OUTLOOK FOR THE PORTUGUESE ECONOMY IN 2002

1. INTRODUCTION

This article presents projections for the Portuguese economy in 2002, covering the trend of activity, major expenditure components, inflation and the joint balance of the current and capital accounts. These projections were prepared by the Banco de Portugal on the basis of data available up to mid-November, within the scope of the Eurosystem autumn projection exercise. Its major results for the euro area were published in the December issue of the *Monthly Bulletin* of the European Central Bank (ECB).

In 2002, economic activity will likely decelerate further in Portugal, while Gross Domestic Product (GDP) is expected to grow from 1 to 1¾ per cent (Table 1). The slowdown in the Portuguese economy is thus expected to continue, following increases of 3.5 per cent in 2000 and in the range from 1½ to 2 per cent in 2001 (Chart 1).(1)

The deceleration of the Portuguese economy in 2002 is associated with an adverse external environment and a continued slowdown in domestic demand, which started in 2000. In spite of the weak growth of external demand relevant to the Portuguese economy, developments in the economy in 2002 are likely to lead to a rise in the household savings ratio and to a narrowing of the current and capital account deficit. Likewise, the decline assumed for public consumption growth also contributes to the slowdown pattern in output. This will contribute significantly to avoid an uncontrolled fiscal deficit in a context of low economic growth. Thus, the projections now disclosed correspond to a scenario of gradual adjustment to some imbalances in the Portuguese economy, whose materialisation may avoid the need for more abrupt adjustments in the future and contribute to a sustained medium to long-term economic growth.

Concerning inflation, the Harmonised Index of Consumer Prices (HICP) is expected to show a significant deceleration in 2002, which will translate into the reduction of its annual average rate of change from 4.4 per cent in 2001, to a figure in a range from 2.2 to 3.2 per cent in 2002. The forecasted inflation decrease in 2002 is accounted for by three major factors: on the one hand, a more favourable international environment for the trend of prices; on the other hand, a domestic framework also more favourable to the moderation of inflation, since the slowdown of economic activity is likely to affect the increase in mark-up margins and the growth of nominal wages; finally, the specific effects that disturbed the behaviour of inflation in 2001 are not expected to be repeated in 2002 (in particular, the sharp price increases in some foodstuffs, as a result of particularly adverse weather conditions and the outbreak of animal diseases, as well as the increase in consumer fuel prices in January 2001).

According to the projections which are now disclosed, in 2002 domestic demand will likely grow in a range from ¼ to 1¼. The moderation of domestic demand is expected to be uniform across all its components. Private consumption is expected to grow between 1 and 2 per cent, close to or even slightly above that for 2001. Although most classes of consumption will probably con-

(1) The assessment of the behaviour of the Portuguese economy in 2001 corresponds to the analysis disclosed by the Banco de Portugal in the latest September issue of the *Economic Bulletin* (see text "The Portuguese economy in 2001")

Table 1

PROJECTIONS FOR THE BANCO DE PORTUGAL

Percentage rates of change

		Current projection		Memo item: *EB* June 01/2001	
	2000	2001	2002	2001	2002
Private consumption	2.8	[¾; 1 ¼]	[1 ; 2]	[2;2½]	[1¾;2¾]
Public consumption	3.5	1.9	0.7	1.7	1
Gross Fixed Capital Formation	4.7	[-1 ; 1]	[-3¼ ; ¾]	[-1;1]	[-1;3]
Domestic demand	3.1	[¾ ; 1¼]	[¼ ; 1¼]	[1½;2]	[1½ ,2½]
Exports	7.9	[4 ¼ ; 5¼]	[3 ; 4½]	[5½;6½]	[5¼;7¼]
Overall demand	4.1	[1½ ; 2]	[1;2]	[2½;3]	[2½;3½]
Imports	5.5	[1¼; 3¼]	[0 ; 3]	[3;5]	[2¼;6¼]
GP	3.5	[1½ ; 2]	[1 ; 1¾]	[2;2½]	[1¾;2¾]
Current account+capital account (% of GDP)	-8.6	[-8¾ ; -7¾]	[-6 ¼; -4 ¼]	[-7¾;-6]	[-8¼;-4¾]
Harmonised Index of Consumer Prices	2.8	4.4	[2.2 ; 3.2]	[3.9,4.5][a]	[2.1;3.1]

Note:

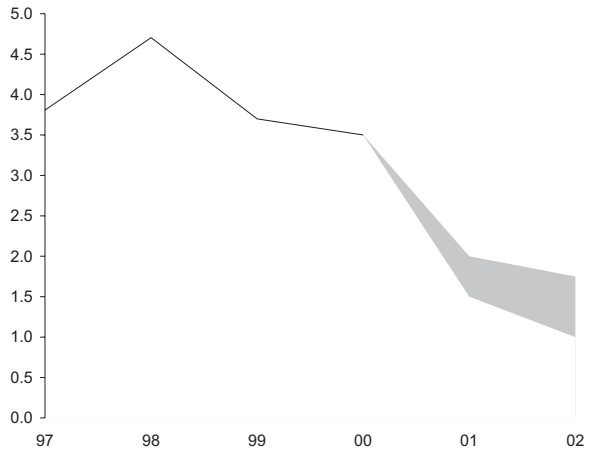
(a) The figure for 2001 corresponds to the update of the spring projection exercise (in a range of 3.6 to 4.1 per cent), taking into account the subsequent increase in prices of some foodstuffs. See Box presented in the June issue of the *Economic Bulletin*.

tinue to follow a decelerating trend, the effects of tax changes introduced in the State Budget for 2001, that determined sharp reductions in household expenditure with the acquisition of motor vehicles, will no longer be felt. Public consumption was assumed to grow, in real terms, by 0.7 per cent, clearly decelerating from the 1.9 per cent increase observed in 2001.(2) This, if actually occurring, will represent a clear reversal of fiscal policy in comparison with recent years. Finally, Gross Fixed Capital Formation (GFCF) is expected to decline in real terms, since the projection corresponds to the range between -3¼ and ¾ per cent. This trend reflects distinctly different developments in the private and public sectors. While the former points to a positive contribution to GFCF, as a result of a recovery of transfers from the European Union, the latter seems to contribute negatively, reflecting simultaneously a less favourable external environment and the continued adjustment process of private expenditure in investment goods.

Chart 1

GDP

Year-on-year percentage rates of change

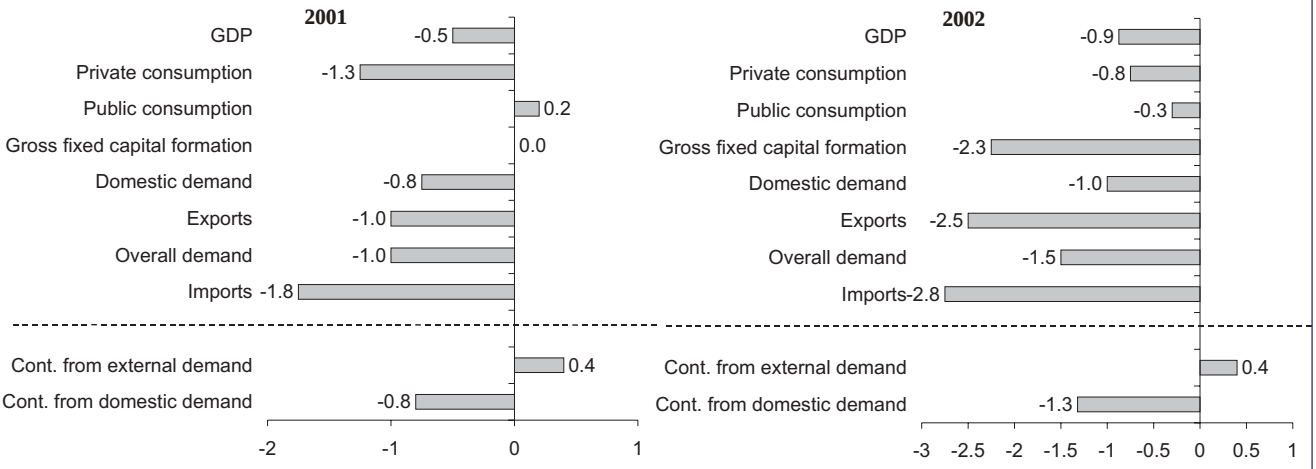


In the context of the weak growth of external demand, exports of goods and services are likely to show a remarkable growth in 2002, i.e. in the range from 3 to 4½% per cent, although decelerating by around 1 percentage point from the previous year. As a result of the projected developments for domestic demand and exports, imports will likely further slow down in 2002. The joint development of exports and imports is expected to lead to an improvement in the balance of the goods and services accounts. In addition, data made available in the report of the State Budget for 2002 suggest a recovery in the level of transfers from the European Union, under the Third Community Support Framework. If occurring, this will also contribute

(2) New data on the budget outturn for 2001, on the expenditure side, may determine a revision of this estimate and, as a result, affect the projection for 2002.

Chart 2

REVISION OF THE PROJECTIONS PUBLISHED IN THE JUNE 2001 ISSUE OF THE *ECONOMIC BULLETIN*[(a)]



Note: (a) Taking into account the forecast range average points.

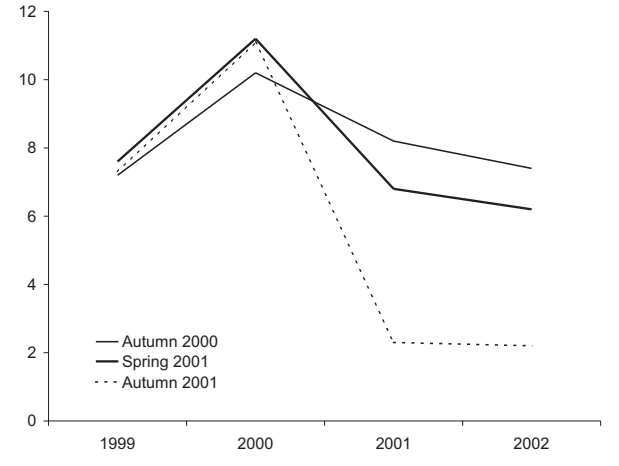
to a narrowing of the deficit of the current and capital accounts in 2002.

The projection now advanced for 2002 is a downward revision of the economic growth prospects released in the June issue of the *Economic Bulletin*, that presented a range for the GDP change between 1¾ and 2¾. Exports, but particularly domestic demand had an important contribution to this revision, against a background in which external demand was clearly more adverse than assumed in June (Charts 2 and 3). With regard to developments in domestic demand, the new appreciation reflects especially the present prospects of a more accentuated slowdown in investment and in consumption of durable goods. Although export growth was revised downwards, it should be noted, however, that the contribution from net exports (i.e. exports less imports) to GDP growth was revised upwards for two reasons. On the one hand, imports were subjected to a significant downward revision, in line with the increased moderation of domestic demand, particularly in durable consumer goods and investment goods, traditionally with high import contents. On the other hand, the present assessment of the trend of the market shares of Portuguese exports is more favourable than implicit in the June forecast.

Chart 3

EXTERNAL DEMAND RELEVANT TO THE PORTUGUESE ECONOMY

Year-on-year percentage rates of change



2. ASSUMPTIONS UNDERLYING THE PROJECTIONS AND DEVELOPMENTS IN THE EXTERNAL FRAMEWORK OF PORTUGUESE ECONOMY

The projections published in this *Economic Bulletin* are based on a set of technical assumptions as used by the Eurosystem, as well as on other assumptions specific to the Portuguese economy. These assumptions reflect the information made available up to mid-November.

The Eurosystem's projections are prepared on the technical assumption that short-term market interest rates and euro bilateral exchange rates will remain unchanged over the projection horizon, at the levels prevailing in the period immediately

prior to the close of information. In addition, long-term interest rates are also assumed to behave in line with market expectations, which, in the present exercise, has given rise to a virtually unchanged interest rate pattern over the projection horizon. The December 2001 issue of the *Monthly Bulletin* of the ECB, which contains the autumn macroeconomic projections for the euro area as a whole, stresses that the technical assumptions with regard to interest rates and exchange rates are not intended to be projections for these variables. In particular, the assumption that short-term interest rates will remain unchanged is made in order to facilitate discussion in the Governing Council of the ECB, by identifying the possible consequences for future price developments of leaving the key ECB interest rates unchanged. Since monetary policy shall always act to maintain price stability, the Eurosystem macroeconomic projections (as well as Banco de Portugal projections as an integral part thereof) shall be interpreted as conditional predictors on the considered set of assumptions.

Turning to the international environment, current projections are based on the assumption that real growth of world GDP, excluding the euro area, will stand at 1.5 per cent in 2002 (after 5 per cent in 2000 and 2 per cent in 2001). These figures imply a reversal of the current slowdown in the USA as of mid-2002, although it is presently assumed that the contraction of economic activity in this country is deeper and longer than expected in June. In the case of Japan, the economy will likely continue to reveal signs of weakness.

The behaviour of the economies in the euro area is particularly important for the preparation of projections for Portuguese economy, given that approximately two thirds of the Portuguese international transactions are concentrated in that economic area. It is worth noting that the consistency of the present exercise ensures that the forecasts prepared for every national economy forming the euro area were explicitly considered in the preparation of the projections for the Portuguese economy. According to the December 2001 issue of the *Monthly Bulletin* of the ECB, economic activity in the euro area, after a 3.4 per cent growth rate of GDP in 2000, slowed down significantly in 2001 to a range between 1.3 and 1.7 per cent. In 2002, GDP growth in the euro area is likely to range between 0.7 and 1.7 per cent.

Turning to the trend of prices of major commodities in international markets, several technical assumptions were considered in the exercise. With regard to the oil price, projections were based on the path implied by futures markets i.e., a downward trend was assumed for the oil price – sharper than that considered in the Spring exercise – translating into a reduction, in US dollars, of approximately 24 per cent in 2002. The prices of other commodities are expected to decrease further in 2002.

Finally, the preparation of the present projections included assumptions on the behaviour of a set of variables specific to the Portuguese economy, particularly with regards to fiscal policy. When these projections were prepared, from mid-October to mid-November, the information available corresponded to the State budget for 2002 and to the latest reporting of the excessive deficit procedure in August 2001. Therefore, they did not include data on the Second Amending Budget, the update of the Stability and Growth Programme and the decision to reduce the price of gasoline in January 2002. Among the technical assumptions considered, special emphasis should be laid on three of them. First, real growth of public consumption was assumed to reach 1.9 per cent in 2001[(3)] and 0.7 per cent in 2002. This latter figure has implicit a nil public administration employment growth. The trend of public consumption in 2002, according to this technical assumption, would reflect a clear reversal of the fiscal policy vis-à-vis its behaviour in recent years. Second, a relatively buoyant behaviour was assumed for 2001 in general government investment, in line with the significant increase in transfers from the European Union considered in the State Budget report. Finally, similarly to the previous projection exercise, it was also assumed that consumer prices of fuels would remain unchanged at November 2001 levels over the projection horizon.

(3) See previous footnote.

3. OUTLOOK FOR THE PORTUGUESE ECONOMY IN 2002

3.1. Economic activity

As referred in the introduction, in 2002, economic activity is expected to decelerate further in Portugal, with the growth rate of GDP projected to range from 1 to 1¾ per cent (see Table 1). This slowdown in GDP growth will also be felt in the major components of demand, with a possible exception in general government investment.

3.1.1. Expenditure components

The current projections point to a real growth of private consumption between 1 and 2 per cent in 2002, after a range between ¾ and 1¼ per cent in 2001, and 2.8, 5.2 and 7.2 per cent in 2000, 1999 and 1998, respectively (see Chart 4). Hence, this scenario points to the maintenance of a moderate growth of private consumption, after the high growth rates observed between 1997 and 2000. It should be noted that the profile projected for the trend of consumption in 2002 has implicit the maintenance of a slowdown across all consumption sectors, except for expenditure with the purchase of motor vehicles. Indeed, the tax related effects that negatively affected this sector in 2001, namely the significant fall in the sales of off-the-road vehicles, are no longer expected. The pre-announcement of the changes to be introduced in the motor vehicle tax, within the scope of the discussions on the State Budget for 2001, determined the anticipation of purchases of that type of vehicles at the end of 2000.

Similarly to developments in 2001, the trend of private consumption in 2002 will be significantly affected by less favourable expectations regarding economic activity and by the need to ensure the growing debt service incurred by households over recent years. In addition, the trend of consumption is also influenced by the deceleration of real disposable income, explained in 2001 by the inflation rate increase, and in 2002 by the lagged effects of the slowdown in economic activity. Taking into account the forecasts of disposable income and private consumption, the household savings rate is expected to increase in 2002. This increase in the savings rate should be interpreted as a natural reflection of the adjustment projected for a more sustainable trend in household indebtedness.

Chart 4
PRIVATE CONSUMPTION
Year-on-year percentage rates of change

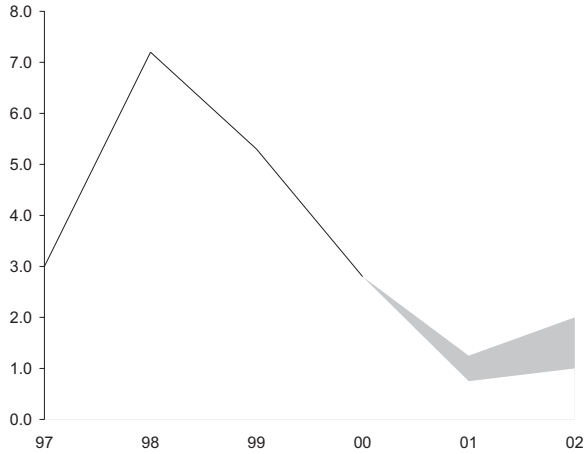
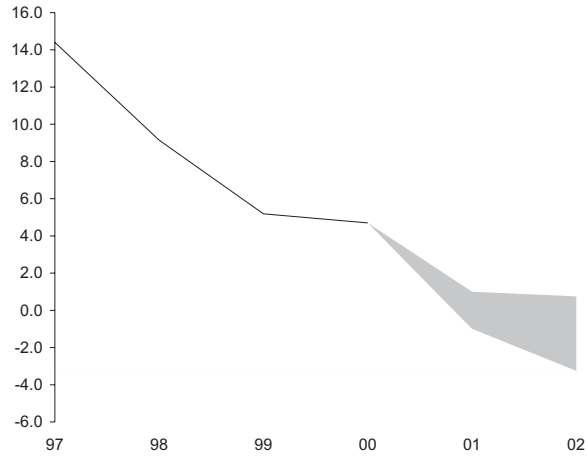


Chart 5
GROSS FIXED CAPITAL FORMATION
Year-on-year percentage rates of change



In turn, Gross Fixed Capital Formation may register a negative growth rate in 2002 (ranging between -3¼ and ¾ per cent), after a virtually null growth estimated for 2001 and an increase of 4.7 per cent in 2000 (see Chart 5). The developments projected for investment in 2002 are mainly explained by its private component, whose contraction will be sufficiently strong to offset, on the one hand, the unwinding of some specific effects that affected negatively this variable in 2001 (in particular the heavy rainfalls in the first quarter and the effects of the changes introduced in the motor ve-

hicle tax in the investment in transport equipment) and, on the other, the acceleration assumed for public investment in 2002 (associated with the assumption of a recovery of public transfers from the European Union).

The developments projected for private investment in 2002 include, in real terms, a reduction in business investment and a near stabilisation of investment in housing. Persists, therefore, the trend of significant deceleration of these components observed since the second quarter of 2000. It should be noted that business investment is typically the expenditure component that presents the highest cyclical variability. Thus, less optimistic prospects on economic activity, the high level of indebtedness of corporations, as a result of the high investment rates recently observed, the increase in overall uncertainty related with the present stage of the economic cycle, aggravated by the apprehension triggered by terrorism, as well as the trend in stock prices since 2000, will likely contribute to a significant slowdown in business investment. Likewise, household investment in housing will tend to be conditioned by the less favourable economic climate and by the pressures of the debt burden associated with the strong pace of growth of these investments in recent years.

The real growth projected for exports of goods and services in 2002 ranges between 3 and 4½ per cent, after an estimate between 4¼ and 5¼ per cent for 2001. The technical assumptions described in Section 2 lead to a near stabilisation of external demand relevant for the Portuguese economy (2.3 per cent in 2001 and 2.2 per cent in 2002). The projections for exports of goods and services in 2002 have implicit a gain in the export market share, albeit lower than that estimated for 2001. Part of this gain in 2001 appears to have resulted from the correction of specific effects that had negatively affected exports in 2000, in particular the temporary reduction of exports of a large production unit in the motor vehicle sector.

The trend now projected for exports of goods and services represents a downward revision of this component for 2002 vis-à-vis that published in the June 2001 issue of the *Economic Bulletin*. The revision of approximately 2½ percentage points, however, is less pronounced than the revision of the assumption of external demand growth relevant for Portuguese economy in 2001 (approximately 4 percentage points). The present projections include more favourable developments in market shares that those assumed in the previous projections, which is accounted for by the buoyancy evidenced by exports in 2001, particularly in the clothing and footwear sectors. As mentioned in the September 2001 issue of the *Economic Bulletin*, the recent performance of the export market shares is likely associated with an interruption in the process involving the change in the location of export companies from the traditional sectors to other countries with cheaper labour costs and / or the redirection of sales to external markets in an environment of weakening domestic demand.

Chart 6
EXPORTS
Year-on-year percentage rates of change

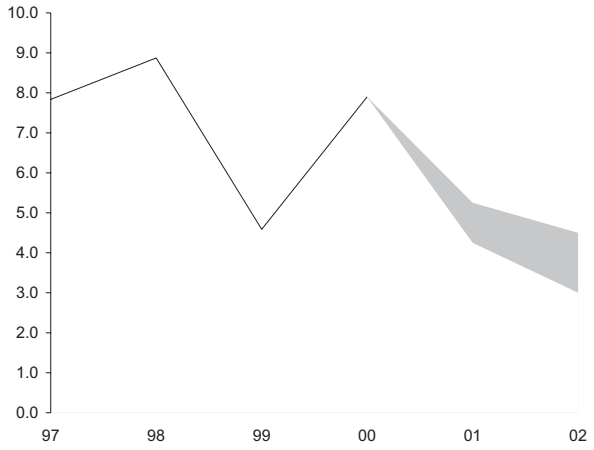
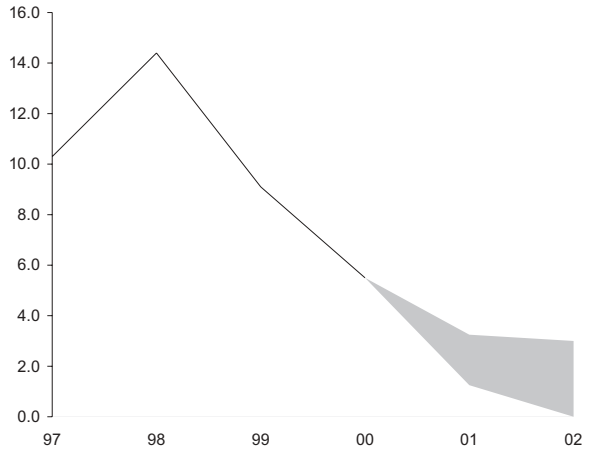


Chart 7
IMPORTS
Year-on-year percentage rates of change



Turning to imports of goods and services, the present projections point to a real growth in 2002 in a range from 0 to 3 per cent, after ranging between 1¼ and 3 ¼ in 2001 and 5.5 per cent in 2000 (see Chart 7). The slowdown in imports in 2002 reflects the deceleration of overall demand, particularly gross fixed capital formation and exports.

3.1.2. Current and capital accounts

In 2002, external borrowing requirements of the Portuguese economy are expected to decrease significantly. The joint balance of the current plus capital accounts will likely stand within -6¼ and -4¼ per cent of GDP, in 2002, compared with a range between -8¾ and -7¾, estimated for 2001. This trend seems to have been determined both by the narrowing of the current account deficit and by the widening of the capital account surplus, contributing by approximately 2/3 and 1/3, respectively, to the total change of the joint balance.

The projected widening of the capital account surplus is chiefly accounted for by the foreseeable recovery of capital transfers from the European Union, associated with the implementation of the Third Community Support Framework. This technical assumption, described in section 2 of the present article, is consistent with the trend assumed for the public component of investment.

The narrowing of the current account deficit, from 2001 to 2002, is almost fully determined by the reduction in the deficit of the goods and services account. This was, to a significant extent, accounted for by the joint developments of exports and imports, in real terms. This effect – usually mentioned in Banco de Portugal's publications as volume effect – is an important feature of the adjustment process of Portuguese economy, constituting a counterpart to the slowdown in domestic demand, particularly important for components with higher imported content. As mentioned in the latest September issue of the *Economic Bulletin*, the change in imported and exported volumes had already contributed to a narrowing of the deficit of the goods account in the first half of 2001. Moreover, the trend of the terms of trade – terms of trade effect – will be particularly relevant in 2002, contributing slightly more markedly than the volume effect to the narrowing of the deficit of the goods balance. This result reflects the technical assumptions on the trend of international prices and, in particular, the oil price.

The gradual narrowing of the joint deficit of the current plus capital accounts falls within the framework of the inevitable adjustment process of the Portuguese economy, associated with a slowdown in domestic demand and an increase in the savings rate to more sustainable levels than those observed in the late 1990's. The present projections for 2002 have implicit a significant reduction of private sector borrowing requirements, which is accounted for by the projected developments of investments and current savings of households and corporations.

3.2. Employment and wages

The macroeconomic developments projected for 2002 will probably lead to a decrease in pressures on the labour market, towards a lower degree of capacity utilisation and a moderation in the wage trend. This behaviour mainly reflects the fact that the labour market tends to respond with some lag to developments in the goods and services market.

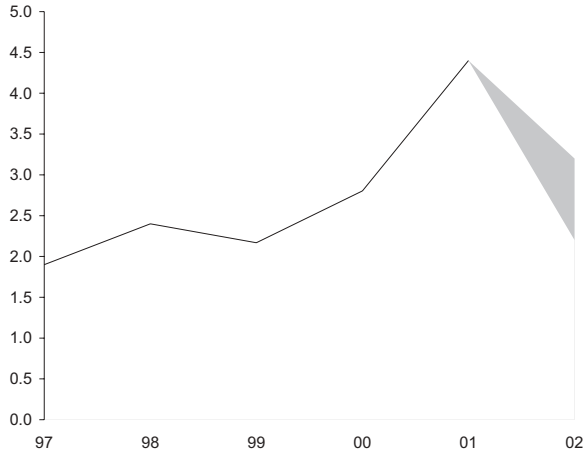
Against this background, the unemployment rate is expected to increase slightly in the course of 2002, after the very low levels observed in 2001. Thus, in the course of 2002, the unemployment rate will tend do move closer to the estimates available for the natural unemployment rate.(4) This trend in the unemployment rate is probably associated with a deceleration in employment, partly due to the technical assumption of null employment growth in the public sector. The growth of the labour force is expected to slow down, consistent with the cyclical situation of the economy, which will naturally imply lower incentives for labour participation.

In 2002, the effects of the slowdown in the Portuguese economy will likely lead to a reduction in the growth rate of wages, within the scope of a downward trend of inflation. As mentioned in the September issue of the *Economic Bulletin*, the Banco

(4) The natural rate, which is an estimate obtained with a high degree of uncertainty, is commonly known as the non-accelerating inflation rate of unemployment (NAIRU). Most estimates for the Portuguese labour market are in the 4.5-5.5 per cent range, accounting already for the break in the series occurred in 1998.

de Portugal's estimates indicate that nominal wages continued to register significant increases in 2001, of approximately 5½ per cent, a rate similar to that recorded in 2000. The update of the wage scale accelerated in 2001, while the differential between wages actually paid and negotiated wages seems to have remained at relatively high levels. In 2001, as it has been happening since 1998, the differential between the increase in total wages per employee and the change in productivity was positive again. The process of adjustment of the Portuguese economy requires the discontinuance of the cycle of high increases in real wages per employee not sustained by productivity increases. Projections for 2002 include wage developments that, at least regarding the recent past, are more in line with productivity gains.

Chart 8
HARMONISED INDEX OF CONSUMER PRICES
Year-on-year percentage rates of change



3.3. Inflation

According to the projections presented in Table 1, the annual rate of change of the HICP is expected to decrease from 4.4 per cent in 2001 to a range between 2.2 and 3.2 per cent in 2002, compared with a range between 2.1 and 3.1 per cent published in the June 2001 issue of the *Economic Bulletin* (see Chart 8).(5) In intra-annual terms, a reduction is expected in the year-on-year rate of change of the HICP throughout 2002, more concentrated on the first half of the year.

A set of explanatory factors, within the scope of the present projection exercise, contributes to the decline in inflation: the discontinuance of special effects on the HICP, developments in international prices and the less favourable prospects for economic growth in Portugal, against the background of a monetary policy suitable for the maintenance of price stability in the euro area as a whole.

As mentioned in previous issues of the *Economic Bulletin*, the trend of the HICP has been affected rather significantly by specific effects in some components of that index, particularly food and fuel prices.

In 2001, and similarly to developments in most European countries, the resurgence of news related to animal diseases, in particular BSE, translated into a significant increase in prices of beef substitutes. In the same vein, weather conditions were characterised by high rainfall indices in early 2001, leading to unusually significant increases in prices of other unprocessed food. The discontinuance of the effects of these price increases on the HICP, per se, leads to a downward trend in inflation.(6) It is important to note that the present forecast assumes that prices more directly affected by animal diseases have reached a new price threshold, and that a reversal to previous price levels is not expected.

The projected trend of inflation for 2002 is also accounted for, albeit in a less relevant manner, by the assumption that fuel prices remain unchanged over the forecast horizon at the levels observed in November 2001.

The trend of international prices – characterised by the technical assumptions described in section 2 – is an extremely important factor behind the decrease in the inflation rate. The projection of a more moderate trend of imports in 2002 is crucial in this exercise, reflecting simultaneously the downward trend of prices of commodities and of most investment and consumption goods. In addition to the effects of the overall slowdown of the world economy on the trend of international

(5) Contrary to the projection for 2001 presented in the June issue of the *Economic Bulletin* (Table 1), the projection then released for 2002 was not updated to consider latest data on prices of some foodstuffs.

(6) See box "The recent trend of unprocessed food prices: implications for inflation projections in 2001" in the June issue of the *Economic Bulletin*.

prices, the discontinuance of the lagged effects associated with the depreciation of the euro should also be mentioned.

The domestic conditions of the Portuguese economy will also probably contribute to a decline in inflation. In effect, the deceleration of domestic demand will moderate demand pressures on the goods and services market. In addition, the decline in the degree of capacity utilisation – determined by lower economic growth than in recent years – may lead to supply conditions favourable to the development of prices, both in the goods market and in the labour market.

4. ASSESSMENT OF RISK FACTORS

As previously mentioned, the projections in this article are based on a set of assumptions that reflect the information available in mid-November. There are, however, risks associated with their non-occurrence, which may determine different developments from those projected. These risks are particularly significant under the present circumstances, given the high uncertainty surrounding the international environment. This increase in uncertainty tends to be characteristic of turnaround stages of the economic cycle and has probably been intensified by the effects of the terrorist attacks in September 2001 on the confidence of economic agents.

Turning to the developments of economic activity, the major risk factor will be an international framework characterised by a smaller increase in economic activity than that assumed in this forecast exercise. Moreover, this risk, which had already been identified in previous forecast exercises, has been occurring through a successive deterioration of growth prospects for the world economy, contributing thus to the downward revisions of projections for the growth of the Portuguese economy. Actually, the statistical information made available after the close of the present forecast exercise has increased the possibility that this risk actually occurs. A situation of slower world economic growth would naturally translate into a lower increase in exports, GDP and employment in Portugal.

The behaviour of the general government introduces a risk of an opposite sign in the short term. In effect, recent information on the accounts of the general government may lead to an upward revision of public consumption in 2001 and, as a result, also of output. Should that happen, the assumptions assumed for the behaviour of public consumption in 2002 might have to be revised, since it would mean a longer delay in the budget consolidation process. Should this actually occur, this delay in the budget consolidation would lead to a higher increase in public expenditure in 2002, but would also imply a smaller increase in output over the coming years.

Turning to the prospects for the developments of consumer prices, the balance of risks points to a higher probability that inflation will stand in the upper half of the projection range for 2002. Indeed, despite the reduction in petrol prices in early January, which had not been considered in the exercise hypothesis and which, by itself, would have an impact of around -0.2 percentage point on the annual average growth of the HICP, developments in inflation at the year-end were worse than expected, implying an unfavourable carry-over effect. On the other hand, surprises arising from the actual introduction of the euro are not to be excluded, with some higher than expected price rises, which strengthens the need for authorities and consumer associations to keep vigilant. Besides, there is also the risk that wage growth may be higher than forecast. Indeed, the fact that the inflation rate at end-2001 remains at high figures may give rise to some effects on wage negotiations for 2002, when the economic slowdown effects on the unemployment rate will still not be clearly discernible.

Finally, the trend of oil prices in international markets is an important risk factor in this exercise. As a result of the recent decision, according to which oil price fluctuations will be reflected in consumer fuel prices, at least in part, deviations from inflation forecasts may arise in both directions. In addition, a trend of oil prices different from that expected will have carry-over effects on other variables, namely on the overall balance of the general government and in the joint balance of the current plus capital accounts.

5. CONCLUSION

The macroeconomic projections presented in this *Bulletin*, albeit expressing relatively low growth rates of GDP and of most expenditure aggregates when compared with previous years, are in line with the sustained development of gradual adjustment of some imbalances initiated in 2000. This adjustment may reduce the degree of vulnerability of the Portuguese economy vis-à-vis adverse shocks and create the conditions for sustained economic growth at the medium and the long term.

In spite of the significant slowdown in the international environment, the maintenance of a decelerating trend of domestic demand will make it possible to reduce the external deficit and, therefore, to reduce the pace of external indebtedness. Restrictions raised by the debt service of households and corporations, as a result of the high growth rates of indebtedness over recent years, the higher sensitivity to the economic cycle by the components of demand with a higher imported content, and the foreseeable improvement in terms of trade will make it possible to narrow significantly the deficit of the current and capital accounts.

Finally, a trend of wages more in line with productivity, a gradual narrowing of the budget deficit and a slowdown in private domestic demand continue to be imperative for the maintenance of the current trend of gradual adjustment of the Portuguese economy, preventing more significant impacts on future growth and unemployment.

Completed in December 2001, on the basis of a projection exercise using data available up to the cut-off date of 16 November 2001.

FROM EC ACCESSION TO EMU PARTICIPATION: THE PORTUGUESE DISINFLATION EXPERIENCE IN THE PERIOD 1984-1998*

*Marta Abreu***

1. INTRODUCTION

In the early 1980s the Portuguese economy was characterised by severe macroeconomic disequilibria, an uncompetitive industry structure, significant distortions in product and factor markets and a substantial weight of the public sector in productive activities, inherited from the 1974 Revolution. Monetary policy was based on capital controls, credit ceilings and administratively fixed interest rates. Financial markets were thin and the availability of financial instruments was rather limited. Financial institutions (essentially banks) were mostly state-owned, undercapitalised and inefficient. In practice the banking system was geared to financing huge public sector borrowing requirements. The Treasury benefited from important sources of privileged financing, including extensive recourse to central bank financing. Exchange rate policy followed a crawling-peg to preserve the competitiveness of Portuguese exporters with a view to containing high and persistent current account deficits(1). The country was caught in a vicious circle of devaluation and inflation.

In 1985, the year preceding EC accession, Portuguese real *per capita* income stood slightly above 50 per cent of the European Union (EU) average, reflecting the country's low productivity levels. The implementation of the 1983 IMF stabilisation package had brought the current account back into balance and had put inflation and the general government deficit on a declining path. However, inflation still ran at 20 per cent (14 percentage points (p.p.) above the EU average) and the general government net borrowing exceeded 10 per cent of GDP, more than twice the EU average (Table 1).

The poor economic performance of the 1970s and early 1980s had made it clear that macroeconomic stability and deep structural reform were necessary conditions for a sustainable convergence of the Portuguese real *per capita* income to the European level, and that a regime shift was warranted. Accession to the European Community (EC) underlined the authorities' commitment to such a regime shift and provided the right incentives for the necessary changes.

The general economic situation has strongly improved since EC accession. Nominal stabilisation and a rapid catching-up have taken place, reflecting the increased competition from integration in the Community market, the implementation of broadly appropriate macroeconomic and struc-

* The views expressed in this article are those of the author and not necessarily those of the Banco de Portugal. I am grateful for the comments and suggestions by Vítor Gaspar, Ana Cristina Leal, Pedro Duarte Neves, Sónia Cabral, Sónia Costa, Jorge Correia da Cunha, Carlos Robalo Marques, Paulo Esteves and Isabel Gameiro which have greatly contributed to improve this paper. The usual disclaimer applies.

** Economic Research Department

(1) In less than a decade, the country suffered two balance of payments crises which led to the negotiation of stabilisation agreements with the IMF in 1978 and 1983. The crawling peg was introduced in August 1977 (i.e. a few months before the negotiation of the first IMF stabilisation package), in the context of severe balance of payments difficulties. It consisted of a pre-announced monthly depreciation rate of the escudo vis-à-vis a basket of 13 currencies. Between 1978 and 1983, four discrete devaluations (May 1978, June 1982, March 1983, June 1983) and one discrete revaluation (February 1980) have also taken place.

Table 1

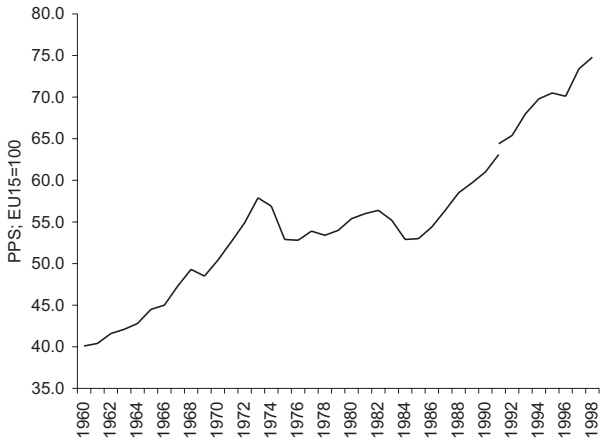
PORTUGAL AND EU15 – SELECTED ECONOMIC INDICATORS

	1985		1991		1998	
	Portugal	EU15	Portugal	EU15	Portugal	EU15
GDP per head (PPS; EU15=100)	53	100	64.4[a]	100	74.8	100
Real GDP (% change)	2.8	2.6	2.3	1.7	3.5	2.7
Inflation (private consumption deflator)	19.4	5.9	12.2	5.8	1.8	1.7
Unemployment (%)	8.7	10	4	8.1	5.2	9.9
Current Account (% of GDP)	0.5	0.5	-0.9	-1.2	-4.7[b]	0.9
General Government net borrowing (% of GDP)[c]	10.3	4.5	5.9	4.2	2.1	1.5
General Government debt (% of GDP)[d]	68	53.6	65.9	55.2	56.5	69

Source: European Commission and Banco de Portugal.
Notes:
(a) Series break in 1991 due to the inclusion of Eastern Germany.
(b) Series break in 1996. Figure for 1998 includes capital transfers for comparability with previous years.
(c) Data for 1985 and 1991 according to ESA 79. Data for 1998 according to ESA 95.
(d) Maastricht definition. GDP for 1998 according to ESA 95.

Chart 1

PORTUGAL – GDP PER HEAD OF POPULATION



Source: European Commission.

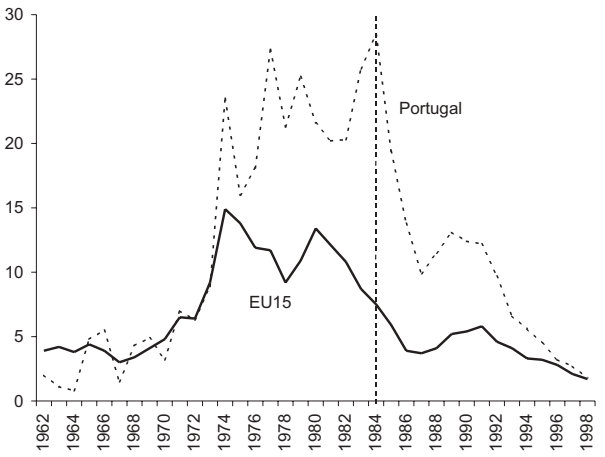
tural policies and EC financial support. GDP per head, expressed in purchasing power parities, increased to about 75 per cent of the EU average in 1998 (Chart 1). Inflation was brought down to levels broadly compatible with price stability and the differential against the EU virtually disappeared. The general government net borrowing was reduced to below the 3 per cent of GDP Maastricht reference value, and the public debt ratio was brought down to below the EU average. Significant progress towards nominal convergence allowed Portugal to meet the conditions for participation in Economic and Monetary Union (EMU) as from January 1999, and thus to be one of the eleven founding members of the euro area.

This paper discusses one of the pillars of the Portuguese convergence process, i.e., the disinflation experience. Section 2 presents a brief overview of the disinflation process. Given that exchange rate stability was at the heart of the disinflation strategy, section 3 describes the monetary and exchange rate policy in Portugal from Community accession to EMU membership. Section 4 discusses disinflation costs. It will be argued that these appear to have been rather low, or non-existent. Section 5 concludes.

2. OVERVIEW OF THE DISINFLATION PROCESS

At the time of accession to the European Community, Portugal recorded the second highest inflation rate amongst EC Member-States (only surpassed by Greece), and the differential against the EC average stood at about 14 p.p. Inflation, which had peaked at almost 30 per cent in 1984, declined to about 2 per cent in 1997-98, a level generally considered as broadly compatible with price stability. At the same time, the differential against the Community average was virtually eliminated. Disinflation was not an even process, however. After a very rapid decline between 1984 and 1987, inflation resumed an upward trend in 1988-90. A

Chart 2
DEFLATOR OF PRIVATE CONSUMPTION



Source: European Commission.

steady deceleration of prices has then taken place up to 1997/98 (Chart 2).

As from the mid-1980s disinflation has become a major goal of economic policy.(2) To ensure a permanent decline of inflation, exchange rate policy became progressively less accommodating,(3) so as to break the vicious circle of inflation-devaluation without putting the sustainability of external accounts into question. In addition, economic agents were encouraged to set nominal wages on the basis of expected (rather than past) price increases. Inflation, measured by the average rate of change of the consumer price index (CPI), declined from 29.3 per cent in 1984 to 9.3 per cent in 1987. In this period, inflation in both the tradable and the non-tradable goods sectors moved closely together. The slack which emerged following the implementation of the 1983 IMF stabilisation package, coupled with favourable international price developments in the mid-1980s, allowed a substantial deceleration of prices to take place in the context of strong GDP growth (Chart 3A).

In 1988, as the economy moved into a state of overheating and international price developments turned less favourable, inflation resumed an upward trend, with average CPI inflation increasing to 13.4 per cent in 1990. The setback in the disinflation process reflected the acceleration of import prices, an unfavourable agricultural year in 1988 and tight labour market conditions. Accordingly, an acceleration of both tradable and non-tradable goods prices has taken place (Chart 3B). After falling by 9.1 per cent in 1986, the goods and services import deflator increased by an average of 7.0 per cent a year between 1987 and 1989 (Chart 3C). In turn, as the unemployment rate reached levels clearly below estimates of the Portuguese NAIRU,(4) unit labour costs accelerated from 7.6 in 1988 to 18.6 in 1991 (Chart 3D). In this period, the pre-announced rate of depreciation of the escudo continued to be cut down in spite of the acceleration of prices, and the escudo started appreciating in real terms. Reflecting the non-accommodating exchange rate policy, tradables prices resumed a decelerating trend in 1990, whereas non-tradables inflation kept edging up in a context of significant wage pressure and an increasingly unbalanced policy-mix. As a result, the differential between non-tradables and tradables inflation widened significantly, peaking at 10.1 p.p. in 1990.

A monetary policy strategy based on exchange rate stability as an intermediate target to reach the final goal of price stability was progressively adopted. In October 1990 the crawling-peg regime was abandoned, and eighteen months later the escudo joined the exchange rate mechanism (ERM) of the European Monetary System (EMS) (Chart 4). After being devalued in the context of the ERM crisis of 1992-93, the nominal exchange rate was

(2) See the 10th Constitutional Government's Programme, dated November 1985 (*Diário da Assembleia da República,* II *série* no.4, 16/11/1985).

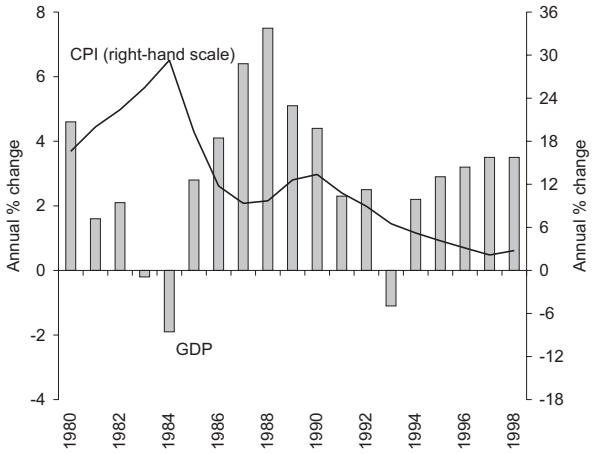
(3) In addition to being an effective tool to promote decline of inflation, the exchange-rate based disinflation strategy also fostered an adequate environment for sustainable economic development. Indeed, while the real depreciation of the currency maintained competitiveness through a deterioration of real wages (favouring a specialisation in low value added activities), a non-accommodating exchange rate policy provided the right incentives to exporters (by making them aware that competitiveness would have to rely on qualitative factors such as innovation, product differentiation, improved management techniques).

(4) See Botas, Marques and Neves (1998). Estimates of the Portuguese NAIRU point to values in the range 5.5 to 6.0 per cent. These values should not be extrapolated to the current date. In 1998, the Employment Survey of the *Instituto Nacional de Estatística* underwent important methodological changes, in the context of the adoption of Eurostat guidelines towards greater statistical harmonisation. These changes resulted into a statistical break in 1997-98, with an estimated magnitude of 0.75 to 1 percentage points. Taking the statistical break into account, NAIRU estimates should be updated to the range of 4.5-5.0 per cent.

Chart 3

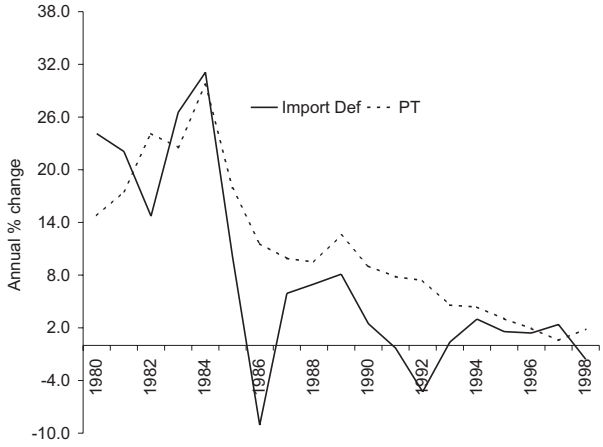
THE PORTUGUESE DISINFLATION PROCESS – 1984-1998

A – Inflation and real GDP growth



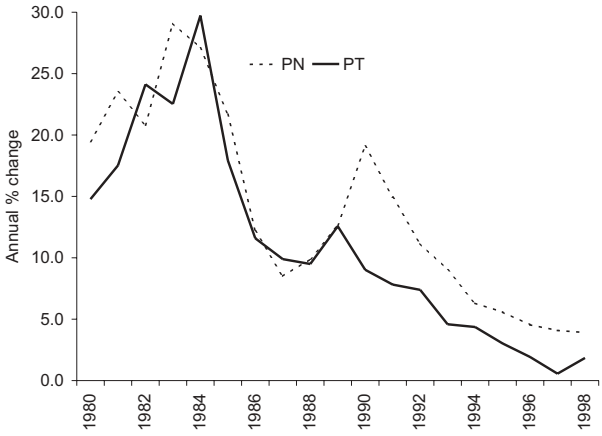
Sources: *INE* and European Commission.

C – Deflator of imports and tradables prices



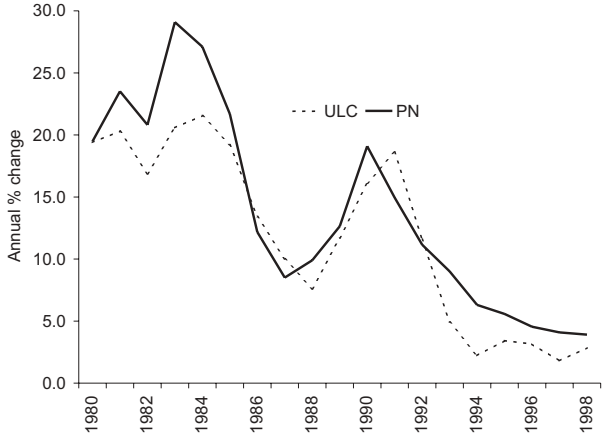
Sources: European Commission and Banco de Portugal.

B – Tradables and non-tradables inflation



Sources: *INE* and Banco de Portugal.

D – Nominal ULC and non-tradables prices

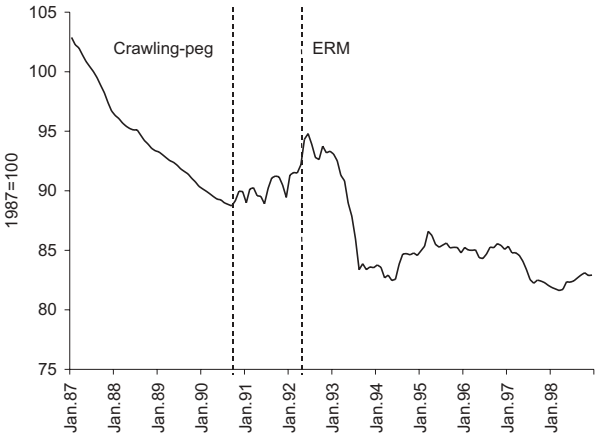


Sources: European Commission and Banco de Portugal.

kept broadly stable since mid-1993 to 1998. Consistent with their announced strategy, the authorities did not to make use of the enlarged room for manoeuvre provided by the enlarged ERM bands, and official interest rates were adjusted in a manner consistent with the maintenance of exchange rate stability.

Inflation followed a continuous downward trend in the period 1991-97, with CPI inflation reaching 2.2 per cent 1997. The emergence of a negative output gap in 1993 and the subsequent increase of unemployment fostered wage moderation, contributing to a steady deceleration of non-tradable goods prices. Nominal unit labour costs decelerated to 2.2 per cent in 1994, and remained relatively moderate up to 1998. The monetary and exchange rate policy pursued since the early-1990s was key in containing inflation expectations throughout the decade, particularly when the economy re-bounded as from the mid-1990s. Portugal was in a position to comply with the price stability criterion for EMU participation since July 1997.

Chart 4
NOMINAL EFFECTIVE EXCHANGE RATE OF THE ESCUDO
Monthly averages; Jan.-87 to Dec.-98;



Source: Banco de Portugal.

Chart 5
PORTUGAL – REAL EFFECTIVE EXCHANGE RATE
Deflated by relative CPIs

Sources: OECD; *INE* and *Banco de Portugal.*

3. MONETARY AND EXCHANGE RATE POLICY IN 1986-1998

This section describes the monetary and exchange rate policy developments in Portugal from EC accession to EMU participation.(5) The section is divided into two parts. The first sub-section covers the period from EC accession in 1986 to early 1992, when the escudo joined the ERM. In this period economic policy was driven by the need to implement the Single Market programme and the *acquis communautaire*. The second sub-section covers the period 1992-1998, i.e., the period from the agreement on the Maastricht Treaty to the start of monetary union. In this period ensuring compliance with the convergence criteria for EMU participation was the immediate priority of economic policy. This corresponds also to the period of ERM membership.

3.1. From EC Accession to the Maastricht Treaty (1986-1991)

In the mid-1980s disinflation became the main goal of monetary and exchange rate policy, and the exchange rate was chosen as the main instrument of the disinflation strategy. The monthly rate of depreciation of the escudo was successively cut down in the period from 1986 to 1990, even when inflation temporarily rebounded in 1988-90. In contrast to the previous decade, the inflation differential between Portugal and its main trading partners was no longer fully compensated, and the escudo appreciated in real terms as from 1987 (Chart 5).

After a very substantial decline in 1984-87, inflation resumed an upward trend in 1988-90.(6) The rebound in the inflation rate and the concomitant increase in the inflation differential against the Community average, at a time when exchange rate policy had turned less accommodating have taken the authorities by surprise. Indeed, in the previous decade the behaviour of inflation in Portugal

(5) Although the focus here is on monetary and exchange rate policy, and most notably its role in the disinflation strategy, it is important to emphasise that changes to the monetary and exchange rate policy framework were part of a coherent package which also included financial sector reform and the consolidation of public finances. It is also worth noting that the timing and the sequencing of the various reforms is relevant. In particular, and as far as the Portuguese experience is concerned, steady fiscal adjustment was a pre-requisite for financial reform and the gradual elimination of central bank financing of the public sector. Indeed, without a substantial reduction of the public sector borrowing requirement, the move to financing at market-determined rates would have translated into an explosive budget deficit. See OCDE (1999) and Borges (1991b).

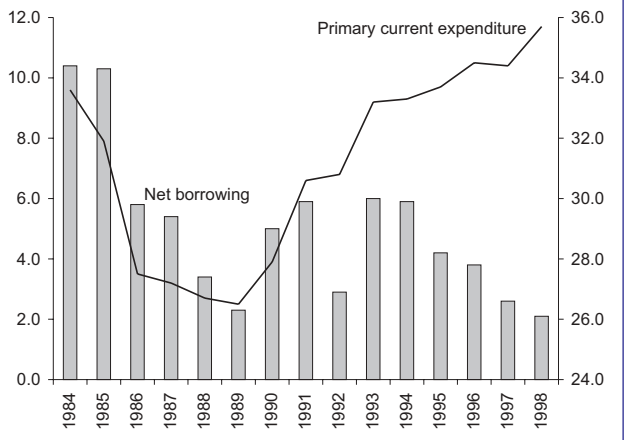
(6) Over this period, year-on-year inflation increased from (a minimum of) 8.0 per cent in April 1988, to (a maximum of) 14.4 per cent in October 1990.

seemed to be well explained by the (relative version of the) Purchasing Power Parity theory.(7)

As noted in section 2 above, an acceleration of both tradables and non-tradables prices has initially taken place. However, while tradables inflation resumed a declining trend as from mid-1989, non-tradables prices kept on accelerating until late 1990.(8) As a result, a substantial inflation differential between both sectors emerged, leading to a marked increase of the relative price of non-tradables. To the extent that this increasing differential reflected strong productivity gains in the tradable goods sector there was no cause for concern (see Section 4 below). However, signs of an increasingly overheated economy were also becoming apparent. The closing of the output gap and the deterioration of the trade balance in the late 1980s, as well as the decline in unemployment and the acceleration of unit labour costs, signalled that domestic production was limited by capacity constraints and a tight labour market. The rebound in the inflation rate, and in particular the strong acceleration of prices in the sheltered sector, added to the signs of overheating.

An increasingly unbalanced policy-mix exacerbated excess demand in the economy in the early 1990s. While a significant decline in the general government deficit and an improvement of the cyclically-adjusted primary balance have taken place up to 1989, the early 1990s witnessed a reversal in fiscal consolidation (Chart 6). The latter was initially caused by a sharp increase in the ratio of primary public expenditure in a context of favourable cyclical conditions, which translated into a significant deterioration of both the actual and cyclically-adjusted primary balances.(9)

Chart 6
GG NET BORROWING AND PRIMARY CURRENT EXPENDITURE
Percentage of GDP; ESA-95 in 1995-98



Source: European Commission.

In the monetary front, as capital movement liberalization was being progressively implemented, the authorities tried to control aggregate demand through a tight monetary policy without allowing for an excessive real appreciation of the escudo. This resulted in a vicious circle, which came to be known as the *monetary policy dilemma*: high domestic interest rates coupled with a tightly managed (and thus highly predictable) exchange rate in the context of the crawling-peg regime fostered strong (in particular short-term) capital inflows, raising serious difficulties to the management of domestic liquidity.(10)

The interruption of the disinflation process and the difficulties in controlling domestic liquidity prompted profound changes in the monetary and exchange rate policy framework. Credit ceilings, which had become ineffective, were abolished in March 1990, a new system of reserve requirements was put in place in May 1990, and a major liquidity absorption operation was carried out in December 1990 and March 1991 to mop up the excess

(7) According to Barosa and Cunha (1989), Portuguese inflation behaved in accordance with the (rate form of the) PPP relationship in the period 1976-1987. In a later study, the same authors show that the PPP relationship has been broken in late 1987 (see Barosa and Cunha (1990)).

(8) Tradable goods prices accelerated from below 7 per cent in May 1988 to over 13 per cent in January 1989, whereas non-tradable goods inflation increased from around 8 per cent in early 1998 to over 20 per cent in late 1990.

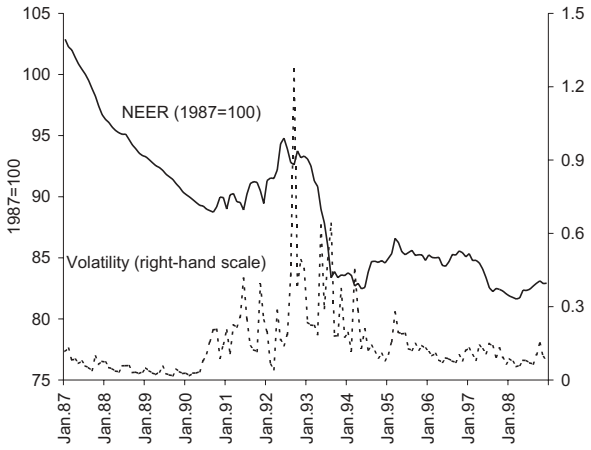
(9) The ratio of primary current expenditure to GDP increased from 26.5 per cent in 1989 to 30.6 per cent in 1991. Over the same period, the cumulative deterioration of the ciclically-adjusted primary balance amounted to almost 3 percentage points of GDP. For a detailed account of fiscal policy in the period 1986-1994, see Cunha and Neves (1995).

(10) It is a well-documented result in economics that one cannot have at the same time free capital movements, an exchange rate target and an autonomous monetary policy. Indeed, in a context of financial integration, markets ensure the equalization of expected returns from assets denominated in different currencies. Accordingly, the domestic interest rate reflects the foreign interest rate and the expected depreciation of the currency.

liquidity created under the system of credit ceilings. In addition, a new central bank law was introduced in October 1990[11], imposing limits to the monetary financing of budget deficits.[12] Interest rates had already been progressively liberalized in the second half of the 1980s.[13] A system of indirect, market-based monetary management was thus implemented.[14]

The crawling-peg regime was abandoned in October 1990. At the time, the monthly rate of depreciation against a basket of thirteen currencies stood at 0.25 per cent. The aim of the exchange rate regime shift was two-fold. First, the authorities wished to introduce some short-term unpredictability in the exchange rate of the escudo in order to discourage (short-term) capital inflows. Secondly, the new regime should prepare the country for future participation in the ERM. Against this background, the objective of a 3.0 per cent depreciation was initially kept, but over an undefined horizon (i.e., in the short term the escudo would be allowed to fluctuate within a non-announced band). In addition, the reference basket against which the escudo was measured was changed to a basket of five ERM currencies.[15] In parallel, the authorities tried to insulate the domestic market through a temporary re-imposition of controls on the inflow of capital. A compulsory non-remunerated deposit amounting to 40.0 per cent of foreign borrowing was introduced in July 1990 and, one year later, restrictions were re-imposed on the purchase of floating-rate Portuguese securities by non-residents.

Chart 7
NOMINAL EFFECTIVE EXCHANGE RATE OF THE ESCUDO
Monthly averages; Jan.-87 to Mar.-92



Source: Banco de Portugal.
Note: Volatility measured as monthly standard deviation of daily changes.

The depreciation objective was gradually replaced by a policy of "stability of the escudo". In the 18-month period from October 1990 – when the crawling peg was abandoned – and March 1992 – just before ERM entry –, the escudo appreciated by 2.6 percent in nominal effective terms (Chart 7), and by a similar magnitude against the D-mark. Given the still substantial inflation differential against the EU average, the (CPI-based) real effective exchange rate appreciated by about 15 per cent between 1990 and 1992.

Changes to the monetary and exchange rate policy framework failed to put an end to the mon-

(11) See "*Lei Orgânica do Banco de Portugal*" (Decree-Law no. 337/90 of 30 October, *Diário da República*, I série, nº251, 30.10.1990).

(12) In practice, monetary financing had been considerably reduced since the mid-1980s, reflecting the rapid decline of the general government borrowing requirement, as well as an increasing willingness on the part of the Treasury to obtain financing in the capital market. Formally, the 1990 Central Bank Law still provided for two important exceptions to the prohibition of monetary financing: an overdraft facility (worth 10 per cent of government revenue) and the underwritting of Treasury Bills by the Banco de Portugal (subject to conditions negotiated between the Bank and the Treasury). No use was made of the possibility of underwritting Treasury Bills since 1991. The interest-free overdraft facility was abolished in December 1992, with the amount outstanding being converted into a non-marketable 10-year loan bearing a 1.3 per cent interest rate that would gradually converge to market rates. Since January 1994 (when the Second Stage of EMU started), the prohibition of monetary financing applies to all EU countries.

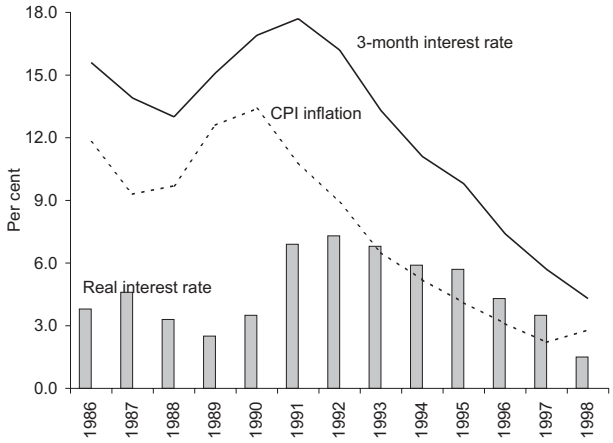
(13) A maximum rate on demand deposits and a minimum rate on six-month deposits remained in place from March 1989 to May 1992.

(14) The monetary policy framework which in the early 1990s emerged from the introduction of market-based monetary management was broadly similar to the one prevailing in most other EU countries, and to the monetary policy framework which would later on be adopted by the ECB. Banks were subject to reserve requirements and liquidity was provided through open market operations. The interest rate applying to these operations signalled the stance of monetary policy and steered the very short term money market rates. Standing facilities for the provision and absorption of liquidity were available in 1993-94. The interest rates applying to these facilities set a corridor within which money market rates fluctuated.

(15) These currencies were the D-mark, Sterling, the French franc, the Italian lira and the Spanish peseta.

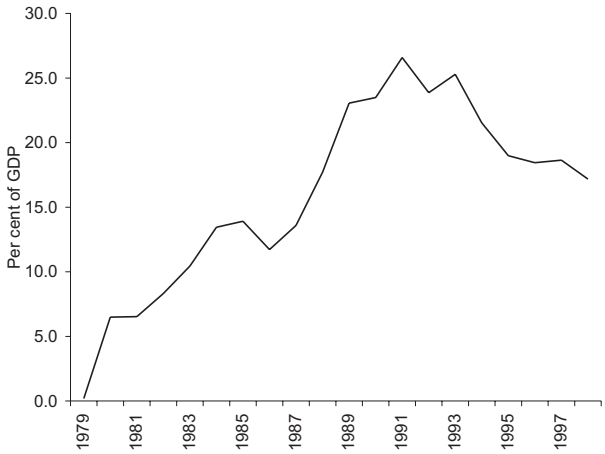
etary policy dilemma because the authorities tried to keep nominal interest rates at a high level in order to fight inflation (Chart 8) but, at the same time, continued to resist the pressure towards nominal appreciation of the escudo out of fear of harming competitiveness. As domestic interest rates were raised to curb excessive demand growth, the positive interest rate differential attracted substantial (in particular short term) capital inflows from abroad, putting upward pressure on the exchange rate of the escudo. This was a period of strong optimism in international financial markets. Risk were low and the escudo, like the higher-yielding ERM currencies, was the object of "convergence plays" (see section 3.2 below). The Banco de Portugal intervened in the foreign exchange market by selling escudos in order to prevent an excessive appreciation of the exchange rate which could harm competitiveness. Foreign exchange market intervention increased domestic liquidity and put downward pressure on domestic interest rates. The Banco de Portugal then tried to dry up the excess liquidity through open-market operations in order to keep interest rates high, again stimulating capital inflows. Since the currency was seen as a "one way bet", administrative restrictions proved rather ineffective to contain capital inflows and net foreign assets peaked at over 25 per cent of GDP in 1991 (Chart 9). Nevertheless, the difficulties in controlling liquidity did not prevent the beginning of a sustained process of disinflation. During this period of "limited floating", the year-on-year CPI inflation declined from over 14 per cent to below 9 per cent

Chart 8
PORTUGAL – INTEREST RATES AND INFLATION



Sources: European Economy and *INE*.

Chart 9
PORTUGAL – NET FOREIGN ASSETS



Source: Banco de Portugal.

3.2. The ERM experience (1992-1998)

In April 1992, the escudo joined the exchange rate mechanism of the European Monetary System with a fluctuation band of +6.0 per cent.(16) For a small open economy, exchange rate stability vis-à-vis a set of currencies with a high degree of nominal stability is a powerful means to reach price stability in the medium-run. ERM membership underlined the authorities' commitment to the pursuit of a non-accommodating exchange rate policy, and was therefore expected to have a favourable impact on inflation expectations. Membership was also a necessary step to ensure that the country would be a candidate for participation in Economic and Monetary Union.

After joining the ERM, the escudo became the strongest currency in the parity grid, and reached the ceiling against the weakest currency in the system, which at the time was the British Pound. These were still the times of the "hard EMS" and of "convergence palys".(17) Strong performance in the band placed downward pressure on domestic interest rates, at a time when year-on-year inflation was edging up again, due to an increase in in-

(16) The ECU central rate was set at about 1.4 per cent below the market rate prevailing at the time.

direct taxes.[18] In August 1992, the Government announced that all remaining capital controls would be gradually abolished until the end of the year. This announcement was accompanied by a significant decline in official interest rates in order to prevent disturbing capital inflows from increasing further. The repo rate declined by 2 p.p. (from 18 to 16 per cent) in the three and half month period between ERM entry and mid-August (when full capital account liberalisation was announced). The decision to fully liberalise capital movements virtually eliminated the room for manoeuvre of domestic monetary policy, as official interest rates had to be used to ensure that the exchange rate was kept within the ERM fluctuation bands.

In spite of a promising start, the first year of ERM participation was not an easy one. The escudo started to fall to the lower half of its fluctuation band, reflecting a combination of external and domestic factors. First and foremost, the loss of credibility of the ERM in the wake of the Danish referendum on the Maastricht Treaty in June 1992 translated into a significant increase of the risk premia of the currencies from countries with the worst stability track-records. "Convergence plays" ended abruptly causing a massive shift out of those currencies. Secondly, the temporary increase in inflation, coupled with the marked decline of interest rates following the announcement of full capital movement liberalisation, created an increasing perception of incompatible policy requirements in the domestic and the external front.

The escudo was thus caught in the turmoil which affected the ERM in 1992-93, and which led to the widening of the ERM fluctuation bands to ±15.0 per cent in August 1993.[19] During this period, the escudo was devalued twice (Chart 10A). After resisting a speculative attack in September 1992 – when the central rate of the Spanish peseta was devalued by 5.0 per cent and the Italian lira and British pound suspended their intervention obligations within the ERM –, the central rate of the Portuguese escudo was devalued by 6.0 per cent in November 1992, and by 6.5 per cent in May 1993. These adjustments have taken place in the context of realignment requests by the Spanish authorities, i.e. the realignments were not initiated by the Portuguese authorities, and in fact the escudo was not under particularly strong pressure in either occasion. However, the devaluation of the peseta (by 6.0 and 8.0 per cent, respectively) changed the conditions which had determined the choice of the central parity of the escudo. In particular, the loss of competitiveness vis-à-vis Spain (one of Portugal's main trading partners a a major competitor in third markets) that would occur if the escudo were not devalued along with the peseta could have been very hard to sustain, particularly at a time when the credibility of the ERM was severely damaged and domestic fundamentals were deteriorating fast. Indeed, the period of rapid economic expansion was coming to an end, and a significant slowdown of real GDP growth led to a recession in 1993.

In spite of deteriorating domestic conditions, the Portuguese authorities did not exploit the increased room for manoeuvre provided by the enlarged ERM fluctuation margins, so that official interest rates were adjusted in a manner consistent with the maintenance of exchange rate stability (Charts 10A to 10D). In the aftermath of the Mexico crisis (December 1994) tensions re-emerged in the ERM. On 6 March 1995 the central rate of the peseta was devalued by 7.0 per cent. On the same occasion, the central parity of the escudo was adjusted by 3.5 per cent, so as to bring it in line with market rates prevailing since August 1993. This was the third and last realignment of the central rate of the escudo during its ERM membership. This adjustment did not compromise the goal of exchange rate stability.

Perhaps somewhat surprisingly, the depreciation of the nominal exchange rate in late 1992 and early 1993 did not prevent the gradual and continuous decline of the inflation rate. The fact that the devaluations of the escudo were probably not per-

(17) The absence of realignments in the EMS since 1987 and increasing prospects regarding the creation of a monetary union in Europe fostered large capital inflows into the higher-yielding ERM currencies. Investors believed that all ERM countries were on a sustainable convergence path towards monetary union, so that interest rate differentials in favour of the higher yielding currencies significantly overestimated the actual risk of exchange rate depreciation. This phenomenon came to be known as "the convergence play". See IMF(1993).

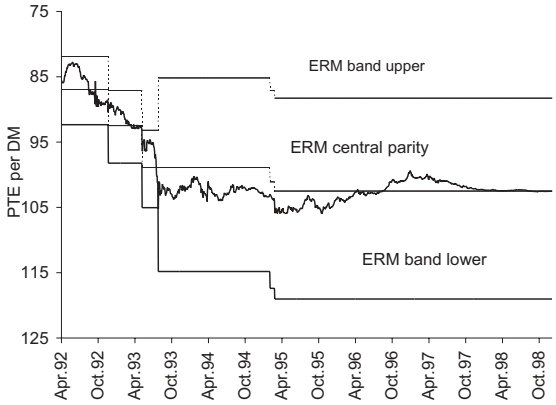
(18) The year-on-year CPI inflation increased from 8.0 per cent in February 1992 to 9.5 per cent in June 1992, resuming a declining trend thereafter.

(19) On the ERM crisis and the reaction of the Portuguese authorities see Banco de Portugal, *Annual Report* 1992 and 1993; Bento and Gaspar (1993); and Bento (1995).

Chart 10

THE ERM EXPERIENCE: APRIL 1992 -DECEMBER 1998

A – DM / PTE exchange rate

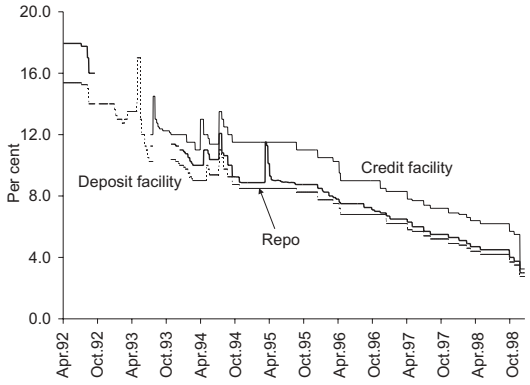


Source: Banco de Portugal.

B – Escudo's effective exchange rate

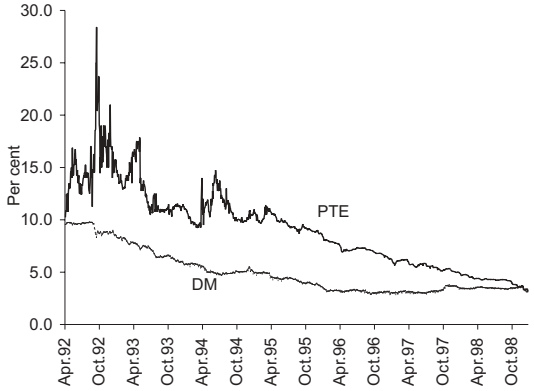
Source: Banco de Portugal.

C – Banco de Portugal intervention rates



Source: Banco de Portugal.

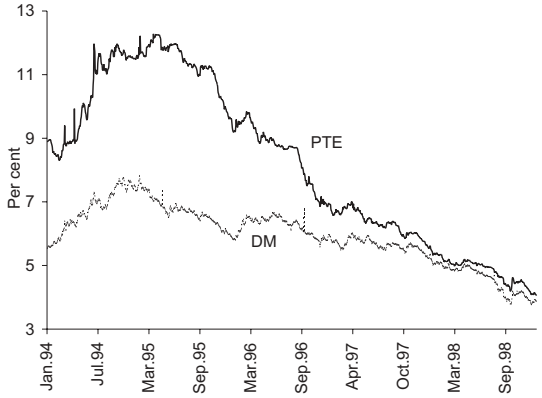
D – Short-term interest rates – 3-month euro-market rates



Source: Reuters.

E – Long-term interest rates

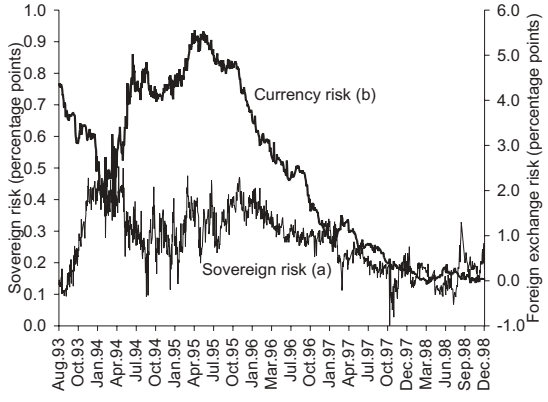
10 years; from 1 Jan. 1994 to 31 Dec. 1998



Source: Reuters.

F – Portugal - Sovereign and currency risk

Risk vis-à-vis Germany



Source: Banco de Portugal.

Notes:(a) Interest rate differential between a Portuguese bond denominated in DM and a German bond for a similar maturity.

(b) Interest rate differential between Portuguese bonds denominated in PTE and in DM, for the same maturity.

ceived as a regime shift, together with the emergence of a negative output gap in 1993, are likely to have contained the transmission of the exchange rate depreciation to domestic prices. The increase in the unemployment rate in 1993-95 fostered wage moderation, contributing to a sustained deceleration of non-tradables prices.[20] When the economy re-bounded as from the mid-1990s, the successful preservation of exchange rate stability since mid-1993 anchored inflation expectations, preventing a re-acceleration of prices. Inflation declined from over 9 per cent in mid-1992 to about 2 per cent in end-1997.

The stability of the nominal exchange rate since mid-1993 and the continuous decline of the inflation rate since the early 1990s, allowed a sustained and significant reduction of both short- and long-term nominal interest rates. Average long-term interest rates declined from a peak of 12.2 per cent in April 1995 to 4.1 per cent in December 1998 (Chart 10E). During the same period the long-term interest rate differential against the D-mark narrowed from over 5 p.p. to about 0.3 p.p. At a certain point in time, a virtuous circle between nominal convergence and the prospect of EMU participation started to emerge. Progress towards nominal convergence increased the likelihood of Portugal meeting the convergence criteria for EMU participation, whereas, at the same time, increased prospects of EMU participation facilitated exchange rate stability, the convergence of interest rates to the lowest levels in the EU and the improvement of the budget balance.[21] This virtuous circle is reflected in the substantial decline of the foreign exchange risk premium as from mid-1995 (Chart 10F).

(20) This is not to say that the nominal depreciation of the escudo had no impact on the exchange rate. Initially the impact of the depreciation on prices was probably masked by favourable base effects related to the unwinding of the impact on the inflation rate of the VAT increase in the first quarter of 1992. However, as from mid-1993 a temporary acceleration of tradable goods prices is clearly evident (the year-on-year rate of change of tradable goods prices increased from 3.4 per cent in June 1993 to 5.3 per cent one year later). The decline of average CPI inflation from 6.5 per cent in 1993 to 5.2 per cent in 1994 can basically be attributed to the deceleration of non-tradable goods prices from 9.0 to 6.3 per cent. Tradables inflation remained virtually unchanged over this period (4.6 per cent in 1993 and 4.4 per cent in 1994).

4. ASSESSING THE COSTS OF DISINFLATION

There is now a widespread recognition that inflation and uncertainty about future inflation negatively affect the level of welfare in the economy.[22] However, while the medium to long-run benefits of a disinflation programme are beyond question, a disinflation process is often associated with a temporary increase in unemployment and a loss of output, reflecting the short-term trade-off between inflation and employment (and output).[23] As a result of hysteresis, short-run costs may persist over the medium term, particularly in the labour market. Such costs may affect the willingness of the policy authorities to pursue a consistent disinflation strategy.

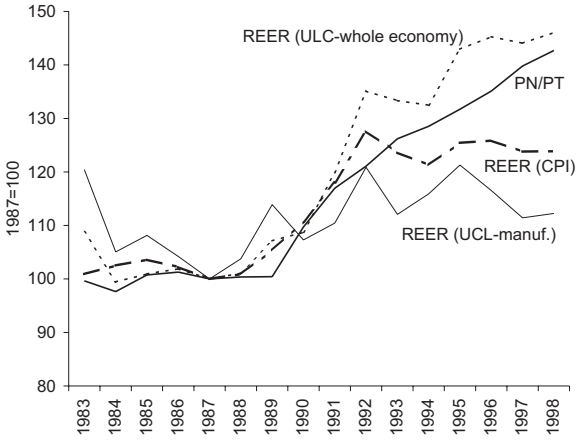
(21) As noted in section 2.1 above, after significant improvements in the second half of the 1980s, the process of budgetary consolidation suffered a serious reversal in the early 1990s. The setback in fiscal consolidation reflected an expansionary fiscal policy in 1990-91, the sharp downturn of the economy in 1993 and severe tax collection problems following the elimination of border controls within the European Union in January 1993. A steady improvement of the budget balance was achieved from 1994 onwards. The deficit to GDP ratio was continuously brought down from over 6.0 per cent of GDP in 1993, to 2.1 per cent of GDP in 1998. After peaking at 65.9 per cent of GDP in 1995, the debt ratio declined to 60.0 per cent of GDP in 1998. In 1997 Portugal was no longer in an excessive deficit situation. The Council decision on the existence of an excessive deficit in Portugal was abrogated in May 1998, ensuring compliance with the EMU criterion on the sustainability of public finances. It should be noted, however, that the improvement of the deficit ratio was achieved as a result of the decline of the interest burden. In fact, over the period 1995-1998, both the primary balance and the cyclically-adjusted primary balance as a per cent of GDP have deteriorated.

(22) Costs from inflation identified in the theoretical literature arise from the need to frequently revise price lists, the need to economise on real money balances, the less than full indexation of tax systems and debt contracts, the unplanned redistribution of income and wealth, increased uncertainty about future prices, and the difficulty in identifying relative price changes. The theoretical literature finds empirical support in a vast number of applied work, where a negative relation between inflation and economic performance is established. The evidence regarding the costs of inflation has led to the adoption of price stability as the main objective of monetary policy in a large number of countries. See Briault (1995), Barbosa *et al.* (1999) and ECB (2001).

(23) This trade-off results from rigidities in product and labour markets, as well as in debt contracts. Unless economic agents perfectly anticipate the decline in inflation, and have the possibility of adjusting their contracts accordingly, disinflation will lead to a loss of output and employment.

Against this background, an important question is to assess whether there have been any significant (short-run) costs of disinflation in Portugal. This is the aim of the present section. Disinflation costs are likely to depend on the structural characteristics of the economy and on the features of the disinflation programme. Given that the Portuguese disinflation strategy was based on a non-accommodating exchange rate policy, one would expect potential costs to be apparent in a deteriorating performance of the external sector, which in turn would be likely to translate into increasing unemployment and a decline of output. This suggests that one should start by looking at how the external sector has performed during the disinflation period. A second step would then be to look more closely at output and labour market developments.

Chart 11
REER AND RELATIVE PRICE OF NON-TRADABLES



Sources: Banco de Portugal; IMF; OECD; *INE*; *Ministério do Trabalho e da Solidariedade.*

4.1. The external sector

Conventional measures of the real effective exchange rate show a significant real appreciation of the escudo since 1987, when the exchange rate policy turned less accommodating (Chart 11). The magnitude of the appreciation varies considerably according to the actual measure used. The accumulated rate of appreciation in the period 1987-1992 ranges from 35 per cent, when measured on the basis of relative unit labour costs in the whole economy, and 20 per cent when measured on the basis of unit labour costs in manufacturing. Real appreciation was particularly strong in the period 1990-92, after the crawling-peg was abandoned. Following a period of instability in the context of the ERM crisis in 1992-93, the real effective exchange rate has remained quite stable from 1995 to 1998, at a level close to that prevailing from mid-1992 to early 1993. The ratio of prices of non-tradable to tradable goods also shows a substantial appreciation, particularly as from 1989.

The performance of the external sector does not point to any significant erosion of the competitiveness of the Portuguese economy during the disinflation period. As can be observed from Chart 12, real export growth was high, market share gains were significant, movements in the trade balance and the current account do not point to an exchange rate misalignment, and no unsustainable compression of exporters' profit margins appears to have taken place.

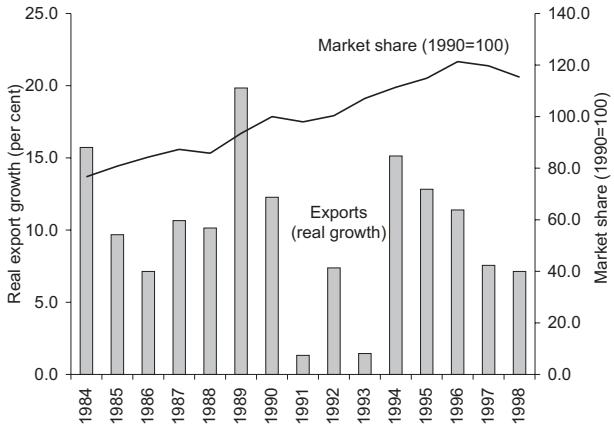
A very strong growth of both imports and exports took place following EC accession, leading to significant increases of both import penetration and export market shares (Charts 12A and 12B). Real import growth clearly outpaced the expansion of exports, leading to an increase of the trade deficit in the period 1986-1988, in spite of significant terms of trade gains (Charts 12C and 12D). This deterioration of the trade balance occurred before real appreciation had become significant, and at a time when domestic demand growth in Portugal was significantly higher than abroad (Chart 12E).[24] Moreover, in 1988, exporters' unit profit margins were still considerably above their level in 1985 (Char 12F). The increased trade deficit thus appears to reflect the behaviour of relative domestic demand growth, rather than a loss of competitiveness of Portuguese exporters. The widening trade deficit was partly compensated by the increase of unilateral public transfers (particularly related to the inflow of Community structural funds), and the current account was kept broadly balanced. From 1989 onwards both the trade and the current account balance as a percentage of

(24) The liberalisation of automobile imports, which gave rise to a stock adjustment, has also contributed to the large deterioration of the trade balance observed in 1988.

Chart 12

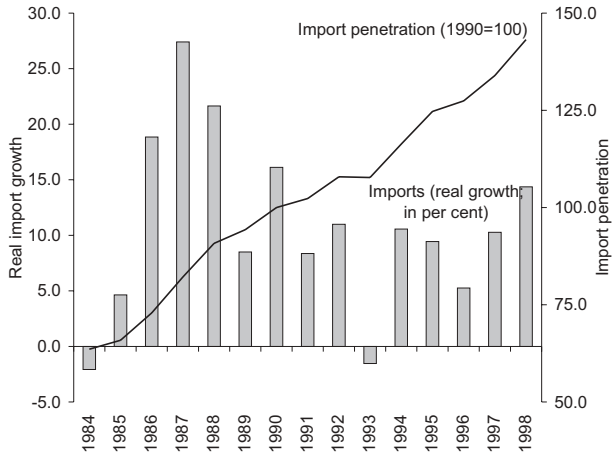
THE EXTERNAL SECTOR DURING THE DISINFLATION PERIOD

A – Exports and market share



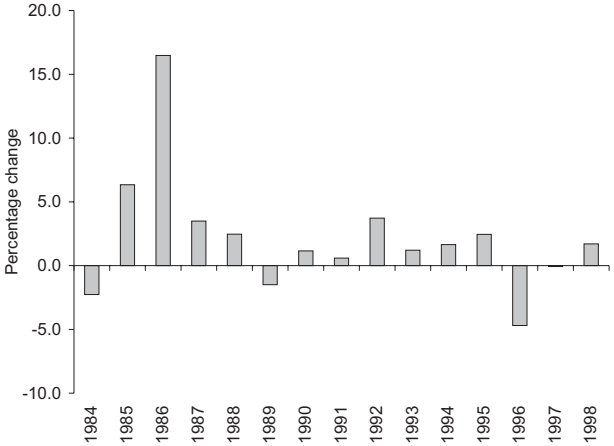
Source: Banco de Portugal.

B – Imports and import penetration



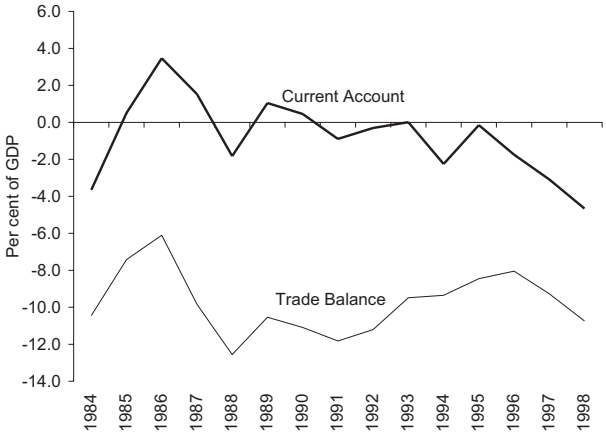
Source: Banco de Portugal.

C – Terms of trade



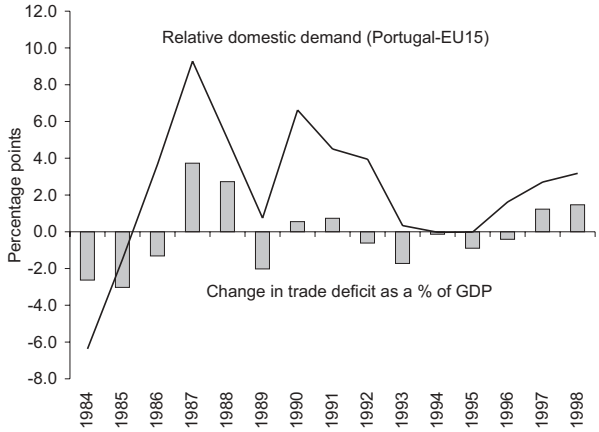
Source: Banco de Portugal.

D – Trade Balance and Current Account Balance



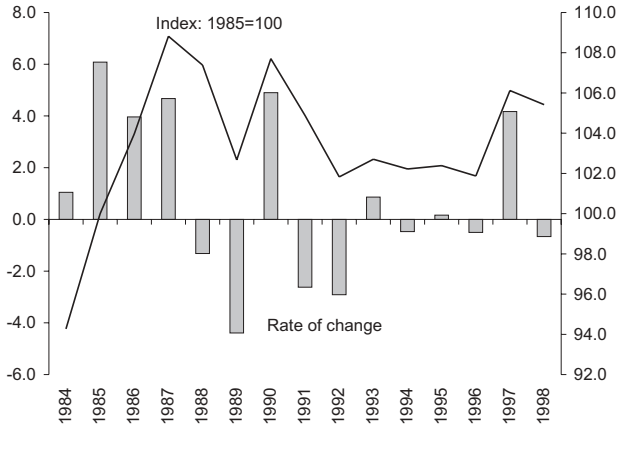
Source: Banco de Portugal.

E – Change in trade deficit and relative domestic demand



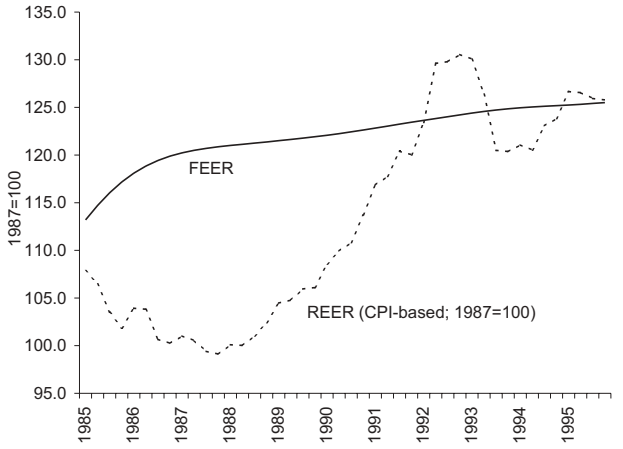
Source: OECD and Banco de Portugal.

F – Unit profit margin of the exports sector



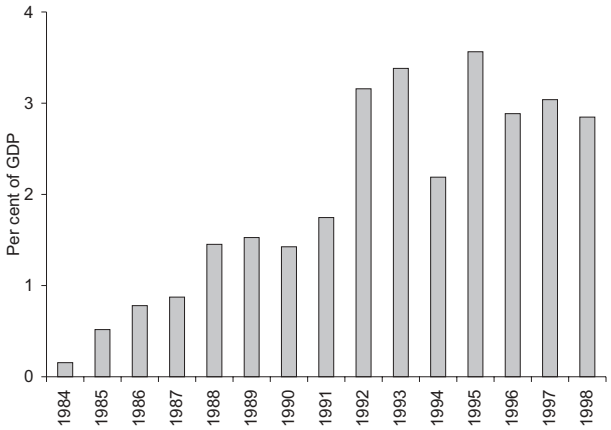
Source: Banco de Portugal.

Chart 13
EQUILIBRIUM AND OBSERVED REAL EFFECTIVE EXCHANGE RATE



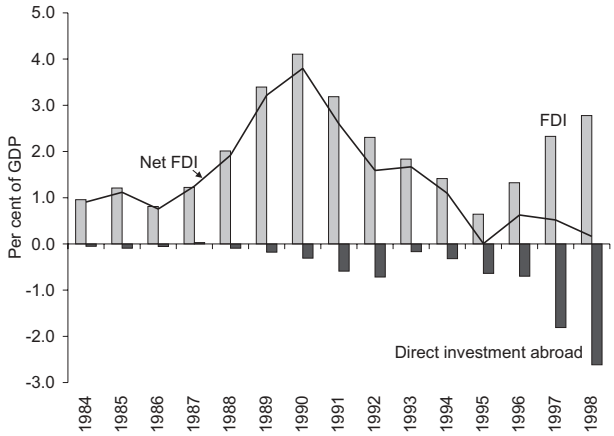
Source: Costa (1998), OECD, *INE* and Banco de Portugal.

Chart 14
PORTUGAL – NET PUBLIC TRANSFERS



Source: Banco de Portugal.

Chart 15
DIRECT INVESTMENT FLOWS



Source: Banco de Portugal.

GDP remained broadly stable, again moving in a manner consistent with changes in relative domestic demand. The substantial increase of exporters' profits in 1985-87 was only partially reversed in 1988-92, when the bulk of real appreciation has taken place. By the end of the disinflation process, in 1997-98, unit profit margins in the exports' sector were about 6 per cent above their level in 1985.

The favourable performance of the external sector suggests that an equilibrium real appreciation was taking place at the time when disinflation was being pursued.(25) Estimates of the so-called "fundamental equilibrium real exchange rate" (FEER) give support to this possibility.(26) Chart 13, which depicts the observed (CPI-based) real effective exchange rate together with an (estimated) path for the FEER, suggests that the Portuguese economy was "over-competitive" from the mid-1980s to the early 1990s, and that the observed real exchange rate did not deviate significantly from its estimated equilibrium values from 1992 to 1995.

Substantial capital inflows related to the Community structural funds and to the process of financial integration (Charts 14 and 15) induced a relaxation of the intertemporal external constraint of the Portuguese economy.(27)(28) Through their impact on investment, these capital inflows fostered the convergence of Portuguese *per capita* in-

(25) On the equilibrium real appreciation of the Portuguese escudo see Manteu and Neves (1998), Gaspar and Pereira (1995), Gaspar and Leite (1995), Gaspar and Pinheiro (1994), Cunha and Machado (1993), Gaspar (1990), Rebelo (1992).

(26) See Costa (1998). The results in this paper are consistent with those obtained in other studies. See, for example, Manteu and Mello (1992).

(27) In other words, a given level of the fundamental balance (which basically corresponds to the balance of current transactions and "permanent" capital flows – i.e., foreign direct investment flows) could be achieved at a more appreciated exchange rate.

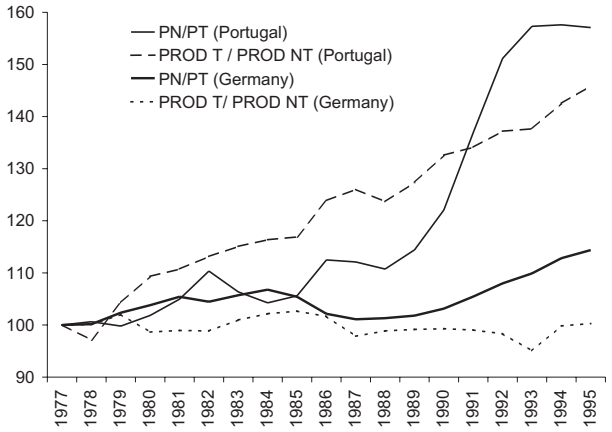
(28) A significant terms of trade improvement, reflecting the combined effect of a US dollar depreciation and a marked decline in oil prices, also contributed to a slowdown of the external constraint of the Portuguese economy, particularly in the period 1985-87.

come to EU levels (the so-called "real convergence", or "catching-up" process).(29) A process of catching-up with more developed economies tends to be associated with an equilibrium real exchange rate appreciation.(30)

The behaviour of labour productivity in Portugal suggests that some of the observed real exchange rate appreciation was indeed caused by favourable productivity shocks in the tradable goods sector(31) (Chart 16). The transition to the steady-state capital/labour ratio also appears to have played a role in explaining the appreciation of the real exchange rate.(32)

Besides their medium-to-long run supply-side effects, structural funds and financial integration were also associated with an immediate expansionary impact on aggregate demand. In addition to a strong impact on investment expenditure, there was pressure on public expenditure (reflecting the principles of additionality and complementarity applying to the structural funds), and private consumption (reflecting the perception of an increase in permanent income). Strong demand growth in the early 1990s reinforced the pressure towards real appreciation of the escudo, generating a dilemma between nominal appreciation of the exchange rate and higher inflation.(33) Given that disinflation was an explicit policy objective, the only option from a monetary policy viewpoint would have been to allow a stronger nominal appreciation of the currency.(34) However, this option would have concentrated the burden of the adjustment on the tradables sector. The risk of overshooting could not be ignored, and there was no

Chart 16
RELATIVE PRICES AND PRODUCTIVITIES IN THE TRADABLES AND NON-TRADABLES SECTORS



Source: Costa (2000).

(29) Structural funds are aimed at reducing the relative scarcity of capital in the EC poorest regions. By fostering (public, private and human) capital accumulation, the funds contribute to enhance the supply potential in the recipient countries in the medium to long run, thus promoting real convergence. Financial integration contributes to reinforce the process of real convergence through its favourable impact on the efficiency of financial intermediation. Integration in the Community – by improving economic prospects and signalling the commitment to an "investment-friendly" economic and political regime greatly enhanced Portugal's attractiveness for investment. This translated into a (permanent) decline of the country's risk premium, allowing Portugal to benefit from massive foreign direct investment flows in the late 1980s and early 1990s. See Gaspar and Pereira (1995) and Gaspar and Leite (1995).

(30) It is an empirical observation that countries' price levels tend to be positively related to the level of real *per capita* income (see Esteves (1993) for an application to Portugal), and that such price level discrepancies result from a lower level of non-tradable goods prices in poorer countries. This means that countries in a catching-up process thus tend to have higher inflation rates than abroad. Explanations for this empirical regularity include cross-country productivity differences (the so-called Balassa-Samuelson hypothesis), cross-country differences in factor endowments (the so-called Bhagwati-Kravis-Lipsey view), and the idea that the income elasticity of non-tradable goods is greater than one. See Balassa (1964), Samuelson (1964), Bhagwatti (1984), Kravis and Lipsey (1983 and 1987) and Bergstrand (1991).

(31) Costa (2000) studies the behaviour of relative prices and productivities in the tradable and non tradable sectors in Portugal and in Germany. The analysis suggests that Portugal has experienced a Balassa-Samuelson effect in 1986-1995. In this period, the increase of the relative price of non-tradable goods was higher in Portugal than in Germany (i.e., $\Delta PN/PT$ (Port) > $\Delta PN/PT$ (Germany)). This coincided with a higher growth rate of the relative labour productivity in the tradable goods sector (i.e., Δ(prod T/ Prod N(Port)) >Δ(Prod T/Prod N (Germany)), which was determined by the faster increase of labour productivity in the tradables sector in Portugal.

(32) See Brito and Correia (2000).

(33) It has been argued that the pressure towards real appreciation in the early 1990s was the result of an overly tight monetary policy, which was stimulating massive capital inflows. See Cunha and Machado (1993) and Lopes (1994). However, while (significantly) lower interest rates would have curbed (short-term) capital inflows, easing the pressure towards nominal appreciation of the currency, they would also have exacerbated the excessive growth of domestic demand. This would most likely translate into higher domestic inflation and an even stronger real appreciation of the currency.

(34) Higher interest rate increases, coupled with a policy of nominal stability of the escudo, would have stimulated further (short-term) capital inflows at a time when domestic liquidity management was already rather complicated.

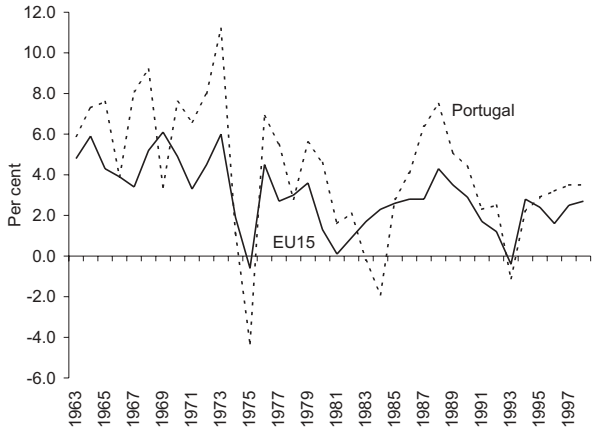
consensus among the policy authorities for letting the currency appreciate. In this context, fiscal restraint would have been the obvious policy solution to moderate the pressure towards real appreciation. Instead, as already noted, fiscal policy was clearly expansionary in the period 1990-91. This translated into a fundamentally unbalanced policy-mix, which may have caused some overshooting of the real exchange rate relative to equilibrium levels.(35)

4.2. Output and labour market developments

The absence of clear evidence pointing towards an erosion of the competitiveness of Portuguese exporters in the context of substantial real appreciation of the escudo suggests that costs from the disinflation process were, at most, rather low. This view is confirmed by looking at output and labour market developments over the disinflation period.

Following a sustained expansion after EC accession, the Portuguese economy experienced a sharp deceleration from 1991 onwards, and entered into recession in 1993. The unemployment rate increased from 4.0 in 1992 to over 7.0 per cent in 1995/96. It could be argued that the 1993 recession and the subsequent increase in the unemployment rate were the result of the disinflation policy that was being followed or, in other words, that they were reflecting the costs of disinflation in terms of economic activity and employment. However, in order to assess the costs of disinflation one needs a benchmark. One possibility is to look at output and labour market developments in Portugal both over a long horizon(36), and in comparison to developments in other EU countries.

Chart 17
REAL GDP GROWTH IN PORTUGAL AND THE EU15



Source: European Commission.

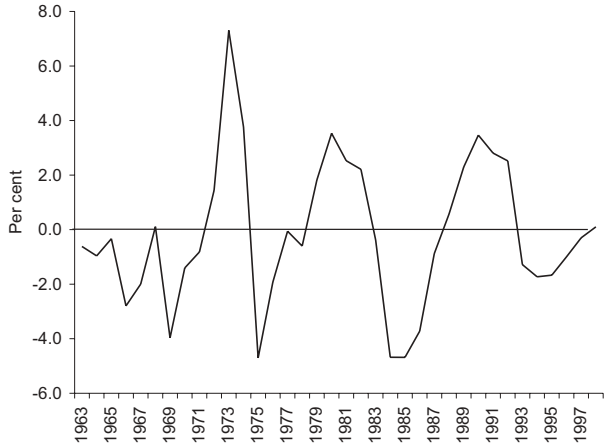
Developments in real economic activity suggest that the 1993 recession was less strong than previous ones. Indeed, the 1975 and the 1983-84 recessions were associated with a more marked decline of GDP and a more negative growth differential against the EU (Chart 17). In fact, the EU also suffered a recession in 1993, and the deceleration of economic activity in Portugal can largely be explained by the decline in real foreign demand observed in that year. The idea that the 1993 recession was not particularly severe is consistent with the behaviour of the Portuguese output gap (Chart 18).(37) During the disinflation period, the unemployment rate in Portugal stayed consistently (and significantly) below the EU average (Chart 19). Portuguese labour market developments appear to

(35) This view is in line with Gaspar and Pinheiro (1994), who claim that positive demand shocks (related to the behaviour of external demand, massive capital inflows and, in particular, from an expansionary fiscal policy) were an important factor in explaining the magnitude of the real appreciation of the exchange rate in the period 1990-1992. Along the same lines, Barbosa (1996) argued that the re-acceleration of inflation in 1988-1990 was essentially caused by demand shocks. See also Borges (1994).

(36) An alternative (and rather common) way of assessing disinflation costs consists in estimating the so-called "sacrifice ratio", which measures the average decline (increase) of output (unemployment) in relation to potential output (natural rate of unemployment) per each percentage point decline of the inflation rate. This approach is followed in Barbosa and Machado (1996), who compute sacrifice ratios for a number of EU countries that have undergone disinflation experiences in the 1980s and 1990s (i.e., Portugal, Ireland, France, Spain and Italy). For Portugal, a sacrifice ratio of 0.7 is obtained when the periods 1984-88 and 1991-94 (i.e. when a decline of inflation was observed) are taken together. As underlined by the authors themselves, results are rather sensitive to the choice of the period for which the sacrifice ratio is computed. Indeed, if one extended the computations up to 1997 (the end of the disinflation process) the sacrifice ratio obtained would be lower, given developments in the output gap in 1994-97. In any case, it is worth mentioning that the results obtained for Portugal compare favourably with those obtained for the remaining countries. This again is consistent with the idea that costs from disinflation have not been significant in Portugal.

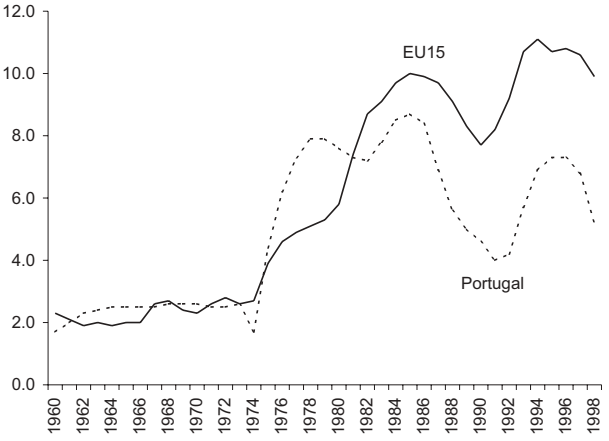
(37) The results obtained by Botas, Marques and Neves (1998) also indicate that the output gap estimated for the period following the 1993 recession is clearly less negative than that obtained following the 1975 and 1983/84 recessions.

Chart 18
PORTUGAL – OUTPUT GAP



Source: OECD.

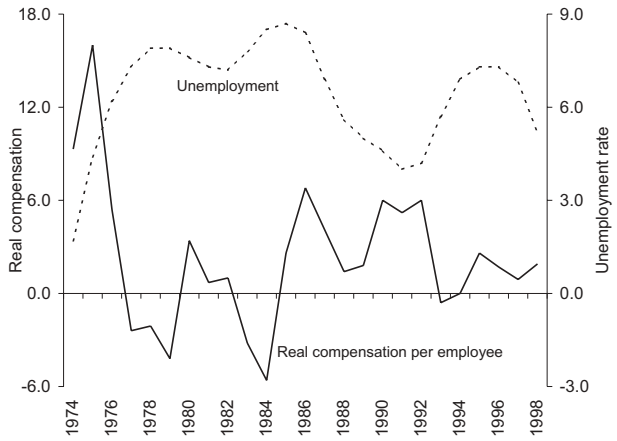
Chart 19
UNEMPLOYMENT RATE



Source: European Commission.

have reflected business cycle conditions, with no evidence of an increase in the natural rate of unemployment[38]. Real wage flexibility has acted as a partial substitute for employment / unemployment movements, providing a smoothing mechanism for economic activity (Chart 20). Three main conclusions emerge from this picture. First, labour market developments in Portugal compare favourably with those in the EU in the disinflation period. Secondly, the process of disinflation, and the related monetary and exchange rate regime shift, do not appear to have affected the structural features of the Portuguese labour market. Finally, the responsiveness of real wages to changes in unemployment is likely to have contributed to the low costs of the disinflation strategy in Portugal.

Chart 20
PORTUGAL – UNEMPLOYMENT AND REAL WAGES



Source: European Commission.

5. CONCLUSION

In 1985, real *per capita* income in Portugal was about half that in the European Community, the economy suffered from significant macroeconomic disequilibria, and the weight of the public sector in productive activities was substantial. Accession to the Community has brought about many difficult challenges, as well as key opportunities. The process of trade and financial integration, and later on the commitment to being a founding member of monetary union, provided the "stick and carrot" for the country to adopt an economic regime based on the prevalence of market mechanisms and macroeconomic stability. Such a regime is a necessary condition for the sustained convergence of real *per capita* income towards Community levels.

There are important lessons to be learnt from successes and mistakes in the process of stabilisa-

(38) A number of studies suggest that, at least for the past 15 years, the Portuguese natural rate of unemployment has been moving without trend around a range of 5.5 to 6.0 per cent (see footnote 5 above) and that the behaviour of the Portuguese labour market can be characterised by a stable Okun relation (estimates of an Okun equation indicate that a 1 percentage point deviation of output growth from trend leads to a decline of the unemployment rate by about 0.5 percentage points after one year). This evidence suggests that unemployment has been essentially determined by developments in economic activity. On the macroeconomic features of the Portuguese labour market see Barbosa (1999), Botas and Marques (1997), Gaspar and Luz (1997) and Luz and Pinheiro (1994).

tion in Portugal. Given the similarities in the point of departure, these lessons can be most useful to the countries of Central and Eastern Europe currently preparing for accession.

First and foremost, real and nominal convergence should be seen as mutually reinforcing. While this idea is generally accepted in a medium- to long-run perspective, the existence of a (short-run) trade-off between real growth and nominal stabilisation often receives disproportionate attention in the policy debate. The Portuguese disinflation experience shows that, provided the right conditions are in place, this short-run trade-off does not necessarily emerge. An equilibrium real appreciation of the escudo in the period following accession to the Community, the pursuit of broadly appropriate macroeconomic policies, and the macroeconomic flexibility of the Portuguese labour market have made it possible to disinflate "without pain".

Secondly, trade liberalisation and financial integration lead to a radical change of the environment in which the authorities define and implement their economic policies. Integration increases the costs of economic distortions and inconsistent policies, clearly illustrated by the failure of the Portuguese authorities to simultaneously pursue a tight domestic monetary policy and contain the appreciation of the escudo, in a context of capital movement liberalisation; however, integration also enhances the rewards from sound policies, as apparent from the emergence of a virtuous circle between nominal convergence and the prospect of EMU participation.

Finally, a balanced monetary and fiscal policy-mix can greatly reduce the risks of an excessive real appreciation of the currency in the context of disinflation. The monetary and exchange rate policy pursued since accession to the Community was key to the success of the disinflation process. In 1990-1992, when the crawling-peg regime was abandoned and real appreciation steepened, this policy was subject to a lot of criticism. It was often argued that an overly tight policy was inducing an excessive real appreciation of the currency which in turn was hurting the real side of the economy. However, real appreciation was an endogenous response to the process of real convergence and to excess demand in the economy. The pressure towards real appreciation of the escudo could have been attenuated through a programme of fiscal restraint aimed at moderating the expansionary impact on domestic demand from financial integration and the Community structural funds. However, fiscal policy was rather expansionary in 1990-91, and the resulting unbalanced policy-mix may have caused some overshooting of the exchange rate relative to equilibrium levels.

The policy lessons drawn here from the Portuguese disinflation experience cannot be extrapolated to the current situation in which the country has become a member of EMU. Participation in a monetary union raises new challenges, which are not necessarily less demanding than the ones faced during the disinflation process. While the price stability regime which characterises EMU provides the best possible framework for sustainable growth and employment creation, steady real convergence will depend crucially on the pursuit of sound domestic policies. Preserving the flexibility of real wages and strictly adhering to the requirements of the Stability and Growth Pact, a necessary condition for fiscal policy to play its stabilisation role, are obviously relevant in this context.

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SOME FACTS ABOUT THE CYCLICAL CONVERGENCE IN THE EURO ZONE*

*Frederico Belo***

1. INTRODUCTION

One of the key elements on the ongoing debate about monetary unions is the degree of business cycle resemblance among the member states. This paper contributes to this debate by providing a descriptive analysis of the cyclical evolution of the output of the European Union countries between 1960 and 1999. As the creation of the European Monetary Union probably represents a regime shift(1) no attempt is made at forecasting cyclical fluctuations. Nonetheless, historical elements can be very useful as a benchmark in the analysis and interpretation of current results.

We resort to the association and synchronization concepts to define cyclical convergence. Using a time domain approach, we purport the use of several parametric and non-parametric statistics to investigate whether the cycles of these countries have converged to the euro area business cycle during the sample period.

The results of this paper are much in line with those from previous studies. Some recent research provides support for the view that there was an increase in the similarity between the business cycles of the European Union countries. Arthis and Zhang (1995) studied the cyclical movements in the industrial production and focused on the role of the Exchange Rate Mechanism in inducing common business cycles among the participating countries. They have found that over time, the business cycle affiliation of most of these countries had shifted from the United States to Germany. Angeloni and Dedola (1999) studied a larger set of variables to conclude for an increase in the cyclical correlation of output, prices and stock indexes between euro countries. In our study, the results obtained suggest that Italy, Spain, Austria, The Netherlands, Portugal and Greece have cyclically converged to the euro area business cycle.

This paper is organised as follows. Section 2 briefly describes the data used and the detrending method employed. Section 3 analyses the degree of association between country and euro area cycles. Section 4 analyses the degree of synchronisation. Section 5 evaluates the existence of cyclical convergence. Finally, section 6 concludes.

2. DATA AND DETRENDING METHOD

The data used in this study is based on European Commission-Ameco database figures on annual product spanning the period from 1960 to 1999 for a sample of 17 countries plus the euro area as a whole.(2)

In this study, we follow Lucas (1977) definition of business cycle as deviations of aggregate real output from trend.(3) The decomposition of the ob-

* The views expressed in this article are those of the author and not necessarily those of the Banco de Portugal.

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I thank Carlos Robalo Marques, Ildeberta Abreu, José Ferreira Machado, Maximiano Pinheiro, Marta Abreu and Carlos Coimbra for their valuable comments and suggestions.

(1) The extrapolation of past results to forecast future behaviour would be subjected to the Lucas critique (Lucas (1976)).

(2) The countries included are: Germany, France, Italy, Spain, The Netherlands, Belgium, Austria, Finland, Portugal, Ireland, Luxembourg, United Kingdom, Denmark, Sweden, Greece, United States and Japan.

(3) For a discussion of alternative definitions see Kydland and Prescott (1990).

served series into trend movement and cyclical component was made using the Hodrick-Prescott filter, the method more widely used in business cycles studies.(4) The series were all expressed in logarithms and so the cyclical component was obtained through the difference between the original series and its trend.

3. DEGREE OF CYCLICAL ASSOCIATION

In this section, we will evaluate the degree of association between the business cycles of the countries included in our sample and the euro area.

Since we are interested not only in the degree of cyclical association but also in its evolution, the sample was divided in two sub-periods, from 1960 to 1978 and from 1979 to 1999, which also coincides with the creation of the European Monetary System in 1979.

The simple correlation coefficient is the statistics normally used when we pretend to measure the degree of association between business cycles. However, since it only measures the degree of linear association, we will also compute the concordance statistics, initially proposed by Harding and Pagan (1999) and the Spearman's rank correlation coefficient.(5)

The concordance is a non-parametric statistics that measures the proportion of time that the cycles of two series spend in the same phase.(6) As a measure of co-movement between two series, the concordance statistics main advantage in comparison with the correlation coefficient(7) is that it can be applied to both stationary and non-stationary series, since it is not affected by single events in time series which are irrelevant for inferences of co-movement. Moreover, the concordance statistics can be used to detect both linear and non-linear type association between two series. Plotting the cycle in country *i* against the cycle in country *j*(8), the concordance statistics will be given by the proportion of observations that are in the same quadrant, independently of the particular type of relationship between the two series (linear or non-linear).

An alternative measure of the degree of association between series that is also robust to non-linear relationships is the Spearman's rank correlation coefficient. As its name suggests, rather than use the cycle itself, it is based on the ranks of the observations. Having ordered the values of the cycle in each country, the Spearman's rank correlation coefficient is just the correlation coefficient calculated for the ranks of the two series.

Table 1 presents the results for the simple correlation coefficient, the concordance statistics and the Spearman's rank correlation. The conclusions are remarkably consistent across the different methods, especially between the simple correlation coefficient and Spearman's statistics. This also suggests that the cycle among countries exhibits in fact a linear relationship and so we can focus our analysis mainly in the correlation coefficient results.

Regarding the results for the euro zone, the most interesting feature is the high degree of contemporaneous correlation in the majority of the countries with respect to the euro area, particularly in France, Belgium, Germany, Portugal, Austria and The Netherlands. In contrast, Finland and Ireland exhibit a weak association with the euro zone business cycle.

Considering the periods before and after 1979, we find that in general, there is an increase in the degree of contemporaneous association between euro zone countries and the euro area business cycle, particularly in Italy, Spain and the Netherlands. Finland and Luxembourg were the only euro zone countries where there was a significant decrease in the contemporaneous correlation with the euro zone cycle (Table 1 and Chart 1).(9) In fact,

(4) In this study the λ parameter was set equal to 100, a standard value for the smoothing parameter for annual data. For a discussion of the properties of this and other filters, see Hodrick and Prescott (1997), King and Rebelo (1993), Kydland and Prescott (1990) and Baxter and King (1999).

(5) For a more detailed description of the statistics used in this study see the *Working Paper* no. 7-2001.

(6) As a proportion, the concordance statistics varies between 0 and 1. However, a positive relationship between the phase in two series implies a degree of concordance higher than 0.5, as this is the expected value of the concordance when we have two independent and identically distributed series, symmetrically around 0. For a detailed explanation of the concordance statistic see McDermot and Scott (1999).

(7) This discussion borrows heavily from MCDermott and Scott (1999).

(8) Country *i* cycle in *x* axis and country *j* in y axis.

(9) In Germany and France there also is a slight but not significant decrease in the contemporaneous correlation with the euro area.

Table 1

CORRELATION, CONCORDANCE AND SPEARMAN'S RANK CORRELATION WITH THE EURO AREA

	Correlation			Concordance			Spearman's		
	1960-1999	1960-1978	1979-1999	1960-1999	1960-1978	1979-1999	1960-1999	1960-1978	1979-1999
Germany	0.84	0.86	0.83	0.78	0.84	0.71	0.82	0.84	0.79
France	0.92	0.93	0.91	0.88	0.84	0.90	0.91	0.93	0.88
Italy	0.71	0.56	0.87	0.70	0.58	0.81	0.72	0.52	0.87
Spain	0.72	0.56	0.83	0.75	0.68	0.81	0.70	0.41[a]	0.84
The Netherlands	0.76	0.62	0.85	0.90	0.84	0.95	0.78	0.68	0.85
Belgium	0.89	0.84	0.93	0.85	0.79	0.90	0.89	0.76	0.91
Austria	0.77	0.71	0.85	0.73	0.74	0.71	0.73	0.58	0.80
Finland	0.35	0.60	0.23[a]	0.58	0.58	0.57	0.27[a]	0.51	0.12[a]
Portugal	0.80	0.72	0.86	0.73	0.53	0.90	0.72	0.44[a]	0.88
Ireland	0.35	0.19[a]	0.44	0.70	0.53	0.86	0.34	0.06[a]	0.49
Luxembourg	0.71	0.82	0.63	0.63	0.58	0.67	0.67	0.71	0.65
United Kingdom	0.40	0.57	0.32[a]	0.60	0.58	0.62	0.32	0.34[a]	0.27[a]
Denmark	0.09[a]	0.63	-0.25[a]	0.55	0.79	0.33	0.09[a]	0.70	-0.27[a]
Sweden	0.40	0.38[a]	0.40	0.70	0.63	0.76	0.42	0.37[a]	0.41[a]
Greece	0.61	0.50	0.77	0.83	0.63	1.00	0.65	0.48	0.79
United States	0.23	0.10[a]	0.32[a]	0.48	0.37	0.57	0.18[a]	0.09[a]	0.29[a]
Japan	0.64	0.63	0.70	0.60	0.58	0.62	0.60	0.65	0.61

Note: (a) The correlation coefficient is not statistically significant with a level of significance of 10%.

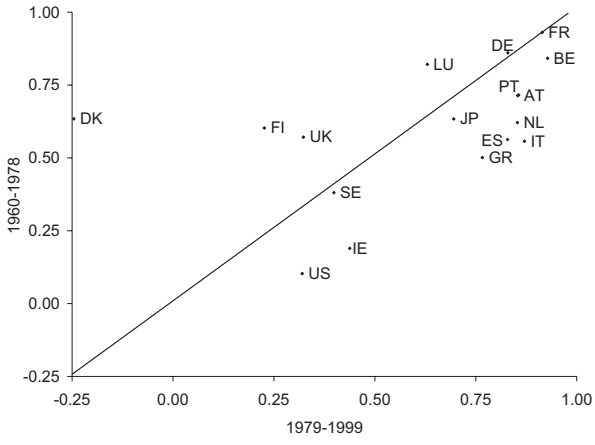
the correlation coefficient between Finland and the euro area business cycle is not statistically significant in the late period of the sample.(10)

We have also computed the contemporaneous correlation using the United States as the benchmark economy. In sharp contrast with the euro zone, the results (not shown) now exhibit a weak association between United States and euro zone countries business cycles. In fact, considering the whole sample period, the correlation coefficient is not statistically significant for the euro countries, except for The Netherlands.

In the non-euro area countries, the results for Greece suggest a relatively strong association with the euro area business cycle, especially in the late period of the sample (Table 1 and Chart 1). The Spearman's and concordance statistics reinforce this conclusion and it is interesting to note that the concordance assumes the value unity in the late sub-period.

Chart 1

CONTEMPORANEOUS CORRELATION WITH THE EURO AREA



Regarding the results for the United Kingdom, the evidence suggests a weak contemporaneous correlation with the euro area business cycle, particularly in the late period of the sample, where the coefficient is not statistically significant. On the contrary, the contemporaneous correlation with the United States has steadily increased, exhibiting

(10) It must be noted that in Chart 1, if a country is over the 45º line, this mean that the correlation coefficient with the euro area stood at the same level in both periods and if it is on the right (left) of the 45º line, the correlation coefficient has increased (diminished) between the two sub-periods.

Table 2

MULTIPLE AND MAXIMUM CORRELATION WITH THE EURO AREA[(a)]

	Multiple correlation			Maximum correlation					
	1962-1997	1962-1978	1979-1997	1960-1999	$j^{(a)}$	1960-1978	$j^{(a)}$	1979-1999	$j^{(a)}$
Germany	0.89	0.89	0.93	0.84	0	0.86	0	0.85	1[(b)]
France	0.93	0.95	0.93	0.92	0	0.93	0	0.91	0
Italy	0.79	0.74	0.92	0.71	0	0.56	0	0.87	0
Spain	0.76	0.67	0.94	0.72	0	0.56	0	0.89	-1[(b)]
The Netherlands	0.83	0.80	0.87	0.76	0	0.62	0	0.85	0
Belgium	0.92	0.95	0.93	0.89	0	0.84	0	0.93	0
Austria	0.86	0.86	0.93	0.77	0	0.71	0	0.85	0
Finland	0.51	0.87	0.79	0.36	-1[(b)]	0.60	1[(b)]	0.54	-1
Portugal	0.82	0.75	0.89	0.80	0	0.72	0	0.86	0
Ireland	0.54	0.66	0.62	0.40	-1[(b)]	0.49	-1	0.44	0
Luxembourg	0.72	0.93	0.78	0.71	0	0.82	0	0.71	-1
United Kingdom	0.75	0.75	0.98	0.63	-1	0.57	0	0.90	-2
Denmark	0.75	0.79	0.87	0.23	-1	0.63	0	0.39	-2
Sweden	0.55	0.66	0.94	0.40	-1[(b)]	0.48	1	0.70	-1
Greece	0.76	0.82	0.84	0.61	0	0.68	-1	0.77	0
United States	0.62	0.54	0.80	0.37	-1	0.10	0	0.67	-2
Japan	0.74	0.80	0.84	0.65	0	0.75	-1	0.70	0

Notes:
(a) Displacement where the correlation is maximum, with j=-2, -1, 0, 1, 2. A positive value (negative) for j means that the country has a lead (lag) cycle with respect to euro area cycle.
(b) Maximum correlation is similar to contemporaneous correlation (absolute difference ≤ 0.06).

in the late period of the sample, a stronger contemporaneous association with the United States than with the euro area business cycle.

Finally, Denmark and Sweden, also exhibit a weak association with the euro area business cycle.

An alternative approach to the non-parametric statistics analysed so far, will be to estimate a model where the relationship between country *i* and euro zone cycle is described by the following equation:

$$X_t^i = \beta_1 X_t^{EU11} + \beta_2 X_{t-2}^{EU11} + \beta_3 X_{t-1}^{EU11} + \beta_4 X_{t+1}^{EU11} + \beta_5 X_{t+2}^{EU11} + \varepsilon_{it}$$

where X^i is the cycle in country *i* and X^{EU11} is the cycle in the euro area.

The main advantage of this approach is that it will give an accurate measure of the degree of linear association between country *i* and euro area business cycle in the presence of leading or lagging relationships between the cycles.

Defining *R* as the square root of the coefficient of determination in country *i* equation, the value of *R* is then the correlation coefficient between X^i and $\hat{X}^i$, where are the fitted values of X^i. In other words, *R* can be seen as the multiple correlation coefficient between country *i* and euro area business cycle.

The results are presented in Table 2. It is clear that for the euro zone countries, there is once again a high consistency degree between these results and the previous ones. In fact, the countries that exhibit a stronger association with the euro area business cycle during the whole sample period are the same, namely France, Belgium, Germany, Austria, The Netherlands and Portugal. Finland and Ireland remain the countries with the lowest degree of association with the euro zone business cycle.

Considering the multiple correlation coefficient in both sub-periods, we find that in general, the results from the previous section also remain valid, particularly the general increase in last period association with the euro area for the euro zone countries. This increase was particularly sharp and significant in Spain and Italy, as well as in Portugal. On the opposite end, in Finland, Luxembourg and Ireland (although in the latter not observed in the previous analysis) there was a decrease in the degree of association with the euro zone business cycle.

For the non-euro zone countries and in contrast to what was observed in the previous statistics, there was a sharp increase in the multiple correlation coefficient between the two sub-periods, particularly in the United Kingdom and Sweden. In the United Kingdom, it is also interesting to note that this country has the highest degree of multiple correlation with the euro zone business cycle. The contradictory results between the contemporaneous correlation and the multiple correlation suggest that these countries have in fact increased their association with the euro area business cycle but the synchronisation, which will be analysed in the next section, has changed between the two sub-periods.

At last, in Greece, the multiple correlation coefficient suggests a relatively strong association with the euro zone business cycle during the whole sample period.

4. SYNCHRONISATION

In order to determine the existence of cyclical convergence with respect to the euro zone, it is necessary not only to analyse the evolution of the degree of association between each country and the euro area business cycle, but also the degree of synchronisation.

The degree of synchronisation will be measured by the number of leading or lagging periods at which the maximum correlation is obtained so that, country *i* will be synchronised with the euro zone business cycle if the maximum correlation is obtained contemporaneously.(11)

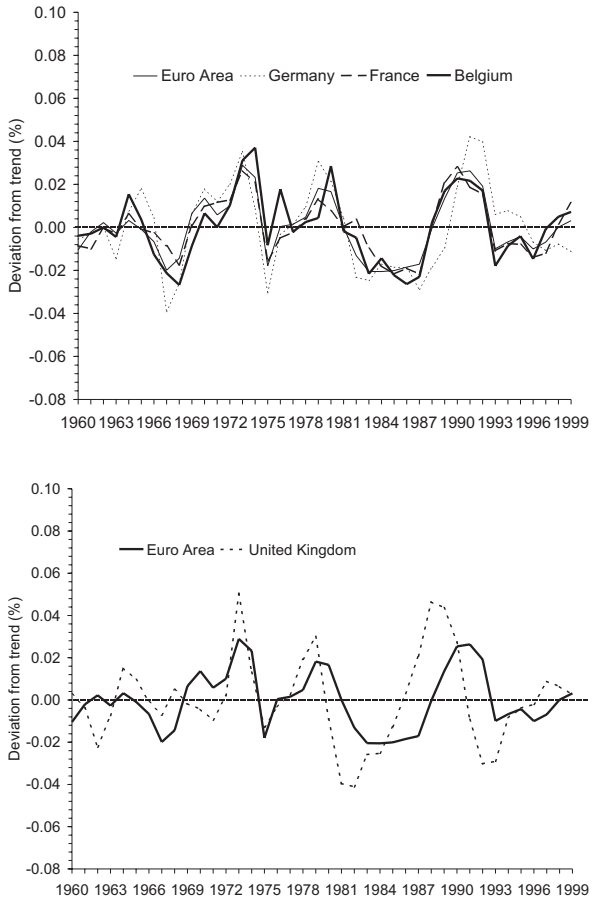
According to the results presented in Table 2, we can say that for the whole sample period, the euro zone countries are highly synchronised with the euro area business cycle. This synchronisation is illustrated in Chart 2, where we confront the German, France and Belgium cycles with the euro area business cycle. In the late period, only Finland and Luxembourg seem to exhibit a lead cycle.

Considering the whole sample period, the non-euro area countries are in general not synchronised with euro area business cycle, with the exception of Greece and Japan.

Between the two sub-periods and as predicted in the previous section, we observe that the United Kingdom, United States and Denmark have become less synchronised with the euro area business cycle. As illustrated in Chart 2 for the United Kingdom, these countries exhibit a lead of about 2 years in the second period of the sample. In contrast, Greece business cycle has become more synchronised with the euro zone business cycle.

Chart 2

CYCLICAL COMPONENT OF THE OUTPUT



5. CYCLICAL CONVERGENCE

Evidence of cyclical convergence implies an increase in both the degree of association and synchronisation between country and euro area business cycles and so we will look at the contemporaneous correlation, concordance and maximum correlation coefficients from a dynamic perspective.

(11) For a given pair of variables, X and Y, $\rho(x_{t-j}, y_t)$ denotes the correlation between X and Y at displacement j ($-2 \le j \le 2$). The maximum correlation coefficient is then the maximum value for $\rho(x_{t-j}, y_t)$.

Moreover, we will estimate and evaluate the cyclical component that is specific to each country, that is, the part in country *i* cycle that is not explained by the euro area business cycle.

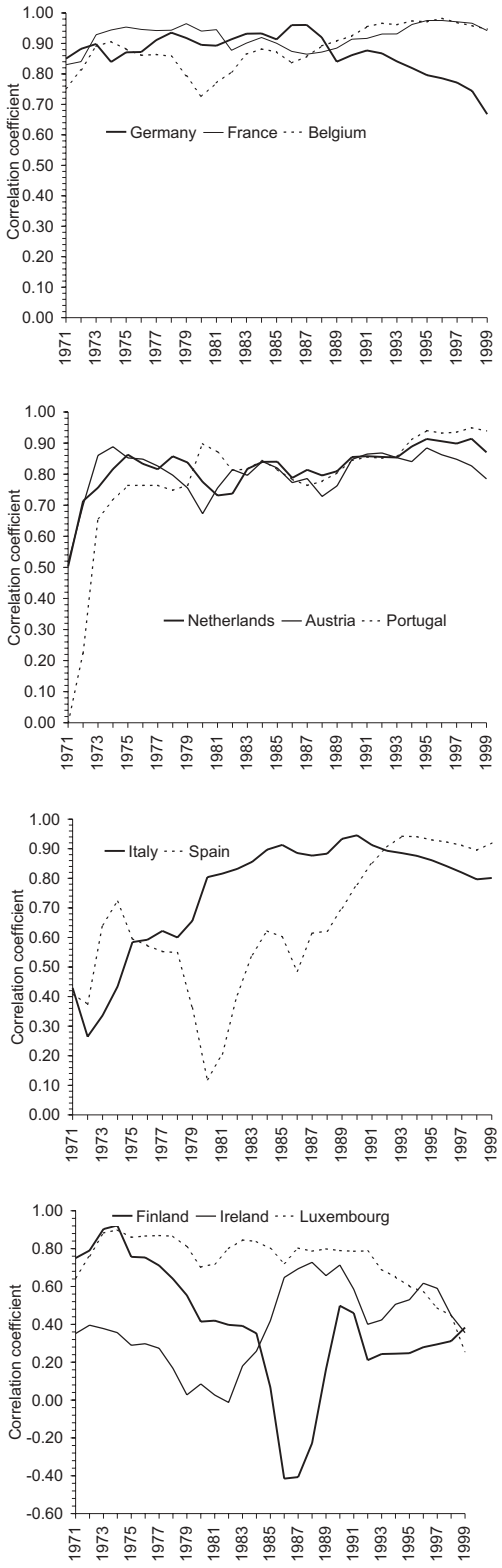
The previous analysis suggested that in the late period of the sample there was a high degree of association and synchronisation in the majority of the euro zone countries. However, in terms of cyclical evolution, it is possible to distinguish three groups of countries.

A first group includes Germany, France and Belgium, where the results suggest a high degree of association and synchronisation with the euro zone business cycle in the whole sample period. However, it should be noted that, in the case of Germany, the idiosyncratic shock caused by the unification and the associated fiscal and monetary policies have probably led to a slight decrease in the degree of association and synchronisation with the euro zone business cycle in recent years. This fact can be observed in the correlation coefficient for a rolling sample of 12 years (Chart 3) and in the evolution of the displacement where the maximum correlation is obtained (not shown), which exhibits a slight lag in the post-unification period.

A second group includes Italy, Spain, Austria, the Netherlands and Portugal, where we observe a sharp increase in the degree of association with the euro zone cycle. In Chart 3 it is possible to observe that this increase in Austria, the Netherlands and Portugal has occurred in the beginning of the sample, earlier and sharper than in Italy and Spain. However, in both cases, the significant increase in the degree of association and synchronisation with the euro zone business cycle suggests that these countries exhibit an evolution that is compatible with the cyclical convergence hypothesis.

A last group includes Finland, Ireland and Luxembourg, where the evidence does not allow us to conclude for the existence of cyclical convergence. This conclusion draws from the fact that during the sample period these countries decreased their degree of association with the euro zone business cycle, as illustrated in Chart 3[12], and have not be-

Chart 3
CONTEMPORANEOUS CORRELATION WITH THE EURO AREA[a]



Notes:
(a) Contemporaneous correlation for a rolling sample of 12 years (eg. 1971 is the correlation for the 1960-71 period).

(12) In Ireland, although the contemporaneous correlation and concordance increase, the maximum and multiple correlation suggests a decrease in the association with the euro zone business cycle.

come more synchronized with the euro zone business cycle.

In the non-euro zone countries, although the degree of association with the euro zone business cycle has increased, particularly in the United Kingdom,(13) the cycles have become less synchronised and so we cannot state that these countries had cyclically converged to the euro zone business cycle. The only exception seems to be Greece, where there was both an increase in association and synchronisation.

An alternative approach to the cyclical convergence issue would be to analyse the specific cyclical component in each country, and so we have estimated the following equations:(14)

$$X_t^i = \beta_1 X_{t-1}^i + \beta_2 X_{t-2}^i + \beta_3 X_t^{EU11} + \beta_4 X_{t-1}^{EU11} + \beta_5 X_{t-2}^{EU11} + \varepsilon_{it}$$

where X_{t+j}^i is the country *i* cycle and X_{t+j}^{EU11} is the euro zone cycle in the *t+j* period, with *j*=-2,-1,0.

The estimation residual ε_i can be interpreted as the part of country *i* cycle that is not explained by the euro zone business cycle nor by the past behaviour of the country cycle. So, the residual might be seen as the idiosyncratic component of country *i* fluctuations.

In Table 3 we present the results for the weight of the variability of the specific component in the total variability of the cycle.(15) As expected, this weight decreases in the majority of the euro area countries, suggesting an increase in integration with the euro area business cycle, even for Finland and Ireland. Only in Luxembourg does the weight of the specific component increase.(16)

In order to test if the changes in country *i* specific component variability are significant or not, we have applied the Goldfeld-Quandt test. If country *i* exhibits a higher degree of association with the euro zone business cycle one should expect a decrease in the specific component variability and so the rejection of the homoscedasticity hypothesis. If this rejection was due to a decrease in the specific component variability, then it would suggest that country *i* had converged to the euro zone business cycle during the sample period, since the majority of their fluctuations would be explained by those of the euro area.

According to the results presented in Table 3, we may conclude for a significant decrease in the variability of the specific component in Germany, Italy, Spain, The Netherlands, Austria and Portugal supporting the previous conclusion of cyclical convergence of these countries with respect to the euro zone business cycle.

Table 3

WEIGHT OF THE VARIABILITY OF THE SPECIFIC COMPONENT IN THE TOTAL VARIABILITY OF THE CYCLE AND GOLDFELD-QUANDT TEST

			GQ Test(a)
	1962-1978	1979-1999	F Statistic
Germany	0.38	0.29	2.18*
France	0.28	0.30	1
Italy	0.55	0.21	16.05***
Spain	0.56	0.32	3.16**
Netherlands	0.56	0.33	4.07**
Belgium	0.35	0.37	1.71
Austria	0.54	0.43	3.34**
Finland	0.52	0.32	1.46
Portugal	0.56	0.25	5.91***
Ireland	0.70	0.57	1.35
Luxembourg	0.43	0.75	1.64
	Estimation without the contemporaneous euro area cycle		
Germany	0.7	0.51	2.64*
France	0.84	0.68	1.15
Italy	0.84	0.55	4.63***

Notes:
(a) Between the sub- periods 1962-1978 and 1983-1999.
* Significant at 10% level.
** Significant at 5% level.
*** Significant at 1% level.

(13) In Denmark and Japan the results for the maximum and multiple correlation suggest a different evolution, so we considered the multiple correlation coefficient to be representative of an increase in the degree of linear association.

(14) This approach is similar to a previous one by Barbosa *et al.* (1998) for the Portuguese business cycle. In Germany, France and Italy the equation were estimated with and without the contemporaneous cycle of the euro area in order to minimise the problem of non-exogeneity of the explanatory variable. However, as one can see in Table 3, the main conclusions remain valid.

(15) The weight is given by $\frac{\sigma_{\varepsilon_{it}}}{\sigma_{x_{it}}}$, where $\sigma_{\varepsilon_{it}}$ is the standard deviation of the specific cyclical component and $\sigma_{x_{it}}$ the total standard deviation of the cycle in country *i* for the *t* sub-period.

(16) It should be noted that in France (with the contemporaneous euro zone cycle) and Belgium there is also an increase in the weight of the specific component, although this increase was not significant.

In the other countries, the results do not suggest a significant change in the variability of the specific component. In France and Belgium this was due to the fact that the variability of the specific component stood low during the whole sample period. In Finland, Ireland and Luxembourg the variability stood high, reinforcing the conclusion that these countries had not converged to the euro zone business cycles during the period in analysis.

6. CONCLUSIONS

This paper provided a descriptive analysis of the cyclical evolution of the European Union countries between 1960 and 1999. In particular, we investigated whether the cycle of these countries converged to the euro area business cycle.

We distinguished three groups of countries. A first group included Germany, France and Belgium, where the results suggested a high degree of association and synchronisation with the euro zone business cycle in the whole sample period. A second group included Italy, Spain, Austria, The Netherlands and Portugal, where it was observed a significant increase in both the association and synchronisation with the euro zone cycle, suggesting that these countries converged to the euro area business cycle. A last group included Finland, Ireland and Luxembourg, where no evidence of cyclical convergence with the euro area was found.

In the non-euro area countries, there was an increase in the degree of cyclical association, particularly for the United Kingdom, but not in synchronisation, so we cannot state that these countries have cyclically converged to the euro zone business cycle. The only exception seems to be Greece, where there was also an increase in synchronisation.

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January*

4 January (Instruction no. 1/2001, Official Gazette no. 14, Series II)

Pursuant to the provisions set forth in subparagraphs f) and g) of paragraph no. 1 of article 6 of the Statute of the Public Credit Management Institute, approved by Decree-Law no. 160/96 of 4 September, and in article 11 of Decree-Law no. 280/98 of 17 September, lays down the rules governing the issuance of Treasury bonds as well as the access conditions and the rights and obligations of financial operators in the primary market. Revokes Instruction no. 2-A/98 (Series II) of 17 December, to come into force as from 1 January 2001.

29 January (Circular Letter of the Banco de Portugal no. 2/DMR)

Following Circular Letter no. 347/DMR of 27 October 1999, fixes the rate of return of Deposit Securities, Series B, at 4.77%, for the quarterly interest rate calculation period to start on 4 February 2001.

30 January (Decree-Law no. 19/2001, Official Gazette no. 25, Series I, A)

Introduces changes in the legal framework of mutual guarantee companies, classifying them as credit institutions whose activity is restricted to the carrying out of financial operations and to the provision of related services, on behalf of small and medium-sized companies.

February

2 February (Notice of Banco de Portugal no. 1/2001, Official Gazette no. 34, Series I - B)

Amends Notice no. 1/93, of 8 June, concerning the calculation of the solvency ratio of credit institutions. Introduces changes, namely, in the risk weightings of some assets items (eg. loans secured by mortgages, real estate financial leasing operations and securities collateralised by mortgage loans), as well as in the calculation of the weighted value of off-balance sheet items related to (e.g. swaps, futures and options) contracts on interest rates, exchange rates, equities, precious metals and commodities, which are not traded in a recognised market.

15 February (Instruction of Banco de Portugal no. 1/2001, BNBP no. 2/2001)

Sets forth the procedure regarding the notification to the Banco de Portugal of the sale of credit within the scope of securitisation operations.

15 February (Instruction of Banco de Portugal no. 2/2001, BNBP no. 2/2001)

Amends Instruction no. 4/96 (Chart of Accounts for the Banking System), requiring the publication, in the Notes annexed to the annual accounts, information of securitisation operations.

16 February (Notice of Banco de Portugal no. 2/2001, Official Gazette no. 40, Series I - B)

Considering the drawing closer of the start of the physical circulation of the euro in 1 January 2002, encourages the utilisation of cheques denominated in euro, regulating some aspects concerning their utilisation.

March

2 March (Circular Letter of Banco de Portugal no. 4/01/DSBDR)

Makes known that Instruction no. 6/2001 - amending the scope of account "9203 - Irrevocable credit lines" of the Chart of Accounts for the Banking System - has been approved. In this conformity, within one month from the date of receipt of the above-mentioned Circular Letter, institutions must reclassify the credit lines and communicate to the Banco de Portugal the resulting change in the amount of the provisions for general credit risks.

20 March (Notice of Banco de Portugal no. 3/2001, Official Gazette no. 67, Series I, B)

In accordance with the provisions laid down in no. 4 of article 1 of Decree-Law no. 3/94, of 11 January, as worded by Decree-Law no. 53/2001, of 15 February, establishes the requirements to be complied with by exchange offices wishing to provide cash transfer services to and from abroad.

* The chronology for monetary measures of the Eurosystem can be found in the Monthly Bulletin of the European Central Bank.

April

3 April (Notice of Banco de Portugal no. 4/2001, Official Gazette no. 79, Series I, B)

Adds no. 9-A and rewords nos. 5 and 8 of Notice no. 12/92, of 22 December, published in Official Gazette no. 299 Series II, 2nd Supplement, of 29 December 1992, which provides for the assets that can be included in the own funds of institutions subject to the supervision of Banco de Portugal and defines their characteristics. In particular, deductions from own funds shall include, for their purchasing price, the amount corresponding to securities, resulting from securitisation operations, held by entities that do not assign the underlying assets, when the latter, due to their characteristics, concentrate the credit risk of the said assets.

3 April (Regulation no. 5/2001 of the Stock Market Commission, Official Gazette no. 79, Series II)

Changes Regulation no. 24/98, of 28 December, with a view to simplifying and making more flexible the procedures regarding the execution of the redenomination methods approved. Rewords articles 11, 18 and 19 and revokes articles 8 and 17 of the above-mentioned Regulation, in which the reference to "*Central de Valores Mobiliários*" is replaced with "*Interbolsa*".

17 April (Decree-Law no. 118/2001, Official Gazette no. 90, Series I, A)

Introduces changes in articles 4, 6, 39, 59, 64 and 65 of the Organic Law of the Banco de Portugal, approved by Law no. 5/98, of 31 January, in force since the date of adoption of the euro. Article no. 64 of the Organic Law, as worded by the mentioned Decree-Law, is effective as of 1 January 2001.

17 April (Decree-Law no 117/2001, Official Gazette no. 90, Series 1, A)

Regulates, on the monetary segment, the period for the double currency circulation from 1 January to 28 February 2001. It shall be incumbent on the Banco de Portugal to establish, by means of a Notice, the rules applicable to any regulation that may be deemed necessary. For a period of 20 years, from 28 February 2002 onwards, the Banco de Portugal shall receive and pay in euro the banknotes mentioned in article 2 submitted to it.

19 April (Notice of the Banco de Portugal no. 5/2001, Official Gazette no. 92, Series I, B)

Introduces changes in sub-section III of section B of the annex VI to Notice no. 7/96, of 24 December, taking into account the changes in the concept of over-the-counter derivative instruments envisaged in Directive no. 93/6/EEC, of 15 March, considering the entry into force of Directive no. 2000/12/EC of the European Parliament and of the Council of 20 March, and considering also the provisions laid down in articles 9 to 11 of Decree-Law no. 250/2000, of 13 October. As a result, the assessment of own fund requirements for the coverage of counterparty risk of any over-the-counter derivative instruments included in the trading portfolio shall be made according to the "mark-to-market" valuation.

23 April (Decision no. 8484/2001, Official Gazette no. 95, Series II)

Approves, pursuant Article no. 63 (1) of the Organic Law of the Banco de Portugal (Law no. 5/98, of 31 January) the adjustments introduced in the Chart of Accounts of the Banco de Portugal, as a reduced version.

23 April (Notice of the Banco de Portugal no. 6/2001, Official Gazette no. 95, Series I, B)

Adds an item c) to article 5 of Notice no. 8/94, of 2 November (which embodies provisions relating to supervision on a consolidated and sub-consolidated basis), widening the scope in which the Banco de Portugal may require supervision on a sub-consolidated basis.

24 April (Decree-Law no. 134/2001, Official Gazette no. 96, Series I, A)

Reviews the personal income tax withholding system. Introduces changes in a number of articles, adds an article 2-A and fully republishes Decree-Law no. 42/91, of 22 January, with the changes introduced by Decree-Laws no. 263/92, of 24 November, 95/94, of 9 April, 18/97, of 21 January, by Law no. 87-B/98, of 31 December, and by the present Decree-Law.

26 April (Regulation of Stock Market Commission no. 2/2001, Official Gazette no. 97, Series II)

Introduces changes in article no. 2 of Regulation no. 10/98, of 5 August, which lays down the rules governing repo operations and security lending, carried out on behalf of transferable securities investment trusts.

30 April (Circular-Letter of the Banco de Portugal no. 7/DMR)	Informs that, in the wake of Circular-Letter no. 347/DMR, of 27 October 99, the rate of return of the Certificates of Deposit, Series B, is fixed at 4,77%, to prevail on the quarter started on 4 May 2001.

May

7 May (Decision no. 9501/2001, Official Gazette no. 105, Series II)	Approves the final plan for the transition of financial administration to the euro, taking into account the proposal submitted by the working group created by Decision no. 15379/2000 of 28 July, and considering the provisions laid down in no. 2 of the Resolution of the Council of Ministers no. 170/2000, of 7 December.
11 May (Resolution of the European Council of 23 March 2001 (OJ C 138, 11.5.2001))	Resolution of the European Council on more effective securities market regulation in the European Union.
12 May (Regulation no. 3/2001 of the Stock Market Committee, Official Gazette no. 110, Series II)	Pursuant to the provisions set forth in paragraph 1 b) of article 353 of the Stock Market Code, and for the purposes of the provisions of articles 8 and 24 of Decree-Law no. 276/94, of 2 November, as worded by Decree-Law no. 323/99, of 13 August, lays down the rules according to which the entities managing mutual funds must publish in one of the stock market bulletins the disaggregated composition of the placements of each investment fund managed by them, the respective overall net value, the off-balance sheet liabilities and the number of equities outstanding. Revokes Regulation no. 7/98, of 25 June.
17 May (Circular Letter of Banco de Portugal no. 10/01/DSBDR)	Recommends for credit institutions and financial companies that resort to the Internet as a distribution channel for their services, a set of procedures to be followed within the framework of their internal organisation and control, in order to reduce the risks to which they are exposed, taking into account the increased use of electronic means in the provision of such services.
18 May (Circular Letter of Banco de Portugal no. 11/01/DSBDR)	Recommends that the clients of credit institutions who suffer damages due to delay in the settlement of debits unduly made for reasons imputable to such institutions, shall be compensated, at least, with the payment of an amount corresponding to the application of the official interest rate to the amounts in question, calculated between the date on which they should have been processed and the respective settlement date.
23 May (Circular Letter of Banco de Portugal no. 12/01/DSBDR)	Informs that considering the changes to be introduced in Notice no. 6/95, which are in course of preparation, and which are foreseen to take effect from the beginning of the second half of 2001 onwards, it is allowed, provided that some conditions are met, the registration against results carried forward of increases in liabilities arising from early retirements.

June

6 June (Notice of the Banco de Portugal no. 7/2001, Official Gazette no. 131, Series I, B)	Fixes at EUR 50,000 the value of the initial contribution to be delivered by credit institutions to the Deposit Guarantee Fund (Revokes Notice no. 8/95).
15 June (Instruction of the Banco de Portugal no. 10/2001, BNBP no. 6/2001)	Lays down the regulations governing the reporting to the Banco de Portugal of the composition of financial groups.
15 June (Instruction of the Banco de Portugal no. 11/2001, BNBP no. 6/2001)	Lays down the requirements to be complied with by credit institutions, when these promote among the public, by means of third parties, the carrying out of operations they are authorised to conduct.
15 June (Circular-Letter of the Banco de Portugal no. 10/2001/DSB)	Contains prudential recommendations on the provision of financial services through the Internet.

15 June (Circular-Letter of the Banco de Portugal no. 12/2001/DSB)	Authorises, up to the entry into force of the changes introduced in Notice no. 6/95 (on the coverage of liabilities in survivorship and retirement pensions) the exemption, against results carried forward, of liabilities accrued on account of early retirements.
21 June (Recommendation of the European Central Bank)	Recommendation of the European Central Bank on the statistical requirements of the European Central Bank related with balance of payments statistics, the institutional reserves model and the international investment position (BCE/2000/5). This Recommendation replaces Recommendation BCE/1998/NP21, pursuant to the rectifications to pages 4 to 6 included in the OJ, Series C, no. 179, of 23-06-2001.

July

3 July (Decree-Law no. 198/2001, Official Gazette no. 152, Series 1, A)	Approves the overall revision of the provision laid down in the Personal Income Tax Code, approved by Decree Law no. 442-A/88, of 30 November, in the Corporate Income Tax Code, approved by Decree-Law no. 442-B/88, of 30 November, and in the Statutes on Tax Incentives, approved by Decree-Law no. 215/89, of 1 July, and publishes, in attachment, the respective provisions. Revokes Articles nos. 5, 9 and 10 of the said Decree-Law no. 215/89, of 1 July.
4 July (Circular Letter of the Banco de Portugal no. 10/DMRPM/AR)	Sends diskette containing files with the lists of all institutions subject to and exempt from reserve requirements in the euro area on 28 June 2001.
6 July (Circular Letter of the Banco de Portugal no. 15/01/DSBDR)	Sends diskette containing an application with information reported on the maps of a prudential nature envisaged in the Instruction of the Banco de Portugal no. 25/97.
6 July (Directive no. 2001/34/CE, Official Gazette no. 184, Series A)	Adopts measures on the admission of securities to official stock exchange listing and on information to be published on those securities. The Member States shall communicate to the Commission the texts of the main laws, regulations and administrative provisions which they adopt in the field covered by this Directive. Directives 79/279/EEC, 80/121/EEC and 88/627/EEC are hereby repealed, as amended by the acts listed in Annex II Part A, without prejudice to the obligations of the Member States concerning the time-limits for transposition set out in Annex II Part B. The references to the repealed Directives shall be construed as references to this Directive and should be read in accordance with the correlation table shown in Annex III. This Directive shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Communities.
6 July (Circular Letter of the Banco de Portugal no. 16/01/DSBDR)	Sends diskette containing an application with information reported on the provisions maps envisaged in the Instruction of the Banco de Portugal no. 91/96.
18 July (Circular Letter of the Banco de Portugal no. 18/01/DSBDR)	Recommends that credit institutions and financial corporations should carefully examine the operations agreed with residents in or entities having their head office in countries or territories considered as non co-operating for the purposes of prevention and repression of money laundering.
19 July (Circular Letter of the Banco de Portugal no. 19/01/DSBDR)	Sends a new Instruction (to be published in the August issue of the "*Boletim de Normas e Informações*" (News and Information Bulletin)) on regular information on liquidity.
27 July (Accounting Directive no. 27 of the Ministry of Finance, Official Gazette no. 173)	Lays down the principles for reporting financial information by segments, so as to make its understanding more clear to users of financial statements.

27 July (Circular Letter of the Banco de Portugal no. 41/DPGDS)	Sends the schemes for the discontinuance of the escudo within the scope of the interbank clearing system (Portuguese abbreviation: SICOI), regarding the following subsystems and respective chronograms: Cheque Teleclearing, Commercial Bills, Direct Debits and Interbank Electronic Transfers.
30 July (Circular Letter of the Banco de Portugal no. 12/DMR)	Informs that, in the wake of Circular Letter no. 347/DMR, of 27 October 1999, the rate of return of the Certificates of Deposit, Series B, is fixed at 4,51%, to prevail on the quarter started on 4 August 2001.

August

2 August (Circular Letter of the Banco de Portugal no. 13/DMRPM/AR)	Sends diskette containing files with the lists of all institutions subject to and exempt from reserve requirements in the euro area on 30 July 2001.
2 August (Circular Letter of the Banco de Portugal no. 20/01/DSBDR)	Information to be supplied to customers by credit institutions, prior to the celebration of housing loan agreements - Communicates that the Recommendation of the Commission no. 2001/193/CE should be complied with by credit institutions.
20 August (Law no. 91/2001, Official Gazette no. 192, Series I, A)	Lays down the general and common framework provisions relating to the budget and accounts of all the sectors of the general government (Budgetary Framework Law).

September

17 September (Circular Letter of the Banco de Portugal no. 20/2001/DSB)	Recommends institutions to follow, without prejudice to the obligation to comply with the rules on transparency and information to be given to the public, Commission Recommendation no. 2001/193/EC of 1 March 2001 on pre-contractual information to be given to consumers by lenders offering home loans.
17 September (Notice of the Banco de Portugal no. 8/2001, Official Gazette no. 223, Series I-B)	Revokes, in the wake of the publication of Instruction no. 20/2001, which lays down a new framework for the regular monitoring of the liquidity levels of deposit-taking credit institutions, the Notice of the Banco de Portugal published in the Supplement no. 142 to the Official Gazette, Series II, of 20 June 1984.
25 September (Notice of the Banco de Portugal no. 9/2001, Official Gazette no. 231, Series I-B)	Introduces changes in Notice no. 1/93 of 8 June on the calculation of the solvency ratio of credit institutions, in the field of risk weighting of mortgage loans on the residential property of the borrower and of the procedures for the assessment of this property. Rewords paragraph 2 and adds a paragraph 4c to part I of the annex to the aforementioned notice.
25 September (Instruction of the Banco de Portugal no. 23/2001, BNBP no. 10/2001)	Fixes the basic contributory rate to be applied in the calculation of the contributions relating to the year 2002 to be delivered to the Deposit Guarantee Fund by participating institutions.
25 September (Instruction of the Banco de Portugal no. 24/2001, BNBP no.10/2001)	Fixes at 75 per cent the limit for the irrevocable payment commitment to be applied in contributions relating to the year 2002 to the Deposit Guarantee Fund.
28 September (Decree-Law no. 262/2001, Official Gazette no. 226, Series I-A)	Lays down the framework of brokers and dealers. Revokes Decree-Law no. 229-I/88 of 4 July.

October

4 October (Regulation no. 4/2001 of the Stock Market Commission, Official Gazette no. 247, Series II)

Pursuant to the provisions set forth in Articles 10 and 32 and in paragraph 3 of Article 34, paragraphs 3 and 4 of Article 35, and paragraph 2 of Article 36 of Decree-Law no. 394/99 of 13 October, establishes the legal framework of the bodies managing markets, central securities systems, securities settlement systems and services. Revokes Regulation no. 3/2000 of 2 February and Regulation no. 28/2000 of 1 August.

15 October (Circular Letter of the Banco de Portugal no. 35/01/DSBDR)

Clarifies that in the event of a reduction in the capital stock of a mutual agricultural credit bank belonging to the Integrated Mutual Agricultural Credit Scheme, in accordance to the provisions laid down in subparagraph c), of paragraph 3 of Article 17 of the Legal Framework of Mutual Agricultural Credit, the own funds to be considered shall be stripped of amounts that might lead to the breach of the relationship between basic and supplementary own funds or to the non-compliance with the ceiling fixed for medium and long-term subordinated loans.

17 October (Circular Letter no.36/01/DSB)

Advises credit institutions and financial companies to examine with particular caution operations negotiated with residents or with individuals established in countries and territories, which are considered non-cooperating, within the scope of the money laundering prevention. Revokes Circular Letter no. 18/01/DSBDR of 11 July.

29 October (Circular Letter no. 16/DMR)

Following Circular Letter no. 347/DMR of 27 October 1999, fixes at 3.76% the rate of return of the Certificates of Deposit, Series B, to prevail in the quarter started on 4 November 2001.

November

20 November (Notice of Banco de Portugal no. 11/2001, Official Gazette no. 269, Series I - B)

Taking into account the provisions set forth in subparagraph a) of article 4 of Decree-Law no. 166/95, of 15 July, introduces changes in the regulatory framework of payment cards. Revokes Notice no. 4/95, of 28 July, as well as Instruction no. 47/96, published in *Boletim de Normas e Informações* (Rules and Information Bulletin) of the Banco de Portugal, of 17 June 1996.

20 November (Notice of Banco de Portugal no. 10/2001, Official Gazette no. 269, Series I - B)

Establishes the regulatory framework, for prudential purposes, of credit and other assets securitisation operations carried out by credit institutions and financial companies. Introduces changes in paragraphs 8 and 9 of part I of the annex to Notice no. 1/93, of 8 June, in paragraph 9?A of Notice 12/92, of 29 December, and adds subparagraph d) to paragraph 11 of Notice no. 10/94, of 18 November. The Banco de Portugal will establish, by means of an Instruction, the date on which the transitional system envisaged in the Notice will end.

21 November (Regulation no. 5/2001 of the Stock Market Commission, Official Gazette no. 270, Series II)

Pursuant to the provisions set forth in subparagraph b) of article 242 of the Stock Market Code, introduces changes in article 50 of Regulation no. 10/2000, in order to make more flexible the preparation of the process regarding the approval of the prospectus for the listing in a regulated market of securities other than shares.

22 November (Executive Order no. 1303/2001, Official Gazette no. 271, Series I - B)

Pursuant to the provisions laid down in article 211 of the Stock Market Code, approved by Decree-Law no. 486/99 of 13 November, sets the rates to be paid to the Stock Market Commission, namely by the market managing entities, on the value of each buying and selling operation, both in normal and in special sessions, by the managing entities of central settlement systems and central securities systems, by investment fund managing entities and by selling entities of foreign collective investment undertakings; it also sets the rates to be paid on the transmission of securities negotiated in a regulated market and executed outside the regulated market. Revokes Executive Orders no. 313-A/2000 (Series II) of 29 February and no. 1338/2000 (Series II) of 5 September.

26 November (Notice of Banco de Portugal no. 12/2001, Official Gazette no. 272, Series I - B)

Introduces changes in the regulatory framework of the coverage of liabilities arising from survivorship and retirement pensions that should be complied with by credit institutions and financial companies and adapts this framework to some internationally accepted accounting rules, namely IAS 19. Revokes Notice no. 6/95, of 21 September. The above-mentioned Notice enters into force on 31 December 2001, except for subparagraph 2c of paragraph 7, which enters into force on the date mentioned in the Instruction referred to therein.

December

5 December (Circular Letter of Banco de Portugal no. 49/01/DSBDR)

Clears doubts as to the accounts that should be used in the registration of fees charged on operations on derivatives traded in organised markets.

6 December (Circular Letter of Banco de Portugal no. 18/DMRPM/AR)

Sends a diskette containing files with the lists of all institutions subject to and exempt from reserve requirements in the euro area on 29 November 2001.

7 December (Guideline of the European Central Bank 2001/833/EC, OJ L310)

Introduces changes in Guideline ECB/2000/1 on the management of the foreign reserve assets of the European Central Bank by the national central banks and the legal documentation for operations involving the foreign reserve assets of the European Central Bank. The above-mentioned Guideline enters into force on 23 November 2001 (ECB/2001/12) and it is addressed to the national central banks of participating Member States.

17 December (Instruction of Banco de Portugal no. 29/2001, BNBP no. 12/2001)

Establishes the new framework of prior notification for securitisation operations.

17 December (Instruction of Banco de Portugal no. 30/2001, BNBP no. 12/2001)

Regulates the granting of the Resident Financial Institution Code.

19 December (Executive Order no. 1429/2001, Official Gazette no. 292, Series I - B)

Pursuant to the provisions set forth in paragraph 1 of Article 4 of Decree-Law no. 394/99, of 13 October, fixes the capital stock of the managing companies of regulated and non-regulated markets, of settlement systems and of central securities systems. Revokes Executive Order no. 1182/99 (Series II) of 4 November and Executive Order no. 1331/99 (Series II) of 24 December.

20 December (Circular Letter of Banco de Portugal no. 19/DMR)

Following a decision of the Governing Council of the ECB, of 14 December 2000, which established the TARGET closing days from 2002 onwards, makes known that having been decided that the large-value RTGS payment system (Sistema de Pagamentos de Grandes Transacções - SPGT) would also be closed on the same days, within the SITEME (market electronic transfer system), operations with value date or redemption date coinciding with the TARGET and the SPGT closing days cannot be carried out. Provides information regarding the minimum services to be provided by SITEME on Banco de Portugal closing days (due to bank holidays), which are operating days for TARGET and SPGT.

26 December (Decree-Law no. 333/2001, Official Gazette no. 296, Series I - A)

Transposes into the Portuguese legal system Directive 98/31/EC of the European Parliament and of the Council, of 22 June, which introduces changes to Council Directive 93/6/EEC, of 15 March, on the capital adequacy of investment firms and credit institutions. In particular, this Decree-Law sets the minimum capital requirements for the coverage of risks associated with positions in commodities and makes it possible - subject to prior authorization of the Banco de Portugal - to calculate the own funds requirements to cover those risks and the so-called market risks, through internal models. This Decree-Law will be regulated by a Notice of Banco de Portugal.

28 December (Regulation no. 7/2001 of the Stock Market Commission, Official Gazette no. 299, Supplement, Series II)

Pursuant to the provisions set forth in subparagraph b) of paragraph 1 of Article 353, in accordance to paragraph 3 of Article 249, and for the purposes laid down in subparagraphs c), d) and g) of paragraph 1 of Article 359, all part of the Stock Market Code, establishes that companies, whose shares are traded in a regulated market, are bound to disclose the degree and form of adoption of Recommendations regarding the Management of Listed Companies.

January

7 January (Regulation no. 8/2001 of the Stock Market Commission, Official Gazette no. 299, Supplement, Series II)

Pursuant to the provisions set forth in subparagraph n) of Article 9 and Article 26 of the Statute of the Stock Market Commission, approved by Decree-Law no. 473/99, of 8 November, and in subparagraph b) of paragraph 1 of Article 353 of the Stock Market Code, approved by Decree-Law no. 486/99, of 13 November, sets the rates to the paid to the Stock Market Commission. Revokes Regulation no. 35/2000, of 14 December. This Regulation takes effect on 1 January 2002.

7 January (Circular Letter of Banco de Portugal no. 1/2002/DET)

Informs about the process of exchanging banknotes and coins denominated in escudos for banknotes and coins denominated in euro, namely about the provisions set forth in Articles no. 3, 4 and 6 of Decree-Law no. 117/2001, of 17 April. The afore-mentioned exchange cannot be subject to restrictions that are not provided for by law. It also makes known that the charging of fees or any other type of commissions is against the legal tender status of the currency.

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