exchange liberalisation in some countries in the region – despite some progress in the 1990s – is identified as a factor explaining to a significant degree the poor performance of these countries in attracting FDI (Sekkat and Veganzones-Varoudakis, 2004).

[20] For a thorough review of the relatively recent contributions to this literature, see Blonigen (2005).
[21] This is appropriate given that empirical research on the determinants of FDI in the Mediterranean region suggests that they are significantly different from the determinants in other developing country regions (see, for example, Sekkat and Veganzones-Varoudakis, 2003; Alessandrini and Resmini, 2000).
[22] Demekas *et al* (2005) argue that "the gravity model consistently explains about 60 percent of aggregate FDI flows, regardless of the region" and provide extensive references supporting this claim.

A useful insight stemming from the relevant empirical literature is that FDI flows in the Mediterranean countries appear to be, to a large extent, resource specific (Alessandrini and Resmini, 2000; Petri, 1997). As a result, the natural resource endowment of these countries is a significant determinant of the amount of FDI they attract. The importance of this effect perhaps also explains the relative insignificance of gravity factors in this region. These two contributions also identify the intensification of regional integration as an important opportunity to increase the FDI attractiveness of the region. There are also indications that the current degree of development of the manufacturing sector in the area negatively affects FDI flows, which may suggest that there is a threshold effect in the way this factor affects FDI and the countries of the region are below the required level of development (Alessandrini and Resmini, 2000).

Finally, the evidence on the effect of macroeconomic reform and stabilisation efforts on FDI is, for the time being, inconclusive (Bouklia-Hassane and Zatla, 2000). The same study identifies the existence of a negative regional bias, without, however, characterising its nature. This bias is perhaps linked with the additional factors cited by Petri (1997), without reference to econometric results, namely the existence of political tensions and risks, the bureaucratic regulation of investment and the not particularly hospitable business climate.

More specifically, regarding the business climate in Mediterranean countries, although progress is gradually being made, there is still a gap compared to south European countries and new EU member states.[23] This is illustrated in Figure 11 using the World Economic Forum's Growth Competitiveness Index for 2005,[24] which is a measure summarising the quality of the main aspects of a county's business climate (contracts and law, corruption, ICT infrastructure, access to credit, innovation and efficiency of public spending). The signing of Association Agreements with the EU is expected to assist in the direction of improving the business climate in these countries and indeed the countries that signed such agreements early on appear to have attracted relatively more FDI as a percentage of GDP than their peers (Bäcker, 2005).

[23] For a review of the business climate in Mediterranean countries, see European Commission (2005).
[24] Growth Competitiveness Index values are not provided for Lebanon, Libya and Syria. The inclusion of index values for these countries is likely to reduce the region average.

Enhancing FDI performance and effectiveness: policy implications

From the preceding discussion it might appear that, to some extent, factors that are exogenous to policymakers determine the amount of FDI flows a country attracts. Nevertheless, there is still scope for policy initiatives to enhance FDI performance and, most importantly, to maximise the benefits from the FDI received. The following guidance can be drawn from the relevant literature for the design of such policies.

The trade strategy that a candidate host country adopts, i.e. import substitution or export promotion, crucially affects both the volume of FDI attracted and its effectiveness in bringing about the desired results for the host economy (Balasubramanyam *et al,* 1996). This suggests that a country's FDI strategy needs to be formulated together and in line with its trade strategy.

The existence of FDI flows into an economy alone does not automatically imply that it will benefit from the positive externalities that FDI can bring about. The productivity gap between the host and target economies needs to be sufficiently small for the host economy to be able to absorb the technology and skills transferred (Borensztein *et al,* 1998). Moreover, policies providing incentives for local firms to invest in technology and training are required for the spillover effects to be realised (Blomström and Kokko, 2003).

Competition in investment incentives among candidate target countries (especially among the Mediterranean countries) can lead to the transfer of most of the potential benefits brought about by FDI from the host economies to the foreign investors. This highlights the need for regional coordination in designing incentives, particularly given the failure of international attempts for multilateral policy coordination, such as the OECD's MAI initiative (Blomström and Kokko, 2003). Moreover, as hinted at above, a push towards greater regional integration will be beneficial to the FDI attractiveness of the countries in the area. If, in particular, this integration takes the form of a Regional Trade Agreement (RTA), Jaumotte (2004) shows that the group[25] would benefit from substantially increased FDI flows, even though the gain will be unevenly divided among the RTA members. The resulting policy conclusion is that if an RTA is to be created, all members should make efforts

[25] In the simulation undertaken in Jaumotte (2004), an RTA among Algeria, Morocco and Tunisia is considered.

to bring their business environment up to the level of the best country in the group, to ensure that they share in the benefits.

7. Concluding remarks

This paper has examined some of the issues surrounding capital account liberalisation in Mediterranean countries. A short review of the benefits of liberalisation suggests that those countries that have not yet liberalised have a lot to gain from a policy of liberalising, mainly in terms or reducing risk and uncertainty and helping to de-link domestic investment decisions from the availability of domestic finance.

Such a conclusion, however, does not mean that a policy of liberalisation will be problem-free. The experience of southern European countries which are now euro area members as well as the new EU member states with non-FDI private net capital flows suggests that net flows (both net inflows and outflows) increase significantly following liberalisation. This can have consequences for macroeconomic management. Experience in the Mediterranean countries with such capital flows over the 1990s and into the current decade highlights the importance of sound macroeconomic policies. However, whilst until now contagion has not featured greatly in their experience, experience with liberalisation in other regions suggests that is unlikely to continue. Countries should therefore be prepared for dealing with the challenges that liberalisation will throw up.

Finally, we focused on FDI inflows which in general operate within a liberalised environment already. Despite liberalisation, however, there is evidence that some Mediterranean countries are not performing to potential – that is, they should be attracting more FDI. This indicates that there is scope for national and regional policies that could help boost FDI flows in these countries. Moreover policies can increase the effectiveness of the FDI attracted in terms of the benefits for the host economies.

References

Alessandrini S. and Resmini L. (2000) 'FDI in the Mediterranean Region: a comparison with CEE experience', *FEMISE Research Programme Report.*

Bäcker A. (2005) *The Development of Trade and Foreign Direct Investment under the Influence of the Barcelona Process – An Initial Assessment*, paper presented at the conference "Middle East and North African Economies – Past Perspectives and Future Challenges" (Brussels, 2-4 June 2005).

Balasubramanyam V. N., Salisu M. and Sapsford D. (1996) 'Foreign Direct Investment and Growth in EP and IS Countries', *The Economic Journal*, 106, 434, 92-105.

Baltagi B., Egger P. and Pfaffermayr M. (2004) 'Estimating Models of Complex FDI: Are There Third-Country Effects?', *Mimeo*.

Begg D., Halpern L. and Wyplosz C. (1999) *Monetary and Exchange Rate Policies, EMU and Central and Eastern Europe*, Forum Report of the Economic Policy Initiative, no. 5, CEPR and EASTWEST Institute.

Blomström M. and Kokko A. (2003) 'The Economics of Foreign Direct Investment Incentives", *NBER Working Paper* no. 9489.

Blonigen B. (2005) 'A Review of the Empirical Literature on FDI Determinants', *NBER Working Paper* no. 11299.

Borensztein E., De Gregorio J. and Lee J.-W. (1998) 'How Does Foreign Direct Investment Affect Growth?', *Journal of International Economics*, 45, 1, 115-135.

Bosworth B. and Collins S. (1999) 'Capital Flows to Developing Economies: Implications for Saving and Investment', *Brookings Papers on Economic Activity*, 1999, 1, 143-180.

Bouklia-Hassane R. and Zatla N. (2000) 'L' IDE Dans le Basin Méditerranéen: ses Determinants et son Effet sur la Croissance Economique', *FEMISE Research Programme Report.*

Chinn M. and Ito H. (2002) 'Capital Account Liberalization, Institutions and Financial Development: Cross Country Evidence', *NBER Working Paper* no. 8967.

Cuddington J. T. (1986) 'Capital flight', *Princeton Studies in International Finance*, 58.

Demekas D., Horváth B., Ribakova E. and Wu Y. (2005) 'Foreign Direct Investment in Southeastern Europe: How (and How Much) Can Policies Help?', *IMF Working Paper* no. 05/110.

Dooley M. (1996) 'A Survey of Literature on Controls of International Capital Transactions', *IMF Staff Papers*, 43(4), 639-87.

Edison H. and Warnock F. (2003) 'A Simple Measure of the Intensity of Capital Controls', *Journal of Empirical Finance*, 10(1/2), 81-103.

Eichengreen B. (2001) 'Capital Account Liberalization: What Do Cross-Country Studies Tell Us?', *The World Bank Economic Review*, 15(3), 341-65.

Eichengreen B., Mussa M., Dell'Ariccia G., Detragiache E., Milesi-Ferretti G. and Tweedie A. (1998) 'Capital Account Liberalization: Theoretical and Practical Aspects', *IMF Occasional Paper* no. 172.

Eichengreen B., Rose A. K. and Wyplosz C. (1995) 'Exchange Market Mayhem: The Antecedents and Aftermath of Speculative Attacks', *Economic Policy*, 21, 249-312.

Eichengreen B., Rose A. K. and Wyplosz C. (1996) 'Contagious Currency Crises', *CEPR Discussion Paper* no. 1453.

Eichengreen B. and Wyplosz C. (1993) 'The Unstable EMS', *Brookings Papers on Economic Activity*, 1, 51-143.

Ekholm K., Forslid R. and Markusen J. (2003) 'Export-Platform Foreign Direct Investment', *NBER Working Paper* no. 9517.

European Commission (2005) '10 Years of Barcelona process: taking stock of economic progress in EU Mediterranean partners', *Occasional Paper* no. 17.

Feldstein M. and Horioka C. (1980) 'Domestic saving and international capital flows', *The Economic Journal*, 90, 358, 314-329.

Findlay R. (1978) 'Relative Backwardness, Direct Foreign Investment, and the Transfer of Technology: A Simple Dynamic Model', *The Quarterly Journal of Economics*, 92, 1, 1-16.

Gibson H. D. (2003) 'Realignment probabilities and reputation effects in the EMS', *Oxford Economic Papers*, 55, 315-54.

Gibson H. D. and Tsakalotos E. (2004) 'Capital flows and speculative attacks in EU member states', *Economics of Transition*, 12, 3.

Gibson H. D. and Tsakalotos E. (2005) 'EU enlargement, ERM II and lessons from the southern European countries', *South-Eastern Europe Journal of Economics*, 3, 1, 41-78.

Goldstein M. (1998) 'The Asian Financial Crisis: Causes, Cures, and Systemic Implications', *Institute for International Economics Policy Analyses in International Economics* no. 55.

Jaumotte F. (2004) 'Foreign Direct Investment and Regional Trade Agreements: The Market Size Effect Revisited', *IMF Working Paper* no. 04/206.

Lane P. and Milesi-Ferretti G. (2001) 'The External Wealth of Nations: Measures of Foreign Assets and Liabilities for Industrial and Developing Countries', *Journal of International Economics*, 55(2), 263–94.

Laureti L. and Postoglione P. (2005) 'The effects of capital inflows on the economic growth in the Med Area', *Journal of Policy Modeling*, 27, 839-51.

Lim E.-G. (2001) 'Determinants of, and the Relation Between, Foreign Direct Investment and Growth: A Summary of the Recent Literature', *IMF Working Paper* no. 01/175.

McKinnon R. I. (1982) 'The order of economic liberalisation – lessons from Chile and Argentina', *Carnegie-Rochester Conference Series on Public Policy*, 17, 159-86.

McKinnon R. I. (1991) *The Order of Economic Liberalisation*, John Hopkins University Press, New York.

Miniane J. (2004) 'A New Set of Measures on Capital Account Restrictions', *IMF Staff Papers*, 51(2), 276-308.

Obstfeld M., Shambaugh J. and Taylor A. (2004) 'The Trilemma in History: Tradeoffs among Exchange Rates, Monetary Policies, and Capital Mobility', *NBER Working Paper* no. 10396.

OECD (2002) *Foreign Direct Investment for Development. Maximising Benefits, Minimising Costs*, Paris.

Petri P (1997) 'The Case of Missing Foreign Investment in the Southern Mediterranean', *OECD Working Paper* no. 128.

Quinn D (1997) 'The Correlates of Change in International Financial Regulation', *American Political Science Review*, 91(3), 531–51.

Rodrik D. (1999) 'The New Global Economy and Developing Countries: Making Openness Work", *Overseas Development Council Policy Essay* no. 24.

Sekkat K. and Veganzones-Varoudakis M.-A. (2004) 'Trade and Foreign Exchange Liberalization, Investment Climate and FDI in the MENA Countries', *DULBEA Working Paper* no. 05-06.RS.

UNCTAD (2004) *World Investment Report 2004: The Shift Towards Services*, New York and Geneva.

Wang J. and Blomström M. (1992) 'Foreign investment and technology transfer: a simple model', *European Economic Review*, 36, 137-155.

Table 1: History of exchange rate regimes in 9 Mediterranean countries	
Country	History of exchange rate regime
Algeria	From 1991-1995 the Algerian Dinar was fixed to a basket of currencies (the weights being determined by trade and capital movements). On 23 December 1995 it moved to a managed floating system, although in practice it still maintains tight control over the dinar/dollar exchange rate.
Egypt	*De facto* operating an exchange rate peg to the dollar from 1991 to mid-2000; significant depreciation was allowed from mid-2000 onwards. At end-January 2001, a band was introduced (±1% on either side of the central rate of LE2.85/$). Throughout 2001 and into 2002, the central rate was devalued on a number of occasions and the band widened to ±3%. As of end January 2003, the exchange rate was officially allowed to float. In December 2004, Egypt moved to a unified flexible exchange rate system and established a formal interbank foreign exchange market.
Israel	The New Shekal was pegged to a basket of currencies (DM, FrF, £, ¥, $) with bands around the central rate of ±5%. From end 1991, the central rate and bands were adjusted according to inflation differentials. In June 1995, the bands were widened to ±7% and the weights adjusted (on basis of 1994 direction of trade statistics). In June 1997, the bands were widened to ±15% and the rate of adjustment of the upper and lower bands were altered such that the bands eventually became wider and wider. By 2003, the band width had reach 55% (that is, ±27.5%). In 2004, the regime was reclassified as an independent float (on a *de facto* basis) and in June 2005 the exchange rate band was abandoned *de jure*.
Jordan	Up until 1995, the Dinar was pegged to the currencies of the SDR; from end-1995 it has been effectively pegged to the dollar.
Lebanon	Up until 1998 it was classified *de jure* as floating. However, *de facto*, from the early 1993 it was operating a crawling depreciation peg to the $ before moving to a fixed peg in 1998; the exchange rate vis-à-vis the dollar depreciated by only 13.5% between 1993 and 1998.
Libya	*De Jure* the Dinar is pegged to the SDR and the exchange rate moves within bands that get larger and larger with the Dinar being allowed to depreciate to the limit of the band. Only in 2002 and 2003 were official devaluations carried out. *De facto* the Dinar should be classified as a peg with discrete devaluations.
Morocco	Initially the Dirham was pegged to the French Franc. In June 1996, a central rate was established relative to a basket of currencies and the exchange rate was kept within a band around the central rate. From 1999, with the creation of the euro, the basket of currencies changed to include €, £ and $ (with the weights determined by trade).

Table 1: History of exchange rate regimes in 9 Mediterranean countries (continued)	
Country	History of exchange rate regime
Syria	A multiple exchange rate system operates (recently the number of rates was reduced to two, the official rate and the neighbouring markets rate. The Pound is pegged to the dollar.
Tunisia	Until February 1994, the Dinar was pegged to a basket of currencies. Thereafter it became a managed float; it was reclassified in 1999 as a crawling peg; reclassified in end 2000 as managed floating with no preannounced path. From 1 January 2002, it has been following a real effective exchange rate rule.
Source: IMF *Annual Report on Exchange Arrangements and Exchange Restrictions*, various years, IMF Website, ECB Country Review Sheets prepared for the Workshop on Economic and Financial Developments in Mediterranean Countries (Frankfurt, 21/22 September 2005).	

Table 2: Controls on capital movements	
Country	Capital controls
Algeria	1990: fairly extensive controls. Export proceeds needed to be surrendered; residents had to repatriate and surrender any assets acquired abroad; capital transfers abroad required authorisation; inward FDI was permitted and repatriation guaranteed. In 2000 there was some opening of portfolio investment to foreigners (allowing investments in the Algerian Stock Market, bond markets, etc. and the repatriation of investment sale proceeds).
Egypt	1990: fairly extensive controls. Export receipts repatriation and surrender requirements were in place; outward capital transactions were restricted; some inward FDI and portfolio investment was permitted; multiple exchange rate system. By end-1991 a unitary exchange rate system had been adopted. From 1994, repatriation of export receipts was abolished; it was reintroduced briefly in March 2003 and abolished again in December 2004.
Israel	1990: fairly extensive controls on export proceeds, capital movements. These were liberalised slowly starting in 1994 when outward FDI was partially liberalised, for example. In 1998 significant liberalisation occurred with limits on controlled capital movements being raised. From 1 January 2003, all controls were removed, with only some reporting requirements remaining.
Jordan	1990: fairly extensive controls. Export receipts were controlled; inward capital movements were not restricted (including FDI), although permission was required for outward flows; repatriation of inward FDI capital was subject to approval. In 1994-95 the requirements re export receipts were liberalised. In 1997, most controls on capital transactions were abolished (July), although a few (minor) restrictions were introduced in 2000.
Lebanon	1990: Only some capital transactions (including lending to nonresidents, taking deposits from nonresidents and bank lending to residents to purchase foreign exchange) involved controls; no controls on FDI. In 1998, more controls were added, with less important restrictions being introduced in subsequent years, although the system of controls does not appear to be that extensive.
Libya	1990: An extensive system of capital controls was in place, including export receipt surrender rules and a requirement to obtain permission for any investment of capital abroad; inward FDI, on a joint-venture basis, was allowed provided that it is in the interests of the country's development. In 1999 the parallel exchange market was legalised by creating a dual exchange rate system while the two rates were unified in 2002.

Table 2: Controls on capital movements (continued)	
Country	Capital controls
Morocco	1990: significant controls applied including export receipt surrender rules and restrictions on transfers of capital abroad; inward FDI was allowed although approval may have been necessary. Full liberalisation of inward FDI (including the repatriation of sale proceeds) was made in 1992. Liberalisation has subsequently been measured.
Syria	1990: extensive controls on export receipts surrender, outward FDI flows and capital flows in general; FDI inflows were actually encouraged by favourable conditions in some areas; a system of multiple exchange rates operated. 2003-4 saw some simplification of the system (elimination of the repatriation and surrender requirements for export proceeds) but controls are still extensive.
Tunisia	1990: extensive controls on export receipt surrender and capital account transactions; inward FDI was allowed and incentives were provided in some cases. Inward portfolio investment was partially liberalised in 1995. Limited liberalisation, mainly relating to export proceeds surrender rules and outward FDI, was recorded in later years.
Source: IMF *Annual Report on Exchange Arrangements and Exchange Restrictions*, various years.	

Table 3: Capital flows, exchange rate regimes and changes in foreign exchange reserves

Country	Correlation between private non-FDI capital flows and changes in foreign exchange reserves			Correlation between current account and changes in foreign exchange reserves
	Whole period	Periods of non-pegged exchange rates	Periods of pegged exchange rates	Whole period
Egypt	-0.57	-	-0.59	0.79
Israel	0.01	0.21	-0.45	-0.33
Jordan	-0.62	-	-0.62	0.44
Libya	-0.93	-	-0.93	0.90
Morocco	-0.72	-	-0.72	0.68
Tunisia	-0.18	0.01	-0.32	0.25
All Countries	-0.62	0.25	-0.64	0.56

Note: There is not sufficient data for Algeria, Lebanon.

Source: Own calculations.

Table 4: Growth rates[1]: Mediterranean – southern European Euro Area countries compared		
Country	Average growth rate, 1980-2003	Standard deviation of growth rates
Algeria	3.2	3.2
Egypt	5.2	3.0
Israel	4.7	3.0
Jordan	2.7	4.8
Lebanon	4.4	20.2
Libya	0.2	5.6
Morocco	4.5	5.3
Syria	3.8	6.0
Tunisia	5.3	2.9
Average	**3.8**	**6.0**
France	4.4	1.8
Greece	4.3	2.0
Ireland	7.5	3.1
Italy	4.7	2.0
Portugal	5.8	3.1
Spain	5.5	1.9
Average	**5.4**	**2.3**

Note: 1. Growth rates of GDP per capita in PPP USD.

Source: Own calculations based on data from IMF, *World Economic Outlook Database,* April 2005.

Table 5: Variability of the investment gap[1] in Mediterranean – southern European Euro Area countries compared	
Country	Standard deviation of investment gap, 1972-2003
Algeria	18.4
Egypt	65.7
Israel	46.8
Jordan	23.9
Libya	20.2
Morocco	12.0
Syria	24.7
Tunisia	11.7
Average	**27.9**
France	5.44
Greece	19.4
Ireland	18.9
Italy	6.6
Portugal	40.0
Spain	7.3
Average	**16.3**

Note: 1. The investment gap is defined as the deviation of actual investment from its trend. The trend was derived using a Hodrick-Prescott filter.

Source: Own calculations based on data from IMF, *International Financial Statistics,* CD ROM.

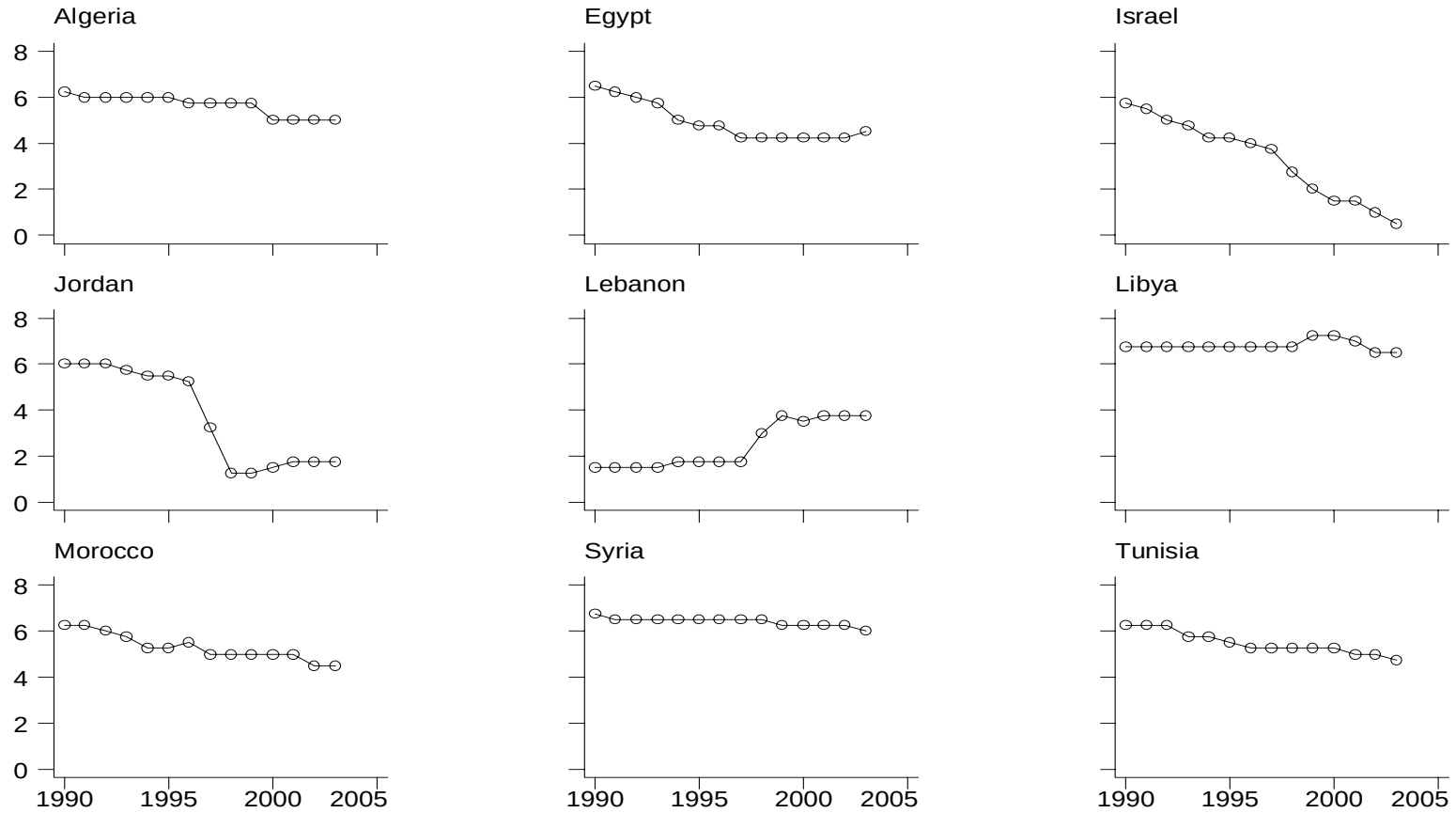
Table 6: The determinants of net capital flows in selected Mediterranean countries

	Model 1		Model 2		Model 3	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Growth	0.361*	0.198	0.260**	0.119	0.802 *	0.424
Lagged growth	0.326*	0.184	0.261**	0.117	0.606 **	0.274
Lagged inflation	-0.347*	0.193	-0.245**	0.114	-0.255 *	0.152
Lagged government balance	0.455	0.297	0.540**	0.215	0.568 **	0.264
Financial intermediation	-0.183**	0.086	-0.180***	0.052	-0.232 ***	0.074
Exchange rate dummy	0.003	0.016				
Domestic interest rate (lag)	0.002	0.003				
US CD rate (lagged)	-0.001	0.004				
Broad money growth	-0.322***	0.111	-0.251***	0.078	-0.284 ***	0.108
Asia	-0.004	0.016				
Russia	0.007	0.017				
Capital control index	0.016**	0.007	0.016***	0.005	0.014 *	0.008
Constant	0.095	0.107	0.089	0.053	0.102	0.071
Fixed effects	F(4, 35) = 6.74 [probability > F = 0.000]		F(5,51) = 10.47 [probability > F = 0.000]		F(5,46) = 7.96 [probability > F =0.000]	
Number of observations	52		64		59	
Overall significance of the model (F-test)	F(12,35) = 5.71 [probability > F = 0.000]		F(7,51) = 11.56 [probability >F = 0.000]		F(13,46) = 7.89 [probability > F = 0.000]	
R-squared: within	0.6620		0.6133		0.5003	
R-squared: overall	0.2185		0.1597		0.1677	
Hausman Test			$Chi^2(7) = 55.36$ Probability > $chi^2 = 0.000$			

Notes: * indicates significant at 10% level; ** at 5% level; *** at 1% level. The Hausman test is for fixed versus random effects model (H_o: random effects model appropriate). Model 3 using instrumental variables where lagged net capital flows, lagged capital control index, the lagged current balance and the government balance are used as instruments.

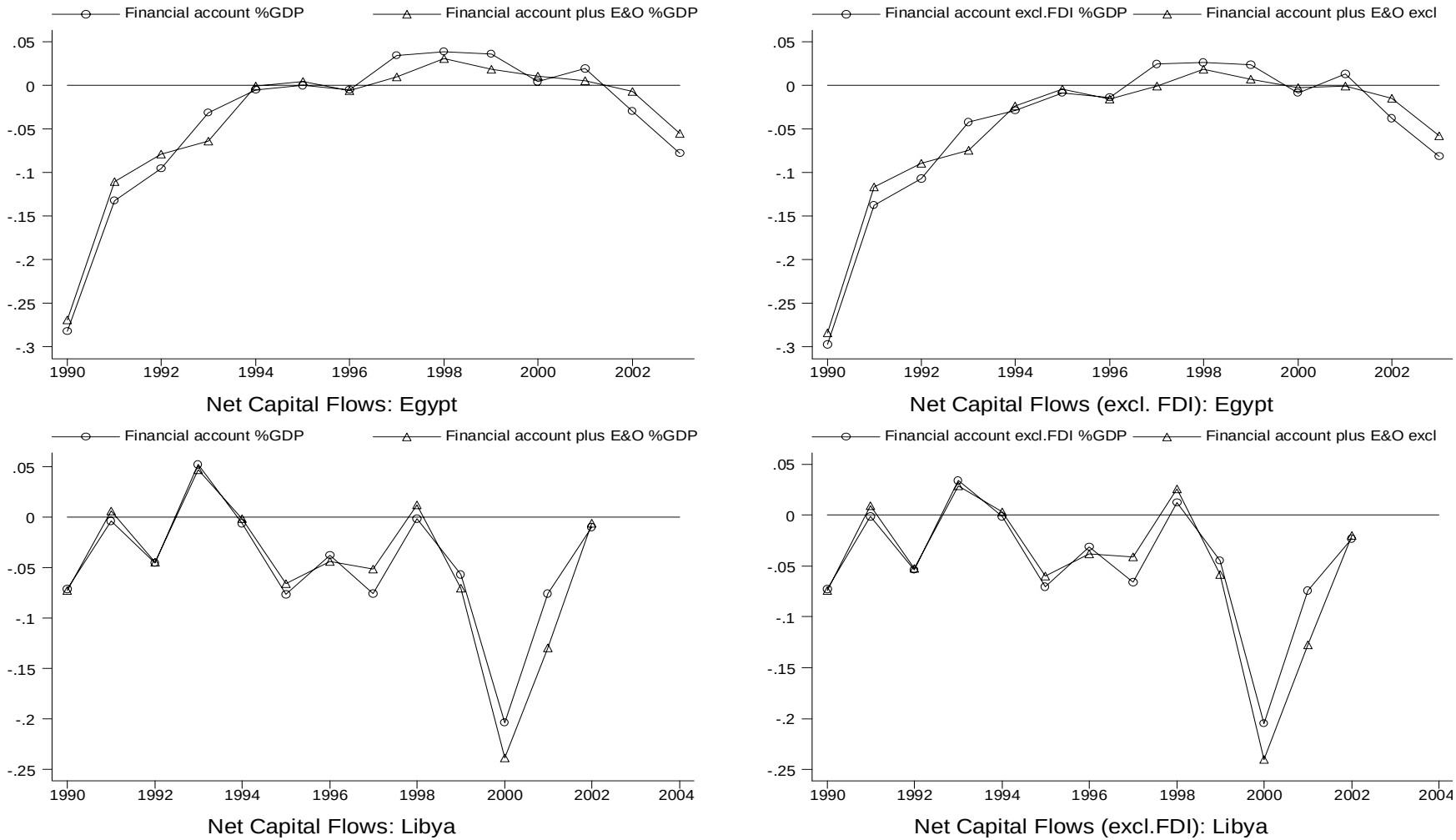
Table 7: Distinguishing net inflows from net outflows			
		Model 4	
Variable	Dummy	Coefficient	Standard error
Growth	in	0.247	0.163
	out	0.046	0.777
Lagged growth	in	0.094	0.598
	out	0.176	0.211
Lagged inflation	in	-0.026	0.915
	out	-0.166	0.142
Lagged government balance	in	0.471	0.151
	out	0.566**	0.022
Financial intermediation	in	-0.067	0.353
	out	-0.113*	0.065
Broad money growth	in	-0.258**	0.019
	out	-0.193*	0.072
Capital control index	in	0.008	0.171
	out	0.010*	0.065
Constant		0.053	0.371
Fixed effects		F(5, 44) = 3.52 [probability > F = 0.009]	
Number of observations		64	
Overall significance of the model (F-test)		F(14,44) = 9.19 [probability > F = 0.000]	
R-squared: within		0.7452	
R-squared: overall		0.4752	
Notes: As in table 6. 'in' and 'out' refer to the effect of the explanatory variable where there are net inflows and outflows, respectively.			

Figure 1: Capital controls index



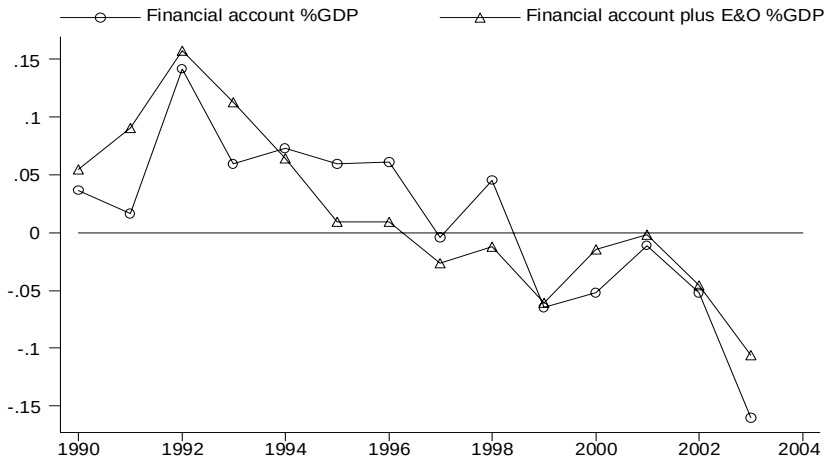
Source: Own calculations.

Figure 2a: Net capital flows in Mediterranean countries

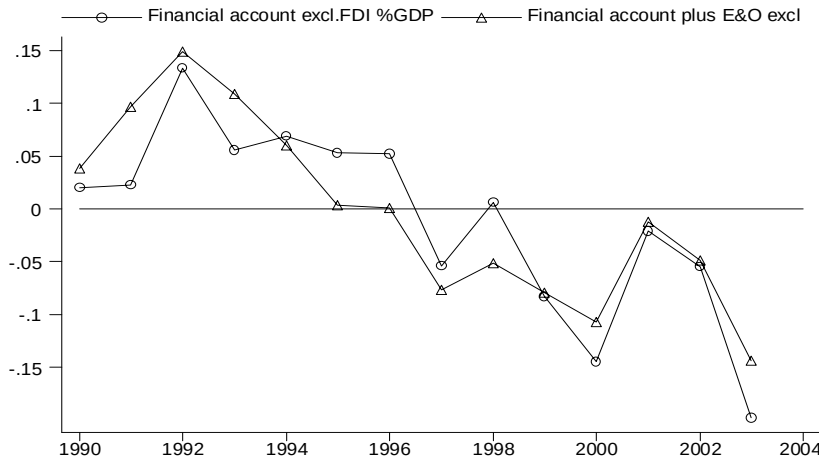


Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

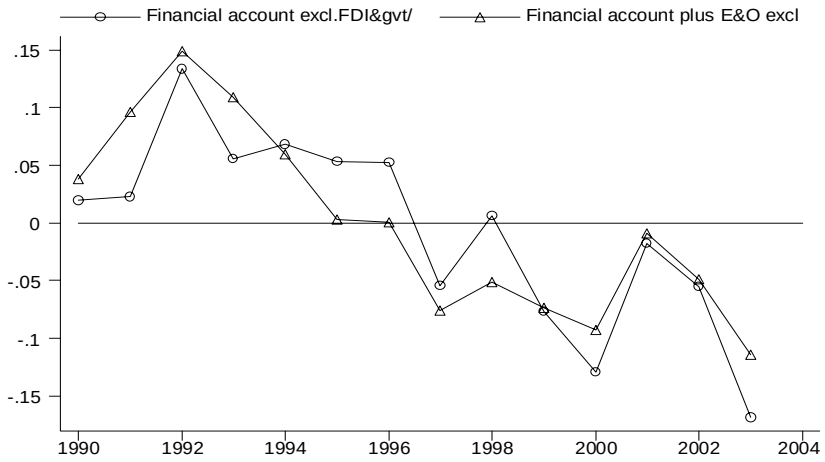
Figure 2b: Net capital flows in Mediterranean countries



Net Capital Flows: Jordan



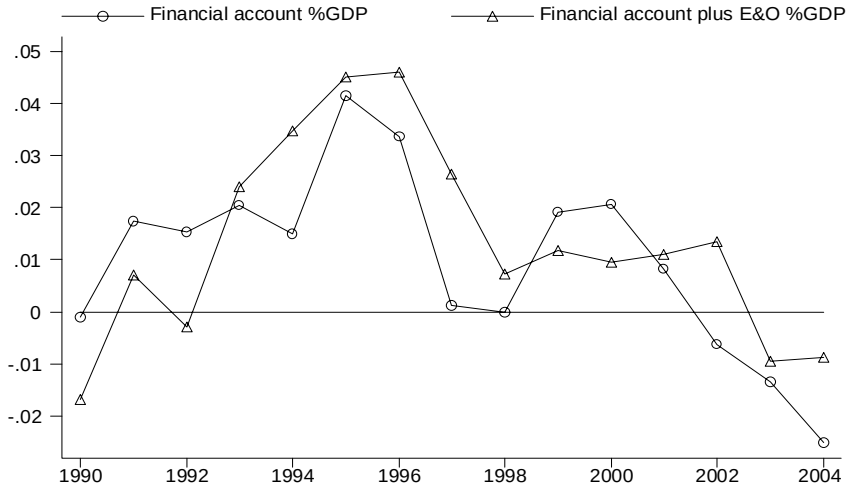
Net Capital Flows (excl.FDI): Jordan



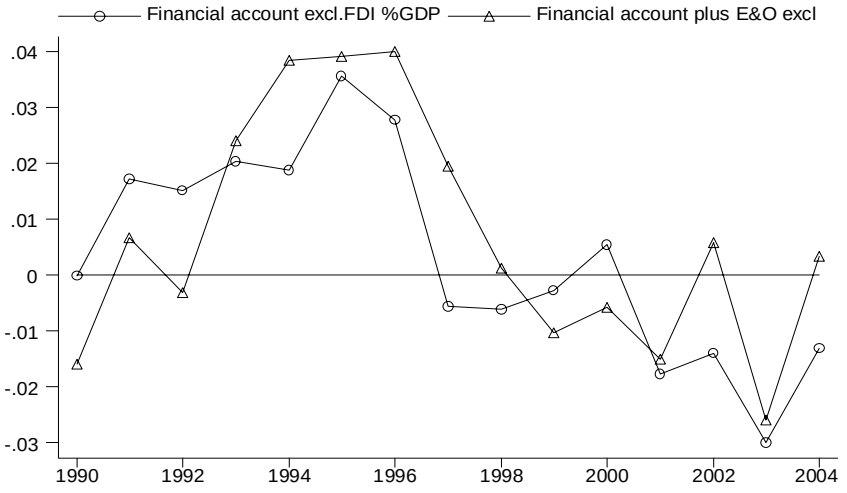
Net Capital Flows (excl. gvt flows and FDI): Jordan

Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

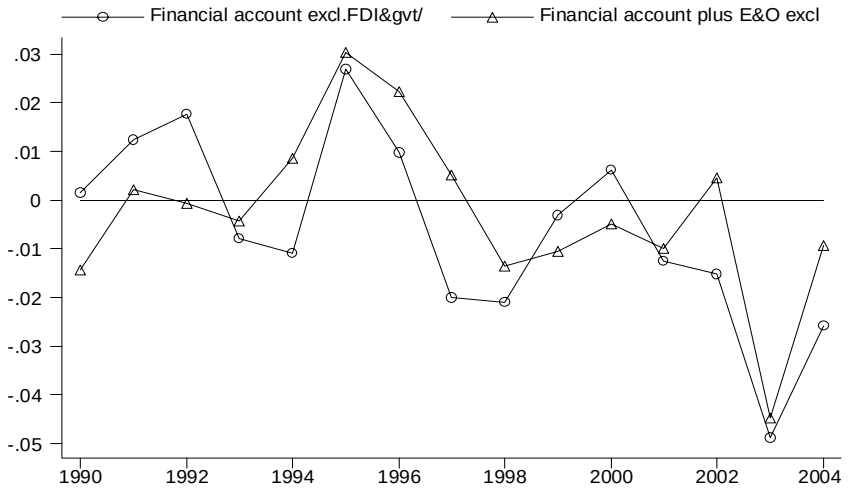
Figure 2c: Net capital flows in Mediterranean countries



Net Capital Flows: Israel



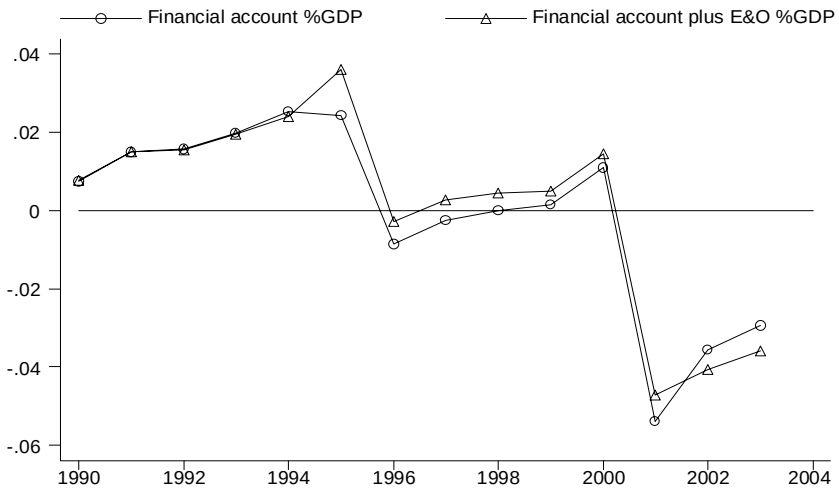
Net Capital Flows (excl.FDI): Israel



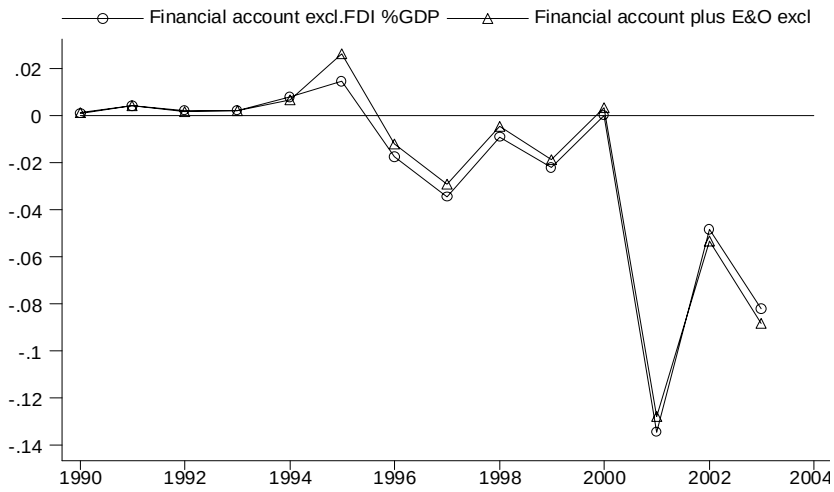
Net Capital Flows (excl.gvt flows and FDI): Israel

Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

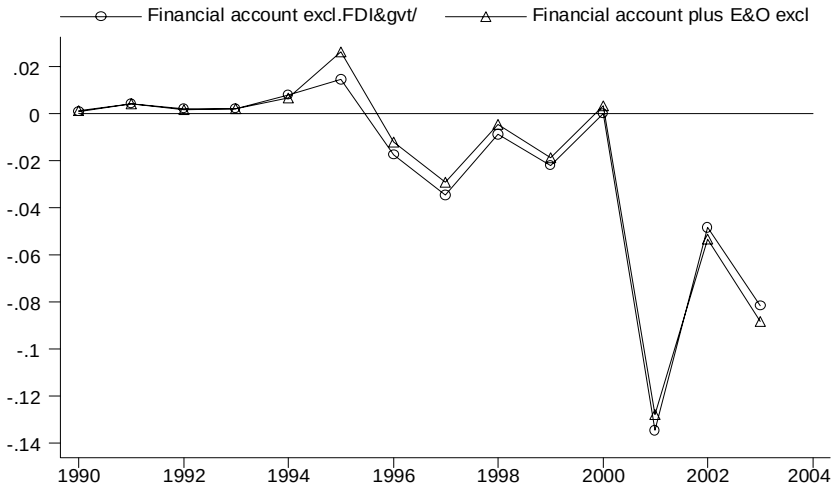
Figure 2d: Net capital flows in Mediterranean countries



Net Capital Flows: Morocco



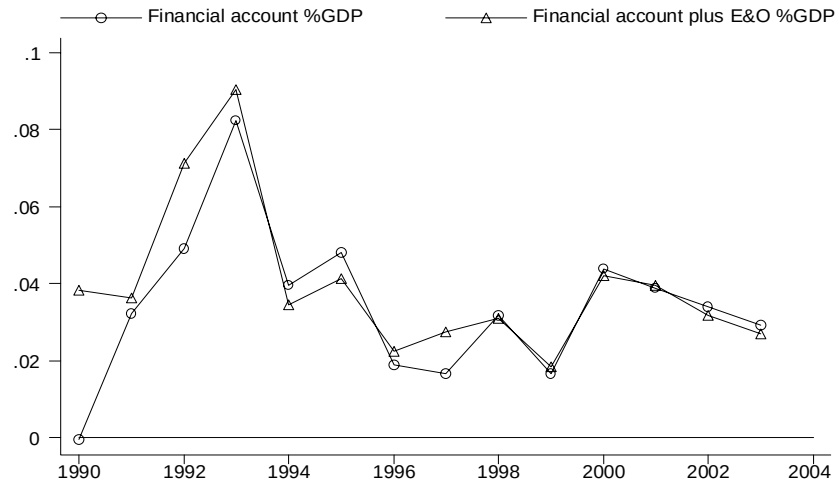
Net Capital Flows (excl.FDI): Morocco



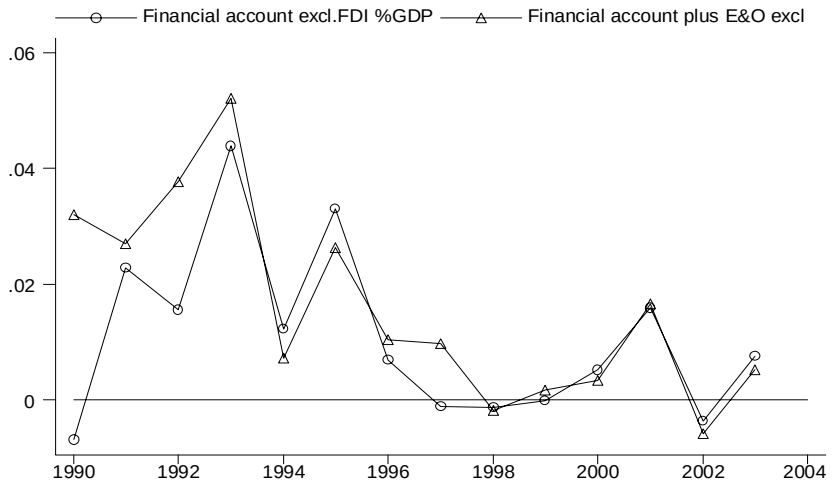
Net Capital Flows (excl. gvt flows and FDI): Morocco

Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

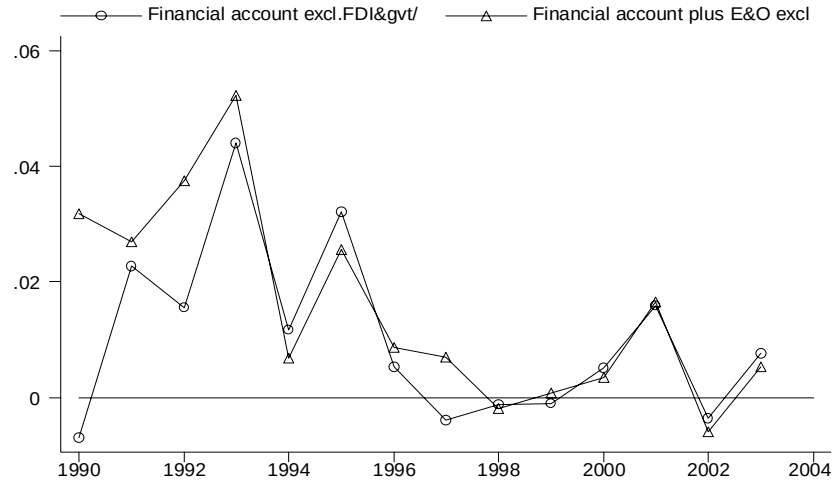
Figure 2e: Net capital flows in Mediterranean countries



Net Capital Flows: Tunisia



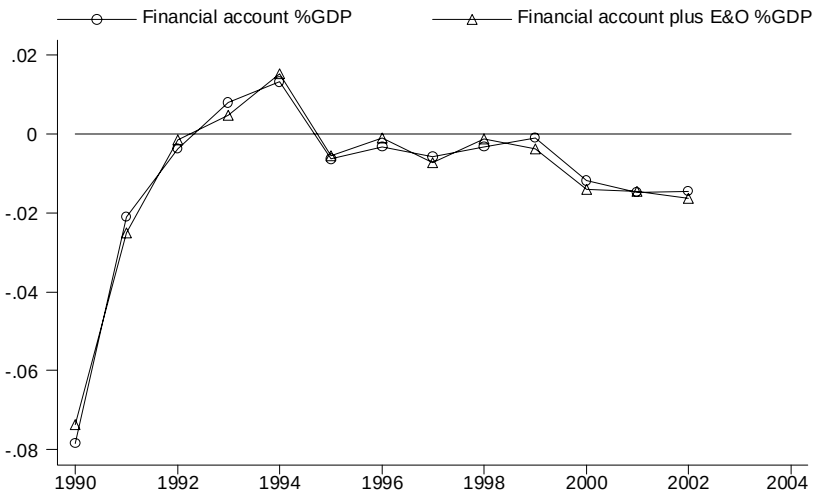
Net Capital Flows (excl.FDI): Tunisia



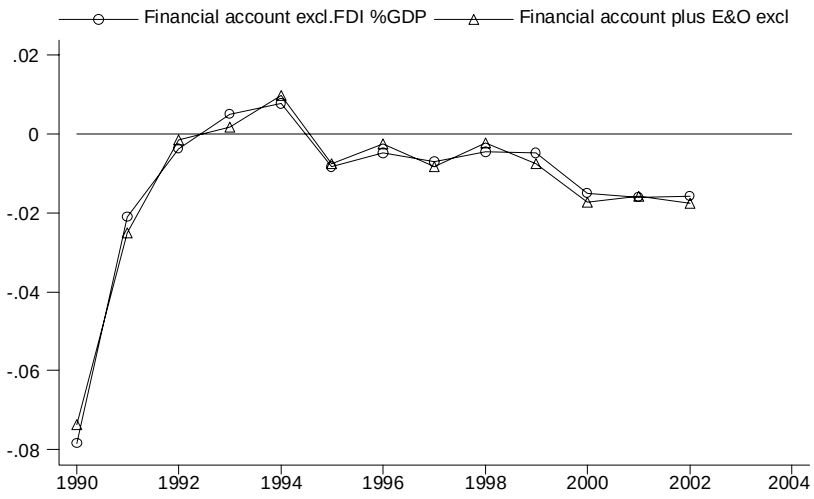
Net Capital Flows (excl. gvt. flows and FDI): Tunisia

Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

Figure 2f: Net capital flows in Mediterranean countries



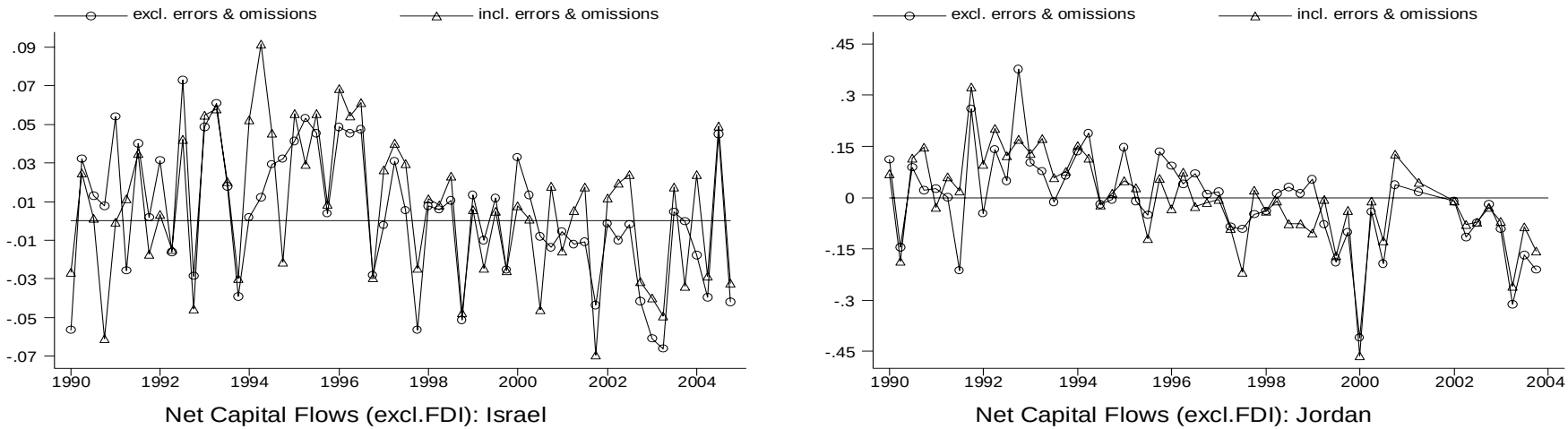
Net Capital Flows: Syria



Net Capital Flows (excl. FDI): Syria

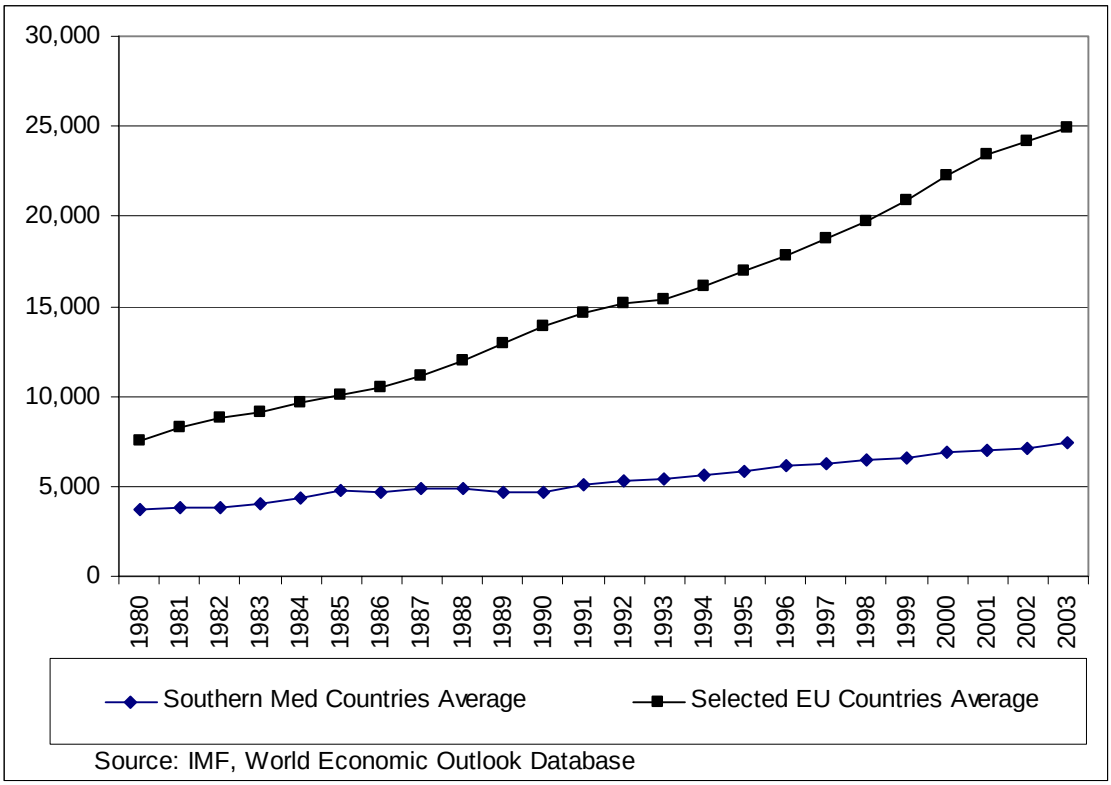
Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

Figure 3: Israel and Jordan – net capital flows – quarterly data



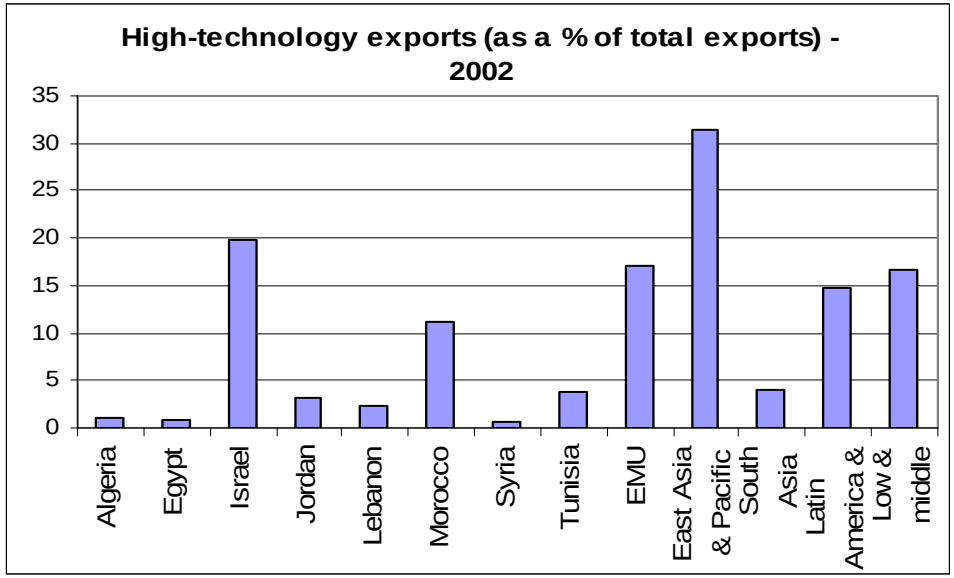
Source: Own calculations based on data from IMF, *Balance of Payments,* CD ROM.

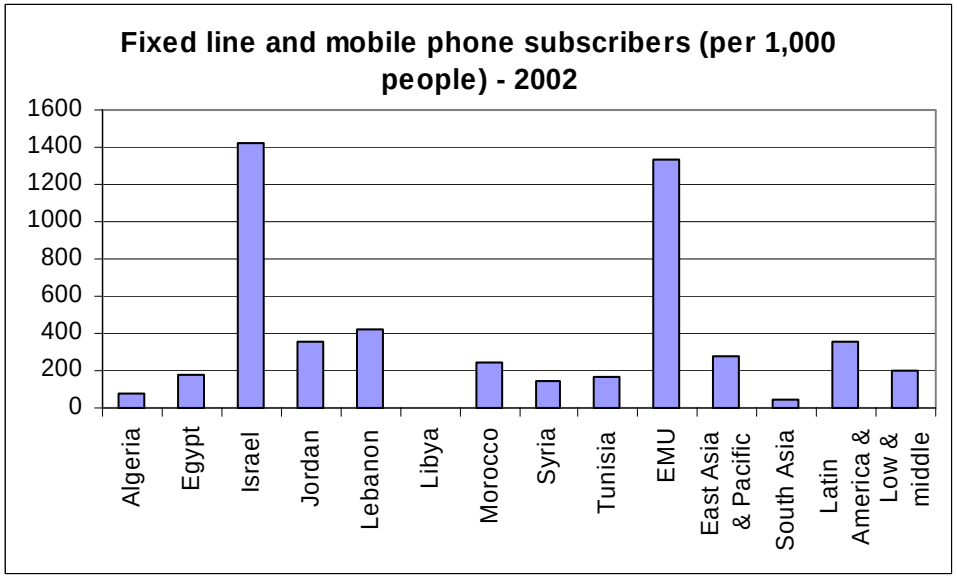
Figure 4: GDP per capita (in PPP USD)

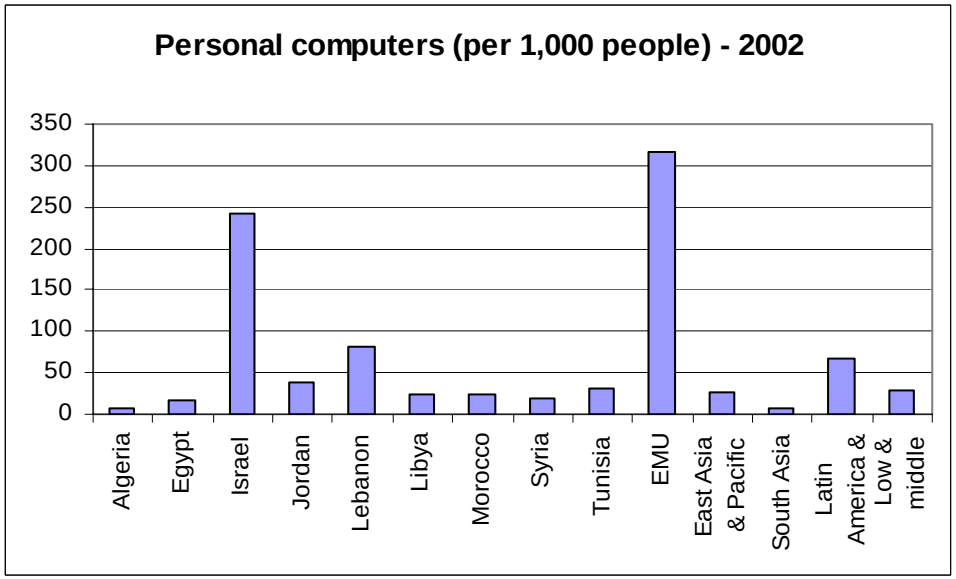


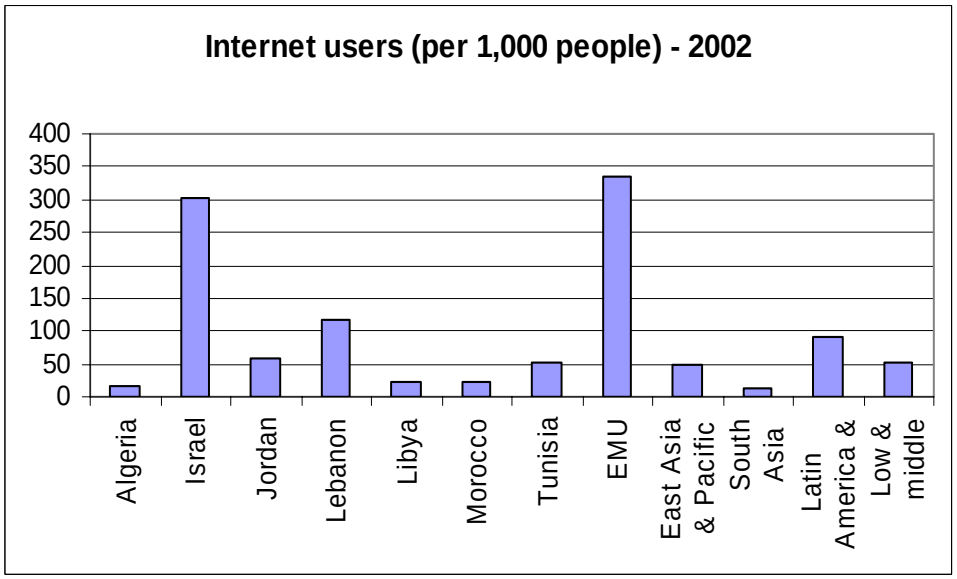
Source: IMF, World Economic Outlook Database

Figure 5: Technology indicators



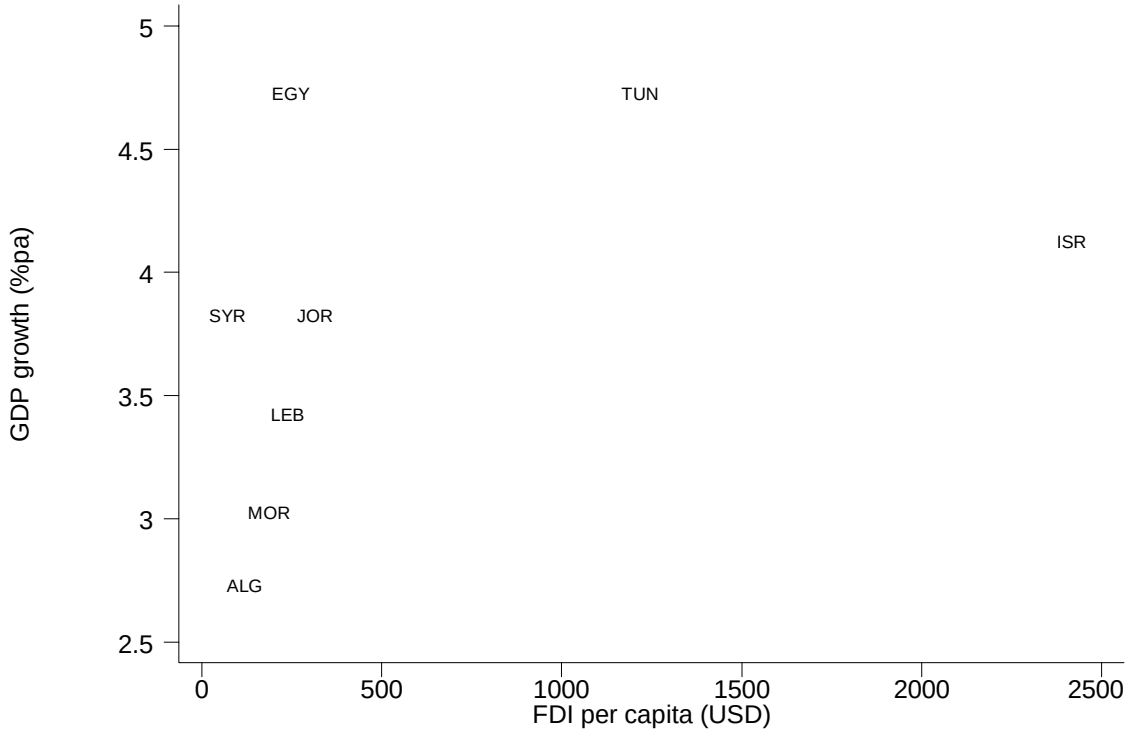






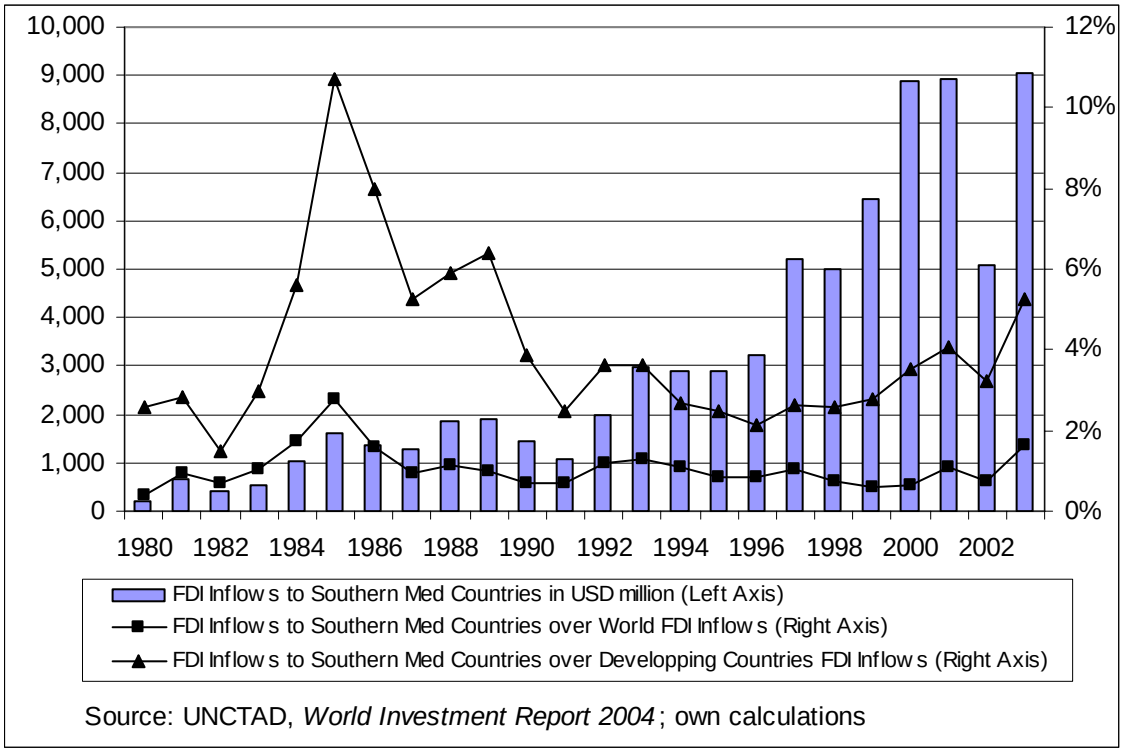
Source: World Bank, *World Development Indicators.*

Figure 6: FDI per capita vs. GDP Growth (1992-2002 averages)



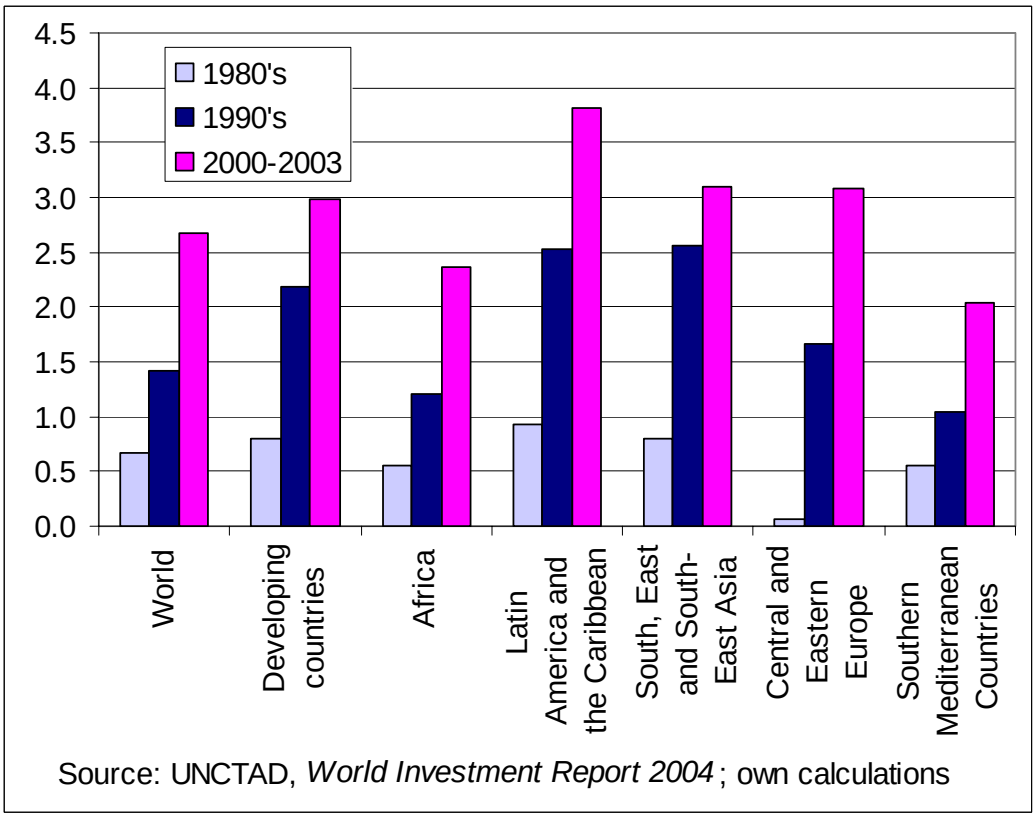
Source: Own calculations based on data from UNCTAD, *World Investment Report 2004* and IMF, *International Financial Statistics* CD ROM.

Figure 7: FDI flows to Mediterranean countries



Source: UNCTAD, *World Investment Report 2004*; own calculations

Figure 8: FDI inflows as a percentage of GDP



Source: UNCTAD, *World Investment Report 2004*; own calculations

Figure 9: FDI inflows as a percentage of GDP in the Mediterranean countries

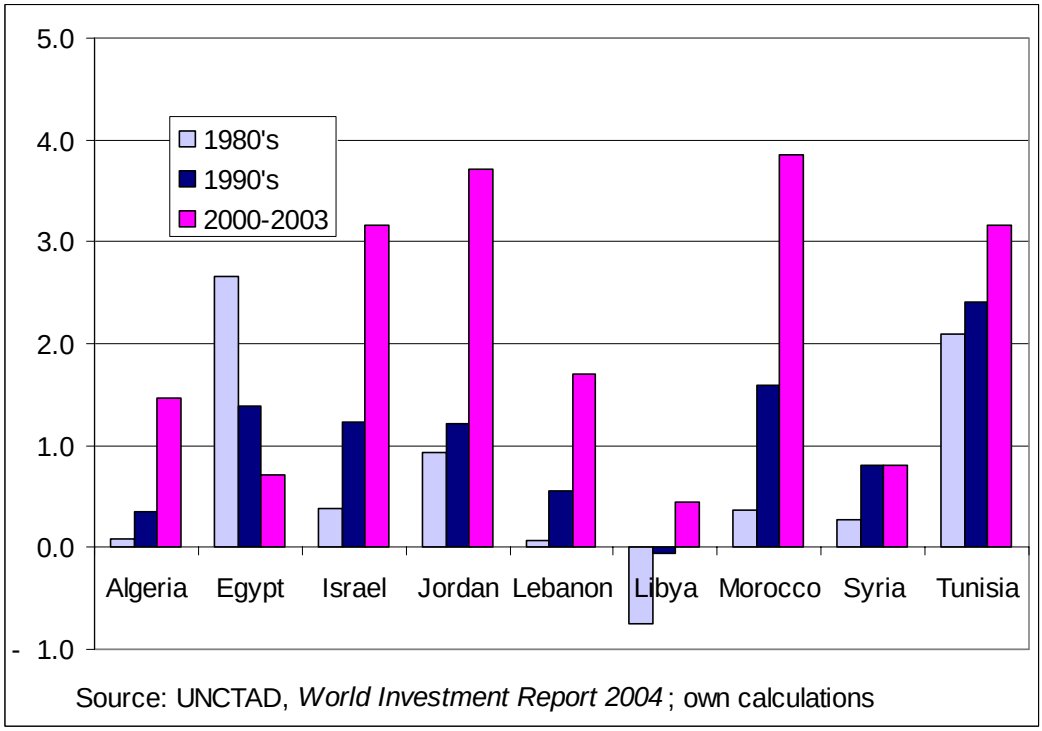
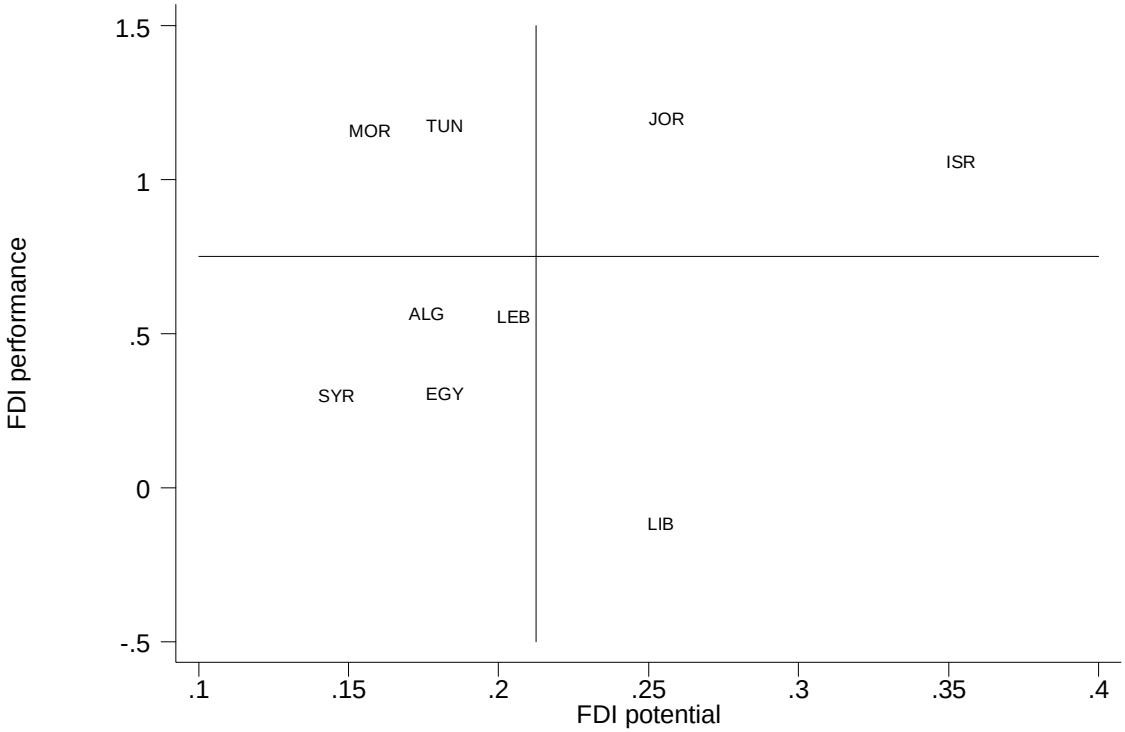
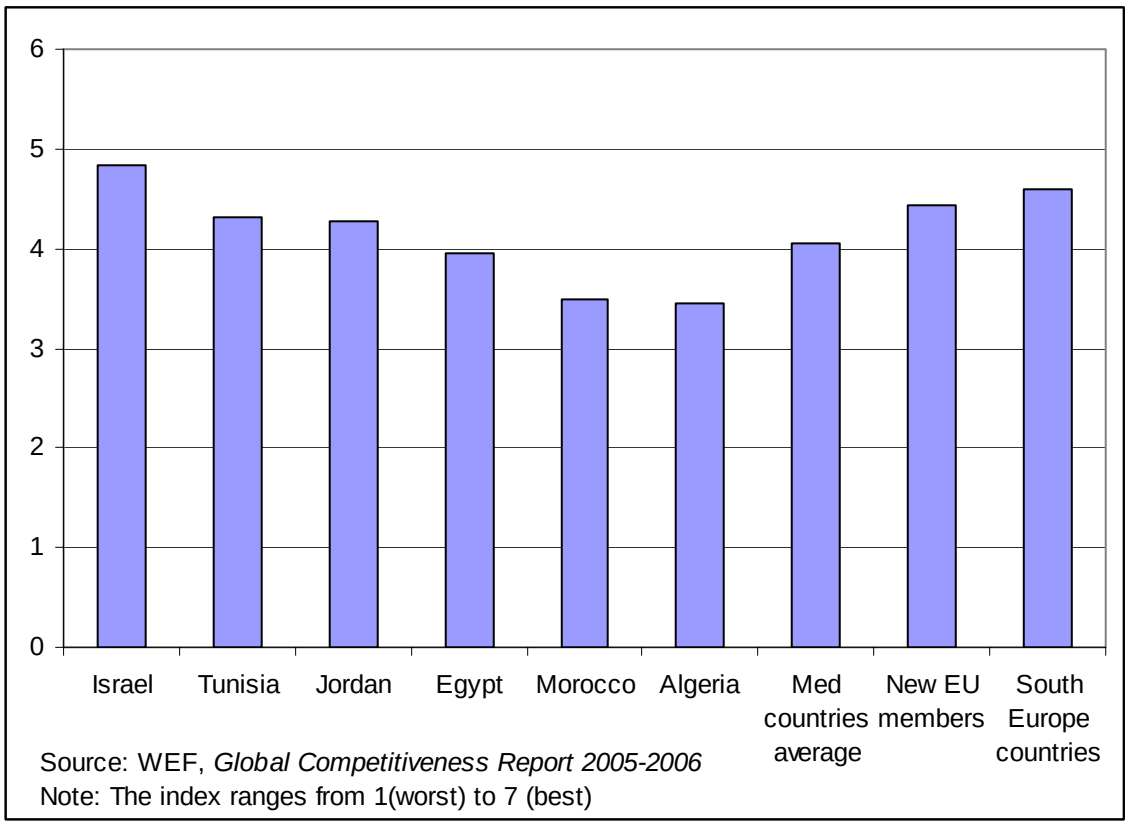


Figure 10: FDI performance vs. FDI potential in the Mediterranean countries, 2000-2002



Source: UNCTAD, *World Investement Report 2004.*

Figure 11: Growth Competitiveness Index, 2005



Source: WEF, *Global Competitiveness Report 2005-2006*
Note: The index ranges from 1(worst) to 7 (best)

Appendix 1: The capital controls intensity index

The difficulties related to the appropriate measurement of the extent and intensity of capital controls, particularly in the context of a cross-country study, have been well documented in the literature (see for example Eichengreen, 2001; Eichengreen *et al* 1998). Broadly classified the approaches proposed fall under two categories. One class of capital controls measures is based on the information appearing in the *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER) published annually by the IMF. These measures vary in scope and sophistication and range from a simple binary variable indicating the existence of capital controls as reported in the AREAER, to disaggregated measures based on the AREAER 13-subcategory classification of capital controls in its post 1997 editions (and extending this classification backwards; see Miniane, 2004) and measures based on principle components analysis of the AREAER binary variables (Chinn and Ito, 2002). However such indices often fail to capture the intensity of the capital controls in place as, due to their inherently binary nature, they attribute the same importance to all controls. Moreover, they are, in effect, *de jure* measures as the AREAER does not normally provide information on the enforceability of capital controls.

The other class of measures proposed in the literature is designed to address this issue by using proxies of a country's capital account openness as *de facto* indices. Such proxies include onshore-offshore interest rate differentials (see Dooley, 1996, for a survey of such indices), the ratio of total market capitalization of equities that are available for purchase by foreign investors over total market capitalization (Edison and Warnock, 2003) and the ratio of a country's portfolio and direct investment assets and liabilities over GDP (Lane and Milesi-Ferretti, 2001). Unfortunately the data required to construct such *de facto* indices is often not available.

In view of the data availability limitations for the countries in our sample, which do not permit the construction of a proxy-based *de facto* measure, and in order to capture the intensity and not merely the extent of capital controls, we constructed a capital controls intensity index, using the information reported in the AREAER. The difference between this measure and existing indices based on the AREAER is that we assess the severity of each capital control reported rather than treating it in a binary fashion (existence/non-existence). In this sense, the index constructed is most closely related to that in Quinn (1997).

The index constructed captures mainly the information contained in the "Capital" section ("Capital Transactions" section for the editions from 1997 onwards) of the AREAER text for each country. Recognising, however, the role that a multiple exchange rate system or a requirement to repatriate and/or surrender export proceeds can play in restricting capital flows, we also considered these aspects when constructing the index. To the extent possible, from the information provided by the AREAER (particularly before the 1997 edition), we considered restrictions on both outgoing and incoming capital flows.

A detailed typology of capital controls in the countries of our sample and corresponding scores cannot be compiled due to the variability in the types of controls employed across countries and the fact that the way the restrictions are reported in the AREAER changed considerably from the 1997 edition onwards. In this respect it should be noted that our methodology involves the exercise of judgment.[26] However the degree of subjectivity involved is moderated by the use of a scoring hierarchy for the intensity of the restriction in place with respect to each type of transaction, as follows (from stricter to less strict):

- Transaction not allowed
- Transaction allowed but approval required
- Transaction allowed under conditions
- Transaction allowed but reporting required
- No restrictions.

In any case, the residual subjectivity should not severely affect our results as long as consistency across time and countries is maintained. In order to ensure this, we follow an incremental approach when compiling the index and use the following sequence. We start with one country (Israel) and assign scores for all the years in our sample, in an incremental fashion, starting from 2003 and going back. A zero score is deemed to denote that no restrictions were in place, while the score increases with the intensity and extent of the controls. For the first year in the sample (1990), we compare the capital controls status of each country in our cross-section with that of Israel and assign a score accordingly. Based on the 1990 result for each country we assign a score value for each year in the sample, in an incremental way. As a final step, we check the cross-country consistency of the scores for the final year in the sample (2003).

[26] This diverges from the approach in Quinn (1997), where a simple coding rule was devised and followed for the construction of the index.

Appendix 2: Data sources and information

Data on capital flows and other balance of payments items is from IMF *Balance of Payments,* CD ROM. Data on macroeconomic aggregates is from IMF *International Financial Statistics*, CD ROM; GDP per capita data in PPP is from the IMF *World Economic Outlook Database, April 2005*. Data on FDI is from the UNCTAD *World Investment Report 2004.* Data on technology indicators is from World Bank, *World Development Indicators.* Data on the business climate is from the World Economic Forum *Global Competitiveness Report 2005-2006*.

Table A1: Basic macroeconomic aggregates – real growth (% per annum)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Egypt	1.1	4.5	2.9	4.0	4.6	5.0	5.5	7.5	6.1	5.4	3.5	3.2	3.1	4.1
Israel	5.6	6.6	3.2	6.8	7.1	5.2	3.5	3.7	2.5	8.0	-0.9	-0.7	1.3	4.3
Jordan	1.6	14.4	4.5	5.0	6.2	2.1	3.3	3.0	3.1	4.1	4.9	4.8	3.3	-
Lebanon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Libya	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	8.9	-3.2	-1.7	10.6	-6.6	11.8	-2.2	7.7	-0.1	1.0	6.3	3.2	5.2	3.4
Syria	7.9	13.5	5.2	7.7	5.8	7.3	2.5	7.6	-2.0	0.6	3.4	3.2	-	-
Tunisia	3.9	7.8	2.2	3.2	2.4	7.1	5.4	4.8	6.1	4.7	4.9	1.7	5.6	5.8

Source: IMF, *International Financial Statistics,* CD ROM.

Table A2: Basic macroeconomic aggregates – inflation (% per annum)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria	25.9	31.7	20.5	29.1	29.8	18.7	5.7	5.0	2.6	0.3	4.2	1.4	2.6	3.6
Egypt	19.8	13.6	12.1	8.1	15.7	7.2	4.6	3.9	3.1	2.7	2.3	2.7	4.5	11.3
Israel	19.0	11.9	10.9	12.3	10.0	11.3	9.0	5.4	5.2	1.1	1.1	5.6	0.7	-0.4
Jordan	8.2	4.0	3.3	3.5	2.4	6.5	3.0	3.1	0.6	0.7	1.8	1.8	2.3	-
Lebanon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Libya	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	8.0	5.7	5.2	5.1	6.1	3.0	1.0	2.8	0.7	1.9	0.6	2.8	1.2	-
Syria	9.0	11.0	13.2	15.3	8.0	8.2	1.9	-0.8	-3.7	-3.8	3.0	1.0	-	-
Tunisia	8.2	5.8	4.0	4.7	6.2	3.7	3.6	3.1	2.7	2.9	2.0	2.7	2.7	3.6

Source: IMF, *International Financial Statistics,* CD ROM.

Table A3: Basic macroeconomic aggregates – government budget balance as a % of GDP

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Egypt	-5.7	-0.9	-3.5	1.7	0.3	0.9	-1.9	-2.0	-0.9	-0.1	-1.2	-2.2	-2.5	-2.4	-2.5
Israel	-5.3	-6.7	-4.2	-2.5	-3.0	-4.4	-4.2	0.3	-1.4	-2.0	0.9	-3.6	-	-	-
Jordan	-3.4	0.4	5.0	3.6	1.0	1.0	-1.3	-3.2	-5.8	-2.4	-2.0	-2.5	-	-	-
Lebanon	-	-	-	-7.7	-17.5	-18.6	-20.8	-26.8	-16.1	-16.2	-	-	-	-	-
Libya	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	-2.2	-2.1	-1.4	-2.6	-3.2	-4.4	-3.0	-1.5	-3.8	0.9	-5.9	-2.6	-4.3	-3.7	-
Syria	0.3	1.3	1.7	0.0	-3.7	-1.8	-0.2	-0.2	-0.7	0.7	-	-	-	-	-
Tunisia	-5.4	-5.9	-3.1	-3.2	-1.4	-3.2	-3.1	-4.1	-0.9	-2.6	-	-	-	-	-

Source: IMF, *International Financial Statistics,* CD ROM.

Table A4: Basic macroeconomic aggregates – current account balance as a % of GDP															
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria	2.3	5.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Egypt	0.4	5.6	6.8	4.9	0.1	-0.4	-0.3	-0.9	-3.0	-1.8	-1.1	-0.5	0.7	5.5	-
Israel	0.3	-2.1	-1.3	-3.7	-4.5	-5.2	-5.2	-3.2	-1.1	-1.7	-1.3	-1.7	-1.5	0.5	0.4
Jordan	-5.4	-9.1	-15.7	-11.2	-6.4	-3.8	-3.2	0.4	0.2	5.0	0.7	0.0	3.8	9.7	-
Lebanon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Libya	7.2	-0.7	4.4	-4.8	0.1	6.6	4.4	5.1	-1.2	7.0	23.8	12.9	0.6	-	-
Morocco	-0.8	-1.5	-1.5	-1.9	-2.4	-3.9	-0.2	-0.5	-0.4	-0.5	-1.5	4.7	4.1	3.5	-
Syria	7.4	2.5	0.2	-0.6	-1.8	0.5	0.1	0.7	0.1	0.3	1.3	1.4	1.6	-	-
Tunisia	-3.8	-3.6	-7.1	-9.0	-3.4	-4.3	-2.4	-3.2	-3.4	-2.1	-4.2	-4.2	-3.5	-2.9	-

Source: IMF, *International Financial Statistics,* CD ROM.

Table A5: Basic macroeconomic aggregates – M2/GDP															
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria	61.9	48.1	49.2	54.6	49.3	39.9	35.6	39.1	45.6	45.3	40.5	48.9	63.7	64.2	-
Egypt	85.9	87.5	84.5	84.7	84.6	79.8	78.6	77.7	77.0	76.0	76.7	82.4	87.8	96.7	97.4
Israel	69.8	64.1	67.2	70.9	72.7	75.8	81.0	82.4	89.2	94.5	93.2	100.5	104.0	102.2	100.9
Jordan	127.0	137.2	116.2	112.9	103.9	101.6	96.6	99.4	96.8	108.8	112.7	115.1	118.3	131.0	-
Lebanon	195.6	142.7	125.8	119.5	131.1	128.7	143.5	157.2	163.8	180.6	198.4	209.0	217.2	233.7	-
Libya	68.1	61.4	67.4	73.0	77.9	79.6	70.5	58.5	67.4	65.2	54.2	57.7	41.3	-	-
Morocco	53.9	55.3	60.0	63.3	62.3	66.0	62.2	72.6	71.2	78.1	82.7	87.2	89.4	92.3	-
Syria	54.7	53.3	53.4	62.5	57.3	55.5	50.5	50.7	52.8	57.8	62.3	73.0	82.5	-	-
Tunisia	51.5	49.0	46.6	46.2	46.3	45.8	46.4	49.3	48.2	52.3	55.3	56.7	56.9	56.3	57.6

Source: IMF, *International Financial Statistics,* CD ROM.

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