

# THE ACCESSION OF GREECE TO THE EMU: INITIAL ESTIMATES AND LESSONS FOR THE NEW EU COUNTRIES

---

Michael G Arghyrou

*Economics Section, Cardiff Business School*

## 1. INTRODUCTION

The accession of Greece to the European Economic and Monetary Union (EMU) in January 2001 is an event of great significance for the Greek economy. The replacement of the Greek drachma by the euro, the delegation of national monetary policy from the Bank of Greece (BoG) to the European Central Bank (ECB) and the adoption of the fiscal rules of the Stability and Growth Pact (SGP) have changed radically the framework within which Greek national authorities exercise macroeconomic policy. Being structural changes of permanent character, these changes will cause effects covering the whole spectrum of the Greek economic system. Some of these effects will appear in the short-term and will be quantitatively estimable. Others, such as changes to the real sector of the economy, will appear in the medium- to long-run and will be easier to assess qualitatively rather than quantitatively.

The date of accession of Greece to the single currency is still too recent to attempt an evaluation of the effects it has caused on variables such as private investment and the rate of economic growth. On the other hand, it is distant enough to attempt a first evaluation of the effects of accession on a series of variables relating to the nominal/financial sector of the economy. Such an evaluation is attempted in a research monograph titled "*The effects of the accession of Greece to EMU: Initial estimates*", published as Study No 64 by the Centre of Economic Planning and Research (KEPE) of the Greek Treasury. More specifically, this study examines:

- (a) The effects of accession to the EMU on the level of Greek consumer prices
- (b) The compatibility of the single monetary policy with the domestic requirements of the Greek economy
- (c) The effects of accession to the EMU on Greek competitiveness and the current account balance.

This article presents the main findings of the study; an assessment, based on the latter, regarding the future prospects of the Greek economy; and two proposals in relation to the future course of Greek macroeconomic policy. Finally, it discusses a number of lessons the Greek

experience has to offer to new EU members, all of which have announced their intention to pursue participation in the single currency in the foreseeable future.

## 2. MAIN EMPIRICAL FINDINGS

### 2.1. The effects of accession on the Greek consumer price index

The accession of Greece to the EMU was immediately followed by a noticeable increase in the level of the Greek consumer price index (CPI). This has led to the formulation of a widely held hypothesis according to which accession to the single currency in 2001 and/or the introduction of the euro in physical form on 1/1/2002 has resulted in a structural increase in the level of Greek CPI.

Such an increase would theoretically be consistent with the price transparency properties of the single currency. In single-currency literature these properties are typically associated with the potential benefits of the euro: Full price transparency, created by the use of a common European currency, is expected to increase competition, reduce price differences associated with exchange rate fluctuations and limit the ability of firms to follow pricing-to-market policies. All these make a case for a lower rather than higher price level following a country's accession to the euro. On the other hand, in countries with relatively large public and services sectors, such as Greece, the level of CPI is, to a significant extent, determined by prices of non-traded goods and services. Also, in countries like Greece where productivity and per-capita income are lower than the EMU average, the prices of non-traded goods and services, and therefore the CPI level, are lower when compared to those of the EMU's more advanced economies when expressed in terms of a common currency. Hence, and according to the Balassa-Samuelson hypothesis, when such economies achieve productivity gains they also face an increase in the prices of non-tradeables and, eventually, a higher CPI. As a result, by making price comparisons easier (thus contributing towards an upward rather than downward price equalisation) and by creating incentives for higher productivity (due to the elimination of the possibility of temporary increases in external competitiveness through a nominal devaluation), it is theoretically possible for accession to the EMU to have indeed caused a structural increase in the level of the Greek CPI.

The study tests the above described hypothesis and rejects it categorically. The econometric analysis covers the period 1971-2003 and involves two price concepts: market prices

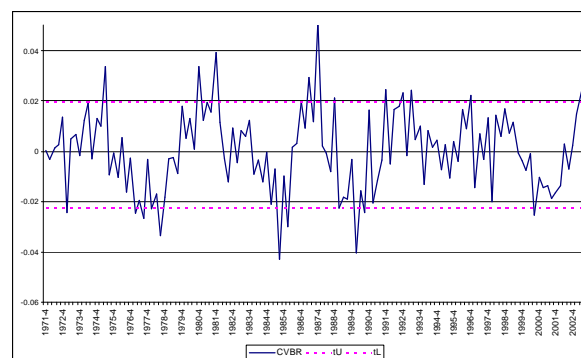
(those faced by consumers) and equilibrium prices (the level of prices consistent with macroeconomic equilibrium, as the latter is defined by the mark-up pricing model).<sup>1</sup> In the long-run, price and equilibrium prices should of course be equal; in the short-run, however, they may deviate from each other. Our findings suggest that the process determining the equilibrium level of the Greek CPI has in the past been subject to structural changes on three occasions. These, however, do not include the accession of Greece to the EMU in 2001 or the introduction of the Euro in physical form in 2002. As a result, we conclude that the accession to the EMU does not account for the substantial increase observed in the level of Greek consumer prices in the way of accession. By contrast, our findings attribute the latter to the following factors:

First, market prices increased significantly immediately after Greece's accession to the Euro (i.e. in 2001-2002) because they had recorded a substantial negative deviation from their equilibrium level during the three-year period preceding EMU accession (1998-2000). In other words, the prices paid by Greek consumers during 1998-2000 were lower than they should pay for the economy to be in steady-state equilibrium. It is worth noticing that this negative deviation was increasing throughout the period 1998-2000 (see Figure 1). As a result, the unavoidable restoration of market prices to their equilibrium following Greece's accession to the Euro could only be achieved through substantial increases in market prices. In addition, due to the fact that the deviation of market prices from their equilibrium level was large, the increase in market prices necessary to restore the CPI to its equilibrium level would also have to be large.

Second, the CPI increase observed after EMU accession was not only large but also abrupt, because the pricing misalignment that had been created by the end of 2000 was enough to activate the high speed of equilibrium price adjustment. Our econometric findings suggest that in Greece, as it is the case with other European economies, the speed of adjustment of market prices towards their equilibrium is a non-linear process, i.e. a function of the size of the price misalignment. Small deviations are corrected slowly due to the various imperfections existing in the goods' and services' market. Big deviations, on the other hand, are corrected fast, as in periods of significant pricing imbalances prices become more flexible. In the case of Greece we find that the deviation of market prices from their equilibrium level at the eve of EMU accession was big enough for the fast speed of adjustment to be activated.

All in all, we conclude that the accession of Greece to the EMU and the introduction of the euro in physical form are not responsible for the increase observed in Greek CPI following 1/1/2001. This was due to pre-existing strong inflationary pressures. The creation of these pressures may be related to administrative measures taken during the

Figure 1: Deviation of market versus CPI level and estimated thresholds of fast price-adjustment band



Note: Values on the vertical axis denote percentage points (e.g. 0.02 denotes 2 per cent)

period 1998-2000, such as price-freezes on behalf of state-owned utilities' first and to the so-called "gentlemen's agreement" for restrained price increases between Greek authorities and big private firms. These measures aimed to achieve meeting the inflation criterion of the Maastricht Treaty so that Greece would manage to join the euro in January 2001. This target was indeed met. However, as inflation convergence was not exclusively underpinned by developments in the real side of the economy, but also assisted by administrative measures of short-term nature, the result was the creation of strong inflationary pressures which were released following Greece's accession to the EMU.

## 2.2. The single monetary policy and Greek macro-fundamentals

The part of the study analysed above concludes with the observation that following the restoration of the Greek CPI to its equilibrium level in mid-2002 the latter continued increasing at a rate so that by the end of 2003 a substantial positive deviation from equilibrium had been created. (see Figure 1). This development, combined with the high (by comparison to the EMU average) rate of CPI inflation observed thereafter, can be attributed to three (non-mutually exclusive) possible explanations:

First, to an overshooting of the market prices relative to their equilibrium level, in response to the under-pricing episode of the period 1998-2002. Such an overshooting, if existent, would be related to the market imperfections mentioned above and should not be expected to be of a long-term nature.

Second, to an attempt on behalf of Greek firms to obtain higher-than-normal profits in order to restore their profitability following the hit the latter took during the under-pricing episode of 1998-2002. If this hypothesis were to be valid, which cannot be tested without microeconomic data, it would represent a negative development as it would contribute towards maintaining the Greek inflation rate at a level higher than the one consistent with the movements of the rest of the macroeconomic variables. However, such a pricing policy, if existing, is unlikely to be maintained in

the long-run, as the goods' and services' market can impose, through an adjustment in demand, more restrained price increases in the future. In that case, the high (relative to the EMU average) rates of inflation observed in 2002/2003 should converge towards a lower level of core CPI inflation.

Third, to a possible incompatibility between the single monetary policy on the one hand and the domestic requirements of the Greek economy on the other. According to this hypothesis, Greek CPI inflation remains at a high (compared to the EMU average) level because the interest rates that have been set by the ECB since 2001 are lower than the interest rates that would ensure that the Greek CPI is restrained to lower than the observed levels. If this hypothesis were to be valid, it would reflect a more serious problem in comparison with the other two discussed above, as it could potentially be a one of longer-term character. According to the theory of optimum currency areas (TOCA), incompatibility between the single monetary policy and the domestic requirements of the Greek economy would be a strong indication of lack of synchronisation between the Greek and the EMU business cycles. This would indicate that Greece did not achieve enough real convergence prior to its accession to the EMU. As a result, accession to the single currency may result to significant short- and medium-term costs, as it could render the single monetary policy a multiplier, instead of a moderator, of the negative effects of the Greek business cycle.

The study tests formally the incompatibility hypothesis discussed above. The analysis is based on econometric estimation of monetary policy reaction functions and involves three stages. The first stage estimates eight equations of nominal interest rate determination for the monetary policy implemented by the BoG during the period 1991-2000, i.e. the period of the implementation of the Greek programmes of nominal convergence. The study estimates linear<sup>2</sup> as well as non-linear<sup>3</sup> monetary policy reaction functions, with the latter including output gap effects on the determination of nominal interest rates. The second stage uses the reaction functions estimated by the first to obtain a projection for the nominal interest rates that would have prevailed in Greece given the values of the macroeconomic fundamentals observed in 2001-2003. Finally, the third stage compares the projected values of the Greek nominal interest rate with the actual interest rates set by the ECB during 2001-2003. The difference between the two sets of interest rates is then used to discuss the compatibility of the single monetary policy with the domestic requirements of the Greek economy.

Our empirical findings turn out to be quite interesting. All eight estimated monetary policy reaction functions provide, with remarkable consistency, a projected average Greek nominal interest for the period 2001-2003 three times higher than the average interest rate set by the ECB

(10 to 12% against 3.5%). This suggests significant incompatibility between the single monetary policy and the Greek economic requirements, which can explain the movements of Greek CPI inflation during the first year of the Greece's participation to the EMU. More specifically, during the period 2001-2003 Greek presented an average rate of economic growth significantly higher than the one of the EMU average (4 versus 1.3%). Under the high aggregate demand conditions caused by high economic growth, the study argues that Greece needed a relatively tight monetary policy to prevent inflationary pressures giving rise to higher actual inflation. By contrast, during 2001-2003 Greece experienced, along with the rest of the EMU members, a reduction in nominal interest rates set by ECB, aiming to boost the weak aggregate demand in the Eurozone. Hence, and in combination with the expansive fiscal policy followed by Greek authorities during 2001-2003, the single monetary policy reinforced, instead of controlling, the existing inflationary pressures. All in all, the analysis concludes, the single monetary policy is not consistent with the domestic requirements of the Greek economy, in which case it was an important factor towards maintaining Greek inflation in higher than the EMU average level.

An argument counter to the one discussed above is that the difference between projected Greek and actual ECB nominal interest rates may be due not to policy incompatibility but to a reduction/elimination of the risk premium embodied in Greek interest rates in the 1990s following the replacement of the drachma by the euro. This would imply that the study's high out-of-sample forecasts for the Greek nominal interest rate are driven by the high constant coefficients of the estimated reaction functions, which may be non-applicable in the post-accession period. If that were to be true, then the difference between projected Greek and actual ECB interest rates would reflect the credibility gains caused by Greece's accession to the euro rather than any incompatibility costs.<sup>4</sup> In a recent study, Arghyrou (2006) tests this hypothesis by expanding the study's post-accession sample from 2001-2003 to 2001-2005 and adjusting the constant term of the estimated reaction functions downwards to allow for the possibility of a lower equilibrium real interest rate. The results are presented in Figure 2. For presentation clarity this presents projections only for the base-line linear reaction function and the model producing the best data fit (lowest regression standard error) among the estimated functions, namely the L-STEMM model allowing for sign output gap effects in Greek monetary policy. Compared to the models with unadjusted constant terms, adjusting the latter for a lower risk premium indeed produces a note-worthy reduction in projected Greek interest rates. However, the adjusted projections still remain higher than the actual EMU rates by a factor approximately equal to two, which validates the study's conclusion regarding the incompatibility between the single monetary policy and Greek macroeconomic fundamentals.

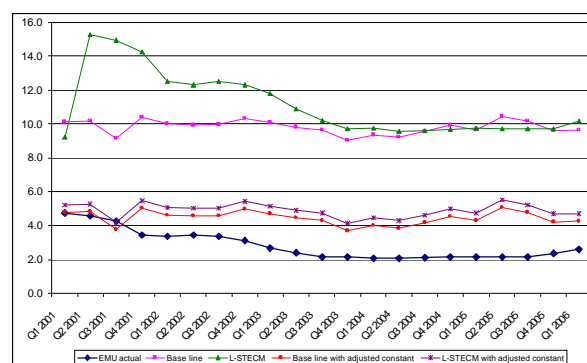
### 2.3. The effects of the accession on the Greek current account

The third question addressed by the study is the effects of EMU accession on the Greek current account balance. Since 2000 the latter's deficit has recorded a substantial increase. During the period covered by the study (2001-2003) the deficit took an average value equal to 6%, which is the highest three-year average deficit value that has been recorded for the Greek economy over the last five decades. This has further increased to 7% in 2004-2005 and, according to the BoG's latest estimates, to 11.5% in 2006.<sup>5</sup>

The substantial increase in the current account deficit can be directly linked with our previous findings according to which the single monetary policy is incompatible with the domestic requirements of the Greek economy. More specifically, given the irrevocable fixing of drachma's nominal exchange rate against the euro, the TOCA predicts that the maintenance of Greek inflation to high, relative to the EMU average, levels would result in overvaluation of the Greek real exchange rate (i.e. the real price of Greek production), which will in turn result in a reduction in Greek competitiveness and eventually cause a higher current account deficit. The direct relationship between Greek real exchange rate and the Greek current account balance exists both in traditional partial equilibrium models of international macroeconomics as well as general equilibrium models of the New Open Economy Macroeconomics literature. Based on this theoretical basis, and using some of the findings obtained by empirical analysis by Arghyrou et al (2006), the study models the movements of the Greek current account balance on the deviation of the Greek real exchange rate from its equilibrium level during the period 1983-2003.

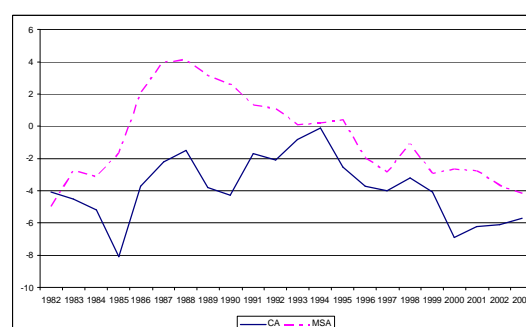
The main econometric findings of this part of the analysis can be summarised as follows: First, and in accordance with the theoretical predictions discussed above, the deviations of the Greek real exchange rate from its equilibrium level explain two thirds of the movements of the Greek current account (see Figure 3). Second, and as a consequence, the significant deterioration of the Greek current account since Greece's accession to the EMU is due to the significant appreciation of the Greek real exchange rate observed since 2001. As argued above, this appreciation is to a large extent due to inflationary pressures that pre-existed Greece's accession to the single currency as well as to the incompatibility of the single monetary policy with Greek domestic conditions. Third, the widening of Greece's external deficit is mainly due to the significant reduction in the competitiveness of Greece's main exporting sectors, a fact that is also documented by the movements of a number of competitiveness indicators calculated for a number of sectors of the Greek economy and presented in the study. All in all, our empirical findings provide further evidence in favour of the hypothesis that Greece joined the single currency without having

Figure 2: Actual EMU versus calculated Greek target 3-month money market rates, 2001(1)-2006(1)



Source for EMU 3-month money market rates European Central Bank; Greek target interest rates calculated by Arghyrou (2006b)

Figure 3: Greek Current Account (CA) versus Drachma's real exchange rate misalignment (MSA)



Sources: Current Account: Bank of Greece; Real exchange rate misalignment: Arghyrou, Boinet and Martin (2006)

previously achieved the necessary degree of real convergence. As a result, the country's participation to the EMU and the accompanying loss of monetary independence seem to have contributed to have reinforced the competitiveness losses caused by the underlying structural weaknesses and have resulted in a significant increase in the Greek current account deficit.

### 2.4. The main findings of the study: an evaluation

The main findings of the study, as discussed above, suggest that the participation of Greece to the EMU has so far highlighted the potential costs rather than the potential benefits of the single currency. More specifically, they lead us to the following conclusions:

*First*, the Greek economy was not adequately prepared to join the EMU in January 2001

*Second*, and as a result, the single monetary policy is not compatible with the domestic requirements of the Greek economy

*Third*, and as a consequence, the accession of Greece to the EMU has caused significant economic cost for the country that has been paid in the form of high (relative to the EMU average) inflation and a significant deterioration of the Greek current account.

The above imply that the continuation of the economic policy followed in the 1990s and also during the first year of Greece's accession to the EMU (2001-2003) implies significant risks for the Greek economy. The following section analyses these risks and presents two policy proposals the study makes with regards to the future nature of Greek macroeconomic policy.

### 3. GREEK MACROECONOMIC POLICY WITHIN THE EUROZONE

#### 3.1. The limits of macroeconomic policy implemented by Greece in the 1990s

The nominal convergence programmes implemented by Greece in the 1990s undoubtedly achieved a reduction in the macroeconomic imbalances observed in the 1980s. As a result, Greece achieved the meeting of the nominal convergence criteria of the Maastricht Treaty and its accession to the EMU on 1/1/2001. One might therefore argue that the Greek economy entered into the eurozone under positive initial conditions, evidence of which may be

the high growth rates recorded in 2001-2003, which were significantly higher the EMU average one. An important question, however, is how sustainable these growth rates are. This is the main question faced by Greek macroeconomic policy in the euro area: to achieve real convergence through sustainable economic growth.

Economic growth is sustainable when it is non-inflationary and self-propagating. Since 2001, however, Greek inflation is on an ascending path and has been taking values approximately two times higher than the EMU average (see Table 1). On the other hand, the high growth rates observed in 2001-2003 were, to a large extent, due to a number of recently concluded big infrastructure projects, most of which were related to the Athens 2004 Olympic Games. By contrast, during the period covered by the study productive (non-residential) private investment spending as well as private saving, important pre-requisites for self-propagating growth, respectively present stability and a down-ward trend. The unemployment rate remains fairly stable around 10% of the labour force, whereas public debt continues to be significantly higher than the excessive (by EMU standards) threshold of 100% of GDP.

**Table 1**  
**Leading Macroeconomic Indicators in Greece, 1999-2003**

	1999	2000	2001	2002	2003
Real GDP growth (%)	3.6	4.4	4.0	3.9	4.2
<i>Contribution of expenditure categories to the rate of growth of GDP</i>					
(a) Private Consumption	2.1	1.5	2.1	1.9	2.7
(b) Public Consumption	0.2	0.3	-0.1	0.8	0.8
(c) Gross Fixed Capital Formation	1.3	1.9	1.6	1.4	3.2
<i>Out of which</i>					
Construction	0.8	0.5	0.9	0.5	1.3
Equipment	0.3	1.3	0.5	0.7	1.8
Residual Gross Fixed Capital Formation	0.3	0.1	0.2	0.2	0.0
(d) External Balance of Goods and Services	0.5	0.4	0.9	-0.4	-2.7
(e) Inventory and Statistical Adjustments	-0.6	0.4	-0.4	0.1	0.1
Net Households' Saving (% in Net Disposable Income)	8.1	6.4	4.1	4.0	n.a.
CPI Inflation	2.6	3.2	3.4	3.6	3.5
Unemployment Rate	11.7	11.1	10.2	9.9	9.4
Current Account Deficit (% in GDP)*	3.4	6.8	6.2	6.1	5.7
General Government Debt (% in GDP)*	112.3	114	114.7	112.5	112.1

Source: Bank of Greece, *Report of the Governor for the Years 2002 and 2003*.

\* The figures incorporate the revisions in Greek fiscal data which took place in October-November 2004.

These developments are worrisome but not surprising. As we have argued in detail elsewhere (see Mourmouras and Arghyrou, 2000), the macroeconomic policy followed by Greece in the 1990s put an excessive weight on macroeconomic stabilisation through monetary policy, without promoting fiscal adjustment and supply/side structural adjustment to the necessary degree. As a result, the macroeconomic policy mix implemented by Greece in the 1990s has been one of limited potential: Although it did achieve a positive outcome in terms of nominal convergence, it created serious side effects in the real sector of the economy, including a significant reduction in Greek competitiveness.<sup>6</sup> In other words, the policy followed in the best part of the 1990s did not promote real convergence to the necessary degree. As a result, it was characterised by a deficit of credibility, which was expressed through frequent deviations between set targets and recorded outcomes, frequent targets' resetting and, eventually, the collapse of its reference, the strong drachma policy in March 1998.<sup>7</sup>

The weaknesses of the macroeconomic policy mix implemented by Greek authorities in the 1990s became more acute following Greece's accession to the EMU in January 2001. This may be related to the following two factors. First, the exchange rate at which the drachma was irrevocably fixed to the euro (340.75 drachmas per euro) was overvalued by approximately five percentage points.<sup>8</sup> This has put further pressure to the already low Greek competitiveness. Second, the loss of monetary independence. As we argued above the interest rate policy followed by the ECB in 2001-2003, combined with the expansionary fiscal policy followed by Greek authorities during the same period, has contributed to further overvaluation of the Greek real exchange rate and to record-high current account deficits. As a result, and as far as the medium-term future is concerned, the Greek economy faces two risks:

*First*, maintenance of a high, relative to the EMU average, inflation rate. The latter's high values during the period 2001-2003 are due to the structural weaknesses in the supply side of the Greek economy, the high level of domestic aggregate demand, and to the non-compatible with the domestic economic requirements interest rate policy of the ECB. Out of these three factors, only the second may be considered of short-term nature. The remaining two represent problems of a longer-term nature.

*Second*, a significant reduction in the rate of economic growth. This risk comes from five sources. First, the prospect of further pressure on net Greek exports due to possible further competitiveness losses caused by a Greek rate of inflation higher than the EMU average one. Second, the cooling effect of the conclusion of the big public infrastructure projects related to the Athens Olympic Games in 2004. Third, the necessary (and unavoidable according to the provisions of SGP) restraining on public spending. Fourth, the recent enlargement of the EU with countries producing goods directly competitive to the

Greek ones and against which (due to their lower labour costs, productivity gains and more flexible legislation framework) Greece may miss out in terms of attracting private investment. Finally, the prospect of European interest rates increasing to levels higher than the historically low levels of 2001-2003.<sup>9</sup>

All in all, at the end of the period covered by the study (early 2004), the Greek economy was in a position in which the prospect of adverse economic developments was not only possible but also probable. In recent years Greek presents high but not sustainable rates of economic growth, an expansionary (for its own domestic requirements) single monetary policy, strong inflationary pressures, an appreciating real exchange rate as well as widening budget and external deficits. These, combined with a significant increase in private borrowing and a boom in the real estate market, are classic symptoms of a dangerously overheating economy.

International experience shows that periods of substantial overheating can be followed by prolonged stagnation, or even outright recession, as it happened in the UK in the early 1990s. If Greece were to experience a similar recession, big enough for a substantial part of the private sector not to be able to service its fast increasing debt level, then a scenario in which the Greek banking system (in whose total assets personal loans and housing mortgages have been occupying a rapidly growing proportion) were to face significant assets' losses (caused by an increase in bad debts and real estate price reduction) is not entirely inconceivable. The problems which could arise under such a scenario have manifested themselves very clearly in the case of Japan and some South East Asian countries in the early 1990s. Under this remote, but not impossible, scenario, the negative spill-over a possible crisis in the Greek banking system could cause on the whole economy will be very far reaching indeed, as the Greek banking system (due to the large share of the small/medium-size firms in total production) has traditionally been the main channel of finance of the Greek supply side.

To conclude, the position of the Greek economy in early 2004 was such for the realisation of a combination involving high inflation and low growth to be a real possibility for the foreseeable future. The realisation of even more adverse, and possibly very serious, economic developments was not inconceivable.

### **3.2. The prospects of Greek macroeconomic policy within the EMU**

On the basis of the risks discussed above, Greek macro-policy makers are currently faced by two challenges:

*First*, and in relation to the short-term future, to discontinue the present conditions of overheating without causing an economic stagnation or, even worse, recession.

*Second*, and in relation to the medium/long-term future, to create economic conditions conducive to real convergence and sustainable economic growth.

In view of these challenges, the study makes two proposals in relation to the future conduct of Greek macroeconomic policy. These are analysed immediately below.

### ***3.2.1. Short-term macroeconomic strategy: Gradual fiscal adjustment***

As far as the first objective is concerned, achieving a “soft landing” for the Greek economy is not a straightforward proposition. The accession to the EMU has denied Greek authorities the main policy tool typically used for the purposes of demand management, namely the nominal interest rate. As a result, the only policy tool now available to the Greek economic authorities is fiscal policy. In this field too, however, due to the realisation of significantly increased public deficits in 2001-2003, there seems to exist little room for manoeuvre: The necessity of maintaining public debt on a sustainable path as well as the provisions of the SGP impose that Greek fiscal policy should now enter into a consolidation phase. Towards this direction, there exist two options: first, a policy of aggressive fiscal adjustment; second a policy of gradual reduction in fiscal deficits. The view adopted by the study is that it would be preferable for fiscal adjustment to be pursued through a gradual, rather than abrupt, way. This proposal is based on the following arguments:

Discontinuing the conditions of economic overheating discussed above is basically an exercise in fine balance, economic and political. The objective is to bring total aggregate demand in sustainable levels without reducing it too much so as to cause an economic recession. As we have discussed above, it is very likely that in the near future a number of demand categories will become under pressure, thus causing first-round downwards demand effects. If, in addition to these, Greek authorities were to reduce public spending in a substantial and speedy way, then the reduction in total aggregate demand may result in economic stagnation, to which the likely increase in European interest rates from the historically low level of the period 2001-2003 could add second round demand effects. A possible combination of reduced private demand, aggressive fiscal consolidation and higher ECB interest rates could put the economy into a downwards spiral from which it will be difficult to exit.

As a result of the above, it might be preferable for the Greek authorities to pursue a gradual rather than aggressive reduction in public deficit, as a gradual adjustment process, combined with the traditional practise of central banks to smooth interest rate changes, will render the transition from the present conditions of overheating to a more sustainable level of economic activity both easier and less risky. A strategy of gradual reduction in public deficits also has a couple of further advantages. First, it will increase the

credibility of Greek macroeconomic policy as a result of setting realistic targets. Second, it will increase the degrees of freedom of Greek authorities in terms of using fiscal policy as a tool of macroeconomic management in the future. If the likely reduction in private spending discussed above does not materialise or, if it does, it is not very pronounced, Greek authorities will be able to accelerate the pace of fiscal adjustment under a lower risk of causing an economic stagnation. If, on the other hand, the pressure on the rest of the categories of public expenditure turns out to be substantial, the proposed gradual reduction in public deficit will have left some margin to use fiscal policy, if necessary and to some reasonable degree, as a tool of short-term demand smoothing (through, for example, a reduction in tax revenue).

### ***3.2.2. Potential problems related to the widening of the current account deficit***

As we have already mentioned, during the period 2001-2003, the deficit of the current account took as a percentage of GDP took the unprecedented average value of 6% and has since increased even further, surpassing the threshold of 10% in 2006. This strong deteriorating pattern represents a very worrying development as the only period for which similar (albeit lower) current account deficits were recorded is the first part of the 1980s when the average deficit value was equal to 5.3% of GDP. During that period, the Greek drachma experienced two substantial discreet devaluations against the USD dollar (in 1983 and 1985), whereas discrete devaluations also occurred every year (or the year immediately after) the Greek current account deficit surpassed the threshold of 4% of GDP, namely in 1974, 1983, 1985 and 1998 (in 1990 no discrete devaluation took place, but the year-to-year devaluation of the drachma against the euro was equal to 15%). It would therefore appear that over the past five decades, the deficit of the current account has operated as a binding constraint for Greek policy makers. Since Greece’s accession to the EMU, this constraint seems to have been violated consistently and substantially. Therefore, it is plausible to say that had the drachma not been replaced by the euro it would have, almost certainly, been devalued against the euro in order to alleviate the pressure on the Greek current account.

An argument counter to the above is that accession to the single currency may have actually relaxed the constraint previously posed by the balance of the current account, due to the elimination of the possibility of a nominal devaluation against the euro. In addition, the increase in the current account deficit recorded in recent years in Greece and some other EU countries (for example Spain) may be due to the high growth rates experienced by these countries in recent years, in other words the result of real exchange rate appreciation caused by a Balassa-Samuelson effect as well as inter-temporal optimisation behaviour on behalf of the private sector. All in all, according to this argument, the increase in the Greek current account deficit since 2001

may be due to the Greek private sector borrowing at a lower real interest rate (as a result of the elimination of exchange rate risk) under the expectation of higher future income levels, within an environment of real exchange rate appreciation (i.e. a loss of price competitiveness) caused by productivity gains. This argument is not without a plausible basis. Indeed, in a recent paper (see Arghyrou and Chortareas, 2006) we have provided empirical evidence suggesting that the current account balance of countries such as Greece and Spain is a function of domestic relative real output, in which case the higher levels of growth achieved by these countries in recent years may have caused an effect similar to the one discussed above. On the other hand, however, in the same paper we provide evidence suggesting that the real exchange rate appreciation and the current account deterioration observed in these countries since the launch of the euro is higher than the one justified by economic growth.

All in all, it would appear that although the accession of Greece to the EMU may have relaxed up to a certain degree the current account constraint faced by the Greek economy, it has not actually abolished it. A persistently high current account deficit is in the long-run a real economic phenomenon caused by problems of limited competitiveness, which are not solved simply by replacing the national currency by the euro. Persistent and large external deficits result in increasing external borrowing, eventually posing a sustainability question, exactly in the same fashion fiscal deficits do. This implies that sooner or later, equilibrium in the external sector will have to be restored, as it was always happening in the case of Greece over the past five decades, and as it happens in other economies, even the largest of the world (such as the one of the United States of America), when the external deficit takes non-sustainable values.

Restoring current account sustainability implies either an increase in demand for Greek exports or/and a reduction in demand for imports of goods and services. Given the downward trend characterizing, as documented in the study, a number of traditional Greek exporting sectors, and also due to the loss of the option to boost (even temporarily) the price competitiveness of Greek exports through a nominal currency depreciation, it is likely that the reduction in Greek current account deficit may come as a result of a reduction in demand for imports. In the absence of competitiveness gains for domestic supply, such a reduction can only take place as a result of anti-inflationary policies and/or subdued economic activity. In other words, the high current account deficits observed in recent years, financed by increasing public and private borrowing, undermines future economic growth. As a result, they represent a significant risk to the medium-term growth prospects of Greece. The only credible way to avoid such a risk is to achieve competitiveness gains following supply-side reforms, an issue to which we turn immediately below.

### **3.2.3. Long-term economic strategy: Structural reforms**

The active promotion of structural reforms is the main proposal advanced by the study with regards to the future contact of Greek macroeconomic policy. This is the only area in which Greek authorities can take substantial policy initiatives with the potential of restoring equilibrium in the external sector of the economy and promoting real convergence. The objective of these reforms should be to increase microeconomic efficiency, so that the right conditions are put in place for Greece to benefit from the potential benefits of the single currency.

Economic theory and international experience suggest that reforms that may contribute towards creating conditions for a higher degree of microeconomic efficiency, the main source of potential benefits under a single currency include the following: (a) abolition of all state monopolies and promotion of a higher degree of competition in the goods' and services' markets' (b) higher labour market flexibility; (c) the simplification of the taxation system with a view to reduce gradually the tax burden on personal incomes and corporate profits; (d) the rationalisation of public consumption and implementation in this field a policy consistent with the objective of long-term public finances sustainability; (e) modernisation of the pension/social security system with a view to ensuring its currently questionable long-term sustainability; (f) privatisations of state-owned firms which operate in sectors of private activity; (g) the discontinuation of the operation of persistently loss-making public firms whose reform has proved beyond the means of Greek authorities in recent years and whose accumulating losses contribute substantially to the maintenance of the public debt to GDP ratio in high levels; (h) reform of public administration with a view to address the negative effects of the currently existing level of bureaucracy and eliminate any existing corruption, both of which operate as counter-incentives for the undertaking of private investment; (i) unification of the numerous trade unions in a smaller number of national trade unions, in order to reduce the inflation bias embedded in nominal wage negotiations at sectoral level; (j) further upgrading of public infrastructure, particularly in sectors directly relevant to the Greek economy's main exporting sectors (e.g. tourism, shipping, telecommunications); (k) substantial improvements in the country's human capital through extensive reforms to all levels Greek education.

## **5. IMPLICATIONS FOR THE NEWLY-ACCESSION EU COUNTRIES**

### **5.1. Similarities between Greece and the newly-accession countries**

This section discusses the implications of our analysis on Greece in relation to the countries that joined the EU in 2004 and looks for insights regarding the best timing and path for their adoption of the euro. With the exception of Cyprus and Malta, the newly-accession countries (NACs)

are formerly-planned economies that introduced market reforms in the early 1990s. Their generally successful transition process, characterised by high growth rates has been discussed by a number of authors (see e.g. Kutan and Brada 2000, Begg et al, 2003). It is not our intention to repeat this discussion here, other than emphasising that the NACs are by no means identical in terms of economic policies and macroeconomic performance (see e.g. Wyplosz 2000, Kenen and Meade, 2003). However, in spite of their differences, they share certain similarities with Greece in four areas of importance.

First, similarities exist in the field of CPI inflation, depicted for the ten-year period (1995-2004) following the initial shock of transition in Figure 4. Two features stand out. First, all NACs have achieved significant inflation convergence. Second, inflation remains more volatile and, in most cases, still higher than the EMU average. At the end of our sample period, it was in most countries in the range of 3 to 4%, which is very similar to Greece, and in some cases even higher. The sources of inflation are not necessarily uniform across countries, however a large empirical literature has established a common denominator, namely Balassa-Samuelson effects, putting upward pressure on the prices of non-traded goods and services (among others, see Taylor and Sarno 2001, Egert 2002). Although recent evidence suggests that these effects may be overestimated (see Egert et al 2003) or slowing down (see Kenen and Meade, 2003), as long as the NACs outperform the EMU growth rate, they are likely to persist.

Second, similarities exist in the field monetary policy. Until the late 1990s all NACs pursued exchange rate targets maintaining a high nominal interest rate differential against the EMU. However, these targets were often tested by markets, leading to speculative pressures reflected in nominal and real interest rate peaks. Following a number of currency devaluations in the 1990s, all Central European countries switched to an inflation-targeting regime.<sup>10</sup> The Baltic and Mediterranean countries have maintained their fixed-exchange rate policies and have joined, along with Slovakia and Slovenia, the ERM-II. Nominal interest rates have converged to the EMU (see Figure 5) but in most cases (not in the Czech and the Baltic states) a positive differential remains. Given the movements of inflation, real interest rates in some countries remain higher than the EMU (Poland, Hungary and Slovenia) while in others (the Czech Republic and the Baltic countries) they have moved into negative territory (see Figure 6). Quite importantly, like Greece in the 1990s, real interest rates in all NACs are much more volatile than in the EMU. To the extent that real interest rate volatility is a reliable indicator of nominal and real convergence, none of the NACs seems to have yet fully achieved it. Third, most of the NACs share the post-1995 Greek experience with real exchange rate appreciation (largely attributed to the previously mentioned Balassa-Samuelson effects) and, increasingly in recent years current account deterioration (see Figure 7). Finally, similarities with Greece exist in output developments. The

Figure 4: Inflation in the newly-accession EU countries and the EMU

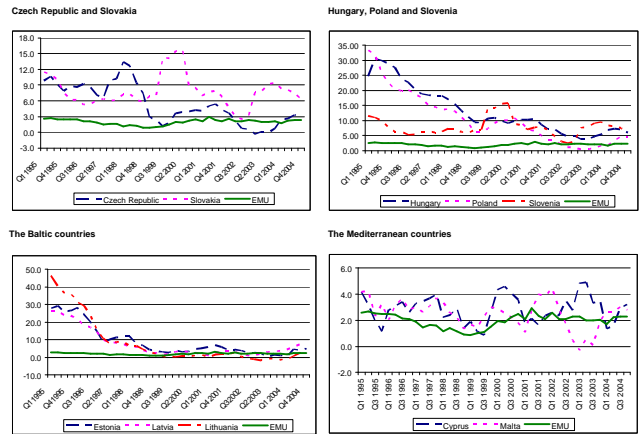
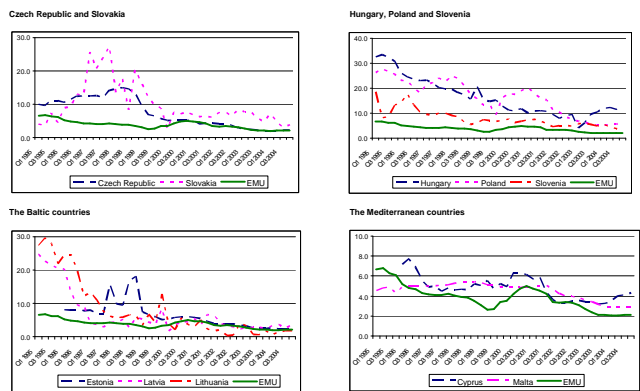
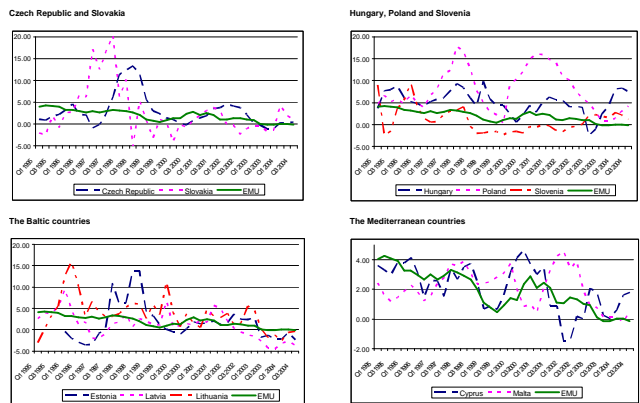


Figure 5: Short term money market rates in newly-accession EU countries and the EMU



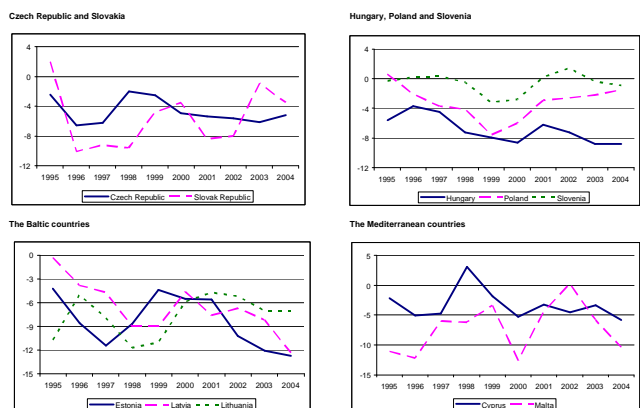
Source: International Financial Statistics and Eurostat

Figure 6: Real interest rates in newly-transition EU countries and the EMU



Source: International Financial Statistics

Figure 7: Current account balance in newly-transition EU countries (% in GDP)



Source: International Financial Statistics

structural reforms and the high growth rates of the last decade have gone some way in promoting real convergence; however, significant differences remain both in terms of income levels<sup>11</sup> as well as in terms of output volatility. With the exception of Slovenia and Estonia, the recursive estimates we calculated for the correlation coefficient between the output gap of the NACs and the EMU average are equal or less than the corresponding coefficient calculated for Greece.<sup>12</sup> This suggests that business-cycle synchronisation with the EMU average is far from perfect (see also Korhonen and Fidrmuc, 2001).

## **5.2. Monetary policy in the new EU countries towards the adoption of the Euro**

To sum up, the NACs currently display (i) declining yet still higher than the EMU average inflation rates; (ii) highly volatile real interest rates; (iii) an appreciating real exchange rate accompanied in many cases by current account deterioration; and (iv) fast growth and output movements not highly synchronised with those of the EMU business cycle. These elements are very similar to the Greek experience analysed above and pose the NACs with a potentially serious policy conflict in their road towards adopting the Euro.

This conflict may arise between the effort of the new EU countries to reduce nominal interest rates towards the EMU levels on the one hand and, on the other, to control the inflation/current account pressures nominal interest rate reductions may create within an environment of positive inflation differentials, high growth and on-going Balassa-Samuelson effects. More specifically, cutting interest rates while pursuing at the same time exchange rate stability (as all NACs are required to do for two years prior to joining the EMU), may lead to two equally unattractive outcomes. First, if exchange rate stability is questioned by markets, to devaluation expectations, real interest rates increases and, ultimately, the peg's collapse. This is the Greek experience during 1995-1997. Second, if the peg is regarded as credible, a positive (albeit diminishing) interest rate differential may cause capital inflows, real interest rate reductions and an increase in aggregate demand. These could lead to increased inflation pressures, real currency overvaluation hurting external competitiveness and, ultimately, to excessive current account deficits. This is the experience of Greece following its accession to the Euro.

During the post-2000 period, the NACs can be classified in four groups regarding the way they have handled this potential monetary policy conflict. The first includes the Baltic countries, which have pegged their currencies to the Euro and have cut their nominal interest rates aggressively towards the EMU level (see Figure 5). The second includes all Central European countries except from the Czech Republic, which implement inflation targets and have been more cautious in cutting interest rates towards the EMU level. Third, there is the Czech Republic which operates under inflation targets but, like the Baltic countries, has

reduced interest rates aggressively towards the EMU average. The final group includes the Mediterranean countries, which have pegged their currencies to the Euro; however, having started their convergence effort at considerably lower interest rates, they have cut interest rates much less aggressively.

For the countries implementing a fixed exchange rate regime, the recent movements of their real interest rates do not suggest any speculative pressures, indicating that the markets regard, at least for the time being, their pegs to the Euro as being credible. For these countries, and the Czech Republic, developments are generally consistent with the analysis in Giavazzi and Spaventa. Real interest rates have declined along with nominal; demand conditions are very strong and current account deficits have increased. By contrast, in Central European countries where interest rate cuts have been more modest, real interest rates remain higher than in the EMU; current account deficits (with the exception of Hungary) are not so excessive and the process of growth has not been disturbed. However, the persistent inflation differential against the EMU remains a problem.

To summarise, in recent years all NACs have proceeded, to varying degrees, to nominal interest rate reductions in the face of declining inflation and in an effort to achieve convergence to the EMU average. However they continue to face significant macroeconomic imbalances, either in terms of a widening current account or a persistent inflation differential against the EMU average. These indicate that the effort of the NACs to achieve nominal interest rate convergence while the process of economic transformation is not yet complete, may be causing monetary policy distortions. Under such circumstances, an early entry into the EMU may increase these distortions and result in a deterioration of the underlying macroeconomic imbalances.

## **4. SUMMARY AND CONCLUDING REMARKS**

The study reviewed in this article has focused on the effects of the accession of Greece to the EMU in three areas of economic importance, namely (a) the effects of EMU accession on Greek consumer prices; (b) the compatibility of the single European monetary policy with the domestic requirements of the Greek economy; (c) the effects of the accession on the level of Greek competitiveness and the current account balance. The empirical findings of the study suggest that the accession of Greece to the EMU has so far highlighted the potential costs rather than the potential benefits of the single currency. These findings are consistent with the view that the macroeconomic policy that was implemented by Greece prior to the accession to the euro was a policy of limited potential. Although it achieved progress in the field of nominal convergence, it did not achieve enough progress in the terms of real convergence, as a result of which it did not prepare the Greek economy to the degree that was necessary in for the country to join the EMU. Continuation of this policy implies significant risks for the Greek economy.

In view of these risks, Greek authorities are now faced with two challenges. First, in relation to the near future, to discontinue the existing overheating conditions without causing economic stagnation or outright recession. Second, and in relation to the medium-/long-term future, to create conditions promoting real convergence through sustainable economic growth. With regards to the first, the study suggests a policy of gradual rather than abrupt fiscal adjustment. With regards to the second, the study suggests the active promotion of a number of wide-ranging structural reforms relating to the supply side of the Greek economy. These reforms may be accompanied by a short-term transition cost. The alternative option, however, of maintaining the present status quo involves significantly higher economic and social costs. Under the present circumstances, the study concludes, structural reforms are the only long-term economic strategy that would give the Greek economy an opportunity to reap the potential benefits of the single currency.

Our analysis on Greece is directly relevant to the new EU members, whose economies are similar in many respects to the Greek one. Our findings on Greece indicate that these countries may be better-off staying outside the single currency until they achieve a degree of real convergence

higher than the one achieved by Greece in the 1990s. To go one step further, for the success of the EMU project as a whole, it may be better to allow some time to consolidate the existing monetary union before expanding it further to incorporate the new EU countries and the current EU candidates. Macroeconomic performance in the Eurozone since the introduction of the Euro can at best be described as average, characterised by low growth rates and high unemployment in a number of countries, including the power-houses of European integration, France and Germany. The recent referenda in France and the Netherlands have clearly established that European nations are gradually adopting a more sober approach to steps towards further European integration. Public and market support has always been, and continues to be, a *sine qua non* prerequisite for the success of the single currency. Within the new, less euro-enthusiastic environment, expanding the EMU prematurely, before putting the economics of individual countries inside and outside the EMU on the right footing, may undermine the sustainability of the single currency altogether. The central message emerging from the study reviewed in this article is that joining the single currency without adequate preparation may cause serious problems both to individual countries as well as to the EMU as a whole.

## REFERENCES

- Arghyrou M.G (2006a), *The effects of the accession of Greece to the EMU: Initial estimates*, Centre of Economic Research and Planning (KEPE), Athens.
- Arghyrou M.G. (2006b), "Monetary policy before and after the euro: evidence from Greece", Discussion Paper No E2006/26, Cardiff Business School, Cardiff University.
- Arghyrou M.G. and E. Bazina (2003), "Competitiveness and the external trade of Greece in the 1990s: A cross-sectoral investigation", *Journal of Economic Integration* 18, pp. 763-793.
- Arghyrou M.G., Boinet V. and C. Martin (2006), "Non-linear and non-symmetric exchange-rate adjustment: Evidence from medium- and high-inflation economies", *Journal of Economics and Finance*, *Journal of Economics and Finance*, 30, pp. 38-56.
- Arghyrou M.G. and G. Chortareas (2006), "Current account imbalances and real exchange rates in the euro area", Discussion Paper No E2006/26, Cardiff Business School, Cardiff University.
- Arghyrou M.G., Martin C. and Milas C. (2005), "Non-linear Inflationary Dynamics: Evidence from the UK", *Oxford Economic Papers* 57, pp. 51-69
- Bank of Greece (2007), *Monetary Policy Report*, February 2007.
- Bec F., Salem M.B. and F. Collard (2002) "Asymmetries in Monetary Policy Reaction Function: Evidence for U.S. French and German Central Banks", *Studies in Nonlinear Dynamics & Econometrics*: vol. 6: No. 2, Article 3.
- Clarida R., Gali J. and M. Gertler (1998), "Monetary policy rules in practice: some international evidence", *European Economic Review* 42, pp. 1033-1077.
- Mourmouras, I.A. and M.G. Argyrou (2000), *Monetary Policy at the European Periphery: Greek Experience and Lessons for EU Candidates*, book in the *European and Transatlantic Studies Series*, Springer-Verlag, Berlin — New York.

- Begg D. Eichengreen B. Halpern L. von Hagen J. and C. Wyplosz (2003), “Sustainable regimes of capital movements in accession countries”, Centre for Economic Policy Research, Research Paper No 10.
- Egert B. (2002), “Investigating the Balassa-Samuelson hypothesis in the transition: Do we understand what we see? A panel study”, *Economics of Transition* 10, pp. 273-309.
- Egert B., Drine I., Lommatzsch K. and C. Rault (2003), “The Balassa-Samuelson effect in Central and Eastern Europe: myth or reality?”, *Journal of Comparative Economics* 31, pp. 552-572.
- Giavazzi F. and G. Spaventa (1990), The “new” EMS, Centre for Economic Policy Research, Discussion Paper No 369.
- Kenen P.B. and E.E. Meade (2003), “EU accession and the euro: close together or far apart?”, Institute for International Economics Policy Brief No 03-09.
- Korhonen I. and J. Fidrmuc (2001), “Similarity of supply and demand shocks between the Euro Area and the Accession Countries”, *Focus on Transition*, Austrian National Bank, Discussion Paper No 2.
- Kutan A. M. and J. C. Brada (2000), “The evolution of monetary policy in transition economies”, *Federal Reserve Bank of St Lewis Review* issue March/April, pp. 31-40.
- Obstfeld M. (1996), “Models of Currency Crises with Self-Fulfilling Features”, *European Economic Review* 40, pp. 1037-1047.
- Taylor M.P. and L. Sarno (2001), “Real exchange rate dynamics in transition economies: a non-linear analysis”, *Studies in Non-Linear Dynamics & Econometrics* vol. 5, issue 3, Article 1.

---

<sup>1</sup> The econometric methodology adopted in this part of the study is the one used by Arghyrou, Martin and Milas (2005).

<sup>2</sup> Similar to those in the study by Clarida, Gali and Gertler (1998).

<sup>3</sup> Similar to those in the study by Bec, Salem, and Collard (2002).

<sup>4</sup> Such credibility gains may in the short-run result in excessively low interest rates, an increase in inflation and higher-than-normal current account deficits (see e.g. Giavazzi and Spaventa, 1990). In the medium-term, however, the subsequent competitiveness losses result in lower inflation so that the economy eventually settles in sustainable current account deficits. The model by Giavazzi and Spaventa relates to countries that fix credibly their exchange rates in the context of the Exchange Rate Mechanism (ERM). Their conclusions must be stronger for countries joining the EMU as the replacement of national currencies by the euro implies a zero probability of a currency crisis during the intermediate period between the short-run increase in inflation and current account deficit and the point in time these effects are reversed in the medium-term.

<sup>5</sup> See Bank of Greece (2007).

<sup>6</sup> See Arghyrou and Bazina (2003).

<sup>7</sup> The fact that the devaluation of March 1998 took place four months after the South-East Asia financial crisis of autumn 1997 lends itself to the hypothesis that it was the result of contagion effects. Our findings when combined with those in Arghyrou et al (2006) reject this hypothesis. The latter study finds that by 1997(4) the size of drachma's overvaluation had grown enough so that a critical threshold triggering devaluation was surpassed. Overall, our findings suggest that the Greek devaluation of 1998 was country-specific and more relevant to the second-generation currency crisis model of Obstfeld (1996).

<sup>8</sup> See Arghyrou et al (2005).

<sup>9</sup> This argument is not contradicting our argument above on the dangers of maintenance of a high rate of inflation. Our econometric findings suggest that the interest rate that is consistent with the requirements of the Greek economy is two to three times as high as the present ECB interest rate. It is practically impossible for the ECB to treble its interest rates in the foreseeable future. So, increasing European interest rates will affect Greek demand to some degree (contributing towards an economic slow down), without, at the same time, eliminating completely the inflationary pressures presently observed in Greece.

---

<sup>10</sup> Slovakia has in place a hybrid monetary framework involving inflation and exchange rate targets. Slovenia, on the other hand, operates a policy involving both inflation and money supply targets.

<sup>11</sup> Eurostat data suggests that in 2004, with the exception of Cyprus, all newly-accession EU countries had a PPP-adjusted per head income less than 80% of the EU25 average, with figures ranging from 78 (Slovakia) to 43% (Latvia). Greece's per capital income was 82% of the EU25 average.

<sup>12</sup> These calculations are available upon request.