# Banco de Portugal

## Economic bulletin

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# *Foreword by the Governor*

## GROWTH AND STABILITY OF THE PORTUGUESE ECONOMY

**1**. This *Economic Bulletin* includes the projections for the Portuguese economy over the next two years, in line with the time horizon adopted by the Eurosystem for the euro area. After a GDP decline at constant prices of approximately 1% in 2003, the present projections point to growth ranges around 0.75% for the current year and around 1.75% for 2005. The apparently weak growth forecast for 2004 is chiefly due to the prospects of a further moderate decline in domestic demand (-0.25%). External demand, in turn, is expected to recover significantly, allowing our exports of goods and services to move from a growth rate of 3% last year to a range of 4.75 to 6.75% in 2004 and of 6 to 9% in 2005. Recovery in the world economy and in the European economy in particular was definitely confirmed towards the end of 2003 and is expected to be pursued in the current year, which explains the growth hypotheses adopted.

There are still, nonetheless, some weaknesses in domestic demand, that are characteristic of the adjustment stage presently experienced by the Portuguese economy. This is particularly reflected in the behaviour of investment, which is expected to decline during the projection period, as a result of the envisaged fall in public investment. Private investment is expected to have a slightly positive growth rate this year and a more relevant recovery next year. Developments in public investment reflect, in particular, the expected decrease in capital transfers from the European Union. In addition, projections as regards public expenditure in general have a normative nature, assuming that the Government will further pursue the fiscal consolidation objective. This justifies the forecast that public consumption, in real terms, will record negative growth during this period.

The weak growth of domestic demand, together with the moderation in the behaviour of wage costs, is behind the deceleration in inflation forecast for the period under consideration. The decline to figures below 3% towards the end of 2003 is an indication that the mentioned factors, together with the appreciation of the euro that is moderating import prices, are now contributing to the better behaviour of inflation.

The moderation of private expenditure will also contribute to a significant decline in the external deficit to approximately -1.5% and -1.25% of GDP in 2004 and 2005 respectively (after an estimation of -2.75% for 2003 and -5.6% for 2002). As we have always affirmed, this correction of the external imbalance occurs without any underlying external financing restrictions, and is the result of a spontaneous adjustment of expenditure of private economic agents. In the present framework of the Portuguese economy, the balance of payments does not, in itself, raise any problem, although it may be a symptom of indebtedness problems faced by the economic agents, naturally including the State.

**2**. The developments projected for the Portuguese economy confirm our analysis of the nature of the recent economic cycle. After a period of excessive expenditure increases, an adjustment was inevitable, leading to some deceleration in growth. The weakness in the world economy and the difficult fiscal position have aggravated the recessive nature of recent developments in the economy. It is certain that, if the present projections come to prove accurate, Portugal will grow below the European average during four years (2002 to 2005), but, for that reason, it is necessary to understand that this is a cyclical situation, and that the economy will maintain its growth potential, permitting it to pursue the

convergence towards its European partners with success in the future. Banco de Portugal projections on the recent developments of the economy have, in general, proved to be correct, and were even adopted by different entities. With the same perspective of prudence and realism that characterises the Bank's interventions, we must adopt an interpretation of projections for the next two years with more optimism than would be assumed from the analysis of the figures. The recovery now announced in the forecasts presented in the present *Bulletin*, albeit moderate, is an indication that a reversal of the economic cycle has been started. On the other hand, it should be stressed that the simple mechanical exercise of excluding the contributions from consumption and public investment to GDP developments, would point to an increase in private activity of approximately 1.5% in 2004 and nearly 3% in 2005. It is therefore assumed that Portuguese firms have adequate productive capacity to take full advantage of the international economic recovery. Contrary to developments in 2003, the households' disposable income is also expected to show positive growth in the next two years, while private consumption, after a fall of 0.7% in 2003, is expected to record real growth of approximately 1.5% in 2005. Consumer confidence, which has been recently improving, may even have a more positive behaviour and thus contribute to the higher growth of the economy. The favourable trend of inflation may contribute to that development. In turn, the adequate trend of costs and external demand prospects may also lead to a faster recovery of private investment than that implicit in the present projections. The improvement of economic growth indicators in the euro area at the end of the year seemed to point to a stronger recovery than that envisaged when the present projections were prepared. Indeed, growth in the euro area in the fourth quarter of 2003 may have come closer to potential growth. Underlying this possibility is also the maintenance of accommodating monetary policy, with the lowest interest rates for the last 50 years, after the decrease recorded in June. In a relatively closed economic area, this has partly offset the appreciation of the euro.

Should these perspectives for consumption and private investment come to materialise, the growth rate of the economic activity would fall within the upper part of the reported ranges. However, it should be realistically recognised that most risks associated with the present projections still point in the opposite direction. The extreme uncertainty in the present economic situation cannot but affect the evaluation of the risks associated with any economic forecast. In effect, the international upturn may turn out to be less buoyant than anticipated, if the current large imbalances in the US economy negatively affect the markets perceptions. In turn, it should be recalled that the Eurosystem October projections are based on the technical assumptions of constant interest rates and exchange rates, and this may represent a downward risk for growth projections. Among the specific negative factors affecting the Portuguese economy, reference should be made, first, to a possible adverse behaviour of wage costs, which may again contribute to a loss of competitiveness and, second, to the fact that a possible development of the fiscal position may require measures with a more negative effect in the short run.

**3**. Some additional remarks on fiscal issues are justified, given their crucial weight in economic policy. As I have mentioned above, the sustained effort towards fiscal consolidation has an short term negative effect on economic growth prospects. The events that surrounded the recent implementation of the Stability Pact may lead some to believe that the fiscal policy stance might or should be changed.

In fact, the need for a budgetary discipline continues to be stringent and, in that sense, the provisions laid down in the Stability and Growth Pact continue to be relevant. On the other hand, whatever opinion one may have on the particulars of the Pact from the point of view of Monetary Union as a whole, that must be differentiated from the requirement that a country such as Portugal must continue to comply with any applicable regulation of the Pact. We are too vulnerable, as a small country, and we are still facing a rather unbalanced fiscal position when excluding the effects of extraordinary and unrepeatable measures with which we have counterbalanced the decline in fiscal receipts.

In addition, we must consider the longer-term objectives of the Portuguese economy, which imply the resumption of the anti-cyclical role of fiscal policy which can only be fully implemented after a more balanced position has been attained. In turn, the growing weight of retirement pension transfers and the prospects of marked ageing of the population in the future make it necessary to build a solid fiscal position that permits to consider without apprehension maintaining the essential features of our social security system. In addition, it should also be emphasised that persistently high fiscal deficits will ultimately have negative effects on national wealth and income in the long run. In the short run, an increase in the deficit will undeniably have expansionary effects, in so far as the decline in public savings is not offset by an increase in private savings, which results in an increase in domestic expenditure. However, the fact that, in such case, national savings decrease, gives rise either to a decline in investment or to an increase in external debt. Both cases imply a fall in future wealth and, possibly, in growth prospects in the long run. It is therefore to our best interest that high public deficits do not persist.

As regards the present situation, the Portuguese structural deficit represents a short-term contribution to the sustainability of economic activity. In 2003, Portugal had better reasons than other countries to exceed the 3% limit of the deficit, in view of the severe recession. However, this would not exclude the need for a subsequent deficit reduction, all the more because budgetary discipline will prevail in the euro area and all other Member Countries will eventually comply with those regulations. From the point of view of the behaviour of the fiscal deficit in forthcoming years, the most relevant starting point is the current situation excluding extraordinary measures that do not last forever. In October, the Commission, in its Autumn Forecasts, pointed out that the fiscal deficit stood at 2.9% in 2003 only on account of one-off receipts that represented «more than 2% of GDP». This was referred to in the issue of the *Economic Bulletin* published in November. It should be noted that the extraordinary measures to obtain receipts are legitimate and accepted by the Eurostat for the purpose of reporting excessive deficits. The advantage of their utilisation lies in the fact that they partly replace receipts that were temporarily reduced on account of recession. The point in considering the deficit without these measures, however, is that it draws attention to the difficulties we still have to face in order to achieve the purpose of full fiscal consolidation. We must be realistic. The prospects of moderate economic growth do not seem to be enough to automatically generate a significant increase in fiscal receipts. The success obtained with the moderation in current expenditure must be pursued, since it is an indispensable contribution to actual fiscal consolidation. In the short term, however, it will be necessary to take measures both on the expenditure side and on the revenue side, particularly by obtaining better results in combating tax evasion. The immediate and conjunctural need for more receipts does not imply any judgement on the major issue relative to their desirable size for the State. This is a purely political problem and it must be exclusively tackled within serious and documented political debate. However, re-establishing a more balanced and sustainable fiscal position should be the object of a broad consensus in the Portuguese society. Adding to all the aforementioned reasons, this will likely make it possible to increase economic agents' confidence in the future, considering the relevance that this subject has had at the national level. Improving households' and corporations' expectations is therefore vital for the present economic situation.

**4**. After the current adjustment stage, the major problem faced by the Portuguese economy is related to the ability to increase its potential growth rate, and, in addition, to achieve this goal within the growing competition we will endure as a result of globalisation and of the enlargement of the European Union. This is an extremely demanding challenge. Notwithstanding the productive structure changes introduced over the last decade, clearly reflected on our exports, competitiveness has declined in the course of that period. First, because we lagged behind concerning innovation, and second, because unit labour costs increased vis-à-vis our trade partners. We have recently witnessed a

deceleration in those costs and gained market share in countries of destination of our exports over the last two years. This behaviour is essential for achieving growth and reducing unemployment, the major factor behind social inequalities. With no possibility of exchange rate adjustments, unit labour costs should evolve in parallel with our trading partners. These, in turn, depend on wage developments, but also on productivity that has been decelerating since the mid-90's, that is beyond the weak behaviour associated with the most recent period of weak economic situation. This pace of total factor productivity has been the major cause behind the decrease in the growth rate of potential output in the course of the last decade. The demographic decline and the regrettable difficulties in receiving more immigrants imply that only by means of a higher increase in productivity will we be able to attain economic growth rates that permit us to converge further to the living standards of more developed countries. Nonetheless, productivity is a variable which is the complex result of a wide set of institutions and economic agents' behaviour involving all social sub-systems. Modernisation must therefore progress on many fronts: changing incentives in order to stimulate efficient economic behaviour; increasing the flexibility of the economic structure, simultaneously ensuring a degree of social cohesion that makes flexibility sustainable; supporting, with the necessary infra-structures, the initiatives of the corporations intended to increase productivity. All these are important tasks of public policies. The effort, however, must be made by society as a whole. We must work harder, reform more and innovate further. The possibility to increase our growth potential depends on our collective effort.

*The Governor*
*VÍTOR CONSTÂNCIO*

# *Economic policy and situation*

## OUTLOOK FOR THE PORTUGUESE ECONOMY: 2004-2005

### 1. INTRODUCTION

This article presents projections for the Portuguese economy in 2004 and 2005, prepared by the Banco de Portugal within the scope of the Eurosystem Autumn 2003 forecast exercise. The corresponding projections for the euro area as a whole were published in the December 2003 issue of the *Monthly Bulletin* of the European Central Bank (ECB).

After the contraction of economic activity in 2003, the Portuguese Gross Domestic Product (GDP) is expected to grow in 2004 within a range of 0 to 1½ per cent (Table 1 and Chart 1). The recovery of the Portuguese economy will probably be triggered by the behaviour of exports. A slightly negative change in domestic demand is expected in 2004. As the external stimulus passes through to domestic demand, particularly to investment, the expansion of economic activity will become stronger. In 2005, domestic demand is expected to have a clearly positive contribution to GDP growth. The latter is forecast to stand within a range of ¾ to 2¾ per cent (Chart 1).

The current indebtedness levels of corporations and households constrain the expansion of investment and private consumption. In addition, the pressing need for budget consolidation and the gradual decline in transfers from the European Union translate, in these projections, into the assumption of a contraction in the public component of domestic demand. This, in turn, will also tend to constrain output growth in the short run. This assumption is illustrated in Chart 2, in which the lines for the 2003-2005 period represent the midpoints of the projection ranges of total and private domestic demand. Contrary to developments estimated to have occurred in 2003, private domestic

Table 1

**PROJECTIONS OF THE BANCO DE PORTUGAL**

Percentage rates of changes

| | | Current projections | | | Memo: *EB* June/2003 | |
|---|---|---|---|---|---|---|
| | 2002 | 2003 | 2004 | 2005 | 2003 | 2004 |
| Private consumption | 0.4 | [-1¼ ; -¼] | [0 ; 1½] | [½ ; 2½] | [-¾ ; ¼] | [½ ; 2½] |
| Public consumption | 2.3 | 0 | -0.8 | -1.5 | -1.6 | -1.4 |
| Gross Fixed capital formation | -5.7 | [-11 ; -9] | [-4¾ ; -¾] | [½ ; 6½] | [-5¾ ; -3¾] | [-3 ; 1] |
| Domestic demand | -0.6 | [-3¼ ; -2¼] | [-1 ; ½] | [¼ ; 2¼] | [-2 ; -1] | [-½ ; 1½] |
| Exports | 3.3 | [2½ ; 3½] | [4¾ ; 6¾] | [6 ; 9] | [2¼ ; 3¾] | [5 ; 8] |
| Overall demand | 0.2 | [-2 ; -1] | [¼ ; 1¾ ] | [1¾ ; 3¾] | [-1 ; 0] | [¾ ; 2¾] |
| Imports | -0.3 | [-2¾ ; -1¾] | [1 ; 3] | [4¼ ; 7¼] | [-1¾ ; ¼] | [3 ; 6] |
| GDP | 0.4 | [-1½ ; -¾] | [0 ; 1½] | [¾ ; 2¾] | [-1 ; 0] | [0 ; 2] |
| Current account + capital account (% GDP) | -5.6 | [-3¼ ; -2¼] | [-2½ ; -½] | [-2¾ ; ¼] | [-3¾ ; -1¾] | [-3¾ ; -¾] |
| Harmonised Index of Consumer Prices | 3.7 | 3.3 | [2 ; 3] | [1½ ; 3] | [2.5 ; 3.5] | [0.7 ; 2.7] |

Chart 1
**GDP**
Year-on-year percentage rates of change

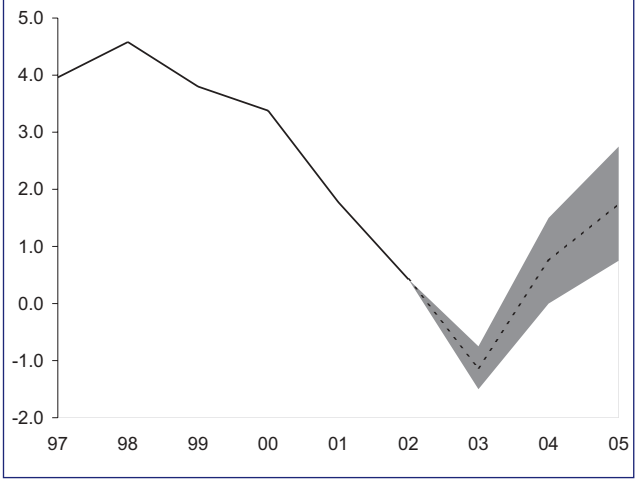
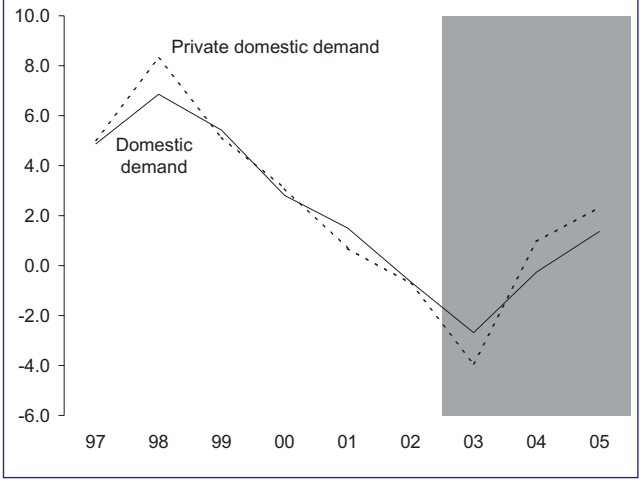



Chart 2
**DOMESTIC DEMAND**
Year-on-year percentage rates of change



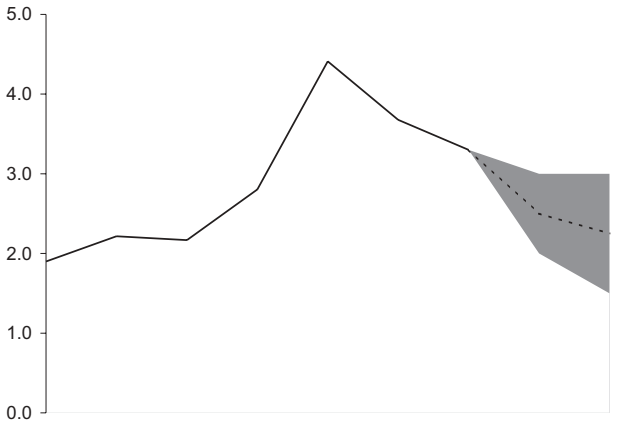

demand, albeit with moderate growth, is expected to register an increase above that for total domestic demand both in 2004 and in 2005.

Exports of goods and services will likely be the most buoyant component of overall demand. This forecast chiefly reflects an acceleration in external demand for the Portuguese economy, in line with the Eurosystem exercise assumptions on the world economy developments and with the projected recovery in the euro area economy. Some external market share gains are also expected over the projection horizon, made possible by an improvement in competitive conditions of the Portuguese economy, as a result of more moderate wage costs, given that it was unsustainable that market share gains would continue to be obtained at the expense of a narrowing of profit margins of exporting corporations, as in 2002 and 2003.

As regards inflation, the annual average rate of change of the Harmonised Index of Consumer Prices (HICP) is expected to decline from 3.3 per cent in 2003 to figures in a range of 2 to 3 per cent in 2004, and of 1½ to 3 per cent in 2005 (Chart 3). This decline in inflation is explained by both domestic and external factors of the Portuguese economy. Domestic factors are related to weak economic growth, which will make it possible to ease some pressures on the demand side, that may have affected the trend of wages and consumer prices over the past years (particularly in services). The deceleration in nominal wages observed in 2003 will likely strengthen in 2004 and 2005. This, together with an increase in productivity closer to the historical average, will determine a small rise in unit labour costs. External factors are also likely to contribute to the decline in inflation, with prices of imported goods growing moderately in 2004 and 2005, reflecting the assumptions on the development of the international prices of commodities assumed in the Eurosystem exercise. The decline in inflation can only be momentarily disturbed by the temporary rise in prices of some services related to the European Football Championship, or by discrete readjustments of prices of goods and services directly or indirectly subsidized by the State.

The projected decline in the inflation rate will likely be reflected in a narrowing of the inflation differential vis-à-vis the euro area average. In turn, the development profile of activity expected in 2004 and 2005 is similar, albeit at a lower level, to that assumed for the euro area economies as a whole. This interruption in the real convergence process is explained by the need for correction of some macroeconomic imbalances accumulated during the latter years of the 90's and in the beginning of the present decade, against a background of high growth of domestic demand not accompanied by the trend of domestic supply. This gave rise to a strong increase in external borrowing requirements of the Portuguese economy. Projections for activity and inflation presented in this article admit that the gradual endogenous adjustment of the financial situation of the private sector

Chart 3
**HARMONISED INDEX OF CONSUMER PRICES**
Year-on-year percentage rates of change



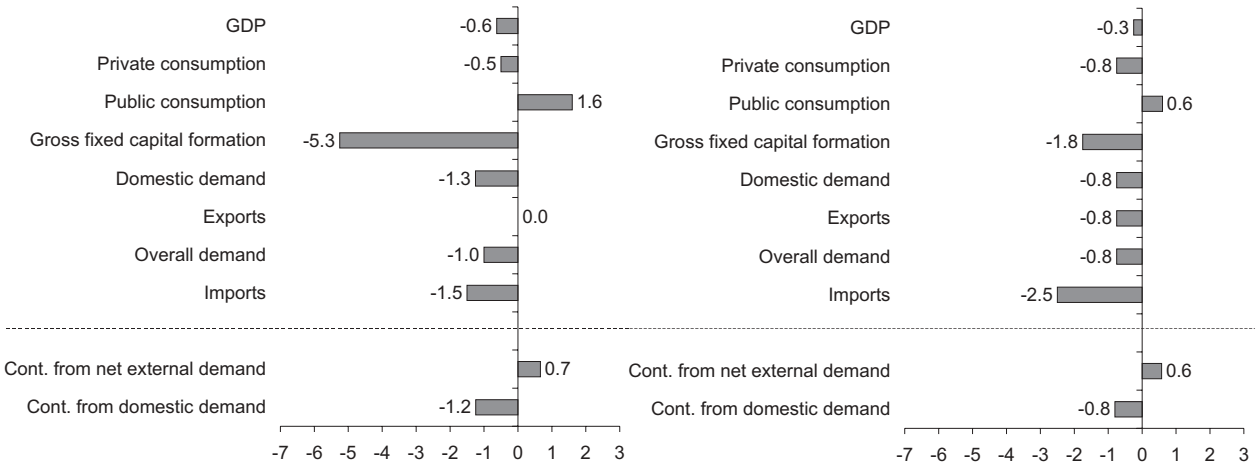

will be continued over coming years and that budget consolidation efforts will be made. These developments are likely associated with an improvement in competitiveness of the Portuguese economy, as a result of wage moderation and increases in productivity. Only in this manner will it be possible to resume higher and more sustainable paces of economic growth.

When compared with projections published in the June 2003 issue of the *Economic Bulletin*, within the scope of the Eurosystem Spring Macroeconomic Projections, in which use was made of data available up to mid-May, the present projections represent a slight downward revision of the level of economic activity projected for 2004 (¼ percentage points, if the average range points are taken as a reference) (Chart 4). This revision is explained, on the one hand, by base effects due to the different evaluation of the behaviour of the economy in 2003, which was characterized by a sharper and longer recession than previously forecast, and, on the other hand, by a slightly downward revision of external demand relevant for the Portuguese economy.

Also when compared with the spring projection exercise, the value of inflation in 2003 was set at the upper margin of the projection range(1), despite the slight downward revision of economic growth. This result is chiefly explained by three factors: (i) higher than expected oil price levels ; (ii) abnormal price increases in some foodstuffs as a result of adverse weather conditions observed last summer; (iii) a higher than anticipated resilience to the deceleration in prices of some services. For 2004, the present projections revise inflation upwards, reflecting not only the fact that the behaviour of this variable in 2003 was more unfavourable than previously expected, but also the inclusion of the effects of the recent increase in pub-

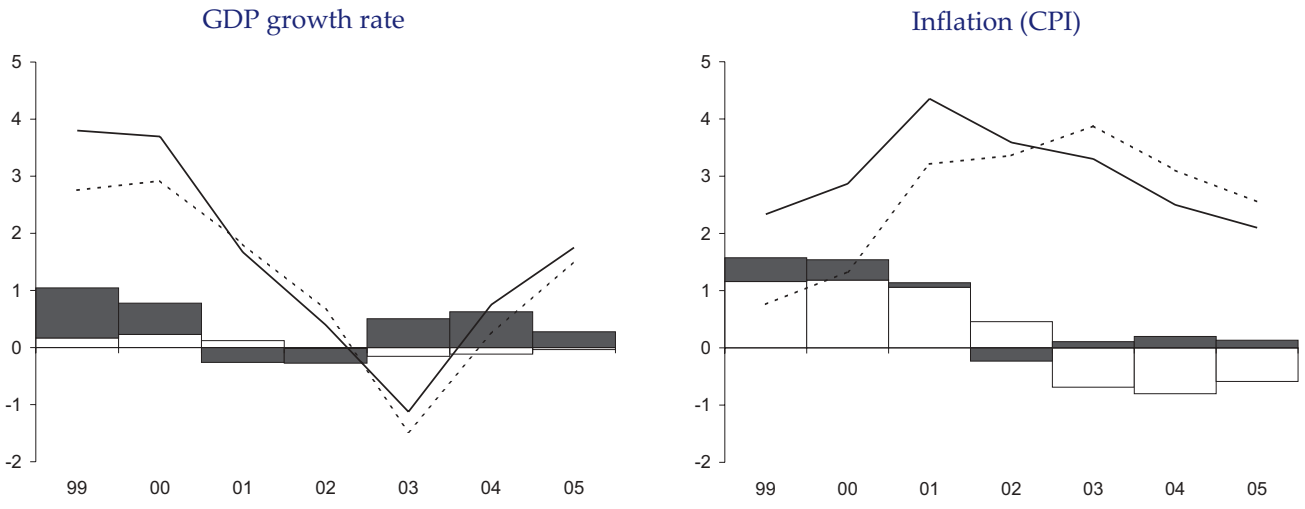
(1) If the September 2003 issue of the *Economic Bulletin* is taken as a reference, the inflation rate measured as the average rate of change of the HICP stood at the lower end of the projection range [3.3-3.5].

Chart 4
**REVISION OF THE PROJECTIONS COMPARED WITH THE JUNE 2003 ISSUE OF THE *ECONOMIC BULLETIN*(a)**




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

Chart 5
**CONTRIBUTION FROM MONETARY CONDITIONS**




Effects from changes in the interest rate occurred during the three years preceding the reference period.
Effects from changes in the exchange rate occurred during the three years preceding the reference period.
GDP and inflation growth rate.
GDP and inflation growth rate excluding the effects from changes in the interest rate and in the exchange rate occurred during the years preceding the reference period.

lic university fees, which will chiefly be felt in 2004, and the expected impact of the European Football Championship on the prices of some services.

## 2. ASSUMPTIONS UNDERLYING PROJECTIONS FOR THE PORTUGUESE ECONOMY

Projections presented in this *Economic Bulletin* are based on a number of assumptions for interest rates, exchange rates, commodity prices and the trend of the international economy. In addition to these assumptions — that were common to all Eurosystem central banks — another specific group of assumptions was assumed for the Portuguese economy, in particular on public finances developments.

### 2.1 Interest rates and exchange rates

Eurosystem projections assume that short-term (three-month) interest rates and exchange rates will be maintained at the same levels observed in mid-October. As regards long-term interest rates, it considers the developments implicit in market expectations, which translate into a slightly upward profile over the projection horizon, albeit to levels below those recorded in 2002, in annual average terms.

Given the decline in long-term interest rates and the appreciating trend of the euro during 2003, the technical assumptions of constant interest rates and exchange rates during the projection horizon, in annual average terms, point to a slight decline in short-term interest rates and an effective exchange appreciation of the euro in 2004.

The trend of the interest rates and of the exchange rates observed over recent years, as well as the technical assumptions that consist in maintaining these variables constant during the projection horizon, represent favourable monetary conditions for the development of economic activity and for the decline in inflation in Portugal, as suggested by the Monetary Conditions Index (MCI)(2). The major purpose of this indicator is to evaluate the effects on output and inflation of interest rate and exchange rate changes observed or accepted in the year in question and in the two previous years. According to the MCI (Chart 5), if monetary condi-

(2) This index corresponds to the nominal MCI presented in the article by Paulo Esteves, "Monetary conditions index for Portugal", June 2003 issue of the *Economic Bulletin*.

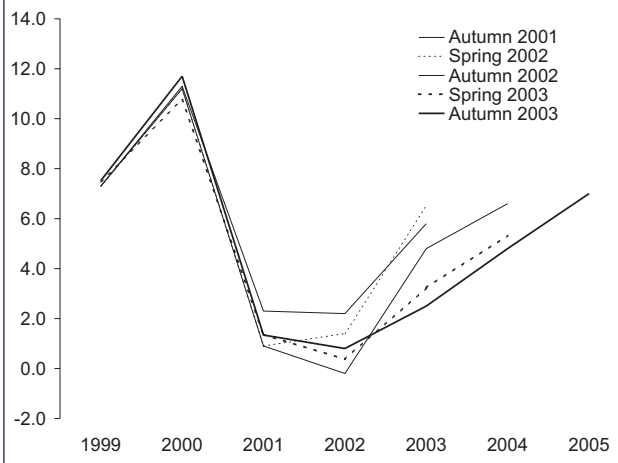
tions had remained unchanged since 2000, i.e., if there had been no decline in interest rates and no appreciation of the euro exchange rate, inflation in 2003 would have been approximately ½ percentage point higher and the increase in output would have been around ½ percentage point lower. Similar values are obtained for the years 2004 and 2005, also assuming that the interest rates and the exchange rates will remain at the average levels observed in 2001 and 2002, respectively. The MCI may, to some extent, be overestimating the favourable effect of monetary conditions on inflation and output growth forecasts, particularly since it does not fully take into account the effect of recent changes in the indebtedness levels of households and corporations on the response of these agents to a change in the interest rates. In any case, a robust conclusion seems to be that monetary conditions, in parallel with a contribution to the decline in inflation, will likely contribute to a slight improvement of output growth forecasts.

### 2.2. External demand relevant for the Portuguese economy

The assumptions assumed in this exercise imply the continuing recovery of world economic activity in the course of the projection period. According to the common external assumptions of the Eurosystem exercise, the world economy, excluding the euro area, is expected to grow by 4 per cent in 2003, and projections for 2004 and 2005 point to growth rates of 4½ per cent and 5 per cent respectively. As regards 2004, this corresponds to assuming world economic growth close to the level estimated for the second half of 2003, which will likely be followed by a gradual improvement in 2005 (Chart 6). The trend of world trade will probably follow a profile identical to that of world GDP. A gradual acceleration in the growth of euro area exporting markets is expected during the projection horizon (from 4 per cent in 2003 to 7 per cent in 2004 and 8 per cent in 2005).

In the preparation of projections on the trend of external markets relevant for the Portuguese economy, account was also taken of the growth projected for the other economies of the euro area, which represent approximately two thirds of Portuguese external trade. It should be recalled that this exercise assures the consistency between forecasts prepared for each national economy forming the euro area and external demand for the Portuguese economy. Eurosystem projections point to an acceleration of economic activity in the euro area, with GDP growth rates standing between 1.1 per cent and 2.1 per cent in 2004, and between 1.9 per cent and 2.9 per cent in 2005.

Chart 6
**EXTERNAL DEMAND RELEVANT FOR THE PORTUGUESE ECONOMY**
Year-on-year percentage rates of change




This external framework translates into an acceleration of external demand relevant for the Portuguese economy from 2.5 per cent in 2003 to approximately 5 per cent and 7 per cent in 2004 and 2005 respectively, which is underlying the predominant role played by exports in the projected recovery of Portuguese economic activity.

### 2.3. International prices

The Eurosystem exercise assumptions on international prices of commodities are based on futures markets data. In the case of the oil price, the futures markets make it possible to project a downward trend in the course of 2004 and 2005, reflecting the expectation of a gradual stabilization of the political and military situation in the Persian Golf and the ensuing decrease in the likelihood of occurrence of negative shocks in the supply of this raw material. In the case on non-energy commodities, the futures markets make it possible to anticipate a moderate growth of their prices in 2004 and 2005. When combining these assumptions with wage moderation in the euro area — translated

into the expected maintenance of the moderate pace of growth of wages over the whole projection horizon —, the Eurosystem projections point to a gradual decline in the inflation rate for the euro area countries as a whole, with the growth rate of the HICP standing in a range of 2.0 per cent to 2.2 per cent in 2003, of 1.3 per cent to 2.3 per cent in 2004, and of 1.0 per cent to 2.2 per cent in 2005.

The trend assumed for international prices, particularly as regards the behaviour of oil prices, together with the technical assumption assumed for the exchange rate, lead to slight gains in terms of trade for the euro area economy, more marked in 2004 than in 2005.

### 2.4. Specific assumptions for Portugal

In addition to the above assumptions that are the result of the Eurosystem projection exercise, the present projections are based on a group of specific assumptions for Portugal, stress being laid on those relating to developments in public finances.

The real change in public consumption assumed for 2004 and 2005 has implicit a gradual decline in the general government staff, as well as the freezing of nominal expenditure with the acquisition of goods and services. As regards public investment — and considering values that exclude the impact of sales of government property — a decline is envisaged, in line with the expected trend of transfers from the European Union within the scope of the Third Community Support Framework.

Turning to consumer prices subject to administrative procedures, the current projections assume that, in general, they will register an increase close to that observed in previous years, with two exceptions. The first one is the result of the updating of university fees, which was considered in the exercise. The second one is related to fuel prices. These seem to point to a downward trend, in line with the aforementioned technical assumptions regarding the oil price and the euro exchange rate vis-à-vis the US dollar.

## 3. PROSPECTS FOR THE PORTUGUESE ECONOMY

### 3.1. Economic activity

Projections for the Portuguese economy presented in this *Economic Bulletin* point to a moderate recovery of economic activity. The adjustment process of the Portuguese economy started in 2000, which has contributed to the slowdown in economic activity in recent years, is expected to continue affecting growth over the projection horizon.

Recovery in 2004 will likely be boosted by a more favourable external framework, taking into account that the contribution of domestic demand to GDP growth may still be slightly negative. On the one hand, the imbalance in public sector accounts, requiring a real decline in public expenditure, and the gradual decrease in transfers from the European Union will be translated into negative changes in public consumption and public investment in 2004 and 2005. On the other hand, the current indebtedness levels of households and corporations will likely continue to restrain the growth of private domestic demand. Thus, projections for 2004 point to an increase in GDP between 0 and 1½ per cent, after the contraction of economic activity observed in 2003.

For 2005, projections indicate an additional strengthening of recovery of economic activity, with GDP growing between ¾ and 2¾ per cent, as a result of a more favourable external environment and, at the domestic level, of the improvement of expectations as to future economic conditions, within the context of the assumption of maintenance of short term interest rates at an historical low.

The moderate recovery of economic activity in 2004 and 2005 is likely to determine a further increase in the unemployment rate. This trend of the unemployment rate will likely exert moderating effects on the nominal growth of wages. Employment, followed with some lag by the trend of economic activity, is expected to decrease further in 2004, reaching a nearly null change in 2005. Therefore, at a first stage, economic activity may expand on account of increasing existent capacity utilisation, permitting a rise in apparent labour productivity, after the virtual stagnation in 2003. The

trend of wages and productivity will likely permit a significant deceleration in unit labour costs, thus creating favourable conditions for a sustained decline in inflation in 2004 and 2005, and an improvement in the economy competitiveness.

### *(i) Private consumption*

In 2004, private consumption is likely to grow in the range of 0 to 1½ per cent, thus reversing the decelerating trend observed in recent years (Chart 7). It should be mentioned that this trend reversal is consistent with the recent recovery of the consumer confidence indicator, after the historical low attained in the middle of first half of 2003 (Chart 8)(3). Growth projected for private consumption in 2004 incorporates a slight increase in expenditure with the acquisition of durable goods, a component that is particularly sensitive to the economic cycle and that in recent years has undergone significant contractions. For 2005, projections point to slightly stronger growth in private consumption, in a range of ½ to 2½ per cent.

Underlying the recovery of private consumption is a slight decline in the savings rate in 2004 and in 2005, after the increase observed in recent years (3.2 p.p. between 1999 and 2003). Despite the technical assumption of constant short-term interest rates at an historical low, the need to comply with the debt service and a precautionary effect, against the background of an increase in the unemployment rate, will likely lead to a prudent behaviour of consumers, thus avoiding a more significant expansion of private consumption and, therefore, a sharper reduction in the savings rate.

Chart 7
**PRIVATE CONSUMPTION**
Year-on-year percentage rates of change

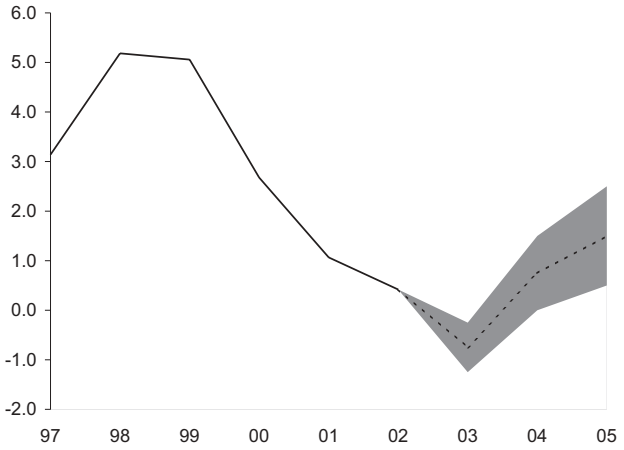



Chart 8
**CONSUMERS CONFIDENCE INDICATOR**


Source: European Commission.

### *(ii) Investment*

Developments in investment will likely continue to be affected by the gradual adjustment process observed in the Portuguese economy in recent years. In 2004, for the third consecutive year, investment will probably see a further decrease, in real terms, projected to range between -4¾ and -¾ per cent (Chart 9). This projection includes a fall in public investment, a further decline in housing investment, albeit less significant than in 2003, and a slight increase in business investment. In 2005, investment is expected to grow, as a result of the acceleration of business investment and of the return of housing investment to positive rates of change. The trend of public investment chiefly reflects the expected decrease in capital transfers from the European Union.

The projected positive development of business investment, after the fall observed in 2003, is associated with the impact on economic activity of the buoyant behaviour expected for exports, in line with the high growth of external demand for the

(3) This indicator presents a strong correlation with private consumption. See the article "The use of qualitative data for short-term analysis", by Raquel Santos, published in the September issue of the *Economic Bulletin*.

Chart 9
**GROSS FIXED CAPITAL FORMATION**
Year-on-year percentage rates of change

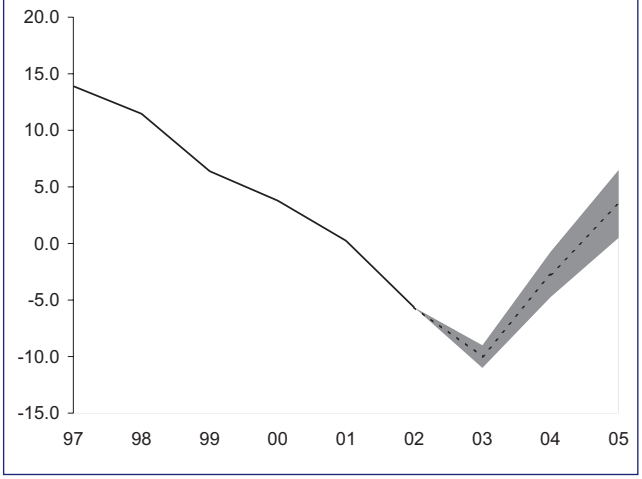
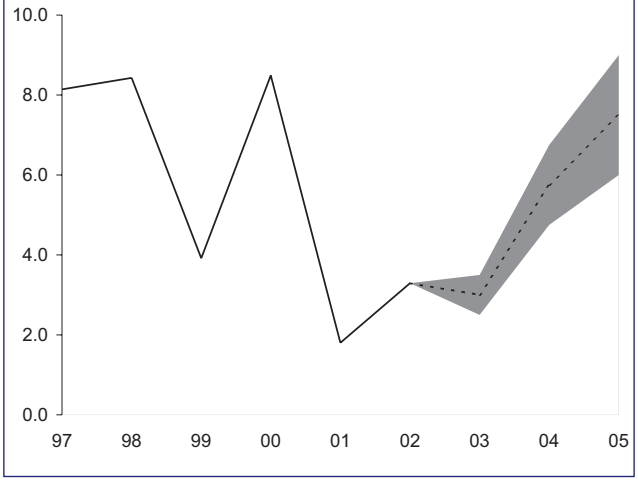



Chart 10
**EXPORTS**
Year-on-year percentage rates of change




Portuguese economy. Moreover, it is also expected to benefit from the more favourable behaviour of profit margins, determined, to a large extent, by the deceleration in unit labour costs. Special reference should also be made to the positive effect exerted on business investment projections by the assumptions assumed as regards the interest rates, which stand at historical lows over the projection exercise.

Turning to housing investment, a negative growth rate is expected in 2004, although less marked that that estimated for 2003, reflecting a slower reaction to the recovery of economic activity, when compared with the behaviour of business investment and of consumption of durable goods. In 2005, residential investment is expected to recover, as economic growth prospects become more solid and the labour market situation ceases to deteriorate.

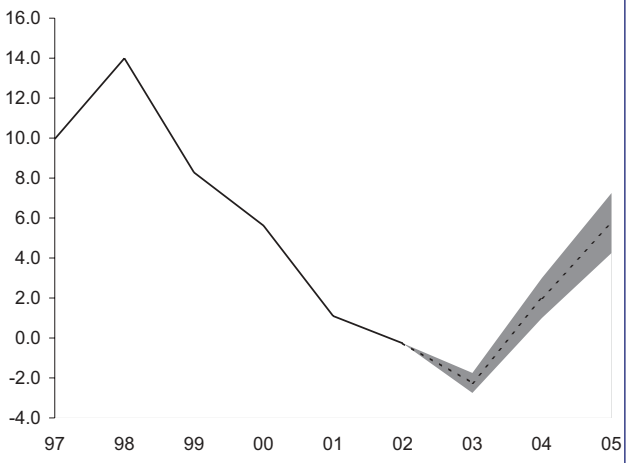
### *(iii) Exports and imports*

The real change projected for exports (Chart 10) chiefly reflects the recovery trend of external demand relevant for the Portuguese economy. The present projection envisages some deceleration in unit labour costs in 2003, which will tend to be more marked in 2004 and 2005, simultaneously reflecting the more moderate growth of wages and a recovery in productivity growth to levels closer to their historical average. As a result, the competitive position of Portuguese exports will make it possible to sustain market share gains over the projection horizon, which, however, may be more moderate than those observed in 2002 and in 2003. Projections of market share gains may also be explained by the weak buoyancy in domestic demand, which will continue to create incentives leading corporations to redirect their sales to external markets. In turn, forecasts point to an extremely fast recovery of exports of tourism services that tend to be more sensitive to the international economic juncture(4). This recovery will be reinforced by the impact of the European Football Championship in 2004. In turn, the negative trend projected for exports in the automobile sector in 2004 will likely mitigate market share gains, given the significant impact of this sector on Portuguese exports.

Developments in imports (Chart 11) reflect the trend projected for the different components of overall demand, particular for those that are more import-intensive, therefore continuing to present a particularly high variability over the economic cycle(5). In 2003, the volume of imports of goods and services is estimated to present a negative rate of

(4) In the 1978-2002 period, the rates of change of external demand relevant for the Portuguese economy — measured as the average of imports of goods and services by major customer markets — and the rates of change of Portuguese tourism exports are positively correlated (correlation coefficient of 0.65). However, the rate of change of tourism exports presents a volatility that is approximately four times higher than that of external demand.

Chart 11
**IMPORTS**
Year-on-year percentage rates of change




change, reflecting the fall in domestic demand. In 2004 and 2005, the recovery projected for economic activity will lead to a real change in imports of goods and services above GDP growth. As a result, and in spite of the strong growth of exports, the contribution of net external demand to growth of the Portuguese economy is likely to decline gradually over the projection horizon.

### 3.2. Current and capital accounts

The current projections point to a significant reduction in net external borrowing requirements of the Portuguese economy, assessed by the joint deficit of the current plus capital accounts. The reduction in the external deficit is to be achieved mainly through an improvement in the goods and services account balance, as a slight decline is expected in the ratio of balances of the other components, in particular of the capital account, to GDP.

The projected developments for the trade account deficit — reductions by around 1½ and ½ percentage points of GDP in 2004 and 2005 respectively — reflect stronger growth in the volume of exports than in the volume of imports, simultaneously mirroring the mentioned buoyancy of external demand and the subdued recovery projected for domestic demand. In addition, the trade account balance is also expected to reflect gains in terms of trade, chiefly resulting from the assumed downward path of oil prices.

The income account deficit as a percentage of GDP is likely to remain broadly unchanged over the projection horizon, consistent with the assumptions of constant short-term interest rates and exchange rates of the euro at the levels observed in mid-October. This implies, in annual average terms, a slight decrease in interest rates and an appreciation of the euro in 2004. Current transfers are expected to stabilise around the values estimated for 2002, also as a percentage of GDP, a contribution to which will be given by a recovery in emigrants' transfers resulting from an improvement in the international economic situation. Capital transfers are likely to evolve according to developments in capital transfers from the European Union associated with the implementation of the Third Community Support Framework.

### 3.3. Inflation

The annual average rate of change in the HICP decreased to 3.3 per cent in 2003, after having reached an average value of 3.7 per cent in 2002. The current projection comprises a deceleration profile of prices in the course of 2004, with the average inflation rate standing between 2 and 3 per cent. A further decline to values within a range of 1½ to 3 per cent in the average annual inflation is expected in 2005.

The maintenance of a pace of economic growth below potential both in 2004 and in 2005, with the subsequent increase in the unemployment rate, will provide a favourable environment for a reduction in labour market pressures, allowing for more subdued wage developments, which would strengthen the slowdown path followed since 2003. Indeed, in the period from January to November changes in wages implied in collective labour agreements excluding general government stood at 2.8 per cent, compared with 3.6 per cent in 2002. It should be stressed that wages actually paid by companies depend both on the update of labour contracts and on a wage cushion[6] sensitive to fluctuations in economic activity. Thus, in the current recession stage of the Portuguese economy,

(5) The fact that expenditure components that traditionally present a higher volatility are simultaneously the ones that present higher import content gives rise to a high variability of imports and a pro-cyclical behaviour of the weight of imports in domestic demand. This explains the large width of projection ranges presented for import growth.

estimates point to a wage deceleration in the private sector exceeding that observed in negotiated settlements.

Turning to external factors, expectations suggest subdued growth in import prices, in a context of the assumed gradual decline in oil prices, relative stability of the remaining international prices of commodities and the maintenance of the exchange rate of the euro at the level observed in mid-October. As a result, a very subdued growth in import prices is expected in 2004 and 2005, contributing to a deceleration in consumer prices. As in 2002, the goods import deflator is forecast to decline further in 2003, recovering in 2004, in line with the unwinding of effects associated with the appreciation of the euro and the downward profile of oil prices. The projections of the Banco de Portugal, due to fuel consumer pricing, assume that the decline in oil prices will pass through directly to consumer prices, contributing significantly to the projected reduction in inflation.

The downward profile of inflation in the course of 2004 is likely to be temporarily disrupted from May onwards, due to the possible rise in prices of some services more directly related to the European Football Championship. The unwinding of two temporary effects observed in 2003 are likely to work in the opposite direction: the first one, during the first quarter, was related to the worsening of the situation in Iraq which was significantly reflected in fuel consumer prices; the second one, which culminated in September 2003, was the unusual rise in prices of some foodstuffs.

## 4. ASSESSMENT OF RISK FACTORS

The overall assessment of risk factors focusing on these projections suggest lower than projected economic growth. As mentioned above, developments in external demand relevant for the Portuguese economy will play a crucial role in the recovery. The assumption of a strong expansion in international economic activity — implying a high pace of economic growth in the US, in a context of imbalances in external accounts and public accounts — may turn out to be optimistic and susceptible to a downward revision, as in recent years. The appreciation of the euro vis-à-vis the US dollar, which occurred after the cut-off date for technical assumptions, may have a negative impact on growth of euro area economic activity. These risks may lead to a downward adjustment of growth in the Portuguese economy.

The possible increase in interest rates over the projection horizon is another source of downward risk for Portuguese economic activity. This is particularly important given the strong increase recorded in recent years in the level of indebtedness of households and corporations, an important element of vulnerability of the Portuguese economy. Nevertheless, this risk factor depends on developments in the world economy. The appreciation of the euro and a less favourable international environment, and the subsequent negative impact on the external demand relevant for the Portuguese economy, make a rise in interest rates more unlikely.

There are also risk factors specific of the Portuguese economy. One of these is related to conditions in the labour market and to the possibility of more negative developments than projected for employment and/or a more significant deceleration in wages. Indeed, it is possible that improvements in the financial situation of corporations, a crucial factor for the recovery of business investment, may have to go through further adjustments in wages, or, if these do not occur, further reductions in employment. This is particularly important in a context in which it is difficult for the general government, due to budgetary consolidation requirements, to create net employment.

An additional risk factor is related to public finances and fiscal policy. The need to promote fiscal measures not envisaged in this projection exercise might, in the short run, have negative effects on GDP growth. Conversely, and similarly to developments in recent years, public components in domestic demand may increase more than anticipated. Should this happen, and despite the possible immediate positive effect on output, this behaviour of public expenditure is very likely to determine a worsening of general government borrowing requirements inevitably conditioning growth prospects for the Portuguese economy in the future.

(6) See box "The wage bargaining system and the role of the wage cushion" published in the 2002 *Annual Report* of Banco de Portugal.

Regarding inflation, risks underlying projections are more balanced[7]. The risks that could lead to higher inflation include, on the one hand, the possibility of oil prices having a less favourable behaviour than projected, and, on the other hand, the possibility of changes in prices of some services being more resilient to decline than expected or, in the case of subsidised services, the respective prices experiencing moderate increases as a result of the ongoing budgetary consolidation process. Conversely, reference should be made to the risk of appreciation of the euro, to previously identified risks which might negatively affect economic activity and, chiefly, to the possibility of a stronger than projected deceleration in nominal wages.

*Completed in mid-December 2003, based on a projection exercise using information available up to 11 November 2003.*

(7) In January 2003, the INE started to disclose a new series of the Consumer Price Index (CPI) and of the HICP. Among the methodological changes, reference should be made to the new treatment of prices with seasonal behaviour (see Annex 1 of the January 2003 *Monthly Economic Indicator* for a more detailed presentation of the methodological changes), which is an additional uncertainty factor in current inflation projections.

# NEW SERIES ON BANKS' INTEREST RATES: LONG SERIES FOR THE AVERAGE RATES ON OUTSTANDING AMOUNTS

## 1. INTRODUCTION

According to Regulation ECB/2001/18 of the European Central Bank, the Banco de Portugal launched in January 2003 a new system for gathering data with a view to compiling statistics on interest rates applied by Monetary Financial Institutions (MFIs) to loans and deposits denominated in euro vis-à-vis households and non-financial corporations resident in Monetary Union countries.

The previous reporting system covered only retail interest rates on new business carried out by MFIs in each reporting month, while the new system also includes average interest rates on outstanding amounts. The latter correspond to a measure of the gross return on interest-earning assets and of the average cost on interest-bearing liabilities recorded in the MFIs' balance sheet for each instrument and for each institutional sector covered (i.e. households, broken down by purpose in the case of loans, and non-financial corporations). The average interest rate on outstanding amounts of operations of a given segment is calculated by weighting the interest rate applied to each operation (regardless of having been agreed during the reporting period or in previous periods) based on the "outstanding" amount of that operation. Thus, average interest rates on outstanding amounts largely reflect the conditions of business carried out in previous reporting periods and only marginally reflect the new business agreed during the reporting period.

Regarding interest rates on "new business", indicators derived from the previous reporting system and those obtained from the new compilation system, albeit with a similar purpose (i.e. to provide a summary of interest rates applied to new contracts every month), show significant differences regarding their coverage, available categories and aggregation methodology, which are summarised in Table 1. Some of the methodological options established in Regulation ECB/2001/18 give rise to an apparently inconsistent calculation of the rates on both new business and outstanding amounts.

Over 2003, regarding housing loans to households, the interest rate on new business was systematically below the corresponding interest rate on outstanding amounts, which is consistent with the decreasing trend in the latter rate. However, this behaviour was not observed in the other two segments of loans to non-financial corporations and loans to households for consumption and other purposes (Charts 1A and 1C). In fact, interest rates on new business in these two segments remained throughout the whole period above the corresponding rates on outstanding amounts, which would hardly be understandable if rates on new business would represent marginal conditions to be gradually passed on to average interest rates on outstanding amounts. On the other hand, for the same two market segments, interest rates on new business in Portugal stand at relatively high levels vis-à-vis the euro area average (Tables 2 and 3), which could indicate the existence of higher intermediation margins in Portugal. However, comparing the corresponding rates on outstanding amounts, which are consistent with those effectively applied by MFIs in all their balance sheet operations and to which no methodological caveats apply, the Portuguese rates are at levels rather similar to average rates in other euro area countries (Table 3).

One of the methodological options established in Regulation ECB/2001/18, and which is linked to these apparent inconsistencies, is related to the ag-

Table 1

## METHODOLOGICAL DIFFERENCES IN THE CALCULATION OF INTEREST RATES ON NEW BUSINESS

| | Previous reporting system (up to Dec.2002) | New reporting system (from Jan.2003 onwards) | Expected impact |
|---|---|---|---|
| **Categories available** | Based on agreed maturity. Broken down by institutional sector in the case of loans (households and non-financial corporations). Deposits not broken down by institutional sector. | Based on the period of initial rate fixation in the case of lending rates and on agreed maturity in the case of deposit rates. Broken down by institutional sector in the case of loans (households and non-financial corporations). Broken down by purpose in the case of loans to households (housing, consumer credit and other loans) and by amount in the case of loans to non-financial corporations ("up to EUR 1 million" and "over EUR 1 million"). | In the case of loans, it hinders the correspondence between agreed maturity categories (in the previous reporting system) and the period of initial rate fixation (in the new reporting system).<br>In the case of deposits, there is no impact. |
| **Institutional sector covered** | Non-financial private sector resident in Portugal (non-monetary resident sector in the case of deposits). | Non-financial private sector resident in then Monetary Union. | Negligible, in the case of loans (the sectoral widening accounts for less than 1% of outstanding amounts). Low, in the case of deposits (the sectoral widening accounts for less than 10 per cent of outstanding amounts of deposits with agreed maturity and less than 1 per cent in overnight deposits; a narrower scope – excluding non-monetary financial institutions accounts for around 15 per cent of overnight deposits and around 5 per cent of deposits with agreed maturity). |
| **Survey universe** | OMFIs (excluding CCAMs, *Caixa Central* and savings banks, except *Montepio Geral*). | Sample of 16 OMFIs representative of the universe. The integrated mutual agricultural credit scheme (SICAM) is now also surveyed. | See Table 5. |
| **Aggregation method of the reporting institutions** | Within each operation/agreed maturity category, rates are aggregated as an average weighted by maturity and amount of new business. | In each category of period of initial rate fixation, rates are aggregated as an average weighted by the amount of new business. | It hinders the interpretation of interest rates on new business in the new reporting system as marginal conditions. |
| **Method for the calculation of interest rates** | No instructions on this matter. Presumably nominal interest rates, with a standard year of 360 days. | Equivalent annual interest rates (TAA). Standard year of 360 days. | 12 basis points for nominal interest rates of around 5 per cent. |
| **Aggregation method used by Banco de Portugal for data on each MFI** | Averages weighted by amount within each operation/agreed maturity category. Exclusion of outliers among institutions in each month. | Averages weighted by amount within each operation/agreed maturity category. All observations are included each moth. | |

Chart 1A

**SYNTHETIC INTEREST RATES ON LOANS TO NON-FINANCIAL CORPORATIONS (EXCLUDING OVERDRAFTS)**

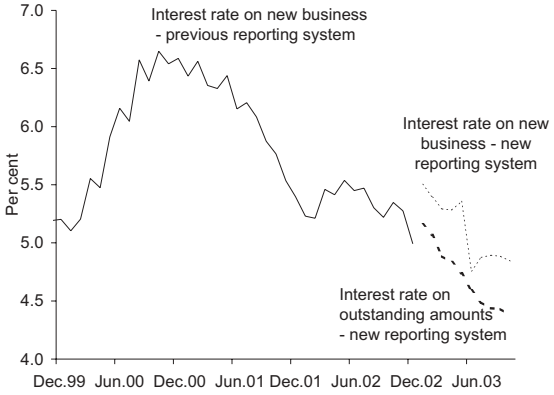



Chart 1B

**SYNTHETIC INTEREST RATES ON HOUSING LOANS TO HOUSEHOLDS**

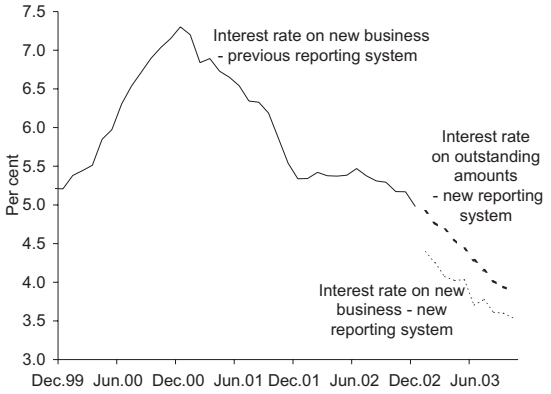



Chart 1C

**SYNTHETIC INTEREST RATES ON LOANS TO HOUSEHOLDS FOR CONSUMPTION AND OTHER PURPOSES (EXCLUDING OVERDRAFTS)**

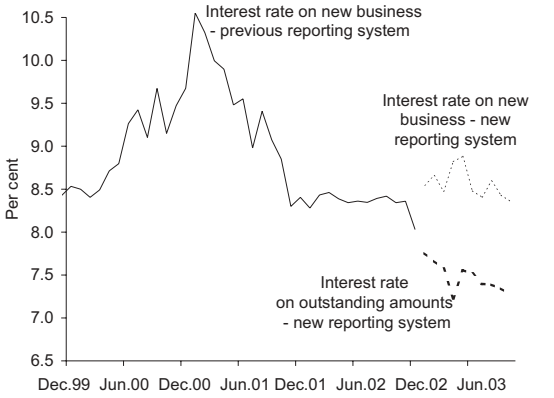
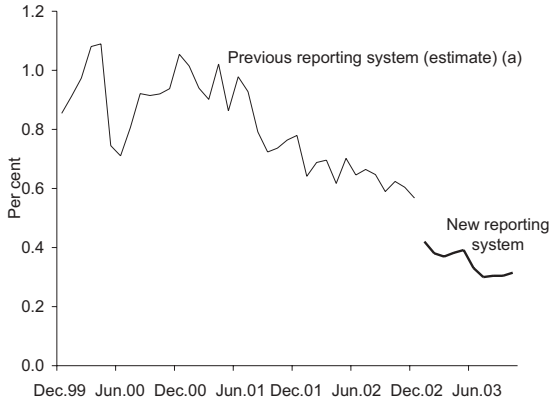



Chart 1D

**SYNTHETIC INTEREST RATES ON OVERNIGHT DEPOSITS BY HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS**




Note:

(a) Adjusted for changes in the institutional sector coverage.

Chart 1E

**SYNTHETIC INTEREST RATES ON DEPOSITS WITH AGREED MATURITY BY HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS**

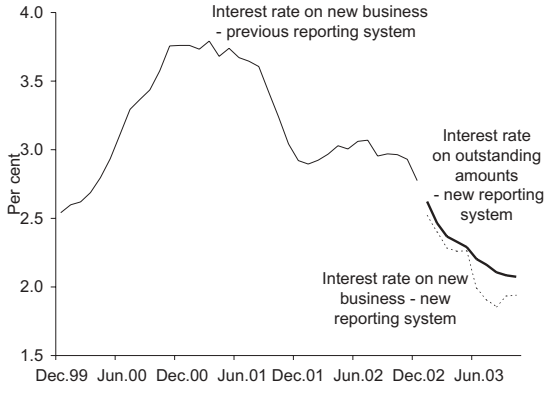


Table 2

## SYNTHETIC INTEREST RATES ON NEW BUSINESS AND OUTSTANDING AMOUNTS IN PORTUGAL AND IN THE EURO AREA

Loans excluding overdrafts

| | Rates on new business | | | | | | Interest rate on outstanding amounts | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Non-financial corporations | | | Households – consumer credit and other loans | | | Non-financial corporations | | | Households – consumer credit and other loans | | |
| | Portugal | Euro area | Differential | Portugal | Euro area | Differential | Portugal | Euro area | Differential | Portugal | Euro area | Differential |
| | (a) | (b) | (c)=(a)-(b) | (d) | (e) | (f))=(d)-(e) | (g) | (h) | (i)=(g)-(h) | (j) | (k) | (l)=(j)-(k) |
| 2003 | | | | | | | | | | | | |
| Jan. | 5.50 | 4.13 | 1.38 | 8.55 | 6.08 | 2.47 | 5.16 | 4.93 | 0.23 | 7.76 | 6.53 | 1.23 |
| Feb. | 5.39 | 4.07 | 1.32 | 8.66 | 6.10 | 2.56 | 5.07 | 4.95 | 0.11 | 7.66 | 6.48 | 1.18 |
| Mar. | 5.29 | 3.98 | 1.32 | 8.47 | 6.00 | 2.47 | 4.88 | 4.79 | 0.09 | 7.58 | 6.44 | 1.13 |
| Apr. | 5.28 | 3.93 | 1.36 | 8.82 | 6.15 | 2.67 | 4.83 | 4.72 | 0.11 | 7.23 | 6.41 | 0.82 |
| May | 5.36 | 3.85 | 1.51 | 8.88 | 6.00 | 2.88 | 4.74 | 4.64 | 0.10 | 7.56 | 6.38 | 1.18 |
| Jun. | 4.76 | 3.52 | 1.23 | 8.48 | 5.70 | 2.78 | 4.59 | 4.58 | 0.01 | 7.52 | 6.33 | 1.19 |
| Jul. | 4.87 | 3.50 | 1.38 | 8.41 | 5.82 | 2.58 | 4.49 | 4.48 | 0.01 | 7.40 | 6.25 | 1.15 |
| Aug. | 4.89 | 3.58 | 1.32 | 8.59 | 5.88 | 2.71 | 4.44 | 4.41 | 0.02 | 7.39 | 6.29 | 1.10 |
| Sep. | 4.88 | 3.53 | 1.35 | 8.43 | 5.74 | 2.69 | 4.43 | 4.42 | 0.01 | 7.34 | 6.27 | 1.08 |

Table 3

## SYNTHETIC INTEREST RATES ON NEW BUSINESS AND OUTSTANDING AMOUNTS IN PORTUGAL AND IN THE EURO AREA

Loans excluding overdrafts

| | Households – consumer credit and other loans | | | Non-financial corporations | | |
|---|---|---|---|---|---|---|
| | Rates on outstanding amounts | Rates on new business | Differential | Rates on outstanding amounts | Rates on new business | Differential |
| | (a) | (b) | (c)=(b)-(a) | (d) | (e) | (f)=(e)-(d) |
| Portugal | 7.34 | 8.69 | 1.35 | 4.43 | 4.88 | 0.45 |
| Finland | 4.82 | 8.78 | 3.95 | 3.57 | 3.38 | -0.18 |
| Germany | 6.28 | 5.46 | -0.82 | 5.00 | 3.69 | -1.31 |
| Greece | 10.12 | 10.05 | -0.07 | 4.91 | 4.60 | -0.31 |
| Ireland | 6.11 | 5.76 | -0.35 | 4.57 | 4.38 | -0.19 |
| Spain | 6.40 | 6.06 | -0.34 | 3.56 | 3.45 | -0.11 |
| Euro area | 6.27 | 5.74 | -0.53 | 4.42 | 3.53 | -0.89 |

Note: Not all euro area countries are listed in the table given that, for some countries, the necessary information for the calculation of synthetic interest rates was not available.

gregation of interest rates on new business, which considers only the amount of these operations as a weighting basis, while the previous system used a double weighting based on the amount of the operation and the agreed original maturity. This change in the weighting method may account for rather different aggregate results, while the procedures which are currently implemented by the Eurosystem, as described in Section 2.1, imply that interest rates on new business do not necessarily act as leading indicators of rates on outstanding amounts. In addition to the weighting method, in the new reporting system, rates on new business are classified by the period of initial rate fixation instead of the agreed original maturity of the operation, as for rates on outstanding amounts. Therefore, a new 4-year loan with an interest rate which changes every 6 months is included in class "over 2 and up to 5 years" for the purpose of calculating the average rate on outstanding amounts, while being classified in "up to 1 year", for the calculation of the rate on new business. Obviously, the rate on new business "up to 1 year" is not a marginal rate vis-à-vis the average rate on outstanding amounts of "up to 1 year" and, likewise, it is not related to rates on outstanding amounts of "over 2 and up to 5 years", given that the aggregation of the rates on new business of "up to 1 year" takes into account rates on operations with different agreed maturities, i.e. some which are actually below one year, and others which are associated to medium and long-term operations.

For banking systems such as the Portuguese, most loans carry a floating interest rate, periodically revised in line with developments in the money market. In such systems, the different classification of loans for the purpose of calculating average interest rates on outstanding amounts and new business precludes the interpretation of the rates on new business as leading indicators of the development of rates on outstanding amounts. It should be mentioned that the new methodology established in Regulation ECB/2001/18, regarding the classification of operations by maturity classes, is appropriate for banking systems of countries where fixed rates on medium and long-term operations are predominant. In those countries, the classification of the same loan operation into different maturity classes in new business and outstanding mounts available categories are not as frequent as in Portugal. However, in the Portuguese case, the different classification criterion in the two type of of interest rates gives rise to serious limitations in the interpretation of rates on loans to non-financial corporations and loans to households for consumption and other purposes. With regard to housing loans to households, given that they usually consist in long-term operations, with relatively lower dispersion of maturities and interest rates than in the other two segments, the problems of interpretation may be considered negligible.

Turning to loans to non-financial corporations and loans to households for consumption and other purposes, interest rates on new business for Portugal, due to the above-mentioned problems, may no longer be interpreted as a contribution at the margin to the interest rates on outstanding amounts. Thus, no inferences should be made as regards profitability trends of reporting institutions in these segments. In particular, given that they lost their usual economic meaning, no spreads between money market benchmark rates should be used as incremental contribution measures to the effective profitability of MFIs in these segments.

Section 2 of this article reviews the methodological differences and their possible contributions to the inconsistencies when interpreting interest rates on new business. It will be concluded that, due to problems caused by the aggregation and classification of rates on new business, these rates should not be used when analysing developments in credit and bank deposits, and, instead, it is preferable to base this analysis on average interest rates on outstanding amounts. The main disadvantage of the latter rates lies in the fact that they are partly affected by market conditions, reflecting changes in these conditions with lags, namely in credit markets. However, in the Portuguese case, this inertia in adjustment is not very high, due to the limited importance of long-term loans with fixed rate (and the recurrence of deposits with agreed maturity of up to 1 year). In fact, the interest rate on most medium and long-term loans is periodically revised, and it is common that contracts stipulate a benchmark for money market interest rates. Another disadvantage of privileging rates on outstanding amounts is related to the absence of series for these rates for the period prior

to December 2002. In order to overcome this limitation, Section 3 suggests series since 1990 for interest rates on outstanding amounts, calculated on the basis of moving averages of previous interest rates on new business and taking into account the structure of outstanding amounts broken down by agreed maturity.

## 2. INTEREST RATES ON NEW BUSINESS IN THE PREVIOUS AND CURRENT REPORTING SYSTEMS

### 2.1. Methodological differences

Each indicator of interest rates on loans and deposits, as published, has no correspondence in terms of the scope of the categories available in the previous reporting system. However, it is possible to obtain more aggregated synthetic indicators, with very similar scope and sectoral coverage in both reporting systems, namely average rates on total loans to non-financial corporations, housing loans to households, loans to households for consumption and other purposes, total deposits with agreed maturity of the non-financial private sector (households and non-financial corporations as a whole) and total overnight deposits of the same sector. Below is a revision of the main methodological differences that may account for divergences at the level of interest rates on new business in the previous and current reporting systems.

#### *Sectoral coverage and territorial scope*

Table 4 shows outstanding amounts in the MFIs balance sheet in loans and deposits in January 2003, namely in sectors with a common coverage and sectors covered by only one of the reporting systems.

Regarding loans, the new reporting system offers a broader coverage in sectoral/territorial terms, while operations that are not covered by the previous reporting system (and which are covered by the new system) account for less than 1 per cent of outstanding amounts in the balance sheet. With regard to deposits, none of the two reporting systems offers a broader coverage: while the former reporting system covered operations carried out with the non-monetary financial sector resident in Portugal (not covered by the new system), the new reporting system also included operations with

Table 4

**COMPARISON OF THE SECTORAL COVERAGE OF INTEREST RATE REPORTING SYSTEMS**

Balance sheet outstanding amounts as at January 2003

Eur million

| | Previous reporting system | New reporting system |
|---|---|---|
| Loans - denominated in euro | | |
| Non-financial corporations resident in Portugal | 75 662 | 75 662 |
| Non-financial corporations resident in other Monetary Union countries | not covered | 672 |
| Households resident in Portugal | 73 161 | 73 161 |
| Households resident in other Monetary Union countries | not covered | 96 |
| Deposits - denominated in euro | | |
| Overnight deposits | | |
| Non-financial private sector resident in Portugal | 35 854 | 35 854 |
| Non-financial private sector resident in other Monetary Union countries | not covered | 298 |
| Non-monetary financial sector resident in Portugal | 5 318 | not covered |
| Deposits with agreed maturity | | |
| Non-financial private sector resident in Portugal | 64 320 | 64 320 |
| Non-financial private sector resident in other Monetary Union countries | not covered | 6 328 |
| Non-monetary financial sector resident in Portugal | 3 436 | not covered |

Table 5

**IMPACT OF CHANGES IN THE UNIVERSE COVERAGE ON THE LEVEL OF INTEREST RATES**

Estimate for December 2002

| | Households + + non-financial corporations | Non-financial corporations | Households – housing loans | Households |
|---|---|---|---|---|
| Loans (excluding overdrafts) | Not applicable | 20 b.p. | 21 b.p. | 23 b.p. |
| Overnight deposits | 1 b.p. | Not applicable | Not applicable | Not applicable |
| Deposits with agreed maturity | 0 b.p. | Not applicable | Not applicable | Not applicable |

the non-financial private sector resident in other euro area countries (which was not covered by the previous reporting system). In any case, the differences are relatively limited. In fact, operations with the non-monetary financial sector resident in Portugal accounted for less than 15 per cent of total overnight deposits covered by the previous reporting system and for less than 5 per cent of deposits with an agreed maturity. On the other hand, deposits of the non-financial private sector resident in other Monetary Union countries account respectively for less than 1 and 10 per cent of overnight deposits and deposits with an agreed maturity covered by the new reporting system.

### *Universe of reporting institutions*

The universe of surveyed institutions changed slightly from the previous to the new reporting system, accounting for part of the differences in interest rates, particularly in loans to non-financial corporations and loans to households for consumption and other purposes. Table 5 shows an estimate of differences in December 2002 that resulted from changes in the reporting universe.

### *Interest rates calculation method*

In the new reporting system, interest rates must be presented as equivalent annual interest rates (TAA), while in the previous reporting system, and given that there were no instructions as to how the rate should be presented, it is reasonable to assume that they were reported to the Banco de Portugal in terms of nominal rate, in line with the banking system practice. For a nominal interest rate of 5 per cent and monthly interest payments, the effective annual interest rate is 12 basis points higher.

### *Categories available and weighting method*

In the reporting system in force until December 2002, interest rates of each individual operation were double weighted — by amount and by agreed original maturity — in the calculation of the average interest rates of each MFI, whereas in the new reporting system according to Regulation EBC/2001/18 of the European Central Bank, only the amount is considered in the weighting process. Furthermore, in the previous reporting system, interest rates on new business were broken down by classes of agreed maturity, whereas in the new reporting system, they are broken down by period of initial rate fixation (in particular, operations with an agreed maturity of up to 1 year and operations with rates indexed to reference rates with an agreed period of up to 1 year are included in "up to 1 year initial rate fixation" category, irrespective of their maturity).

It should also be noted that the aggregation of interest rates on new business, using the amount of those business as the single weighting factor, leads to average indicators that give a higher weight to business with shorter maturities than when using a double weighting of agreed maturity and amount of new business. Under certain conditions, the average rate on new business can differ according to the aggregation method considered. For instance, let us consider the calculation of av-

erage interest rates on new deposits when, for consecutive months, only two operations with the same amount M are carried out in each month, one with an agreed maturity of 1 month and a 1.0% interest rate, while the other has an agreed maturity of 6 months and an interest rate of 2.4%. At the end of each month, after the sixth month, the outstanding amount of deposits recorded in the MFI's balance sheet is 7M (M stands for an agreed maturity of 1 month and 6M for an agreed maturity of 6 months), while the average interest rate on the outstanding amount is 2.2%. The average interest rate on new business, according to the method established in Regulation ECB/2001/18, is 1.7% (given that it used only the amount of new business as the single weighting factor), while it would be 2.2% with a double weighting factor, by amount and agreed maturity of the operation (in this case, the new operation with 6 months to maturity will have six times the weight of the new operation with a 1-month maturity). This example suggests that, if conditions remain unchanged for long enough, the average interest rate on outstanding amounts converges to the interest rate on new business calculated from the double weighting method. This does not happen with the simple weighting method using the amounts of new business. In the case of loans, an additional complication arises from possible partial redemptions of loans prior to final maturity. Therefore, in order to guarantee the convergence of the average interest rate on outstanding amounts towards the average interest rate on new business if conditions remain unchanged for long enough, the double weighting should be adopted on the basis of the amount and the duration of the expected redemption flows (instead of the agreed maturity) of new loans.

If the convergence property is verified in steady-state (at least approximately) for a given weighting method, this guarantees that, in practice, interest rates on new business calculated from that method will act as "attractors" for average interest rates on outstanding amounts. Only in this case will it be legitimate to consider that these rates on new business reflect marginal price conditions in the deposit and/or loan market. However, the aggregation method of interest rates on new business considering only amounts, as currently implemented in the Eurosystem, does not display that characteristic. In turn, Regulation ECB/2001/18, by setting the breakdown of interest rates on new business according to the period of initial rate fixation, does not allow the calculation of interest rates on new business according to the agreed maturity of the transaction. Thus, indicators of interest rates on new business cannot be interpreted as marginal conditions applied by MFIs to business agreed in the reporting month. Therefore, no inferences should be made as regards the profitability trends of reporting institutions. In particular, no spreads vis-à-vis money market reference rates should be used as incremental contribution measures to the effective profitability of MFIs.

### 2.2. Problems with the interpretation of interest rates on new business in the current reporting system

Charts 1A to 1E show synthetic indicators of interest rates on new business and outstanding amounts for the five segments mentioned above. Rates on new business up to December 2002 were adjusted for changes in the universe covered and were re-calculated in order to reflect equivalent annual interest rates(1). Comparing interest rates on new business, there are significant discontinuities in the transition from the previous to the current reporting system in two segments: loans (excluding overdrafts) to non-financial corporations and loans to households for consumption and other purposes (excluding overdrafts). For these two segments, the comparison between interest rates on new business and the interest rate on outstanding amounts since January 2003 clearly indicates that the problem lies in the recent series of rates on new business. Indeed, interest rates on outstanding amounts in both segments show downward trends, even though interest rates on new business are systematically above interest rates on outstanding amounts. The most reasonable explanation for this inconsistent behaviour is the different aggregation method used. As mentioned in the previous section, interest rates on new business according to the current reporting

(1) Moreover, interest rates on overnight deposits up to December 2002 were adjusted for differences, vis-à-vis the new reporting system, of the institutional sector covered, involving an estimate of the impact of excluding the resident non-monetary financial sector.

system are not "attractors" for rates on outstanding amounts, which clearly hinders the economic meaning of the calculated figures.

For the two problematic segments, additional evidence on the problems with the interpretation of interest rates on new business in the current reporting system is given by the comparison between these rates in Portugal and in the euro area as a whole (Tables 2 and 3). Since the beginning of the series, there have been broad positive differentials between the figures for the synthetic rates on new business for Portugal and for the euro area as a whole in two segments: loans (excluding overdrafts) to non-financial corporations and loans to households for consumption and other purposes (excluding overdrafts).

In both segments, the Portuguese rates are clearly rated as outliers among those euro area countries, for which it is possible to calculate corresponding interest rates on new business. In September 2003, the differentials vis-à-vis the euro area average were 1.35 and 2.69 percentage points (p.p.) respectively for the first and second segments (for instance, in Spain the corresponding differentials were 0.08 p.p. and 0.32 p.p.). Moreover, it should be noted that, in most euro area countries for which there are sufficient data avilable for the calculation of these synthetic rates, the interest rate on new business in both segments is lower than the corresponding rate on outstanding amounts (Table 3), in line with what could be expected in context of widespread declines in interest rates. Portugal is an exception in terms of both segments, while Finland also records an interest rate on new business that is clearly above the interest rate on outstanding amounts, but only regarding the segment of loans to households for consumption and other purposes.

If these differentials in interest rates on new business reflected higher intermediation margins in Portugal than in the euro area as a whole, it would be natural that they would also be reflected in differentials of similar size in average rates on outstanding amounts. In September, these differentials in interest rates on outstanding amounts (also excluding overdrafts) were 0.01 p.p. for loans to non-financial corporations and 1.08 p.p. for loans to households for consumption and other purposes. In the case of non-financial corporations, it seems clear that the differential in rates on new business is spurious. With regard to the segment of loans to households for consumption and other purposes, even though there seems to be a higher margin in Portugal, this difference accounts for only 30 to 40 per cent of the differential calculated on the basis of average rates on new business, which seems to indicate that the remainder is also a spurious result.

## 3. LONG SERIES CALCULATED FOR AVERAGE INTEREST RATES ON OUTSTANDING AMOUNTS

Given that the economic interpretation of series of interest rates on new business in the current reporting system is seriously affected by the aggregation method, as shown in the previous section, the use of average interest rates on outstanding amounts is recommended for the economic analysis. The new series do not present problems in terms of the aggregation methodology and reflect appropriately effective gross average rates for total MFI balance sheet operations in each of the covered segments. Obviously, average interest rates on outstanding amounts, by default, adjust in a slower and somewhat lagged manner to market conditions prevailing in each period. However, this additional inertia, that would not exist if the analysis would focus on appropriately aggregated interest rates on new business, should not give rise to problems in the Portuguese case, given the low relative importance of long-term operations with fixed interest rates. Thus, the main difficulty related to the option of privileging rates on outstanding amounts is the lack of long enough series of these rates to allow the analysis to have the indispensable time perspective.

In order to obviate this problem, and based on data available on interest rates on new business in the previous reporting system, whose economic interpretation did not present the problems of the current reporting system, interest rates on outstanding amounts were calculated for the period prior to December 2002. For each segment, as the first step in the procedure, there was a calculation of moving averages of interest rates on new business collected under the previous reporting system for each sub-segment where it was possible to break down the segment considered. For instance, for loans (excluding overdrafts) to non-financial

corporations, the previous reporting system presented interest rates on new business for the six sub-segments with an agreed maturity of up to 90 days, from 91 to 180 days, from 181 days to 1 year, from 1 to 2 years, from 2 to 5 years and over 5 years. The number of terms of the moving average was chosen according to the agreed original maturity: one sole term for the sub-segment "up to 90 days", three terms for sub-segments "from 91 to 180 days" and "from 181 days to 1 year" and six terms for the other sub-segments. This choice of terms was based on the assumption that loans of up to 90 days usually have one-month maturity, that loans from 91 days to 1 year have an index-linked rate with a quarterly revision and that loans of over one year have an index-linked rate revised every six months. After the moving averages were calculated by sub-segment, they were aggregated using the corresponding outstanding amounts as a weighting basis. In some cases, the outstanding amounts of operations were not available for the more disaggregated levels of the sub-segments, and thus it was necessary to make an initial aggregation with double weighting of gross flows of the sub-segments and an estimate of the average duration of redemption flows by maturity segment. For instance, for the same segment of loans (excluding overdrafts) to non-financial corporations, the figures for outstanding amounts of operations were only available for three breakdowns: up to 1 year, 1 to 5 years and over 5 years. Therefore, before it was possible to carry out an aggregation using outstanding amounts as a weighting basis, it was necessary to aggregate first: on the one hand, sub-segments up to 90 days, 91 to 180 days and 181 days to 1 year, in a single maturity class "up to 1 year"; on the other hand, sub-segments 1 to 2 years and 2 to 5 years, in the maturity class "1 to 5 years".

Charts 2A and 2E show the estimates obtained since 2000 for five segments while the Annex presents the long series figures estimated since 1990, which correspond to those considered in section 2, with a slight change regarding loans. Given that the rates now presented should be representative of the rates applied to outstanding amounts in operations, bank overdrafts are now also included in segments "loans to households for consumption and other purposes" and "loans to non-financial corporations".

The publication of these series aims at allowing users to have the appropriate instruments for the analysis of a long period that includes the transition period between the two reporting systems (Dec.2002-Jan.2003). It should be noted that interest rates on outstanding amounts up to December 2002 are presented as estimates through the use of a relatively simple method. Nevertheless, as shown in Charts 2A to 2E, the series seem to show continuity over the transition period between the two reporting systems (marked in these charts with a vertical line, between December 2002 and January 2003).

## 4. CONCLUSION

The aim of this article is to show that some methodological issues arising from the implementation of Regulation ECB/2001/18 of the ECB, regarding the calculation of statistics on interest rates on new business, hinder the usual interpretation of these rates as a contribution at the margin to the interest rates on outstanding amounts, particularly in the segments of loans to non-financial corporations and loans to households for consumption and other purposes. As a result, at least in the Portuguese case and for those two segments, it is not advisable to use rates on new business calculated according to that Regulation for the purpose of analysing developments in MFI profitability. In particular, no spreads between interest rates on new business and money market references should be used, given that the former lost their usual economic meaning. In order to overcome the problem, the use of average interest rates on outstanding amounts is recommended, since their calculation methodology does not give rise to caveats. Given that average interest rates on outstanding amounts are only available from January 2003 onwards, it was suggested the use of estimates of these rates, calculated on the basis of moving averages of series of the interest rates on new business, that used to be published by Banco de Portugal up to December 2002.

Chart 2A

**SYNTHETIC INTEREST RATES ON LOANS (INCLUDING OVERDRAFTS) TO NON-FINANCIAL CORPORATIONS**

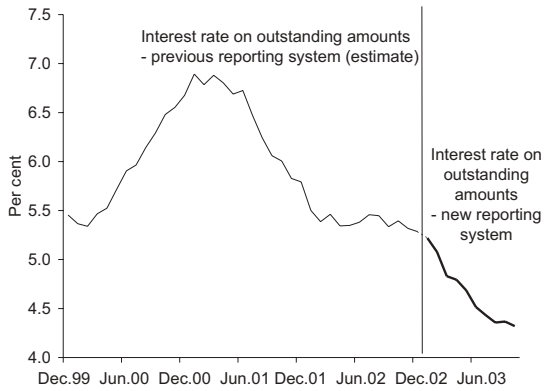



Chart 2B

**SYNTHETIC INTEREST RATES ON HOUSING LOANS TO HOUSEHOLDS**

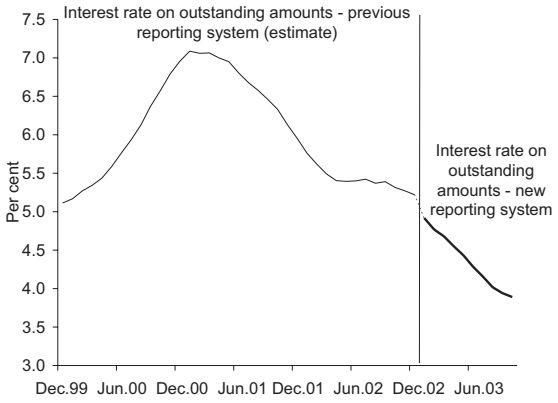



Chart 2C

**SYNTHETIC INTEREST RATES ON LOANS TO HOUSEHOLDS FOR CONSUMPTION AND OTHER PURPOSES (INCLUDING OVERDRAFTS)**

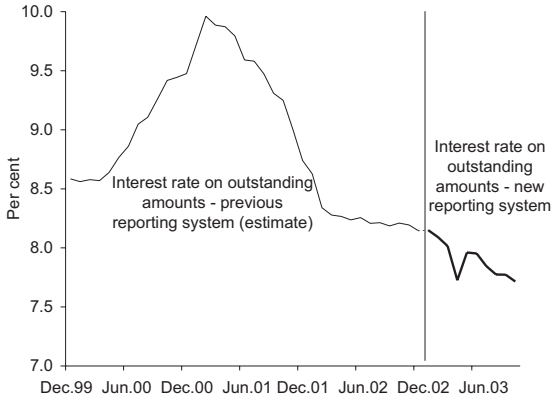
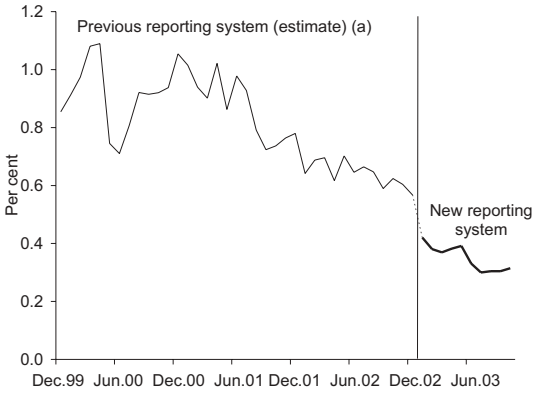



Chart 2D

**SYNTHETIC INTEREST RATES ON OVERNIGHT DEPOSITS BY HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS**

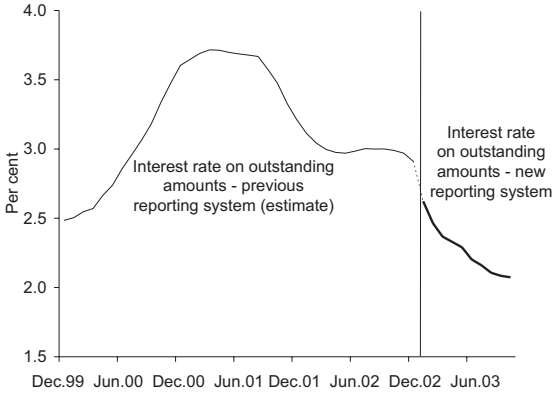



Note:

(a) Adjusted for changes in the institutional sector coverage.

Chart 2E

**SYNTHETIC INTEREST RATES ON DEPOSITS WITH AGREED MATURITY BY HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS**



## Annex

### BANKS' INTEREST RATES ON OUTSTANDING AMOUNTS – LONG SERIES

| | Loans (including overdrafts) to non-financial corporations | Loans to households for house purchase | Loans (including overdrafts) to households for consumption and other purposes | Overnight deposits from households and non-financial corporations | Deposits with agreed maturity from households and non-financial corporations |
|---|---|---|---|---|---|
| Jan-90 | 23.63 | 21.70 | 23.97 | 1.59 | 14.70 |
| Feb-90 | 23.65 | 21.70 | 23.91 | 1.72 | 14.70 |
| Mar-90 | 23.74 | 21.70 | 24.17 | 1.85 | 14.72 |
| Apr-90 | 23.91 | 21.70 | 24.59 | 1.75 | 14.73 |
| May-90 | 23.90 | 21.70 | 24.88 | 1.73 | 14.80 |
| Jun-90 | 23.96 | 21.70 | 24.98 | 1.76 | 14.76 |
| Jul-90 | 24.06 | 21.92 | 25.12 | 1.97 | 14.83 |
| Aug-90 | 24.14 | 22.00 | 24.98 | 1.85 | 14.91 |
| Sep-90 | 24.50 | 22.22 | 25.18 | 1.87 | 14.94 |
| Oct-90 | 24.73 | 22.36 | 25.32 | 1.77 | 15.03 |
| Nov-90 | 24.91 | 22.42 | 25.51 | 1.72 | 15.09 |
| Dec-90 | 25.27 | 22.10 | 25.57 | 1.72 | 15.20 |
| Jan-91 | 25.48 | 22.08 | 25.64 | 1.76 | 15.23 |
| Feb-91 | 25.44 | 22.18 | 25.78 | 1.83 | 15.27 |
| Mar-91 | 25.29 | 22.08 | 25.53 | 1.91 | 15.37 |
| Apr-91 | 25.05 | 22.10 | 25.59 | 1.69 | 15.48 |
| May-91 | 25.14 | 22.06 | 25.87 | 1.85 | 15.52 |
| Jun-91 | 25.13 | 22.34 | 25.74 | 1.66 | 15.81 |
| Jul-91 | 25.08 | 22.40 | 25.75 | 1.91 | 15.81 |
| Aug-91 | 24.85 | 22.42 | 25.70 | 1.86 | 15.83 |
| Sep-91 | 24.66 | 22.48 | 25.71 | 1.72 | 15.84 |
| Oct-91 | 24.55 | 22.50 | 25.77 | 1.72 | 15.98 |
| Nov-91 | 24.45 | 22.52 | 25.85 | 1.82 | 16.18 |
| Dec-91 | 24.42 | 22.54 | 25.37 | 1.55 | 16.17 |
| Jan-92 | 24.38 | 22.48 | 25.42 | 1.65 | 16.25 |
| Feb-92 | 24.17 | 22.46 | 25.39 | 1.81 | 16.32 |
| Mar-92 | 24.03 | 22.38 | 25.47 | 1.65 | 16.37 |
| Apr-92 | 23.75 | 22.12 | 25.51 | 1.72 | 16.39 |
| May-92 | 23.74 | 21.66 | 25.02 | 1.75 | 16.46 |
| Jun-92 | 23.62 | 21.54 | 24.62 | 1.67 | 16.40 |
| Jul-92 | 23.52 | 21.42 | 24.37 | 1.82 | 16.35 |
| Aug-92 | 23.12 | 20.98 | 24.23 | 1.70 | 16.15 |
| Sep-92 | 22.57 | 20.74 | 24.13 | 1.32 | 15.83 |
| Oct-92 | 22.20 | 20.65 | 24.11 | 1.51 | 15.49 |
| Nov-92 | 21.86 | 20.71 | 23.67 | 1.88 | 15.23 |
| Dec-92 | 21.57 | 20.45 | 23.85 | 2.06 | 14.96 |
| Jan-93 | 21.28 | 20.23 | 23.32 | 2.18 | 14.61 |
| Feb-93 | 21.01 | 20.21 | 23.14 | 2.88 | 14.20 |
| Mar-93 | 20.84 | 20.05 | 22.60 | 2.87 | 13.95 |
| Apr-93 | 20.88 | 19.86 | 22.65 | 2.62 | 13.78 |
| May-93 | 20.68 | 19.60 | 21.87 | 2.60 | 13.53 |
| Jun-93 | 20.27 | 19.23 | 21.92 | 2.89 | 13.12 |
| Jul-93 | 19.84 | 18.78 | 21.31 | 2.97 | 12.63 |
| Aug-93 | 19.40 | 18.31 | 20.92 | 3.18 | 12.09 |
| Sep-93 | 18.82 | 17.83 | 21.00 | 2.42 | 11.60 |
| Oct-93 | 18.64 | 17.34 | 20.58 | 2.50 | 11.16 |
| Nov-93 | 18.42 | 16.96 | 20.31 | 2.24 | 10.74 |
| Dec-93 | 18.05 | 16.59 | 20.09 | 2.06 | 10.39 |
| Jan-94 | 17.65 | 16.29 | 20.08 | 3.03 | 10.10 |
| Feb-94 | 17.53 | 16.04 | 20.14 | 2.40 | 9.78 |
| Mar-94 | 17.27 | 15.67 | 19.96 | 2.28 | 9.47 |
| Apr-94 | 16.95 | 15.33 | 19.92 | 2.07 | 9.29 |
| May-94 | 16.87 | 14.99 | 19.93 | 2.31 | 9.06 |
| Jun-94 | 17.08 | 14.71 | 19.84 | 2.15 | 9.00 |
| Jul-94 | 17.12 | 14.46 | 19.67 | 2.16 | 8.96 |
| Aug-94 | 16.99 | 14.25 | 19.74 | 2.31 | 8.86 |

(*to be continued*)

## Annex

### BANKS' INTEREST RATES ON OUTSTANDING AMOUNTS – LONG SERIES

| | Loans (including overdrafts) to non-financial corporations | Loans to households for house purchase | Loans (including overdrafts) to households for consumption and other purposes | Overnight deposits from households and non-financial corporations | Deposits with agreed maturity from households and non-financial corporations |
|---|---|---|---|---|---|
| Sep-94 | 16.98 | 14.22 | 19.66 | 2.44 | 8.77 |
| Oct-94 | 16.61 | 14.20 | 19.56 | 2.34 | 8.69 |
| Nov-94 | 16.13 | 14.20 | 19.54 | 2.47 | 8.61 |
| Dec-94 | 15.82 | 14.18 | 19.21 | 2.23 | 8.59 |
| Jan-95 | 15.63 | 14.14 | 19.07 | 2.31 | 8.57 |
| Feb-95 | 15.45 | 14.07 | 19.14 | 2.49 | 8.53 |
| Mar-95 | 15.36 | 13.99 | 19.27 | 2.21 | 8.60 |
| Apr-95 | 15.23 | 13.88 | 19.37 | 2.22 | 8.65 |
| May-95 | 15.27 | 13.78 | 19.31 | 2.43 | 8.65 |
| Jun-95 | 15.29 | 13.71 | 19.25 | 2.31 | 8.67 |
| Jul-95 | 15.31 | 13.63 | 19.10 | 2.30 | 8.66 |
| Aug-95 | 15.21 | 13.60 | 19.02 | 2.44 | 8.63 |
| Sep-95 | 15.06 | 13.52 | 18.88 | 2.25 | 8.59 |
| Oct-95 | 14.88 | 13.50 | 18.77 | 2.10 | 8.49 |
| Nov-95 | 14.65 | 13.47 | 18.53 | 2.15 | 8.45 |
| Dec-95 | 14.58 | 13.43 | 18.12 | 2.28 | 8.36 |
| Jan-96 | 14.44 | 13.33 | 17.82 | 2.29 | 8.22 |
| Feb-96 | 14.18 | 13.19 | 17.84 | 1.82 | 8.03 |
| Mar-96 | 13.86 | 13.05 | 17.83 | 2.17 | 7.82 |
| Apr-96 | 13.57 | 12.92 | 17.62 | 2.14 | 7.58 |
| May-96 | 13.22 | 12.76 | 17.48 | 2.10 | 7.28 |
| Jun-96 | 12.77 | 12.57 | 17.04 | 2.16 | 6.98 |
| Jul-96 | 12.68 | 12.42 | 16.73 | 2.00 | 6.75 |
| Aug-96 | 12.52 | 12.31 | 16.60 | 1.85 | 6.59 |
| Sep-96 | 12.35 | 12.18 | 16.59 | 1.92 | 6.43 |
| Oct-96 | 12.03 | 12.03 | 16.41 | 1.76 | 6.24 |
| Nov-96 | 11.59 | 11.92 | 16.18 | 1.68 | 6.07 |
| Dec-96 | 11.36 | 11.85 | 15.89 | 1.61 | 5.91 |
| Jan-97 | 11.09 | 11.76 | 15.70 | 1.49 | 5.72 |
| Feb-97 | 11.01 | 11.65 | 15.52 | 1.31 | 5.52 |
| Mar-97 | 10.70 | 11.52 | 15.29 | 1.42 | 5.32 |
| Apr-97 | 10.58 | 11.39 | 14.98 | 1.36 | 5.17 |
| May-97 | 10.55 | 11.22 | 14.70 | 1.49 | 5.00 |
| Jun-97 | 10.49 | 10.98 | 14.15 | 1.22 | 4.85 |
| Jul-97 | 10.13 | 10.75 | 13.91 | 1.30 | 4.72 |
| Aug-97 | 9.93 | 10.53 | 13.77 | 1.24 | 4.62 |
| Sep-97 | 9.80 | 10.31 | 13.57 | 1.19 | 4.55 |
| Oct-97 | 9.66 | 10.02 | 13.26 | 1.24 | 4.47 |
| Nov-97 | 9.40 | 9.71 | 12.97 | 1.23 | 4.41 |
| Dec-97 | 9.24 | 9.40 | 13.00 | 1.19 | 4.32 |
| Jan-98 | 9.29 | 9.09 | 13.14 | 1.10 | 4.22 |
| Feb-98 | 9.10 | 8.77 | 12.82 | 1.01 | 4.12 |
| Mar-98 | 8.92 | 8.44 | 12.45 | 0.94 | 3.97 |
| Apr-98 | 8.63 | 8.12 | 12.23 | 0.85 | 3.84 |
| May-98 | 8.31 | 7.80 | 11.93 | 0.90 | 3.69 |
| Jun-98 | 8.18 | 7.53 | 11.45 | 1.04 | 3.59 |
| Jul-98 | 8.02 | 7.30 | 10.87 | 1.02 | 3.52 |
| Aug-98 | 7.81 | 7.07 | 10.66 | 1.13 | 3.47 |
| Sep-98 | 7.73 | 6.87 | 10.59 | 1.16 | 3.42 |
| Oct-98 | 7.56 | 6.73 | 10.39 | 1.09 | 3.33 |
| Nov-98 | 7.34 | 6.59 | 10.23 | 1.10 | 3.23 |
| Dec-98 | 6.95 | 6.45 | 10.18 | 0.99 | 3.10 |
| Jan-99 | 6.84 | 6.29 | 10.10 | 0.94 | 2.99 |
| Feb-99 | 6.66 | 6.13 | 9.93 | 0.83 | 2.84 |
| Mar-99 | 6.34 | 5.92 | 9.57 | 0.73 | 2.72 |
| Apr-99 | 6.14 | 5.76 | 9.22 | 0.78 | 2.60 |

(*to be continued*)

## Annex

### BANKS' INTEREST RATES ON OUTSTANDING AMOUNTS – LONG SERIES

| | Loans (including overdrafts) to non-financial corporations | Loans to households for house purchase | Loans (including overdrafts) to households for consumption and other purposes | Overnight deposits from households and non-financial corporations | Deposits with agreed maturity from households and non-financial corporations |
|---|---|---|---|---|---|
| May-99 | 5.84 | 5.60 | 9.23 | 0.75 | 2.49 |
| Jun-99 | 5.57 | 5.45 | 9.15 | 0.54 | 2.38 |
| Jul-99 | 5.58 | 5.31 | 9.09 | 0.59 | 2.30 |
| Aug-99 | 5.45 | 5.21 | 8.88 | 0.74 | 2.26 |
| Sep-99 | 5.43 | 5.16 | 8.88 | 0.79 | 2.22 |
| Oct-99 | 5.39 | 5.11 | 8.81 | 0.78 | 2.22 |
| Nov-99 | 5.30 | 5.09 | 8.65 | 0.80 | 2.43 |
| Dec-99 | 5.46 | 5.11 | 8.58 | 0.85 | 2.48 |
| Jan-00 | 5.37 | 5.17 | 8.56 | 0.91 | 2.50 |
| Feb-00 | 5.34 | 5.27 | 8.58 | 0.97 | 2.55 |
| Mar-00 | 5.47 | 5.34 | 8.57 | 1.08 | 2.57 |
| Apr-00 | 5.52 | 5.44 | 8.64 | 1.09 | 2.66 |
| May-00 | 5.72 | 5.58 | 8.77 | 0.75 | 2.74 |
| Jun-00 | 5.90 | 5.76 | 8.86 | 0.71 | 2.86 |
| Jul-00 | 5.96 | 5.93 | 9.05 | 0.81 | 2.96 |
| Aug-00 | 6.14 | 6.13 | 9.11 | 0.92 | 3.06 |
| Sep-00 | 6.29 | 6.37 | 9.26 | 0.91 | 3.18 |
| Oct-00 | 6.48 | 6.57 | 9.42 | 0.92 | 3.34 |
| Nov-00 | 6.55 | 6.79 | 9.44 | 0.94 | 3.48 |
| Dec-00 | 6.68 | 6.96 | 9.48 | 1.05 | 3.60 |
| Jan-01 | 6.89 | 7.09 | 9.72 | 1.01 | 3.65 |
| Feb-01 | 6.79 | 7.06 | 9.96 | 0.94 | 3.69 |
| Mar-01 | 6.88 | 7.06 | 9.89 | 0.90 | 3.72 |
| Apr-01 | 6.80 | 7.00 | 9.87 | 1.02 | 3.71 |
| May-01 | 6.69 | 6.95 | 9.79 | 0.86 | 3.70 |
| Jun-01 | 6.73 | 6.81 | 9.59 | 0.98 | 3.69 |
| Jul-01 | 6.47 | 6.68 | 9.58 | 0.93 | 3.68 |
| Aug-01 | 6.24 | 6.58 | 9.47 | 0.79 | 3.67 |
| Sep-01 | 6.06 | 6.46 | 9.31 | 0.72 | 3.57 |
| Oct-01 | 6.01 | 6.33 | 9.25 | 0.74 | 3.47 |
| Nov-01 | 5.83 | 6.13 | 9.00 | 0.76 | 3.33 |
| Dec-01 | 5.79 | 5.95 | 8.74 | 0.78 | 3.21 |
| Jan-02 | 5.50 | 5.76 | 8.63 | 0.64 | 3.11 |
| Feb-02 | 5.39 | 5.62 | 8.34 | 0.69 | 3.04 |
| Mar-02 | 5.46 | 5.49 | 8.28 | 0.70 | 3.00 |
| Apr-02 | 5.34 | 5.40 | 8.27 | 0.62 | 2.98 |
| May-02 | 5.35 | 5.39 | 8.24 | 0.70 | 2.97 |
| Jun-02 | 5.38 | 5.40 | 8.26 | 0.65 | 2.98 |
| Jul-02 | 5.46 | 5.42 | 8.21 | 0.66 | 3.00 |
| Aug-02 | 5.45 | 5.37 | 8.21 | 0.65 | 3.00 |
| Sep-02 | 5.33 | 5.39 | 8.19 | 0.59 | 3.00 |
| Oct-02 | 5.39 | 5.32 | 8.21 | 0.62 | 2.99 |
| Nov-02 | 5.32 | 5.27 | 8.19 | 0.60 | 2.97 |
| Dec-02 | 5.28 | 5.22 | 8.14 | 0.57 | 2.91 |
| Jan-03 | 5.22 | 4.92 | 8.15 | 0.42 | 2.62 |
| Feb-03 | 5.08 | 4.77 | 8.09 | 0.38 | 2.47 |
| Mar-03 | 4.83 | 4.68 | 8.02 | 0.37 | 2.37 |
| Apr-03 | 4.79 | 4.55 | 7.73 | 0.38 | 2.33 |
| May-03 | 4.69 | 4.43 | 7.96 | 0.39 | 2.29 |
| Jun-03 | 4.52 | 4.28 | 7.95 | 0.33 | 2.20 |
| Jul-03 | 4.43 | 4.16 | 7.85 | 0.30 | 2.16 |
| Aug-03 | 4.36 | 4.02 | 7.77 | 0.30 | 2.11 |
| Sep-03 | 4.37 | 3.94 | 7.77 | 0.30 | 2.08 |
| Oct-03 | 4.32 | 3.89 | 7.71 | 0.31 | 2.07 |

# *Articles*

# UNCERTAINTY AND RISK ANALYSIS: AN APPLICATION TO THE PROJECTIONS FOR THE PORTUGUESE ECONOMY IN 2004*

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## 1. INTRODUCTION

Economic forecasts are generally presented as point projections. However, these central projections are subject to risks that can be translated into a probability distribution function whose estimation can supply significantly important indications. The existence of uncertainty as well as asymmetric risks is reflected in forecast intervals, which can result in distinct probabilities of the variable standing above/below that point projection.

In practice, while the uncertainty analysis is often quantified in the form of forecast intervals, the implication of the asymmetric risk, given their higher degree of technical complexity, are generally not quantified. Instead, only qualitative assessments of the direction of projection risks are produced(1).

With a pioneer approach, since 1996 the Bank of England has carried out quantified analyses of the risks underlying its forecasts. The communication to the public is made using fan charts, which quantify the (usually asymmetric) probability distribution underlying a point projection. These charts superimpose, with different shades of colour(2), asymmetric projection intervals for different degrees of confidence(3).

Novo and Pinheiro (2003) have recently proposed an alternative procedure to construct such probability distribution functions, trying to overcome some limitations inherent to the Bank of England procedure. This note summarises the approach by Novo and Pinheiro (2003), illustrating its application with an example for the Portuguese economy projections for 2004 published in this issue of the *Economic bulletin*.(4)

The second section introduces the problem. The method of definition of uncertainty factors and of risks balance is presented in the third section. The fourth section illustrates the aggregation of these uncertainty and risk factors, and presents the resulting probability distribution underlying the projected values. Finally, the fifth section applies the procedure to the projections for the Portuguese economy in 2004.

## 2. HOW CAN ASYMMETRIC AND CORRELATED DISTRIBUTIONS BE AGGREGATED?

In order to illustrate the problem a simple example will be considered, in which the variable to be forecast, $y$, can be expressed as a local linear approximation of $k$ conditioning variables, $x_i$:

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

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(1) For example, this has been the practice followed by the Banco de Portugal in the articles that publish the projections for the Portuguese economy.

(2) Also known in literature as «rivers of blood» due to their red colour.

(3) This approach was subsequently adopted by other central banks, in particular, the Bank of Sweden.

(4) The procedure is applicable to forecasts at more than a period ahead, although for illustrative purposes only 2004 is considered.

$$y_t = \sum_{i=1}^{k} \alpha_i x_{i,t} \quad (1)$$

The point projection of variable $y$, for moment $t$, $\hat{y}_t$, can be written as a linear combination of the contemporaneous values projected for variables $x_i$, $\hat{x}_{i,t}$:

$$\hat{y}_t = \sum_{i=1}^{k} \alpha_i \hat{x}_{i,t} \quad (2)$$

Similarly, the point projection errors for variable $y$, $\varepsilon_{y_t} = y_t - \hat{y}_t$, can be written as a linear combination of the projection errors for variables $x_i$, $\varepsilon_{x_{i,t}} = x_{i,t} - \hat{x}_{i,t}$:(5)

$$\varepsilon_{y_t} = \sum_{i=1}^{k} \alpha_i \varepsilon_{x_{i,t}} \quad (3)$$

The point projections assumed for variables $x$ are subject to uncertainty, which naturally passes through to the projections made for variable $y$. Thus, the problem lies firstly in establishing distributions for the projection errors of variables $x_i$ and secondly in aggregating these distributions (which may be correlated), to obtain the probability distribution underlying the projection error of variable $y$(6). In general terms, two cases can be considered.

A simpler case would be to consider that the forecast errors of variables $x$ are symmetrically distributed(7), assuming therefore balanced risks. In this case, the expected value and the mode of the projection errors of variables $x$ coincide in zero. Consequently, the distribution for the forecast error of $y$ is also characterised by a symmetrical distribution centred in zero. From the technical point of view, in this case the problem boils down to the estimation of a dispersion measure of the projection error of $y$.

In a more realistic alternative, some projection errors for variables $x_i$ may have asymmetric distributions. In this case, the problem is more complex and, in addition to the dispersion, it is also necessary to estimate the degree of asymmetry underlying the error in the forecast of $y$. Moreover, the distribution function of variable $y$ is not normally the same as that of variables $x$. In such cases, different solutions to the problem can be considered:

(i) numerically simulating uncertainty and risk factors (variables $x_i$) and aggregating them. The disadvantage of this procedure is related to the difficulty in considering the existence of correlations between the distributions of projection errors for variables $x_i$(8).

(ii) assuming that the asymmetry of the projection is the linear combination of the asymmetries defined for the risk factors. This is the procedure used by the Bank of England to construct fan-charts(9). In this procedure, the dispersion of the projection error of $y$ is, in turn, obtained through the linear combination of the variances of projection errors for variables $x_i$, thereby assuming the inexistence of correlations between these errors.

(5) This simpler example is intended to be illustrative, considering only one variable to be forecast – not depending on a random term – and that there is no uncertainty with respect to the aggregation coefficients. More generally, this will not happen, because the variable to be forecasted will also depend on a specific random disturbance, which will represent all the factors influencing the variable, but that are not expressed in the linear approximation considered (e.g. specification errors associated with the functional form and the variables included, as well as measurement errors of the variables).
In a more general analysis, let $Y$ stand for a variable vector to be forecasted and $X$ represent the conditioning variables vector. It can be admitted that there is a local linear approximation to the forecast generating process. In matricial terms:

$$A_y Y = A_x X_t + u_t \Leftrightarrow Y = A_y^{-1} A_x X_t + A_y^{-1} u_t \quad 1a$$
$$\hat{Y}_t = \hat{A}_y^{-1} \hat{A}_x \hat{X}_t \quad 2a$$
$$\hat{A}_y \varepsilon_{y_t} = \hat{A}_x \varepsilon_{x_t} + v_t \Leftrightarrow \varepsilon_{y_t} = \hat{A}_y^{-1} \hat{A}_x \varepsilon_{x_t} + \hat{A}_y^{-1} v_t \quad 3a$$

The total error of each variable of vector Y is accounted for by the error of the conditioning variables $\varepsilon_{xt}$ and by the pure errors $v_t$ that cannot be accounted for by errors made in the conditioning variables. It should be noted that (3a) expresses $\varepsilon_{yt}$ as a linear combination of $\varepsilon_{xt}$ and $v_t$.

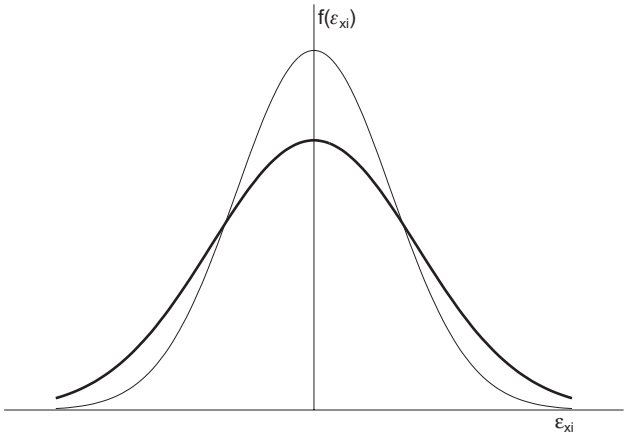
(6) An hypothesis to overcome this problem would be the direct use of projection errors subsequently observed in the projection of variable y. This procedure is used to define the projection intervals currently published by the European Central Bank [see ECB (2000)]. However, this analysis («to make as many errors as in the past») does not consider the introduction of elements of uncertainty and risks distinct from the past, nor the analysis of their impact on projections.

(7) Conveniently, the most common parametric hypothesis is the normal distribution of errors.

(8) Martins et al (2003) present an application of a numerical procedure which only considers a binomial correlation between two input distributions. The use of the method shown in Mardia (1970) only considers correlations between two uncertainty factors – applied to inflation and GDP in Sweden by Blix and Sellin (2000).

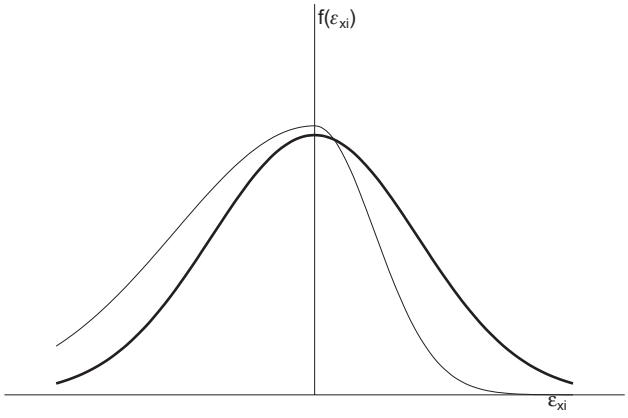
Chart 1
**DEFINITION OF UNCERTAINTY/RISKS FOR VARIABLE $X_i$**

Decrease in uncertainty by 25 per cent




$f_0: E_0 = M_0 = 0; \sigma_0 = 1$
$f_1: E_1 = M_1 = 0; \sigma_1 = 0.75\ \sigma_0$

Downward risks of 70 per cent




$f_0: E_0 = M_0 = 0; \sigma_0 = 1$
$f_1: M_1 = M_0 = 0; E_1 < M_1$
$P(\varepsilon_{xi} < M_1) = 0.7; \sigma_1 = \sigma_0$

(iii) Novo and Pinheiro (2003) suggest a more global procedure. This approach, under certain conditions, overcomes the restrictive hypotheses of the linear aggregation used by the Bank of England.

## 3. DISTRIBUTION OF UNCERTAINTY AND RISK FACTORS

Chart 1 illustrates the procedure used to define the level of uncertainty and risk for any conditioning variable. This procedure — which includes the judgment of the forecaster in the definition of the probability distribution around the values underlying the central scenario — is the same used by the Bank of England, and is also followed in Novo and Pinheiro (2003).

In Chart 1, the probability density function $f_0$ represents the initial distribution of the forecast error of variable $x_i$. It is a distribution centred around zero, reflecting the most probable value for projection errors. However, as there is uncertainty, these errors are characterised by a probability distribution, which is approximated by a normal distribution due to the fact that the baseline was admittedly constructed without considering asymmetric risks. Thus, in this distribution the most probable value $(M_0)$ coincides with the mean $(E_0)$. In turn, the variance can be estimated taking into account the historical projection errors made for variable $x_i$ (the example considers $\sigma_0 = 1$). However, the forecaster should evaluate weather it is reasonable to project this historical variability for the future, changing it if he deems apropriate. For example, for a euro area country, the variability of the effective exchange rate will tend to be lower than the volatility seen in the past, when there were significant changes in bilateral rates across the countries currently comprising the euro area.

In order to illustrate the type of intervention which can be carried out by the forecaster, let´s consider a first case where uncertainty on developments in variable $x_t$ admittedly decreases by 25 per cent. This type of intervention is justified when it is considered that the uncertainty associated with the projection of this variable will be different from that historically observed[10]. Thus, the definition of these additional uncertainty factors only

(9) This procedure considers that the difference between the expected value and the mode is the linear combination of the differences between the mean and the mode of risk factors. The problem in this hypothesis, as actually acknowledged by the Bank of England, results from the fact that the mode of a linear combination cannot be expressed as the linear combination of the respective modes (contrary to the expected value).

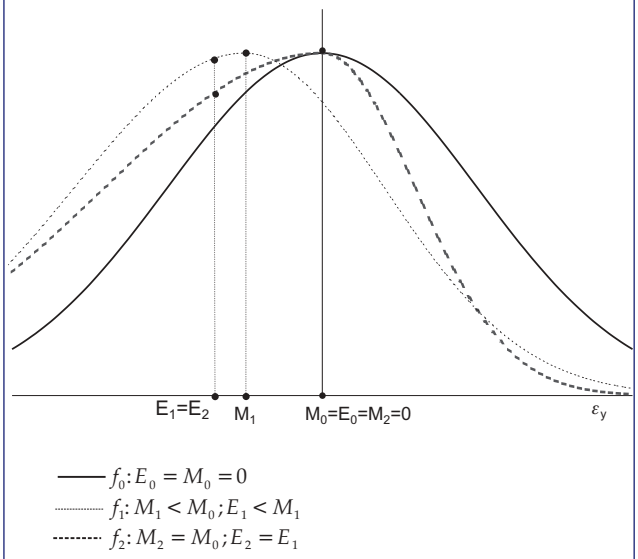
changes the dispersion of distribution, and does not affect location measures — both the most probable value $(M_1)$ and the mean $(E_1)$ for the forecast error of this variable continue to be equal to zero.

The second panel of Chart 1 considers the definition of an asymmetric risk factor with regards to developments in variable $x_t$. Although the most probable value of this error is still considered to be zero — i.e. the value of $x_t$ implied in the baseline continues to be the most probable — it is assumed a different probability that this error may stand below or above zero (70 and 30%, respectively, in the example shown). With the definition of this asymmetry, the expected value $(E_1)$ deviates from the mode $(M_1)$, shifting to the tail of the distribution with higher probability mass. In this case, the parametric hypothesis of the normal distribution no longer serves the purposes of the forecaster. Thus, it is necessary to select distributions that accommodate both situations — symmetry and asymmetry, as is the case of the distributions used by the Bank of England and in Novo and Pinheiro (2003). In the former case the distribution chosen was the two-piece normal (*tpn*) and in the latter case the authors chose the skewed generalized normal (*sgn*)[11].

## 4. DISTRIBUTION OF THE PROJECTION

Upon defining the risk and uncertainty factors on developments in the conditioning variables, aggregating these distributions makes it possible to obtain the distribution underlying the projections of endogenous variables. Chart 2 illustrates the output resulting from this aggregation, showing

Chart 2
**ILLUSTRATION OF ASYMMETRY IN THE ENDOGENOUS VARIABLE**




the impact of the adoption of risks (asymmetry). Its analysis can be broken down into three parts:

(i) The initial distribution, $f_0$, corresponds to the distribution underlying the initial point projection, defined in a context of inexistent asymmetric risks. In this case, the projection errors for variable $y$ follow a normal distribution, with a mean zero and a specific standard deviation.

(ii) The definition of asymmetric risks changes the distribution of forecast errors. The distribution $f_1$ illustrates the result of the procedure by Novo and Pinheiro (2003). The shifting of the mean (from $E_0$ to $E_1$) reflects the fact that the risk analysis has also changed the expected value of the variables affecting the projection of $y$. However, the introduction of asymmetric risks also changes the projection mode (from $M_0$ to $M_1$). This last change results from the fact that the procedure aggregates, in a statistically consistent way, the distributions of $x_i$, i.e. without simplifications in the aggregation of the mode. Thus, the effect of the introduction of asymmetric risks must consider the shifting of the distribution, which can be broken down into two parts: (i) shifting of the most probable

(10) In this context, a pure statistical fact can justify reducing the uncertainty associated with the variable in question. The historical variance of the projection errors of this variable may have been significantly affected by an irregular observation, in particular when small samples are used.

(11) The adoption of the *sgn* distribution (linear combination of a normal distribution with a gamma distribution) is justified by its better properties of linear aggregation when compared with the *tpn*. In terms of the definition of the elementary factors of uncertainty and risk, the results are quite similar to those of the Bank of England, given the resemblance of the two distributions. In the case of symmetry, the results are the same, because both distributions have as a particular case the normal distribution.

value; (ii) differentiation between the expected value and the mode due to the asymmetry of the new distribution. This difference between the mode and the mean will be smaller than the linear combination of the differences between the mean and mode of the variables on which risks are defined, in particular when there is an increase in the number of variables. This new distribution will be the basis for the definition of forecast intervals and for the calculations made regarding the probability that the variable in question may stand above/below the value projected in the central scenario.

(iii) For illustrative purposes, the distribution resulting from applying the procedure used by the Bank of England $(f_2)$ is also plotted. In this case, while the shifting of the expected value is equal to the method of Novo and Pinheiro (2003)[12], the mode is artificially maintained in the initial projection.

Thus, with the approach by Novo and Pinheiro (2003), two location measures can be considered in order to measure the effects of the risk analysis in the central scenario: (i) the shifting of the mode, $M_1 - M_0$; (ii) the shifting of the mean, $E_1 - E_0$. It should be noted that the signal of the differences indicates the direction of risks. Thus, negative (positive) differences are associated with downward (upward) risks in the forecast.

The use of the mode has the advantage of measuring the change in the most probable value resulting from the analysis of risks. In fact, given the analysis of uncertainties and risks considered, the value $M_1$ can be interpreted as the most likely realisation for the variable in question. The use of the expected value is less consistent with the interpretation that the baseline corresponds to a modal forecast on which uncertainties and risks are defined. However, the use of this measure has a communication advantage. Its shifting can be easily accounted for by the risks introduced in variables $x_t$, i.e. the effect on the mean of dependent variable can be broken down in an additive manner by the effects on the means of conditioning variables.

## 5. APPLICATION TO CURRENT PROJECTIONS FOR THE PORTUGUESE ECONOMY IN 2004

The use of the procedure by Novo and (2003) requires the adoption of a set of working hypotheses. Thus, for the 2004 Portuguese economic projections, which were prepared within the scope of the Eurosystem autumn exercise and disclosed in this issue of the Economic bulletin, the following options were used:

### *(i) Variables considered*

The current Eurosystem projection exercise considers a set of variables on which risks and uncertainty factors can be defined. These variables can be broken down into three major groups.

(a) Conditioning variables on which technical hypotheses are made (includes the exchange rates of the euro, the oil price and long and short-term interest rates).

(b) Other conditioning variables on which common hypotheses are assumed for the Eurosystem countries (developments in the economic activity of countries outside the euro area, which, together with projections for the remaining Eurosystem countries, determine foreign demand relevant for the Portuguese economy), or whose nature as a policy variable naturally renders them conditioning variables of the exercise (public consumption).

(c) Endogenous variables on which uncertainty and risk factors can be defined through the behaviour of the residual of the respective equations (private consumption, investment, exports, imports, wages, employment, inflation)[13]. The effect on the behaviour of an endogenous variable will depend not only on the factors directly defined for this variable, but also on the impacts associated with the factors defined for both the conditioning

(12) In approximate terms, given the differences in parametric hypotheses, tpn and sgn, used for defining risk factors. The expected values of these two distributions are different, even if they share the same mode, mode percentile and standard deviation. Thus, the shifting of the expected value of distribution resulting from the definition of the same specific risk factor (see figure 1) is not exactly the same, thereby giving rise to slight differences in the shifting of the expected value of endogenous variables.

variables and the remaining endogenous variables.

*(ii) Historical errors*

The collection of historical errors for both the conditioning variables and the projections made for endogenous variables is instrumental to estimate the standard deviations and corresponding correlation matrix among projection errors of the several variables considered. As already mentioned, this information is viewed as a working basis, which the forecaster can judge and assess whether it is reasonable to project this historical information into the projection horizon.

This historical information was constructed taking into consideration the autumn projection exercises prepared by the Banco de Portugal from 1995 to 2003, within the framework of the European Monetary Institute up to 1998 and of the Eurosystem from that date onwards. In order to deal with the usual series revisions, the actual value for each variable in a given year was considered to correspond to the value projected in the autumn exercise of the following year.

*(iii) Linear proxy*

When defining the linear approximation around the central scenario that characterises relationships among the variables considered, the shock multipliers of both the conditioning variables and the endogenous variables, were obtained by means of innovations in the respective behavioural equations. In addition to permit the aggregation of the several variables, these multipliers are instrumental to filter the projection errors of each endogenous variable of the part that can be explained by errors made in the projection of the other variables considered.

These multipliers were obtained on the basis of the model normally used in the Banco de Portugal in the projection exercises for the Portuguese economy. With regard to conditioning variable shocks (with the exception of public consumption), it should be noted that the model multipliers were amplified by considering equivalent simulations for the remaining euro area countries. Thus, these multipliers also take into account the effects on the Portuguese economy associated with the fact that these variables affect the remaining euro area countries with which Portugal maintains trade flows. For example, a change in the euro interest rates, in addition to having direct effects on the Portuguese economy, also generates indirect effects through foreign demand relevant for the Portuguese economy, given that euro area countries are also affected by this change in interest rates.

### 5.1. Filtering of errors

As a consequence of applying the procedure, it is possible to analyse the projection errors made in the past in similar projection exercises. In addition, the filtering of such errors makes it possible to recognise their origin. Chart 3 illustrates this analysis for projection errors one year away, by showing a numerical measure of these errors for each endogenous variable — Root Mean Squared Error () — as well as the percentage of this indicator which is not attributable to «pure» projection errors of this variable[14].

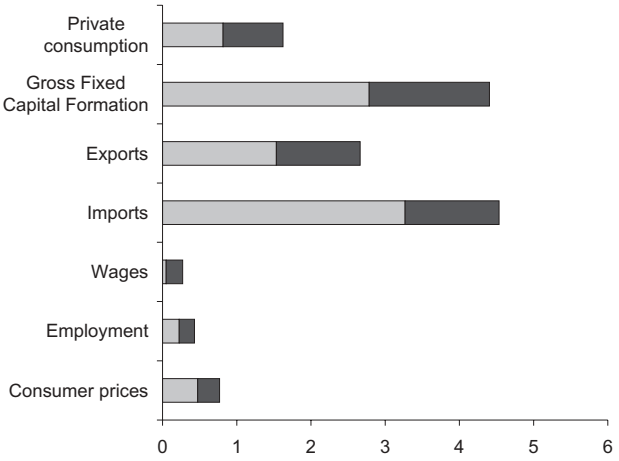
Not surprisingly, projection errors are larger for investment (strong sensitivity to the business cycle), exports (higher dependence on the hypotheses assumed for developments in foreign demand) and imports (strongly conditioned by the projection errors made when projecting the various global demand components). In these cases, a significant percentage of the error will tend to be accounted for by the errors made in the remaining variables considered.

Projection errors have been less significant for the remaining variables — wages, employment and inflation. This, however, cannot be directly attributed to a greater skill in the projection of these variables, since this result will reflect the fact that these series have recorded less variability in the period under consideration[15]. Among the variables considered, the projection errors made in the autumn exercises for wage developments in the

(13) GDP projection errors are determined by aggregating the errors of its expenditure components.

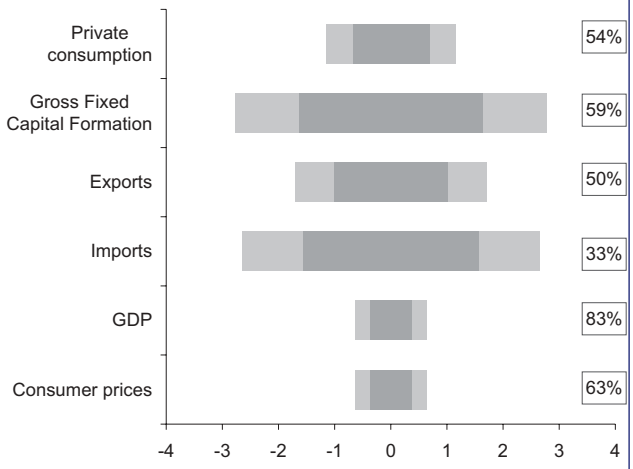
(14) Notice that the variables used in the linear proxy model around the baseline do not necessarily coincide with those used by the Banco de Portugal in its forecast models. Thus, the percentages reported in this article must only be interpreted in the light of the model used for risk analysis.

Chart 3
**HISTORICAL FORECAST ERRORS**
In percentage points, root mean squared error




Share of the mean squared error not explained by errors in other (both conditioning and endogenous) variables.
Share of the mean squared error explained by errors in other (both conditioning and endogenous) variables.

Chart 4
**PROJECTIONS INTERVALS**




% Degree of confidence of projection intervals for 2004 published in the article «Projections for the Portuguese economy in 2004-2005».
50 per cent confidence interval.
75 per cent confidence interval.

following year are the smallest. Simultaneously, however, they tend to be the least explained by projection errors made in the remaining variables considered — showing the low flexibility of wages with regard to the events of the year.

### 5.2. Uncertainty analysis

Regardless of the set of risks that may be considered, applying the procedure by Novo and Pinheiro (2003) always makes it possible to construct confidence intervals for economic projections. If the sole purpose is to obtain a measure of the degree of imprecision of projections, there is no need to define asymmetric risks. The estimated dispersion of projection errors is based on the historical variances and covariances and on the set of model multipliers.

Chart 4 summarises the results for 2004[16]. Considering confidence degrees of 50 and 75 per cent, confidence intervals are shown for the projection errors of variables for which projection intervals are usually disclosed. In addition, the Chart shows the degree of confidence that this procedure assigns to the projection intervals for 2004 considered in the article of this issue of the Economic bulletin that presents projections for the Portuguese economy.

According to the results obtained, considering all uncertainty associated with both the adoption of external hypotheses resulting from the Eurosystem's exercise and specific behaviours of the endogenous variables considered, GDP growth in

(15) When obtaining projection skill indicators, the comparison of projection errors with the variability of the series itself gains importance. Errors made in the projection of more unpredictable series are more tolerated [see for example, Diebold and Killian (2001)].

(16) Several hypotheses have been considered in the construction of these confidence intervals. First, translating a usual hypothesis, it was assumed that projection errors of conditioning variables were not correlated with the residuals of the behavioural equations («pure» errors) of endogenous variables. Second, the historical standard deviations of projection errors were calculated excluding the more «abnormal» observation, since the presence of outliers is particularly prone to influence the results when small samples are taken into consideration. Finally, the adoption of non-truncated distributions gives rise to a different-from-zero probability of the projected variable shifting to very negative or very positive values, despite its low economic reasonability. In the case of the Bank of England's fan charts, the original forecast distribution is truncated at the limits defined by the scale of the chart itself. In this case, a 98 per cent truncation was considered, i.e. a distribution defined only for the central «most likely» 98 per cent values.

2004 is likely to stand, with a 50% degree of confidence, within a range of 0.8 percentage points defined around the baseline (or 1.2 in the case of a 75% confidence interval). The limits of these intervals for the inflation rate are also 0.8 and 1.2 percentage points, respectively.

Turning to developments in the various expenditure components, there is a significantly higher uncertainty than that underlying the GDP projection. There are two possible explanations for this result. First, in the absence of correlations, the variability of a more aggregated indicator (which can be expressed as an average of other indicators) can be attenuated (being lower than the average indicator variability), since positive innovations in a variable can be offset by negative innovations in another variable. In addition, given the strong correlation between imports and global demand, part of the innovations in the various demand components is reflected in import developments, not affecting output growth.

### 5.3. Risk scenarios

Applying this procedure also makes it possible to quantify the impacts of a given balance of risks in the projections made. As an example, let's consider of a balance that translates a possible quantification of the risk factors referred to in the article that presents the projections for the Portuguese economy: (i) appreciation of the exchange rate of the euro; (ii) higher oil price; (iii) lower foreign demand growth; (iv) higher public consumption growth; (v) higher labour market adjustment — translated into a lower growth pace of employment and wages; (vi) higher consumer price growth due to the possibility of a greater increase in administered prices. In all cases an intermediate level of risks is considered (0.4 or 0.6 mode percentile). In the case of the exchange rate, given the significant appreciation of the euro since the Eurosystem's exercise, a sharper risk balance is assumed (70% subjective probability that the exchange rate of the euro in 2004 may appreciate vis-à-vis the technical hypothesis considered in the central scenario).

Table 1 presents the balance of risks for the projections for the Portuguese economy in 2004, showing the probability that the GDP growth rate and the inflation rate may stand below the central projection, as well as the respective minimum magnitude confidence intervals[17].

The results confirm that the risks regarding economic activity in 2004 are mainly on the downside — a higher than 55 per cent probability that the GDP growth rate may stand below the initial point projection. Inflation risks seem to be more balanced. The probability that the inflation rate may stand above the below projection stands only slightly above 50 per cent.

One important aspect is the fact that confidence intervals cease to be centred around the initial projection, with the limit of the interval widening towards the branch with higher concentration of risks. Considering this balance of risks defined around a point projection of 0.75 per cent (central value of the interval disclosed in the article that presents the projections for the Portuguese economy), GDP growth rate intervals in 2004 would be [0.28; 1.03] with 50 per cent confidence and [0.02; 1.29] with 75 per cent confidence. In the case of the inflation rate, these intervals defined around the central scenario of 2.5 per cent would be [2.19; 2.86] and [1.89; 3.13].

Considering the effects of the risk balance on the expected projection value (mean effect), it is possible to analyse which risk factors can contribute the most to a deviation of the GDP growth rate and the inflation rate vis-à-vis the central scenario in 2004 (Chart 5).

Most risk factors considered, in particular those related to developments in foreign demand relevant for the Portuguese economy, can negatively influence the GDP growth rate in 2004. These factors will tend to override the risk that public consumption will not record such negative developments as those assumed in the central scenario of the projection.

(17) In the presence of asymmetric distributions the choices are (i) confidence intervals in which the tails of the distribution not considered by the interval have the same probability mass or (ii) intervals whose limits are defined for the points whose density function reaches the same value so as to minimise the magnitude of the interval — option underlying the fan chart of the Bank of England [see Wallis (1999)]. No technical absolute arguments seem to support the adoption of one of the solutions. Thus, the criterion of showing minimum magnitude intervals may prevail. However, it should be mentioned that the probability that this variable may stand above or below this interval is not the same.

Table1

**RISK ANALYSIS**

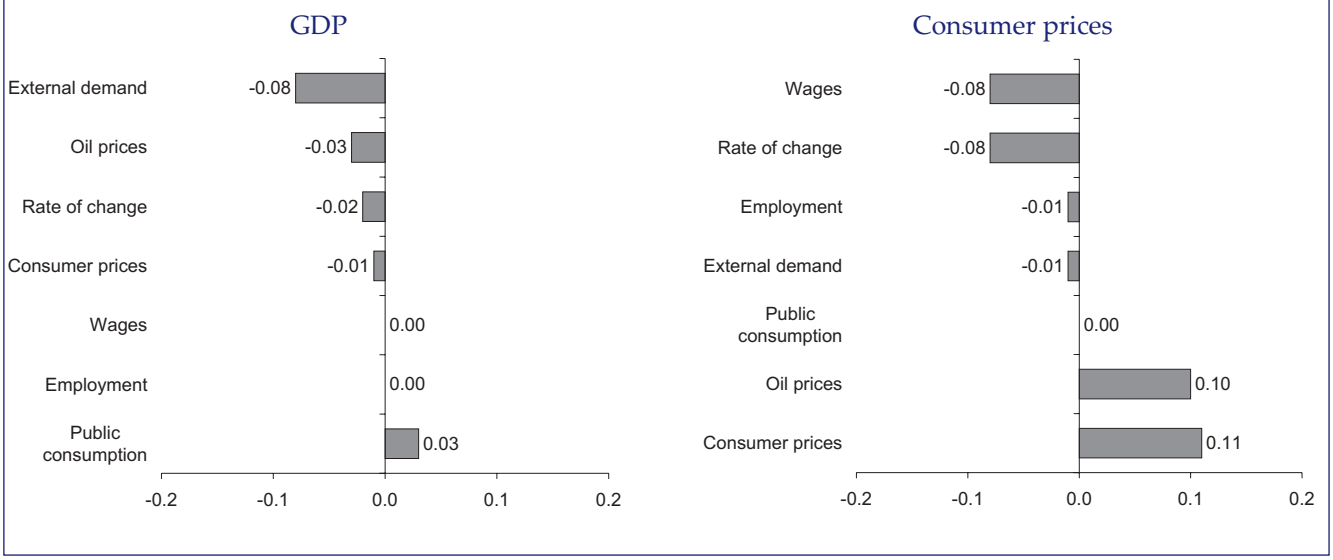
| *Input* | | Subjective probability (mode percentile) |
|---|---|---|
| Conditioning variables | | |
| Exchange rate[a] | | 0.7 |
| Oil price | | 0.4 |
| Foreign demand | | 0.6 |
| Public consumption | | 0.4 |
| "Pure errors" | | |
| Employment | | 0.6 |
| Wages | | 0.6 |
| Inflation | | 0.4 |
| ***Output*** | | |
| GDP | Central scenario percentile | 0.57 |
| | Confidence interval (50%)[b] | [0.28; 1.03] |
| | Confidence interval (75%)[b] | [0.02; 1.29] |
| Inflation | Central scenario percentile | 0.49 |
| | Confidence interval (50%)[b] | [2.19; 2.86] |
| | Confidence interval (75%)[b] | [1.89; 3.13] |

Notes
(a) An increase (decrease) corresponds to a depreciation (appreciation).
(b) Defined on truncated distributions at 98 per cent.

Chart 5

**EFFECTS OF THE RISK BALANCE (MEAN EFFECT)**

Contributions for growth rates, in percentage points



With regards to inflation, the risks associated with the possibility of an oil price level above that assumed in the point projection or of a higher increase in administered prices, will tend to be offset by the risks of an appreciation of the euro and lower wage growth.

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# DISINFLATION AND FISCAL POLICY IN PORTUGAL: 1990-2002*

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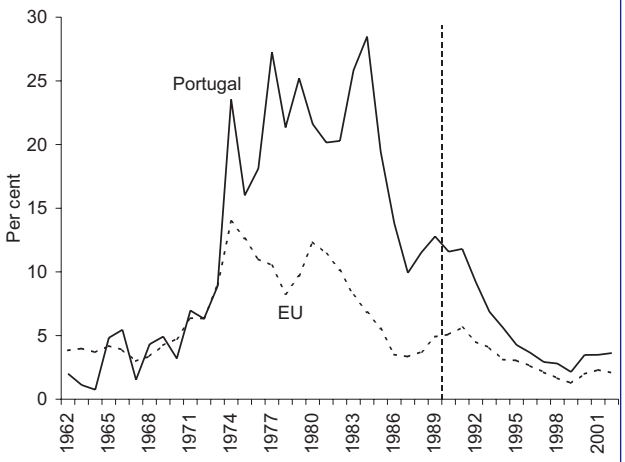
*Cláudia Braz***

## 1. INTRODUCTION

Following the implementation of the economic stabilization agreement of 1983 with the IMF and the favourable developments in international oil prices and other commodities by the middle of the eighties, Portugal initiated a disinflation process that lasted until 1998(1). Inflation measured by the private consumption deflator reached a figure close to 30 per cent in 1984, decreasing afterwards to close to 2 per cent in 1997-1998, before the outset of the third phase of the Economic and Monetary Union (EMU). The differential to the European Community average stood at 14 percentage points (p.p.) in 1986, the year of Portugal's accession, dwindling to 1 p.p. from 1995 to 1999. From 2000 to 2002 it stood close to 1.5 p.p. (Chart 1).

Chart 1
**PRIVATE CONSUMPTION DEFLATOR**




Source: European Commission (AMECO database, Autumn 2003).

Between 1985 and 1998 the general government deficit declined from about 10 per cent of GDP to a figure around 3 per cent of GDP, following the present accounting rules of the excessive deficit procedure (ESA 95) (Chart 2). However, this process was not continuous. Until 1989 a sizeable deficit reduction took place. From 1990 to 1993 the trend was reversed owing to an adverse combination of expansionary discretionary measures and cyclical effects, with the exception of 1992, when a major change of VAT rates led to a substantial increase of tax receipts. From 1994 onwards the declining trend of the deficit resumed as a consequence of the fall in interest payments as a ratio to GDP, enhanced in a first moment by discretionary measures(2) and afterwards by particularly favourable cyclical effects, partially resulting from the composition of expenditure and income. However, excluding interest payments and the impact of the economic cycle, the stance of the fiscal policy was clearly expansionary from 1995 to 2001, as it is shown by the reduction of the cyclically adjusted primary balance every year during that period (Chart 3). Behind this outcome was the return to a sustained growth of primary current expenditure,

* The views expressed in this article are those of the authors and not necessarily those of the Banco de Portugal. The authors would like to thank João Amador, Luís Morais Sarmento, Maximiano Pinheiro, Pedro Duarte Neves and Vítor Gaspar for their comments.

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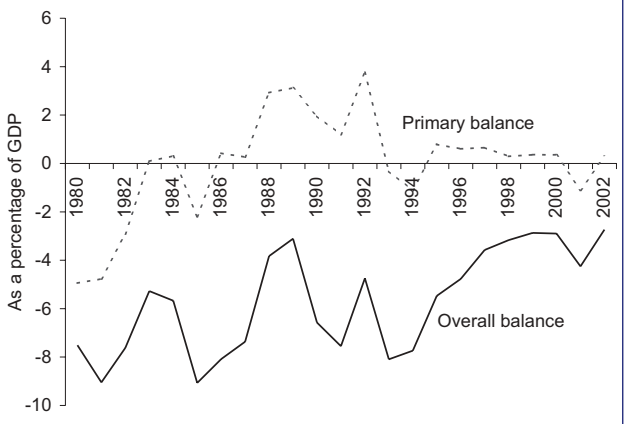
(1) See Abreu (2001).

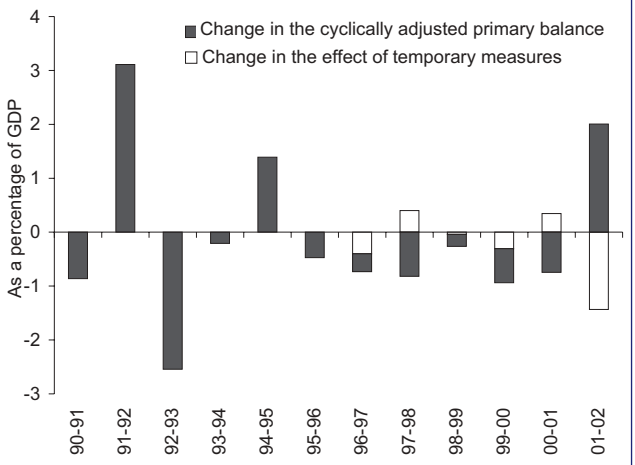
(2) In particular, the modest update of civil servants wages in 1994, the decline in the number of general government employees in 1993 and 1994 and the gradual increase in the retirement age of women from 1994 to 1999.

Chart 2
**GENERAL GOVERNMENT BALANCES (ESA95)**




Sources: *Instituto Nacional de Estatística* and Banco de Portugal.

Chart 3
**CHANGE IN THE CYCLICALLY ADJUSTED PRIMARY BALANCE**




Sources: European Commission and Banco de Portugal.

as it had already been observed at the beginning of the nineties. This growth was mainly explained by the increases of the civil servants wage bill, due to the rise in the number of public employees and extraordinary revisions of specific careers, and of the expenditure with pensions, both in the general and the civil servants systems.

The steady growth of primary current expenditure was compatible with the deficit reduction as long as interest expenditure was declining and the cyclical component had a positive impact. However, as interest expenditure stabilised as a ratio to GDP and the economy activity decelerated, the deficit clearly exceeded the reference value of 3 per cent of GDP, reaching 4.2 per cent of GDP in 2001. In 2002, in order to keep the deficit below 3 per cent of GDP, it was necessary to tighten procyclically the fiscal policy and to implement temporary measures corresponding to about 1.5 per cent of GDP.

The goal of this paper is threefold. Firstly, to analyse how disinflation contributed to the decline of the general government deficit in Portugal during the nineties[3]. Secondly, to quantify the impact on the deficit of the decrease in interest expenditure resulting from disinflation. Finally, as the leeway created by the decline in interest payments would have justified a more marked reduction of the deficit, the current fiscal position in Portugal is simulated assuming that the fiscal policy had not shown the expansionary stance mentioned above.

Section 2 summarises the references in the literature to the several channels through which inflation may influence budgetary outcomes and discusses the importance of each one in Portugal in the recent past. Section 3 presents an estimate of the impact of disinflation on the cyclically adjusted deficit of general government as a ratio to potential GDP[4] via interest expenditure assuming that the implicit interest rate on public debt[5] deflated by the consumer price index (CPI) was the one actually observed and inflation did not change from the 1990 level. Section 4 summarises a simulation of the Portuguese budgetary outcomes assuming that the room for manoeuvre created by the decline in interest expenditure had not been

(3) The analysis was not extended to the period from 1984 to 1989 due to major differences in the institutional set up, concerning, in particular, the tax system and the public debt management.

(4) The baseline cyclically adjusted deficit is based on the European Commission calculations following the most recent methodology. The nominal potential output also results from European Commission estimates.

(5) In this paper, the implicit interest rate on public debt of period *t* is defined as the interest expenditure of period *t* divided by the stock of debt at the end of period *t-1*. A definition based on the average of the stock of debt at the end of *t-1* and *t* would be more suitable. However, it would give rise to circular references in the simulation exercises.

used to take discretionary measures increasing primary current expenditure, namely in the areas of personnel expenditure and social payments. Section 5 presents the conclusions of this paper.

## 2. THE FISCAL IMPACT OF DISINFLATION: THE PORTUGUESE CASE FROM 1990 TO 2002

The literature on the fiscal impact of inflation/disinflation is quite limited. It deals predominantly with the effects of inflation on tax receipts and, in most cases, analyses aspects that are only important for very large levels or changes in inflation. On the expenditure side it appears difficult to generalize an automatic relationship between the level of public expenditure and the inflation rate. Interest expenditure is an exception. Indeed, it is commonly accepted that a change in expected inflation implies almost automatically a change in the same direction not only in the level of nominal interest expenditure but also in its ratio to GDP.

Concerning the effects of inflation on tax receipts three channels are most frequently highlighted(6). Firstly, the lags in tax collection reduce real receipt to an extent that grows with inflation (Tanzi effect). Secondly, the tax burden increases as households or individual taxpayers move to higher tax brackets in the framework of a progressive income tax not fully indexed. The magnitude of this effect increases with inflation and decreases with the degree of indexation of the income tax. Finally, in the corporate income tax, the real value of depreciation allowances and some deductions declines with inflation as they are fixed in nominal terms, increasing the tax burden.

In the Portuguese case, by the middle of the eighties, the tax collection lag was responsible for a substantial loss of real revenue. However, the sharp reduction in the inflation rate until 1987 and, above all, the 1989 reform of income taxation suggest that this effect was minor along the nineties. The income tax reform was important in this sense, as it increased substantially withholding schemes, allowing the moment of tax collection to become on average much closer to the moment when income is received. In the case of personal income taxation net reimbursements were positive, increasing steadily. This means that withheld amounts exceeded to a growing extent the amounts actually due, given the incomes received. Indeed, households on aggregate have been lending compulsorily significant sums to the State, without interest. The decrease of inflation from the 1990 level reduced gradually the real value of these loans to the State to an amount that in 2002 still fell short of 0.1 p.p. of GDP. This effect was actually minor and was still partially compensated by an effect in the opposite direction in the corporate income tax, whose receipts concerning the profits of one year are not totally collected in the same year.

The 1989 reform of income taxation did not include an automatic indexation of the tax brackets and other parameters of the personal income tax. Nevertheless, in practice, the annual discretionary updates of the tax parameters have been leading to adjustments that, in trend terms, are not very far from full indexation, though imperfect, coexisting in some years with discretionary measures aiming at the reduction of the tax burden or the change in its impact on income distribution. Table 1 shows the inflation rate taken into account in the elaboration of the State Budgets, the actual inflation rate and the update of the main parameters of the personal income tax. In this context, and considering also the relatively low level of inflation at the beginning of the nineties, disinflation by itself does not appear to have caused a significant impact on tax receipts via the fiscal drag.

The data available are not detailed enough to estimate the impact of disinflation on the tax burden of the corporate income tax, through the increase of the real value of depreciation allowances and some deductions.

The direct impact of disinflation on interest expenditure results from the fact that, as public debt is defined in nominal terms, part of interest expenditure aims at compensating the holders of debt for the erosion of its real value caused by inflation. Assuming, for the sake of simplification, that nominal interest rates adjust to expected inflation keeping unchanged the real expected interest rate (Fisher effect) and that actual inflation equals expected inflation, it is possible to demonstrate that if inflation decreases, interest expenditure declines more than proportionally to nominal GDP, leading to a reduction of the general government deficit as

(6) See Dornbusch, Sturzenegger and Wolf (1990) and Rosen (1995).

Table 1

**INFLATION AND THE UPDATE OF THE PERSONAL INCOME TAX PARAMETERS**

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Observed inflation[a] | 13.4 | 11.4 | 8.9 | 6.5 | 5.2 | 4.1 | 3.1 | 2.2 | 2.8 | 2.3 | 2.9 | 4.4 | 3.6 |
| Inflation assumed in the Budgets[b] | 10.0 | 10.8 | 9.3 | 6.5 | 4.7 | 4.0 | 3.3 | 2.4 | 2.0 | 2.0 | 2.0 | 2.8 | 2.8 |
| Update of the personal income tax withholding tables | 20.0 | 16.2 | 9.6 | 7.5 | 3.0 | 5.0 | 3.5 | 2.9 | 2.5 | 2.4 | 2.7 | 8.0 | 8.0 |
| Update of the specific deduction of employment income | 20.0 | 13.3 | 11.2 | 5.8 | 4.0 | 5.8 | 5.7 | 4.1 | 3.9 | 5.5 | 4.1 | 5.0 | 4.1 |
| Update of the personal income tax brackets | 20.0 | (c) | 8.0/10.8 | 6.2/6.4 | 8.0/8.1 | 4.0/4.3 | 3.6/4.1 | 2.5/4.0 | 2.1/2.9 | (d) | 2.7/4.3 | (e) | 2.7 |

Notes:
(a) Measured by the consumer price index.
(b) Measured by the private consumption deflator.
(c) Decrease of the number of brackets and change in part of the marginal tax rates.
(d) Introduction of a new bracket.
(e) Introduction of a new bracket and reduction of the marginal tax rates, with the exception of the highest one.

a ratio to GDP. According to some literature, this effect depends on the change in the inflation rate and the magnitude of the stock of short-term and medium and long term floating rate debt denominated in domestic currency[7]. However, on average, higher inflation would also imply a more than proportional increase of interest payments on debt denominated in foreign currencies via a further depreciation of the national currency. Thus, in periods characterised by large fluctuations in the inflation rate, the deficit adjusted for inflation and the primary deficit should be favoured as indicators for fiscal analysis. It should also be referred that a change in the inflation rate may be associated with a change in the risk premium included in interest rates, in particular, in the framework of a transition to a new economic regime. This change in the risk premium, as it affects the implicit interest rate of public debt deflated by the CPI, may have a considerable impact on the general government deficit.

In 1990, the debt ratio stood at about 58 per cent. Public debt was then predominantly composed by short-term instruments like Treasury bills and by floating-rate instruments as savings certificates and most bonds issued and loans contracted in the domestic market. Public debt denominated in foreign currencies represented slightly more than 10 per cent of the overall debt. In this context, a decrease in the inflation rate would necessarily have an impact on the public debt interest rates with a very short lag, reducing interest expenditure as a ratio to GDP, even if real interest rates were unchanged. In the next section the magnitude of this effect is calculated, considering some simplifying assumptions.

From 1992-1993 onwards, the nominal convergence required to ensure the participation of Portugal, from the outset, in the third phase of EMU became the key objective of economic policy. Until 1993 there were still increases in the implicit interest rate of public debt deflated by the CPI mainly explained by three factors (Chart 4). Firstly, the gradual substitution of tax exempt public debt by public debt subject to income taxation from 1989 onwards. Secondly, the substitution of public debt with interest rates below the market ones by public debt, held by financial institutions still in a context marked by the existence of credit ceilings and other constraints, by public debt with market interest rates. Finally, the tightening of monetary and exchange rate policy. As the convergence policy enhanced its credibility, the level of interest rates, as well as its differentials to other countries, recorded a sharp reduction, mainly as a result of the declines in the expected depreciation and in the risk premium. Chart 5 shows the evolution of nominal long-term interest rates (10 years) in Germany and Portugal between 1993 and 2002[8].

According to an authors estimate, between 1993 and 1998, the cumulative effect on the general gov-

(7) See Tanzi, Blejer and Teijeiro (1993).

Chart 4
**IMPLICIT INTEREST RATE ON PUBLIC DEBT AND INFLATION**

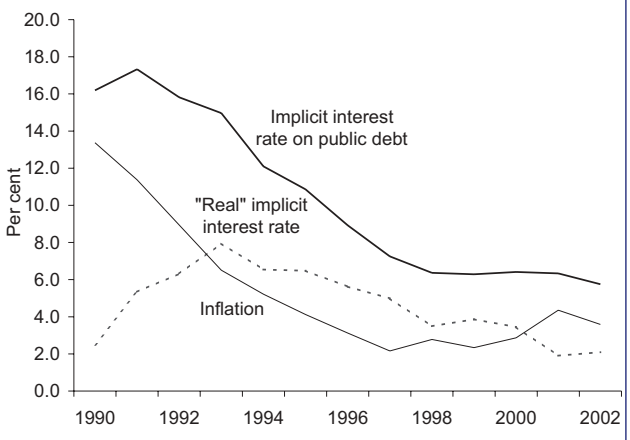
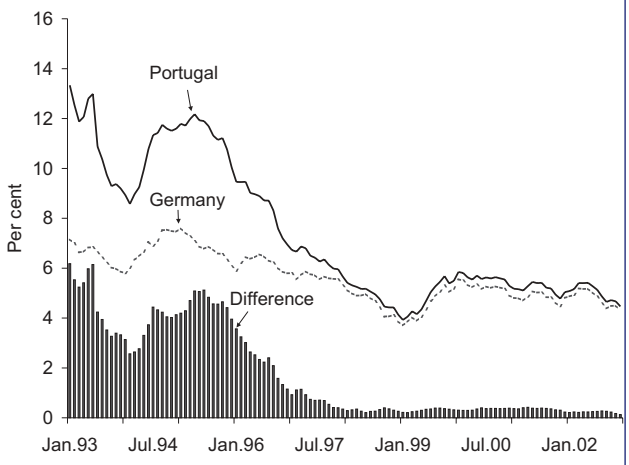



Chart 5
**LONG-TERM INTEREST RATES**
10 years, monthly averages




Source: Reuters.

ernment deficit resulting from the decrease in the interest rate differential relatively to Germany amounted to around 2.6 p.p. of GDP[9]. From 1999 onwards, implicit interest rates on public debt are only influenced by interest rates in the euro area, with small differentials relative to other countries explained by differences in the liquidity of the secondary market of Treasury bonds and in the risk premiums.

## 3. THE DIRECT EFFECTS OF DISINFLATION ON INTEREST RECEIPTS AND EXPENDITURE: SIMULATION RESULTS FOR PORTUGAL

The objective of this section is to quantify the direct impact of the disinflation process on the cyclically adjusted general government balance through interest rate changes. For that purpose the evolution of interest expenditure from 1991 until 2002 is simulated assuming that inflation throughout that period would remain at the 1990 figure, though keeping the implicit interest rate of public debt deflated by the CPI at the observed levels (Chart 6). This exercise is purely mechanical and does not intend to build a consistent macroeconomic scenario alternative to the integration of Portugal in the European Community/European Union. Several other caveats should be highlighted. Firstly, as the actual average tax rate on public debt interest is unknown, it was not possible to keep the implicit interest rate after tax unchanged. Indeed, the overall amount of tax receipts resulting from the taxation of public debt interest is not available and the legal changes that occurred during the period under analysis do not allow its estimation. Secondly, the composition of the debt is ignored, being assumed that it would not prevent higher inflation to be fully reflected in the implicit interest rate of the public debt. Finally, it is also not taken into account the eventual negative relation between inflation and the real interest rate through the Mundell-Tobin effect[10] and/or the Feldstein-Summers effect[11]. In the literature the empirical studies testing the existence of these effects in different countries lead to different con-

(8) Having in mind the uncovered interest parity condition in the case of risk averse agents

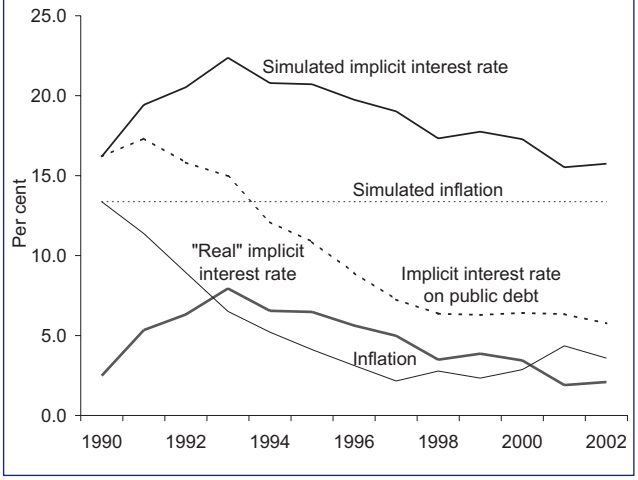
$$i_t = i_t^* + \left(E_{t+1}^t - E_t\right) / E_t + \psi_t,$$

the difference between the Portuguese and the German long-term interest rates would include the risk premium and the expected depreciation of the escudo in relation to the deustche mark in the period 1993-1998.

(9) An alternative exercise for the same period, keeping the implicit interest rate on public debt deflated by the CPI unchanged at the 1993 level, would lead to an estimate for the cumulative impact on the deficit of 2.7 p.p. of GDP.

(10) According to the Mundell-Tobin effect higher inflation would reduce the demand for money and would increase the demand for interest-bearing assets and/or real capital. Therefore, the required return on bonds and/or marginal productivity of capital would fall and the real interest rate would decline.

Chart 6
**IMPLICIT INTEREST RATE ON PUBLIC DEBT AND INFLATION**




clusions. Additionally, for the specific case of Portugal, there is no estimation of the magnitude of these effects and, as such, they cannot be considered in the simulation.

For the sake of consistency, two items on the receipt side were adjusted accordingly. The first one was interest receipts, though they represented a small percentage of GDP in most of the period under analysis. Personal income tax receipts were also calculated again as higher interest rates should lead to a rise in tax collection. Regarding public debt, this effect was only taken into account for saving certificates that are subject to a final withholding tax rate of 20 per cent. For the other instruments, predominantly held by the resident financial sector and by non-residents, no additional tax receipts were considered. For the resident financial sector a rise in the tax payments related to the additional interest is not possible to estimate since it would be included in the collectable income of each firm and, as such, would be subject to different actual corporate income tax rates. Portuguese public debt bonds held by non-residents only became relevant after ceasing to be subject to withholding taxation. Concerning other financial instruments held by households, final withholding tax receipts were revised following the new level of inflation.

Table 2 presents the simulation results for the inflation effects on the main fiscal indicators via changes in nominal interest rates. As far as the cyclically adjusted primary balance as a percentage of potential GDP[12] is concerned, excluding both

(11) At the corporate level, a rise in inflation would increase the effective tax rate since the depreciation allowances and the deduction of interest payments are defined in nominal terms and are not significantly affected by inflation. This increase in the cost of capital due to higher inflation that would lead to a fall in the real interest rate is usually known as the Feldstein-Summers effect.

(12) For obtaining the new fiscal variables as a percentage of a potential GDP compatible with the changes introduced, the GDP deflator was modified in each year in the same amount of the adjustment in inflation.

Table 2

**RESULTS OF THE INTEREST RECEIPTS AND EXPENDITURE SIMULATION**

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | Cum. 1990 /2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Differences vis-à-vis the baseline (p.p.) | | | | | | | | | | | | | | |
| Annual rates | | | | | | | | | | | | | | |
| Inflation | 0.0 | 2.0 | 4.4 | 6.9 | 8.2 | 9.3 | 10.2 | 11.2 | 10.6 | 11.0 | 10.5 | 9.0 | 9.8 | |
| Nominal potential GDP growth | 0.0 | 2.1 | 4.6 | 7.1 | 8.4 | 9.5 | 10.5 | 11.5 | 10.9 | 11.4 | 10.8 | 9.3 | 10.0 | |
| Changes as a ratio to potential GDP (p.p.)[a] | | | | | | | | | | | | | | |
| Interest receipts | 0.0 | 0.1 | 0.3 | -0.1 | -0.1 | 0.1 | -0.1 | 0.0 | -0.1 | -0.1 | 0.0 | -0.1 | 0.0 | 0.0 |
| Interest expenditure | 0.0 | 0.9 | 1.2 | 0.8 | 0.6 | 0.7 | 0.6 | 0.2 | -0.7 | -0.2 | -0.3 | -0.8 | 0.4 | 3.4 |
| Personal income tax | 0.0 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | -0.1 | -0.1 | -0.1 | 0.1 | 0.1 | -0.1 | 0.6 |
| Cyclically adjusted overall balance | 0.0 | -0.7 | -0.7 | -0.7 | -0.6 | -0.4 | -0.6 | -0.3 | 0.5 | 0.0 | 0.4 | 0.7 | -0.4 | -2.8 |
| Cyclically adjusted primary balance[b] | 0.0 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | -0.1 | -0.1 | -0.1 | 0.1 | 0.0 | 0.0 | 0.6 |
| Public debt | 0.0 | -0.2 | -0.7 | -0.8 | -0.7 | -1.1 | -1.2 | -1.0 | -0.8 | -0.6 | -0.8 | -0.5 | -0.4 | -8.9 |

Notes:
(a) Annual changes taking into account the cumulative effects until the end of the previous year.
(b) Excludes interest both on the receipt and expenditure sides.

Chart 7
**OBSERVED AND SIMULATED INTEREST RECEIPTS AND EXPENDITURE**

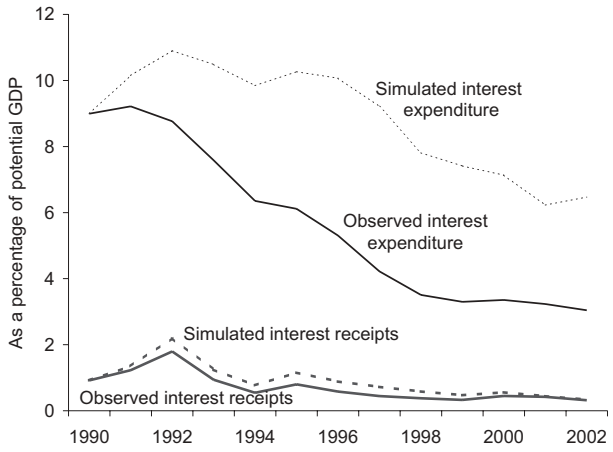



Chart 8
**OBSERVED AND SIMULATED CYCLICALLY ADJUSTED GENERAL GOVERNMENT BALANCES**

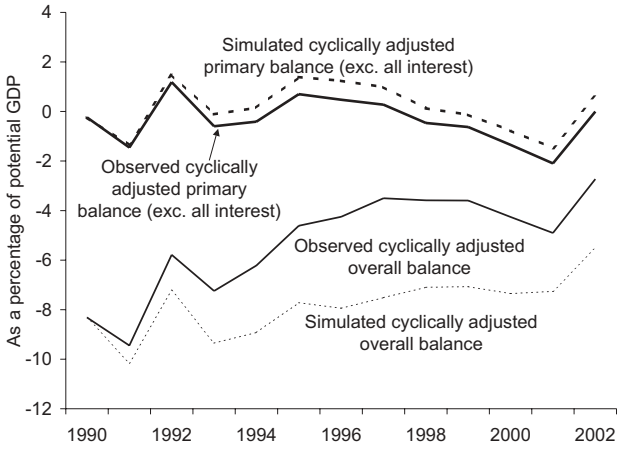
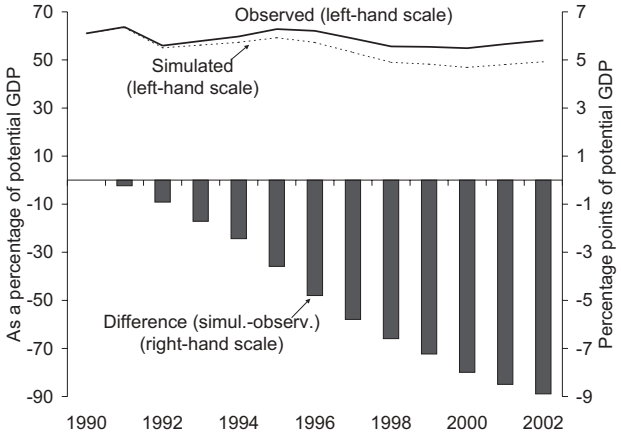



Chart 9
**OBSERVED AND SIMULATED GENERAL GOVERNMENT GROSS DEBT**




interest on the receipt and the expenditure sides, the effect of higher interest rates would have amounted to 0.6 p.p. of potential GDP in 2002. As already mentioned, this impact is only due to changes in the personal income tax receipts. Interest receipts would have been barely affected. On the contrary, the rise in interest expenditure would have been very significant, reaching 3.4 p.p. of potential GDP in 2002. Thus, the increase in the cyclically adjusted deficit by 2.8 p.p. of potential GDP in 2002 would have stemmed essentially from higher interest expenditure, only partially compensated by the rise in tax receipts (Charts 7 and 8). Concerning the debt to potential GDP ratio, by contrast, the rise in inflation would have led to a decrease of 8.9 p.p. at the end of 2002, in spite of the increases in the deficits in the period under consideration (Chart 9). This result stems, essentially, from the nominal potential GDP growth effect and is enhanced by the increase in the primary balance. The deficit-debt adjustments as a percentage of potential GDP would have not changed significantly. It is worth noting that, contrary to the outcome for the deficit, the debt ratio would be substantially influenced by the assumption on the adjustment of nominal potential GDP (see footnote 12).

## 4. OTHER SIMULATIONS: COMPENSATION OF EMPLOYEES AND PENSIONS EXCLUDING SOME DISCRETIONARY MEASURES

In the previous sections it was considered that the disinflation effects on the expenditure side would mainly appear through interest expenditure. Implicitly it was assumed that the other components would be somehow indexed to inflation and, as such, its ratio to GDP would not change. However, during the period under analysis, primary current expenditure increased significantly as a percentage of GDP, in particular compensa-

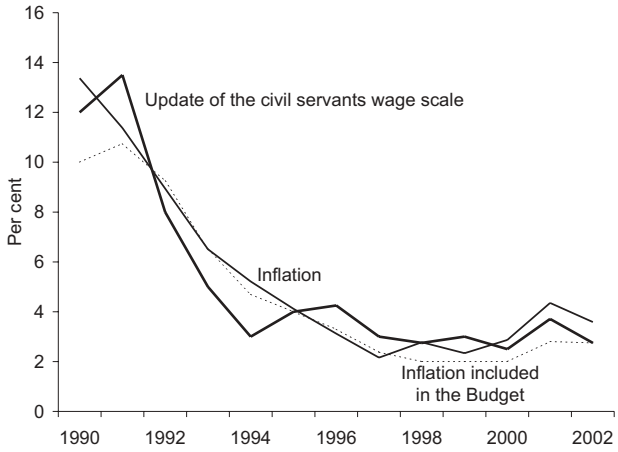
tion of employees and pensions. As such, it is important to understand if this expansion was somehow related to the disinflation process, as these two specific items are annually influenced by discretionary updates, or was the result of policy measures and/or structural factors. The following subsections analyse separately these two budgetary items.

### 4.1. Compensation of employees

Regarding compensation of employees, and having in mind that, as mentioned in section 3, the inflation estimates included in the Budgets in the period 1990-2002 were broadly in line with the observed inflation, the updates of the civil servants wage scale anticipated well the disinflation process (Chart 10). However, in spite of this evolution, compensation of employees increased around 3.6 p.p. of GDP between 1990 and 2002, showing almost always considerably high growth rates. Part of this behaviour (around 1.6 p.p. of GDP) was explained by the increase in social security contributions that are a liability of the general government as an employer[13]. The rest stemmed mainly from the evolution of wages, that recorded in this period growth rates always well above the update of the wage scale. Chart 11 shows the decomposition of the growth rate of the wage bill in four explanatory factors: the update of the wage scale, the wage "drift", the number of civil servants and a residual. The wage "drift" corresponds to the increase in wages due to normal promotions and the rise of the average wage resulting from the renewal of the stock of civil servants, and it was assumed to be constant at 2.0 per cent in the period under consideration. The wages residual represents essentially the effect of extraordinary revisions of careers. In the period 1990-2002 it was recorded, on the one hand, a strong rise in the number of civil servants, in particular at the beginning of the decade and after 1997. On the other hand, the residual effect was also very significant from 1990 to 1992, as a consequence of the introduction of the New Civil Servants Pay System, and between 1997 and 2002, due to additional revisions in some specific careers. As such, it can be assumed that part of the leeway resulting from disinflation was used by the authorities to increase the number of general government employees and to improve most civil servants careers.

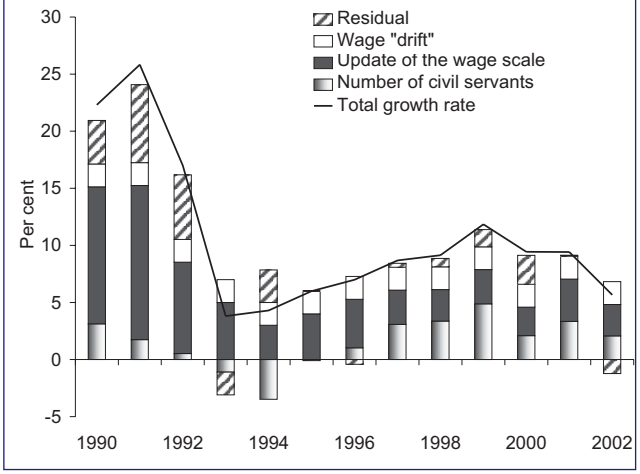
In this context, it is interesting to evaluate the impact of these policy measures on the general government deficit. For that end it was performed

Chart 10
**OBSERVED AND BUDGETED INFLATION AND THE UPDATE OF THE CIVIL SERVANTS WAGE SCALE**




Note: The inflation included in the Budget is measured by the private consumption deflator while the observed inflation is measured by the consumer price index.

Chart 11
**DECOMPOSITION OF THE CIVIL SERVANTS WAGE BILL GROWTH RATE**




(13) The part of social security contributions for which the State is responsible as an employer is determined in a way to guarantee the financial balance of *Caixa Geral de Aposentações*, entity managing the civil servants pension system. Therefore, the increase in this component of compensation of employees in the last few years is associated with the rise of expenditure with pensions of the former civil servants.

Table 3

**RESULTS OF THE COMPENSATION OF EMPLOYEES SIMULATION**

Elimination of the "residual" component of wages + unchanged number of civil servants

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | Cum. 1990 /2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Differences vis-à-vis the baseline (p.p.) | | | | | | | | | | | | | | |
| Annual growth rates (p.p.) | | | | | | | | | | | | | | |
| Wages | 0.0 | -10.1 | -6.8 | 3.3 | 0.8 | 0.1 | -0.7 | -3.6 | -4.3 | -6.8 | -4.9 | -3.6 | -0.9 | |
| Compensation of employees | 0.0 | -8.7 | -5.6 | 3.2 | 0.6 | 0.2 | -0.5 | -2.8 | -3.3 | -5.3 | -3.4 | -3.0 | -0.3 | |
| Pensions (civil servants system) | 0.0 | -0.8 | -1.8 | -1.8 | -2.6 | -1.6 | -1.2 | -1.1 | -0.9 | -0.9 | -1.0 | -1.0 | -1.3 | |
| Changes as a ratio to potential GDP (p.p.)[a] | | | | | | | | | | | | | | |
| Compensation of employees | 0.0 | -0.9 | -0.7 | 0.4 | 0.1 | 0.0 | -0.1 | -0.3 | -0.4 | -0.7 | -0.5 | -0.4 | 0.0 | -3.5 |
| Pensions (civil servants system) | 0.0 | 0.0 | 0.0 | 0.0 | - 0.1 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 |
| Personal income tax | 0.0 | -0.2 | -0.1 | 0.1 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | -0.1 | -0.1 | -0.1 | 0.0 | -0.6 |
| Social security contributions | 0.0 | -0.1 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0.1 | 0.0 | 0.0 | 0.0 | -0.3 |
| Interest expenditure | 0.0 | 0.0 | -0.1 | -0.2 | -0.1 | -0.1 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | -0.1 | -0.1 | -0.9 |
| Cyclically adjusted overall balance | 0.0 | 0.7 | 0.6 | -0.1 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.7 | 0.6 | 0.4 | 0.2 | 3.9 |

Note:
(a) Annual changes taking into account the cumulative effects until the end of the previous year.

a simulation assuming that from 1990 onwards the number of civil servants had been kept unchanged and the extraordinary revisions of carriers had not taken place[14]. In addition to the direct effect on wages, and to ensure the consistency of the exercise, some other changes in budgetary items were also considered. On the receipt side, personal income tax receipts and social security contributions were adjusted due to the decrease in the public sector wage bill. Concerning the adjustment in social security contributions, it is worth noting that only social contributions paid by the employees were changed. Indeed, the social contributions paid by the employers should have also recorded a decrease but since this one would not have an effect on the deficit (by being recorded on both the receipt and the expenditure sides) it was not included in the analysis. On the expenditure side, it was made an adjustment on the expenditure with pensions of the former civil servants. As the reference wage for the calculation of the initial pension corresponded to the last wage earned by the civil servants, the elimination of the extraordinary revisions of carriers and the resulting reduction in wages would be reflected in the amount of pensions of the new pensioners in the years under consideration. Finally, interest expenditure was also corrected to take into account the effect of smaller deficits on debt.

The results of this simulation are presented in Table 3. The effect on cyclically adjusted deficit is very significant and amounts to around 3.9 p.p. of potential GDP in 2002, of which 0.9 p.p. would result from the reduction in interest expenditure stemming from smaller deficits[15]. It should be noted that the policy currently followed by the Portuguese Government is much more demanding than the assumptions underlying this simulation. Indeed, the annual update of the civil servants wages was lower than inflation in 2003 and the number of civil servants is projected to decline in the next years.

It can be argued, however, that the increases in civil servants wages tend to influence the rises of wages of the private sector employees. Thus, a lower growth of civil servants wages assuming that the extraordinary revisions of careers had not taken place would have some effect on the wages of the private sector. The decomposition of the growth rate of the private sector wage bill in employment, productivity and wage per employee shows that, contrary to what happened in the public sector, the wage per employee was not always systematically above observed inflation in the 1990-2002 period (Charts 12 and 13). Indeed, this

(14) The annual updates of the wage scale in line with inflation would have kept unchanged the purchasing power of the civil servants wages. The analysis of the performance of some key areas of general government, like education and health, does not allow confirming the existence of significant productivity gains during the period considered in this study.

(15) The results presented in this section are a percentage of the baseline potential GDP.

Chart 12
**DECOMPOSITION OF THE PRIVATE SECTOR WAGE BILL GROWTH RATE**

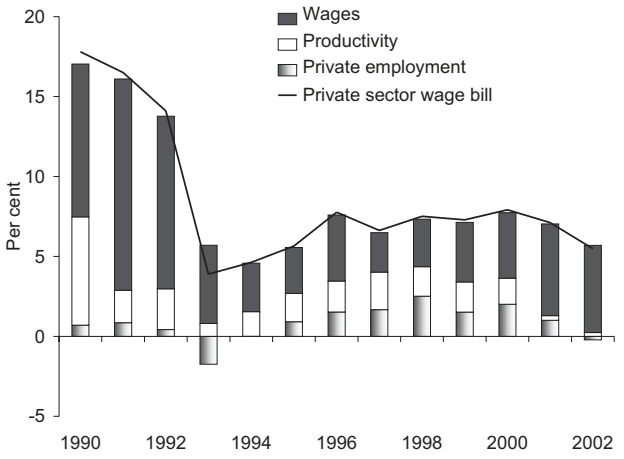



Chart 13
**INFLATION AND PRIVATE SECTOR WAGES**

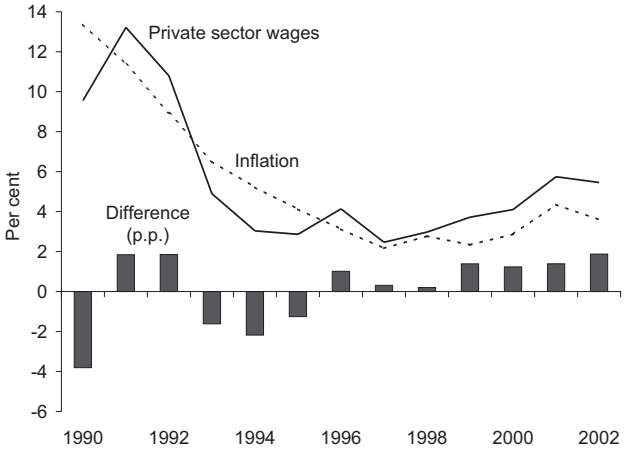
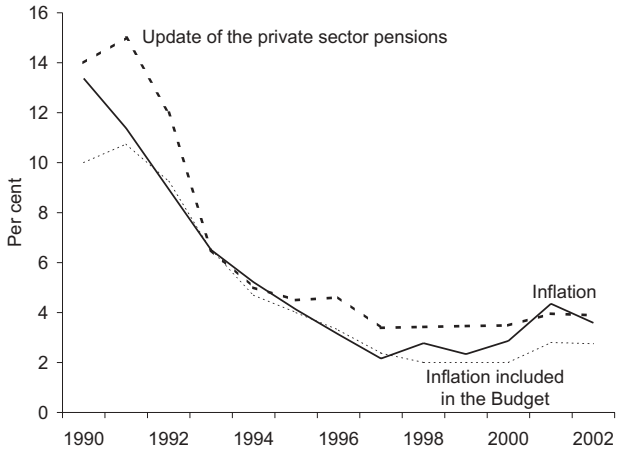



Chart 14
**OBSERVED AND BUDGETED INFLATION AND THE UPDATE OF THE PRIVATE SECTOR PENSIONS**




Note: The inflation included in the Budget is measured by the private consumption deflator while the observed inflation is measured by the consumer price index.

happened only from 1996 onwards, since in the previous period it appears to exist some compensation between the rise of wages above inflation in 1991 and 1992 and the reverse situation in the period 1993-1996. If part of the difference between the wage per worker and inflation from 1996 onwards was eliminated, the impact on the general government deficit, mainly through a reduction of personal income tax receipts and social security contributions, would have been relatively minor, not changing significantly the former conclusions.

### 4.2. Pensions

In Portugal there are two main social security systems comprising the private sector workers (general system) and public employees. The pensions paid by the civil servants system will not be analysed in this subsection since they are annually adjusted in line with the update of the wage scale, and the latter, as mentioned in the last subsection, has followed inflation quite closely. In addition, they were not subject to significant discretionary measures with an impact in this period. Regarding the general system pensions the same has not happened. In fact, in the 1990-2002 period, the general system pensions were updated above inflation in most years under consideration, contributing to the strong increase in social payments as a percentage of GDP (1.3 p.p. of GDP) (Chart 14). However, this was not the only factor explaining the evolution of these pensions. In Charts 15-A to 15-C it is shown that the growth rate of old-age, disability and survival pensions was strongly influenced by the rise in the number of pensioners, due to the ageing of population, and by the magnitude of the composition effect, which comprises, essentially, the hike in average pensions, including the effect of discretionary measures, like, for example, the introduction of the 14$^{th}$ month in the payment of pensions in 1990. Thus, for the general system, the leeway originated by the disinflation process was not replaced by very significant discretionary mea-

Chart 15A

**DECOMPOSITION OF THE GROWTH RATE OF EXPENDITURE ON OLD-AGE PENSIONS**

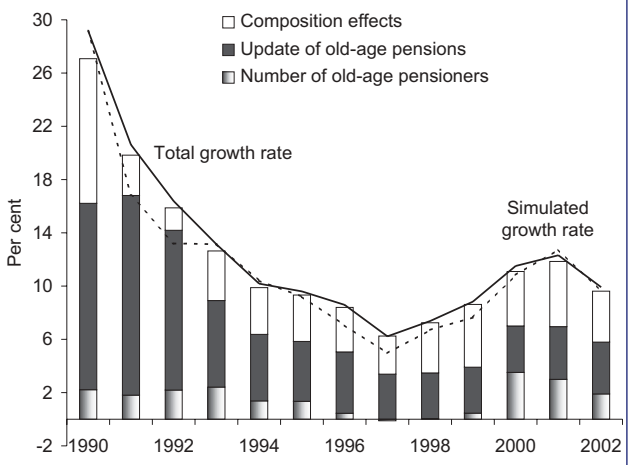



Chart 15B

**DECOMPOSITION OF THE GROWTH RATE OF EXPENDITURE ON DISABILITY PENSIONS**

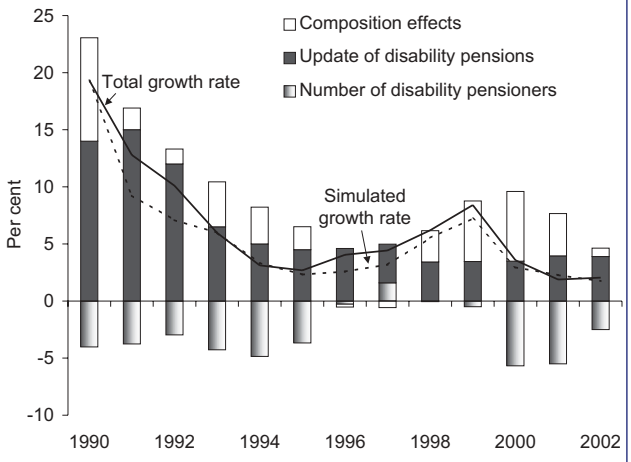
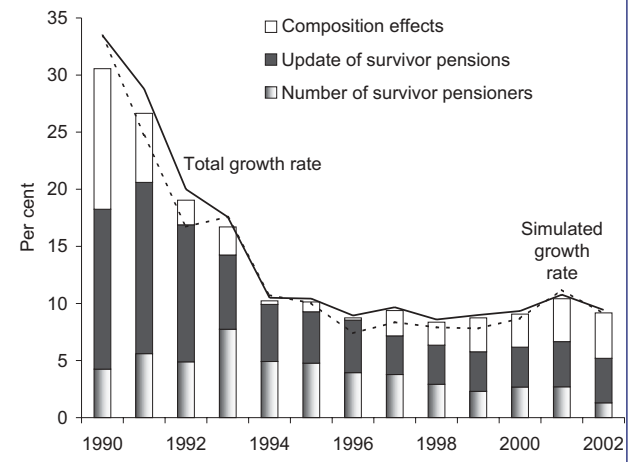



Chart 15C

**DECOMPOSITION OF THE GROWTH RATE OF EXPENDITURE ON SURVIVOR PENSIONS**




sures, as the evolution of pension expenditure stemmed mostly from structural factors.

The simulation included in this subsection attempts to quantify the impact of the update of the general system pensions above inflation. For that end, it is assumed that the pensions would have been updated in line with inflation. The personal income tax receipts were also modified accordingly. As a result of these changes, the cyclically adjusted deficit would have been 0.7 p.p. of potential GDP below the baseline figure for 2002 (Table 4).

Table 5 presents the total results for the simulations included in this section: compensation of employees and pensions. According to the results, if the leeway originated by disinflation had not been used by authorities to take discretionary measures of an expansionary nature, in particular the increase in the number of civil servants, the implementation of the New Civil Servants Pay System and the additional revisions in several specific careers, the cyclically adjusted deficit would have improved by around 4.6 p.p. of potential GDP in 2002, of which 1.1 p.p. would stem from a reduction in interest expenditure resulting from lower deficits. The debt as a percentage of potential GDP would have been 24.2 p.p. below the baseline figure of 2002. It is worth noting that these results are based on cyclically adjusted balances and, as such, do not take into account the effects of macroeconomic scenario changes on the cyclical component of fiscal balances, in particular through disposable income and private consumption.

## 5. CONCLUSIONS

Portugal experienced a disinflation process that reduced the growth of prices to figures very close to the EU average in the period preceding the outset of the third phase of EMU.

From 1990 to 1998 disinflation did not have a major impact on general government revenue. Indeed, in the framework of the system of income taxation arisen from the 1989 reform inflation does not lead to a sizeable change neither of the real value of tax receipts nor of the magnitude of the fiscal drag. On the one hand, because most tax receipts concerning incomes received in one year are collected in the same year. On the other hand, because on average the annual discretionary update

Table 4

**RESULTS OF THE PENSIONS SIMULATION**

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | Cum. 1990 /2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Differences vis-à-vis baseline | | | | | | | | | | | | | | |
| Annual rates (p.p.) | | | | | | | | | | | | | | |
| Update of the general system pensions | 0.0 | -3.6 | -3.1 | 0.0 | 0.2 | -0.4 | -1.5 | -1.2 | -0.7 | -1.1 | -0.6 | 0.4 | -0.3 | |
| Growth of expenditure on pensions | 0.0 | -3.8 | -3.2 | 0.0 | 0.2 | -0.4 | -1.5 | -1.3 | -0.7 | -1.2 | -0.7 | 0.4 | -0.3 | |
| Changes as a ratio to potential GDP (p.p.)[a] | | | | | | | | | | | | | | |
| Expenditure on pensions | 0.0 | -0.2 | -0.2 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.0 | -0.1 | -0.1 | 0.0 | 0.0 | -0.7 |
| Personal income tax | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 |
| Interest expenditure | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 |
| Cyclically adjusted overall balance | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.7 |

Note:
(a) Annual changes taking into account the cumulative effects until the end of the previous year.

Table 5

**TOTAL RESULTS**

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | Cum. 1990 /2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total impact on the cyclically adjusted overall balance (p.p. of potential GDP): | 0.0 | 0.9 | 0.8 | -0.1 | 0.0 | 0.2 | 0.2 | 0.3 | 0.4 | 0.8 | 0.6 | 0.4 | 0.2 | 4.6 |
| Compensation of employees simulation | 0.0 | 0.7 | 0.6 | -0.1 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.7 | 0.6 | 0.4 | 0.2 | 3.9 |
| Pensions simulation | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.7 |
| Total impact on the debt (p.p. of potential GDP) | 0.0 | -0.9 | -1.5 | -1.4 | -1.2 | -1.5 | -1.6 | -1.8 | -2.0 | -2.7 | -3.2 | -3.2 | -3.2 | -24.2 |

of the personal income tax parameters is not far from full a generalised, though imperfect, indexation.

On the contrary, in the same period the effect of disinflation on general government interest expenditure was a major deficit reducing factor. Indeed, the composition of public debt at the beginning of the nineties (mostly short term instruments and medium and long term floating-rate bonds denominated in domestic currency) allowed the decrease with a very short lag of the part of interest payments that aims at compensating the debt holders for the erosion of the real value of public debt caused by inflation. In this context, it should be expected that a decline in inflation would lead to a more than proportional reduction in interest payments, decreasing its ratio to GDP, what actually did happen. Assuming for the sake of simplification that inflation throughout the period would have remained at the 1990 level, though keeping the implicit interest rate of public debt deflated by the CPI at the observed levels, this effect was estimated to be around 2.8 p.p. of potential GDP in 2002. Further, the credibility associated with nominal convergence determined in Portugal a sharp reduction of the risk premium included in interest rates, with an impact on the implicit interest rate on public debt deflated by the CPI. Between 1993 and 1998, the cumulative effect on the general government deficit resulting from the reduction of the interest rate differential relatively to Germany may be estimated at around 2.6 p.p. of GDP.

The sizeable room for manoeuvre allowed by the decrease in interest expenditures as a ratio to GDP was, to a large extent, offset by the expansion of primary current expenditure resulting from discretionary policy measures, namely in the area of personnel expenditure, and structural factors

stemming from the working of the pension systems. Simply keeping the number of civil servants unchanged and avoiding extraordinary revisions in the wages of specific careers and pension updates exceeding expected inflation would have led to a reduction of the cyclically adjusted deficit by 4.6 p.p. of potential GDP in 2002. As such, it is clear that following policies in some aspects less demanding than the current ones, Portugal would be now in a fiscal position close to balance or in surplus.

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# THE PORTUGUESE ESCUDO IN THE ERM*

*Marta Abreu***

## 1. INTRODUCTION

The European Union (EU) will be enlarged to 10 new Member-States in May 2004. Upon accession to the EU, these countries are required to treat their exchange rate policies as a matter of common interest and to pursue price stability as the primary objective of monetary policy. In addition, the new Member States have committed to adopt the euro upon the fulfilment of the required convergence criteria. Against this background, many acceding countries have signalled their intention to join the Exchange Rate Mechanism II (ERM II)(1). The mechanism can provide a useful framework for the conduct of monetary and exchange rate policies in the new Member States and is also a precondition for joining the euro.

This article reviews the experience of the Portuguese escudo in the exchange rate mechanism (ERM) of the European Monetary System (EMS), the precursor of ERM II. The Portuguese experience will hopefully provide a useful point of reference for the acceding countries as they consider applying for ERM II membership. Section 2 discusses the background to the decision to apply for ERM membership. Section 3 describes the management of the escudo in the ERM, highlighting three distinct periods. The first period corresponds to the early months of participation in the system, from April to the summer 1992, i.e. the last phase of the "hard EMS". The second period coincided with the ERM crisis, which started in the summer of 1992 and ultimately led to a widening of the fluctuation bands to ±15 per cent in August 1993. Finally, the third period, from the enlargement of the ERM bands to the end of 1998, was one of increasing stability in the run-up to Economic and Monetary Union (EMU). Section 4 concludes.

## 2. BACKGROUND TO THE DECISION TO JOIN THE ERM

The decision to join the exchange rate mechanism of the European Monetary System should be seen in the context of the exchange rate-based disinflation strategy implemented by the Portuguese authorities as from the mid-1980s(2). In 1984, after a decade of severe macroeconomic instability in which two stabilisation packages had to be negotiated with the IMF, inflation was running at 30 per cent, and the inflation differential vis-à-vis the EU exceeded 20 percentage points (p.p.) (Chart 1A). In this period, monetary policy was based on capital controls, credit ceilings and administered interest rates, and there was extensive recourse to monetary financing of budget deficits. Exchange rate policy followed a crawling-peg aimed at preserv-

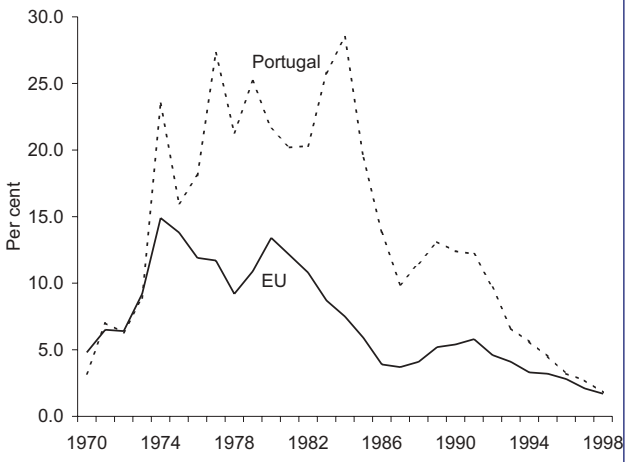
* The views expressed are those of the author and not necessarily those of the Banco de Portugal. I am grateful for the comments and suggestions by Vítor Gaspar, Ana Cristina Leal, Isabel Gameiro, Maximiano Pinheiro and José António Ferreira Machado. I am also grateful to Sónia Costa for providing Annex 2. The usual disclaimer applies.

** Economics and Research Department.

(1) ERM II was set up by the Resolution of the European Council of 16 June 1997 to replace the European Monetary System that had been created in 1979. It is a multilateral arrangement of fixed, but adjustable, exchange rates with a central rate established against the euro and a standard fluctuation band of ± 15 per cent. Formally agreed fluctuation bands narrower than the standard one may be set at the request of the non-euro area Member State concerned.

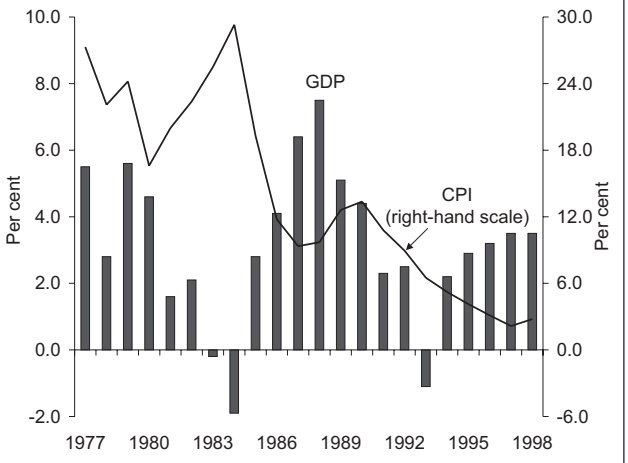
(2) See Abreu (2001) on the Portuguese disinflation experience.

Chart 1A
**PRIVATE CONSUMPTION DEFLATOR**




Source: European Commission.

Chart 1B
**INFLATION AND GDP GROWTH**




Sources: INE and European Commission.

ing the competitiveness of Portuguese exporters in the context of high and chronic current account deficits. The crawling-peg had been introduced in August 1977, a few months before the implementation of the first IMF stabilisation package, and consisted of a pre-announced monthly depreciation rate of the escudo vis-à-vis a basket of 13 currencies. Up to 1983, a number of discrete devaluations have also taken place(3). The country was trapped in a vicious circle of inflation and devaluation. The poor economic performance of the 1970s and early 1980s made it clear that a regime shift focusing on macroeconomic stability and structural reform would be needed to put the economy on a sustainable growth path. Accordingly, in the mid-1980s, an ambitious economic programme aimed at sustained disinflation, budgetary consolidation and wide-ranging structural reform was put in place. The implementation of the 1983 IMF stabilisation package had balanced the current account and had put inflation and the general government deficit on a declining path. The country's integration in the European Union in 1986 provided the catalyst for the implementation of the reform programme.

The exchange rate was chosen as the central piece in the disinflation strategy, a natural choice for a small open-economy like the Portuguese one. In this context, the monthly rate of depreciation of the escudo was gradually cut down since 1986, and no more discrete devaluations were carried out. Initially, inflation declined very rapidly with annual consumer price increases moving from a peak of 29.3 per cent in 1984 to 9.3 per cent in 1987. This deceleration of prices, which took place in a context of strong economic growth (Chart 1B), benefited from extremely favourable international price developments, as well as from the slack that had emerged in the economy following the implementation of the 1983 stabilisation package. In the late 1980s, however, inflation resumed an upward trend, reflecting increasing signs of overheating in the economy, as well as less favourable international prices. As the monthly rate of devaluation of the Portuguese escudo continued to be reduced, the inflation differential against Portugal's main trading partners was no longer fully compensated, and the currency started appreciating in real terms (Chart 2A).

In the late 1980s, in the context of the gradual liberalisation of capital outflows and inflows, the monetary authorities experienced increasing difficulties in controlling domestic liquidity. The attractiveness of the Portuguese economy had greatly improved after EU accession, reflecting better economic prospects and the commitment to an investment-friendly economic and political environment. The corresponding (permanent) decline in the country's risk premium attracted significant amounts of foreign direct investment. In

(3) Discrete devaluations were announced on 5 May 1978 (-6.1 per cent); 16 June 1982 (-9.4 per cent); 23 March 1983 (-2.0 per cent) and 22 June 1983 (-12.0 per cent). One discrete re-valuation has taken place on 12 February 1980 (+6.0 per cent).

Chart 2A
**PORTUGAL — NOMINAL AND REAL EFFECTIVE EXCHANGE RATE**
(1987=100)

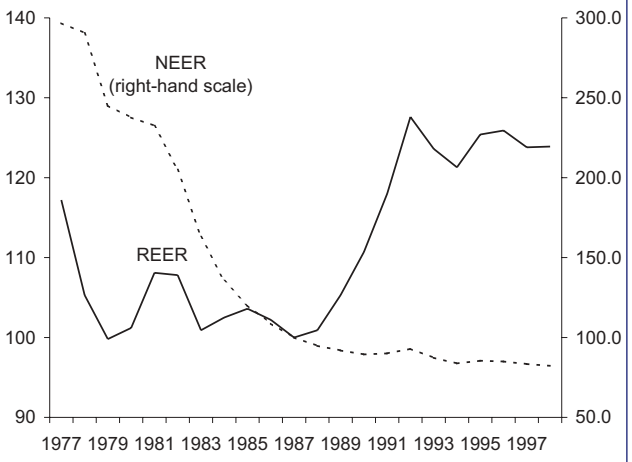
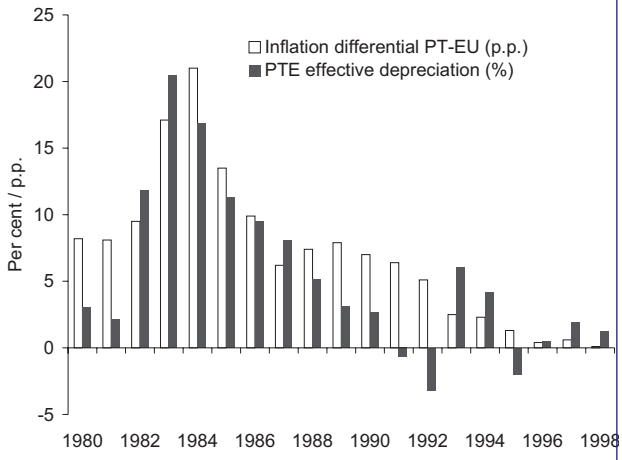



Chart 2B
**INFLATION DIFFERENTIAL AND PTE EFFECTIVE DEPRECIATION**




Sources: European Commission and Banco de Portugal.

addition, a large interest rate differential vis-à-vis the core European currencies, coupled with a tightly managed (and thus highly predictable) exchange rate in the context of the crawling-peg regime, fostered massive inflows of short-term capital. The central bank was caught in a vicious circle, as it tried to simultaneously control domestic interest rates and the exchange rate. Foreign exchange interventions to contain the pressure towards the appreciation of the escudo increased domestic liquidity, impairing the effectiveness of credit ceilings.

The interruption of the disinflation process in the late 1980s, and the difficulties in controlling domestic liquidity, prompted radical changes in the conduct of monetary and exchange rate policies in the early 1990s. A system of market-based liquidity management was implemented, and controls to capital inflows were temporarily re-imposed(4). In addition, the crawling-peg regime was abandoned, and the escudo was allowed to fluctuate within an undisclosed band against a basket composed of the five main ERM currencies as from October 1990(5). This regime shift was intended to enhance the anti-inflationary stance of monetary policy. The authorities wished to introduce some short-term unpredictability in the exchange rate of the escudo, so as to discourage short-term capital inflows. The new policy strategy was also aimed at preparing the country for the future participation in the ERM.

The new regime failed to discourage capital inflows since, as before, the Banco de Portugal continued to impose high domestic interest rates to fight inflation, while at the same time intervening in the foreign exchange market to contain the pressure towards the appreciation of the Portuguese escudo(6). In an environment characterised by strong optimism regarding the prospects for the creation of a monetary union in Europe, and by favourable prospects for the Portuguese economy, investors saw the Portuguese currency as a "one way bet"(7). In spite of the massive sales of escudos by the Banco de Portugal — the central bank's net

(4) In July 1990, a compulsory non-remunerated deposit amounting to 40 per cent of foreign borrowing by Portuguese residents was introduced. One year later, restrictions were re-imposed on the purchase of floating-rate Portuguese securities by non-residents.

(5) These currencies were the German mark, Sterling, the French franc, the Italian lira and the Spanish peseta.

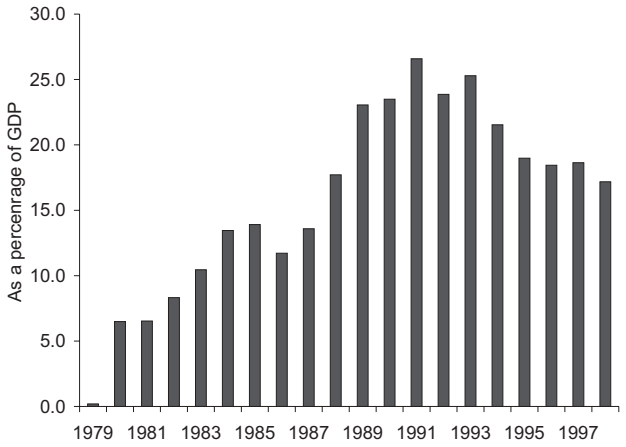
(6) The Banco de Portugal sold escudos in the foreign exchange market to prevent an excessive appreciation of the currency that would harm competitiveness. Foreign exchange interventions increased domestic liquidity putting downward pressure on domestic interest rates. The Banco de Portugal would then try to dry up excess liquidity through open-market operations, further stimulating capital inflows.

(7) A similar phenomenon affected the high-yielding ERM currencies. At the time, investors believed that 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)).

foreign assets peaked at over 25 per cent of GDP in 1991 (Chart 3) — the nominal effective exchange rate appreciated by almost 3 per cent in the 18 months that followed the abolition of the crawling-peg. Given that the inflation differential against the EU average was still significant, this translated into a substantial real appreciation of the currency (Chart 1A and 2B). The conduct of monetary policy in this period was further complicated by the expansionary stance of fiscal policy[8], which added to the strong growth of private sector expenditure, giving rise to an increasingly unbalanced policy-mix. In spite of the difficulties in running monetary policy, inflation resumed a downward path in 1991, as high domestic real interest rates and the appreciation of the currency helped contain price pressures.

In April 1992, the Portuguese government applied for ERM membership[9]. Participation in the ERM did not seem a radical departure from the exchange rate policy being followed since October 1990. However, the formal commitment to keeping the escudo within a pre-established band was expected to reinforce the medium-term credibility of the Portuguese authorities' anti-inflation stance, and to have a favourable impact on inflation expectations. Indeed, exchange rate stability vis-à-vis a set of currencies characterised by a high degree of nominal stability should provide a powerful anchor to reach and maintain price stability over the medium-run[10]. ERM membership was also a necessary step to ensure that the country would be a candidate for participation in EMU. The Maastricht Treaty had been signed just two months before, and participation in the exchange rate mechanism was one of the eligibility criteria for EMU[11].

Chart 3
**BANCO DE PORTUGAL**
**NET FOREIGN ASSETS**




Sources: European Commission and Banco de Portugal.

The escudo formally joined the ERM on 6 April 1992. The central rate against the ECU was set at 178.735 escudos per ECU, implying a 1.4 per cent devaluation vis-à-vis the prevailing market rate. The central parity against the German currency, which was effectively the anchor of the system, was set at 86.9393 escudos per German mark. The Portuguese currency joined the then-called wide band, which allowed for a ± 6 per cent fluctuation of the market rate around the bilateral central rates against the other ERM currencies. The entry rate in the ERM was broadly in line with available estimates for the escudo's equilibrium real exchange rate[12]. The strong performance of the external sector since the mid-1980s, as evidenced by the mar-

(8) After significant progress towards budgetary consolidation up to 1989, fiscal policy became clearly expansionary in 1990-91, as illustrated by the cumulative decline of the cyclically-adjusted primary balance of close to 3 percentage points of GDP between 1989 and 1991. For an account of fiscal policy in the period 1986-1994, see Cunha and Neves (1995).

(9) The fact that Portugal was holding the EU Presidency in the first semester of 1992 — indeed for the first time since the country had joined the Union — was probably an important consideration in the authorities' decision to apply for ERM membership at that particular moment, as such a move increased the visibility of the government's commitment to the process of European integration.

(10) Somewhat paradoxically, as the experience of the Spanish peseta had made clear, ERM accession implied some risks to the pursuit of the disinflation process. Indeed, participation in the system would impose easier monetary conditions at a time when the inflation differential against the EU was still substantial (in excess of 5 p.p.), and domestic demand was still seen to be growing fast.

(11) Article 121 of the Treaty on European Union (former Article 109j), set as one of the criteria for EMU participation "the observance of the normal fluctuation margins provided for by the exchange rate mechanism of the European Monetary System, for at least two years, without devaluing against the currency of any other member state". At the time, the common wisdom was that the "normal fluctuation margins" corresponded to the so-called narrow bands (± 2.25 per cent).

(12) Manteu and Mello (1992) provide an estimate for the path of the fundamental real equilibrium exchange rate of the Portuguese escudo in the period 1980-1992. Later studies reported similar results. See, for instance, Costa (1998).

ket share gains of Portuguese exporters and a balanced current account, suggested that the steep real appreciation of the currency in the previous years had been, at least to a large extent, an equilibrium phenomenon[13].

## 3. THE EXPERIENCE OF THE PTE IN THE ERM

This section reviews the management of the escudo in the ERM. Charts 4 to 6 present an overview of the most relevant variables in the period 1992-98. Charts 4A and B depict developments in the PTE/DEM exchange rate, as well the behaviour of the money market overnight interest rate and daily foreign exchange market interventions. Since foreign exchange interventions data are not publicly available, an intervention index was computed as in Adão and Pina (2003)[14]. The volatilities of both the PTE/DEM exchange rate and the escudo overnight interest rate are shown in Chart 5. Finally, Chart 6A and B presents the short and long-term interest rates of the Portuguese escudo and the German mark[15].

The period of ERM membership can be divided into three sub-periods. The first corresponds to the early months of participation in the system, from April to the summer 1992, i.e. the last phase of the "hard EMS". In this period the trends that had prevailed in the previous years continued to apply, i.e., strong inflows of foreign capital attracted by high interest rate differentials put upward pressure on the escudo and complicated the management of domestic liquidity. The second period lasted about one year and was the most turbulent one. It coincided with the ERM crisis, which started in the summer of 1992, and ultimately led to a widening of the fluctuation bands to $\pm$ 15 per cent in August 1993. In this period, the central parity of the escudo was devalued twice, and the Portuguese currency depreciated by about 10 per cent in effective terms and by twice as much against the German mark. The third period, which runs from the enlargement of the ERM bands to the end of 1998, is one of increasing stability in the run-up to the EMU. The stability of the exchange rate in this period is attested by the fact that, in spite of a third realignment of the central parity of the escudo, the escudo's conversion rate into euro was very close to the average PTE/DEM market rate prevailing in August 1993.

The ERM crisis and the related depreciation the Portuguese escudo did not prevent a steady decline of the inflation rate in the period of ERM membership. Average CPI inflation declined from 10.8 per cent in 1991 to 2.2 per cent in 1997. The transmission of the exchange rate depreciation of 1992/93 to tradables prices appears to have been rather limited, suggesting that the realignments of the Portuguese escudo were not regarded as a regime shift. Moreover, a significant deterioration of the cyclical position in the second half of 1992 and in 1993 in the context of the recession in the EU has put non-tradables inflation on a clear downward path. When the economy re-bounded from 1994 onwards, the successful preservation of exchange rate stability since the enlargement of the bands anchored inflation expectations allowing for continued disinflation.

### 3.1. The early months: a continuation of the previous trends

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. Reference rates for regular money market intervention were reduced with the aim of easing the upward pressure on the escudo (Table 1) and the Banco de Portugal had to make frequent purchases

(13) The process of financial integration and the associated decline in the country's risk premium, as well as the inflows related to the Community structural funds, played an important role in explaining the equilibrium appreciation of the Portuguese currency. For a survey of the arguments pointing to an equilibrium appreciation of the Portuguese escudo, see Manteu and Neves (1998).

(14) The intervention index corresponds to the ratio between daily intervention figures and the highest absolute value of daily interventions in the period of ERM membership (which occurred on 16 September 1992) times 100. A positive value for the index corresponds to a purchase of escudos (i.e., a sale of foreign currency) by the Banco de Portugal. Interventions include the so-called "re-chanelling operations, which correspond to sales of foreign currency that the central bank had from the Treasury and that originated from Community transfers, or from the issuance of foreign currency denominated public debt.

(15) Two annexes are provided as background material: Annex 1 presents a chronology of the Portuguese escudo experience in the ERM, and Annex 2 contains a comprehensive list of the changes to the Banco de Portugal money market intervention rates throughout the ERM period.

Chart 4A
**DEM/PTE EXCHANGE RATE**

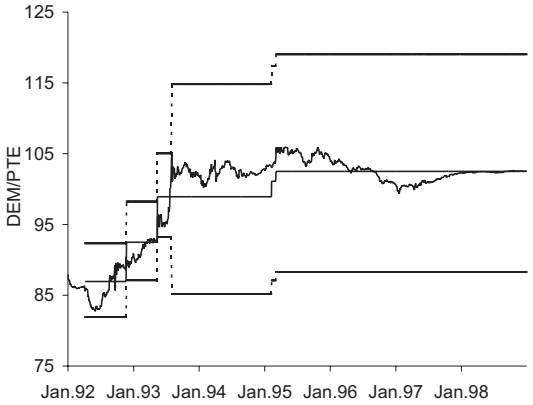



Chart 4B
**FOREIGN EXCHANGE INTERVENTIONS AND PTE OVERNIGHT INTEREST RATE**

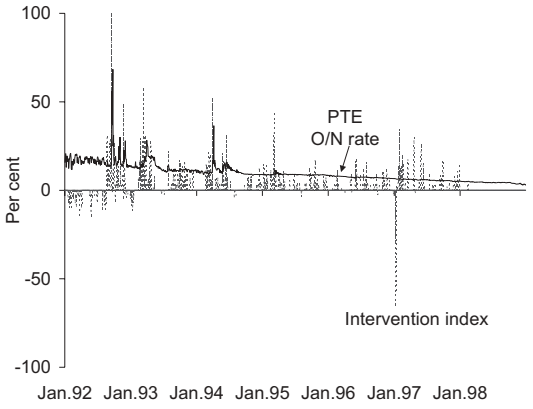
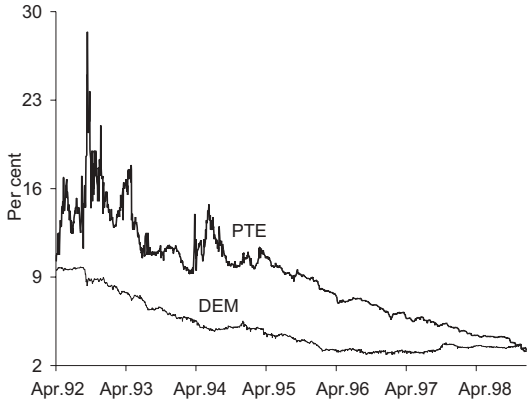
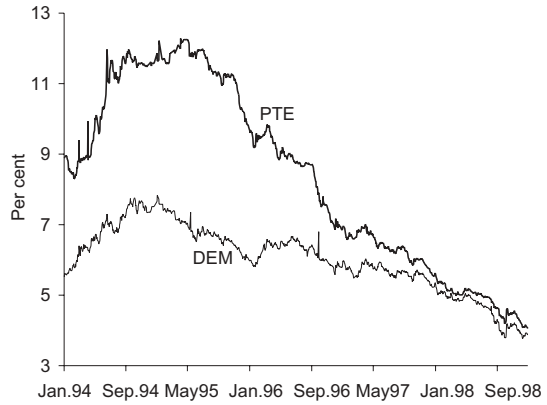



Chart 6A
**SHORT-TERM INTEREST RATES**
3-month euro-market rates



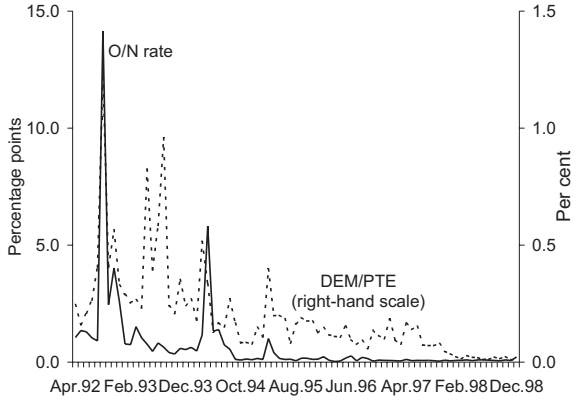

Source: Reuters.

Chart 6B
**LONG-TERM INTEREST RATES**
10 years; 1 Jan 1994 to 31 December 1998




Source: Reuters.

Chart 5
**INTERACTION RATE AND EXCHANGE RATE VOLATILITY OF THE PTE**




Volatility measured as monthly standard deviation of daily changes in PTE overnight rate or log of DEM/PTE.

Table 1

**BANCO DE PORTUGAL OFFICIAL INTEREST RATES[a]**

Per cent

| Date | Liquidity absorption | Regular provision of liquidity |
|---|---|---|
| 03-Apr-92 | 15.625 | 18.9375 |
| 06-Apr-92 | 15.375 | 17.9375 |
| 13-Jul-92 | 15.25 | 17.75 |
| 12-Aug-92 | 15.0 | 17.0 |
| 19-Aug-92 | 14.0 | 16.0 |

Note:

(a) Money market management relied upon regular intervention operations aimed at the absorption or the provision of liquidity through fixed rate tenders (with one week maturity, corresponding to the minimum reserve maintenance period). Fine-tuning operations and a late credit facility allowing access to funds at a penalty rate on the last day of the minimum reserve maintenance period were also available.

Chart 7A

**DEM/PTE EXCHANGE RATE**

6 April 1992 to 20 August 1992

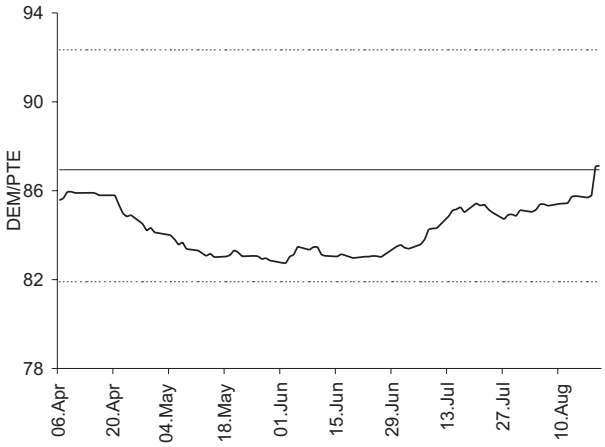
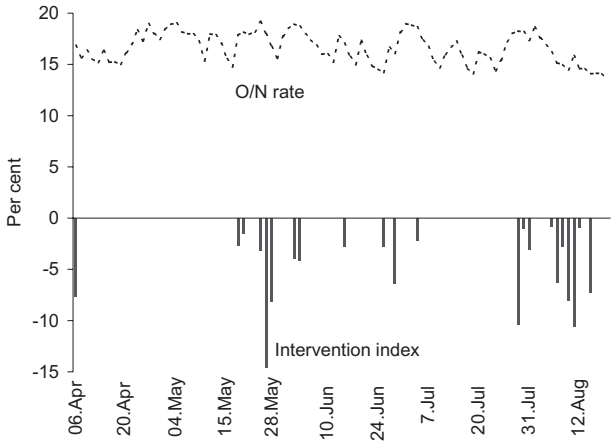



Chart 7B

**FOREIGN EXCHANGE INTERVENTIONS AND PTE OVERNIGHT INTEREST RATE**

6 April 1992 to 20 August 1992




of foreign currency in order to keep the escudo within the band (Chart 7).

On 13 August, in accordance with the guidelines set by the government, the Banco de Portugal announced that all remaining capital controls would be gradually lifted until the end of the year[16]. The announcement of full capital movement liberalisation was accompanied by a further (and rather significant) cut in official interest rates in order to prevent capital inflows from increasing even more. In two stages (August 12 and 19), the Banco de Portugal reduced the reference rate for the regular provision of liquidity by 1.75 p.p. to 16 per cent, bringing the cumulative decline of this rate to 3 p.p. since ERM entry. The rate for the regular absorption of liquidity was reduced to 14 per cent, a 1.6 p.p. decline since ERM accession. The completion of capital movement liberalisation made a further (unwarranted) easing of monetary conditions inevitable. In the Press Release announcing the liberalisation process, the Banco de Portugal pointed out that the decision to fully liberalise capital movements virtually eliminated the room for manoeuvre of domestic monetary policy. Accordingly, quantitative guidelines for the domestic liquidity would cease to be announced, as official interest rates would have to be exclusively used to ensure that the exchange rate was kept within the ERM fluctuation bands. Against this background, the contribution of monetary policy

(16) The restrictions in force at the time were to be dismantled in stages. From the end of August onwards, open access to external borrowing would be permitted, with the abolition of the compulsory deposit requirement (the rate of which had been progressively reduced since March); from the end of October, purchase by non-residents of indexed-rate debt securities would be liberalised; and lastly, from the end of the year, non-residents would be allowed access to the domestic money market. These measures had been preceded by the lifting of restrictions on purchases of short-term foreign securities by residents at the beginning of August. See the Banco de Portugal Press Release of 13 August 1992 on the liberalization of capital movements.

to the disinflation process would be reduced, implying the need for stronger efforts from the fiscal policy side in achieving nominal convergence.

### 3.2. The ERM crisis (Summer 1992-August 1993)[17]

After the initial period of strong performance in the system, the escudo started to fall to the lower half of its fluctuation band. This development resulted from a combination of domestic and external factors. On the domestic front, the marked decline of official interest rates since ERM accession, which took place in a context of (temporarily) increasing inflation, created a perception of incompatible internal and external policy requirements[18]. On the external side, the loss of credibility of the ERM after the Danish rejection of the Maastricht Treaty in early June 1992 led to a significant increase of the risk-premia of the currencies from the countries with the worst macroeconomic stability track records, causing a massive shift out of those currencies. Difficulties in the ERM were compounded by the appreciating trend of the German mark against the US dollar in international markets[19].

Against this background, the escudo found itself under heavy selling pressure from August 21 onwards. The Banco de Portugal resorted to the three Basle-Nyborg instruments to defend the currency[20]. The exchange rate was allowed to slide within its fluctuation band, but was prevented from reaching the lower limit. The escudo depreciated by around 2.4 per cent against the German currency in the week of August 17 to 24. For the first time in many years, the Banco de Portugal had to carry out significant interventions in defence of the escudo, and in less than two weeks the amount of foreign currency that was spent in defence of the escudo had fully offset the reserves accumulated since ERM entry. Less than full sterilisation of intervention operations put upward pressure on money market interest rates, and the overnight rate increased almost 3 p.p. from August 21 to August 25 (Chart 8).

Mounting tensions in the ERM led to a 7 per cent devaluation of the Italian lira on September 13, the first ERM realignment in more than five years[21]. Three days later, on September 16, the Italian lira, the British pound, the Spanish peseta and the Portuguese escudo suffered a severe speculative attack. As a consequence, British membership of the ERM was suspended; the Italian authorities "temporarily" suspended their foreign exchange market intervention obligations and the peseta's central rate was devalued by 5 per cent. The Banco de Portugal managed to counter the attack on the escudo and to keep the currency well within the band. Massive interventions were carried out in defence of the escudo[22] and regular intervention operations in the domestic money market were suspended and replaced by the provision of fixed amounts of liquidity through interest rate auctions (Annex 2). The average overnight interest rate in the domestic money market increased sub-

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

(18) The year-on-year CPI inflation increased from 8.0 per cent in February 1992 to 9.5 per cent in June 1992, reflecting an increase in indirect taxes. A declining trend resumed thereafter.

(19) The ERM had undergone a brief period of tension towards the end of 1991. At the time, domestic developments in Germany (i.e., increasing inflation pressures linked to the re-unification process) pointed to the need of tighter monetary conditions, whereas in most other ERM countries a deceleration of economic activity pressed towards lower interest rates. These developments occurred at a time when the scope for a further reduction of interest rate differentials amongst ERM currencies had become rather limited. Tensions in the ERM were fuelled by rumours of a realignment prior to the agreement on the Maastricht Treaty, and a depreciating trend of the US dollar *vis-à-vis* the German mark. When the Bundesbank increased its discount rate by 0.5 p.p on 19 December (after the Maastricht European Council), the move was followed by all ERM countries except the UK. This course of action, together with the agreement on Economic and Monetary Union reached at Maastricht and a recovery of the dollar restored calm conditions in the ERM. The pound sterling, however, remained weak, reflecting the British authorities' decision not to raise interest rates.

(20) The Basle-Nyborg Agreement of September 1987 introduced several improvements in the management of the ERM. In particular, the agreement called for a more active, flexible and concerted use of three instruments for defending a currency suffering from unwarranted speculative pressure: changes in interest rate differentials: a flexible use of the fluctuation margins and foreign exchange market interventions. See the Communiqué by EC Ministers of Economics and Finance of September 12, 1987, reproduced in Ungerer *et al* (1990).

(21) The only exception was the adjustment of the central rate of the lira in January 1990, when this currency moved from the wide to the narrow band keeping its lower intervention limits unchanged.

(22) The maximum (absolute) value of daily interventions was recorded on September 16.

Chart 8A
**DEM/PTE EXCHANGE RATE**

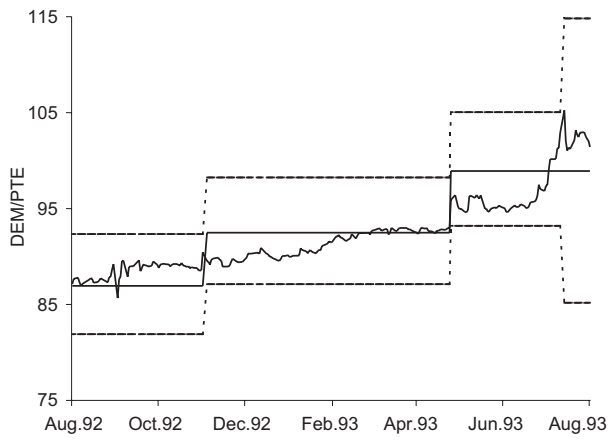
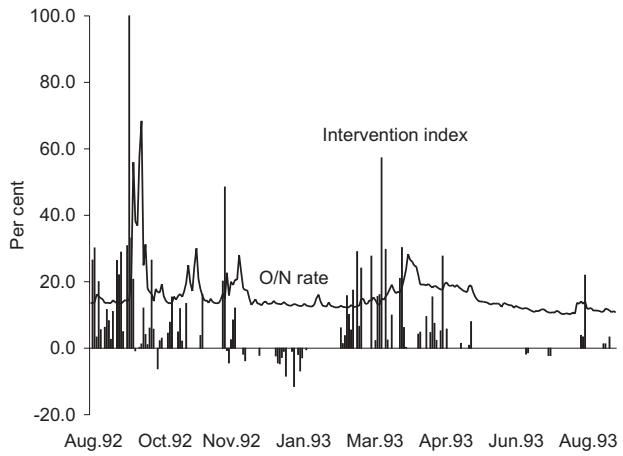



Chart 8B
**FOREIGN EXCHANGE INTERVENTIONS AND PTE OVERNIGHT INTEREST RATE**




stantially, peaking at 68.4 per cent on September 24.

The defence of the escudo was facilitated by the fact that controls on capital outflows were still in force, even if they had been a non-active restriction for many years. In particular, short-term bank lending in domestic currency to non-residents was not allowed, including in the form of overdrafts. Given that speculation mainly originated from non-residents, the enforcement of existing controls allowed a partial insulation of the domestic money market from the interest rate costs of defending the escudo. In the euro-escudo market, the large scale of (short) sales of escudos by non-residents translated into strong demand for funds as speculators had to settle their transactions. In order to prevent a disruption of the payments system, existing restrictions were activated through prices rather than quantities. The Banco de Portugal provided funds directly to the euro-escudo market through foreign currency swaps at discouraging rates, which increased with the amount demanded by the market[23]. The tom/next rate exceeded 1000 per cent on September 18 and September 21. The levels reached by euro-escudo interest rates prompted speculators to quickly cover their short positions in escudos (mainly created during the major speculative attack of 15-17 September). This temporarily pushed the exchange rate towards the upper limit of the fluctuation band on September 21, when the escudo appreciated by 4 per cent against the DEM. The high interest rates paid to finance short positions, and the price paid to cover those positions imposed heavy losses on speculators. Overall, and despite significant volatility within the month, the average nominal effective exchange rate of the Portuguese escudo remained stable in September 1992 relative to August. The average overnight rate, however, increased substantially, from 15 to 24 per cent, as did the 3-month interest rate differential against the DEM, which climbed from 4.5 to 9.2 p.p., reflecting a marked increase in the risk premium of the Portuguese currency (Chart 6).

In October 1992 tensions in the ERM eased somewhat. Net capital flows out of the escudo persisted, and the Banco de Portugal continued to intervene in the foreign exchange market in support of the currency, although in a much smaller scale than before. The aim was to avoid an excessive volatility of the exchange rate. Regular liquidity absorption was resumed on October 12, while the rate applying to the regular provision of liquidity remained suspended. In the first half of November, as the situation in the ERM stabilised further, intervention in the foreign exchange market became unnecessary.

On November 19, however, as the ECU peg of the Swedish Krona was abandoned[24], heavy selling pressure re-emerged against several ERM cur-

(23) In addition, on 24 September, the restriction on bank lending in domestic currency to non-residents was enforced by subjecting banks engaging in such lending to borrow an equivalent amount from the central bank at a penalty rate.

rencies. On November 23, the Spanish authorities requested a new devaluation of the Spanish peseta's central rate. In this context, the Portuguese authorities decided that the central parity of the escudo should also be adjusted, and both currencies' central rates were devalued by 6 per cent. The authorities emphasised that the realignment of the escudo was not intended to mark a departure from the policy of exchange rate stability, but rather to provide the authorities with some room for manoeuvre in the context of difficult foreign exchange market conditions[25]. Accordingly, the central bank kept buying escudos in the foreign exchange market, and tightened liquidity conditions in the domestic and euro-escudo money markets. The regular liquidity absorption operations were once again suspended in the few days after the realignment. By acting in this manner, the Banco de Portugal intended both to limit the impact of the realignment on the anti-inflationary stance of monetary policy and to prevent speculators from profiting from the short escudo positions established before the realignment. As a result, the realignment involved a downward shift of the band, but not an immediate depreciation of the market exchange rate.

By the end of 1992, money and currency markets showed clear signs of a return to normality. Money market interest rates and interest rate differentials against the German mark still stood above pre-crisis levels, but a downward trend had been re-established, and net outflows of capital moderated considerably. Against this background, the Banco de Portugal announced that the complete liberalisation of capital movements between residents and non-residents would be effective from December 16 onwards, two weeks before the deadline that had been announced in August. From mid-December 1992 to mid-January 1993, the escudo benefited from improved sentiment in foreign exchange markets, reflecting an increased confidence in monetary union after the Edinburgh summit, as well as a favourable reaction to the successful completion of capital movement liberalisation by the Portuguese authorities. In the first two weeks of January, favourable sentiment towards the escudo allowed the Banco de Portugal to sell escudos in the foreign exchange market. The authorities used the strengthening of the domestic currency to proceed with the gradual decline of official interest rates. Further interest rate cuts took place in late January and early February, but the Banco de Portugal stopped selling escudos in the foreign exchange market as the upward pressure on the currency dissipated amid renewed tensions in the ERM, which would lead to a 10 per cent devaluation of the central rate of the Irish pound on 1 February 1993.

From mid-February onwards the sentiment towards the escudo deteriorated again. Downward pressure on the exchange rate re-emerged and persisted in varying degrees up to mid-May. The escudo was affected by the weakness of the peseta and by increasing doubts regarding the determination of the Portuguese authorities to defend their currency. This erosion of credibility resulted from the perception of insufficient domestic macroeconomic adjustment and a rapidly deteriorating economic environment, as well as an increasing tension between the Minister of Finance and the central bank. While the Banco de Portugal believed that interest rates should be reduced in a manner consistent with the preservation of exchange rate stability, it was coming under increasing pressure from the government to make use of the margin of manoeuvre created by the devaluation of the central rate of the escudo in November 1992 and ease monetary conditions considerably. Despite heavy intervention and tighter liquidity conditions, the escudo weakened significantly from mid-January to mid-March, and then stabi-

(24) Norway, Sweden and Finland had pegged their currencies unilaterally to the ECU in October 1990, May 1991 and June 1991, respectively (Sweden and Finland were not yet members of the EU). All three Nordic countries experienced great difficulties in defending their ECU pegs. In November 1991, the Finish markka suffered from heavy selling pressure in the context of a severe recession. After a short period of floating, the central rate against the ECU was devalued by 12.3 per cent on November 15. On September 8, 1992, the peg of the Finish markka was abandoned. The peg of the Norwegian Krona lasted until December 10.

(25) As pointed out by Bento and Gaspar (1993), the realignment procedure was not initiated by the Portuguese authorities, and the escudo was not under particularly strong pressure at the time. However, the devaluation of the central rate of the Spanish peseta changed the environment in which the choice of the central rate of the escudo had to be considered. Spain was one of Portugal's main trading partners and an important competitor in third markets. Moreover, both countries had joined the Community at the same time and were perceived to face similar adjustment processes.

lised around the central rate that had been established following the November 1992 realignment up to mid-May. In contrast with what had happened in September 1992, when the Banco de Portugal allowed for a significant short-run volatility of the exchange rate and money market rates, but kept the exchange rate broadly stable in monthly average terms, the escudo was now allowed to gradually depreciate towards the central rate, with no significant increase in volatility. These different approaches reflect the very rapid deterioration of the cyclical position since mid-1992, and also the fact that in 1993 the authorities could no longer benefit from segmentation between the domestic and euro-escudo money markets (which would imply *ceteris paribus* the need for tighter domestic money market conditions to keep the currency stable).

On May 13, at the start of a regular meeting of the Monetary Committee, the Spanish authorities requested the third realignment of the peseta's central parity in less than a year, taking the remaining Committee members by surprise. In this context, the Portuguese authorities decided to request that the central parity of the escudo be also adjusted. By the end of the day, an agreement had been reached to devalue the central rate of the peseta by 8 per cent and that of the escudo by 6.5 per cent. Following the realignment, the escudo exchange rate suffered an immediate downward adjustment and then stabilised. The stabilisation of the exchange rate allowed a sharp reduction of official interest rates (see Annex 2).

Turbulence returned to the EMS in July 1993, when several ERM currencies, and particularly the French franc, came under heavy selling pressure. The Banco de Portugal increased its official rates by a much smaller degree than in previous episodes of tension and made very limited interventions in the foreign exchange market. As a result, the escudo depreciated significantly. In the second half of July, the escudo lost about 6 per cent against the DEM. On 2 August 1993, the ERM fluctuation bands were widened to $\pm$15 per cent, without any change to the central parities[26].

(26) The decision to widen the ERM bands was complemented by a bilateral agreement between the Dutch and German authorities to preserve the former band among the two currencies.

Overall, in the year to August 1993, the escudo depreciated by 10 per cent in nominal effective terms, and by roughly twice as much against the German currency. In line with the trend decline of official interest rates over this period, the average overnight rate stood at 11 per cent, a 4 p.p. decline. However, the 3-month interest rate differential stood at the level observed a year before, reflecting the maintenance of a substantial risk premium on the Portuguese currency.

### 3.3. From the widening of the bands to EMU (August 1993-December 1998)

The enlargement of the bands was aimed at introducing a "two-way risk" that would discourage speculation. The Banco de Portugal acted in line with the strategy pursued by the other ERM central banks, and did not exploit the increased room for manoeuvre provided by the enlarged fluctuation margins. The commitment to exchange rate stability was constantly re-affirmed by the central bank, and episodes of pressure were countered through (at times substantial) interest rate increases and interventions in the foreign exchange market. While seeking to keep the escudo within the old 6 per cent margins, the Banco de Portugal considered it preferable not to specify a target range for the fluctuation of the escudo, so as to avoid the emergence of potential focal points for market pressures. In practice, there was a concern to keep the escudo from becoming the weakest currency in the system, so as to minimize exposure to possible attacks.

From October 1993 to end-February 1994, the Banco de Portugal was able to gradually reduce its money market intervention rates. However, in the second quarter of 1994, the escudo again suffered from speculative pressure. Tensions reflected uncertainty regarding the intentions of the Portuguese authorities in the context of a delayed economic upturn and suspicion that the conflict between the government and the central bank was intensifying. Market tensions were particularly intense in early April. The escudo approached its (former) 6 per cent lower limit against the German mark prompting the central bank to suspend regular money market intervention procedures and intervene in the foreign exchange market (Chart 9). The escudo's overnight rate climbed to 36 per cent

Chart 9A
**DEM/PTE EXCHANGE RATE**

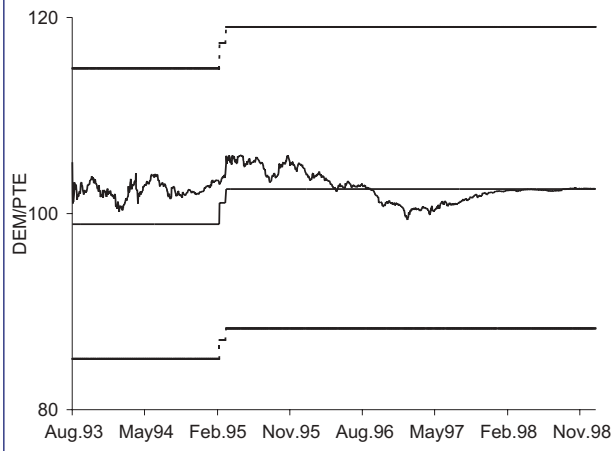
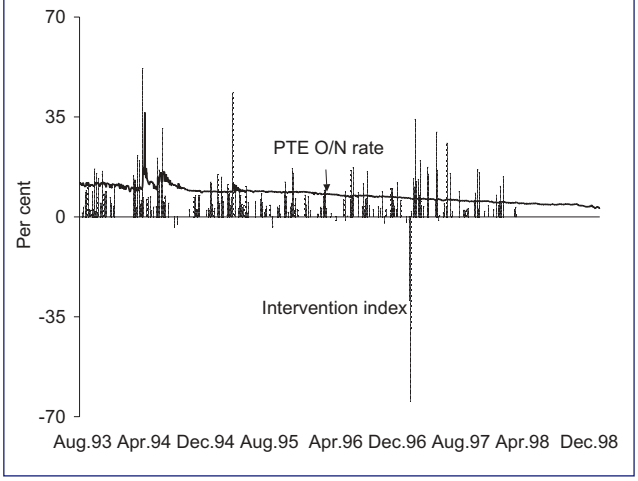



Chart 9B
**FOREIGN EXCHANGE INTERVENTIONS AND PTE OVERNIGHT INTEREST RATE**




on April 7, from about 12 per cent in late March, and the 3-month differential against the German mark widened 5 p.p. In late June, the Governor and 2 Deputy-Governors of the Banco de Portugal were replaced. At the same time, the Finance minister recognised that a decline of domestic interest rates could only be achieved in the context of a sustained reduction of the inflation rate and sustained exchange rate stability[27]. This position marked a welcome departure from previous government calls for lower interest rates. Exchange rate tensions abated in July, as reflected in the strengthening of the escudo, the decline of the overnight rate to the levels prevailing in late February, and some narrowing of the short-term rate spread against the German mark. Intervention rates were reduced in steps, but previous money market intervention procedures were adjusted in order to keep the degree of flexibility associated with variable rate repo operations[28].

In end-1994 and early 1995, instability returned to the world's foreign exchange markets, with repercussions in the ERM. Instability was associated to a significant decline of the US dollar against the German mark, following the Mexican peso crisis in December 1994. The escudo was negatively affected by pressure on some other ERM currencies, in particular the peseta, and also by some political uncertainty in Portugal in the run-up to the October 1995 election. On 6 March 1995, following a request by the Spanish authorities, the central parity of the peseta was devalued by 7 per cent. Even if the escudo was not under selling pressure at the time, the Portuguese authorities decided to request a 3.5 per cent devaluation of the central rate of the escudo, in order to bring it in line with market rates prevailing since August 1993. At the same time, the commitment to the objective of exchange rate stability was re-affirmed. For a brief period of time after the adjustment of the central parity, pressure on the escudo intensified, suggesting that the realignment was not well understood by the markets. The Banco de Portugal had to resort to the usual instruments to support the currency. Subsequently, as tensions abated, and as monetary easing took place elsewhere in Europe, the Banco de Portugal began reducing official interest rates in the summer of 1995. The central bank remained cautious during the electoral period and until the 1996 budget was approved in March that year. It thereafter reduced rates more actively.

(27) See the speech by the Finance Minister Eduardo Catroga, delivered at the occasion of the nomination of the new members of the Banco de Portugal Board on 28 June 1994.

(28) On 12 July a (daily) absorption facility was put in place. At the same time, the Banco de Portugal decided not to resume the announcement of the rate on the regular supply of liquidity and instead to continue to supply liquidity through variable repos. This decision was motivated by the fact that changes to the rate on the regular provision of liquidity had in the past tended to attract unwarranted attention undermining the management of the exchange rate by the central bank. The rates on the absorption and overnight credit facilities (the latter had been set up in July 1993) set a corridor for the repo rate, which became the main instrument to steer money market rates and signal the stance of monetary policy.

From mid-1995 up to the end of 1998 calm conditions generally prevailed in the ERM. In this period, most currencies, including the Portuguese escudo, tended to trade close to their respective central parities and to show a declining volatility[29]. The trend decline of the German mark against the dollar in this period, progress at nominal convergence within the European Union and major political and institutional achievements regarding the EMU process were important factors in explaining the calm conditions that prevailed in the European foreign exchange markets. At a certain point in time, a virtuous circle emerged between the strengthening of nominal convergence and prospects for EMU. The latter benefited in particular those countries that still faced significant risk premia, as evidenced by large long-term interest rate differentials against the German mark. In Portugal, the stability of the nominal exchange rate since mid-1993, the continuous decline of the inflation rate since the early 1990s and the re-establishment of a declining path for the budget deficit as from 1994, allowed a sustained and significant reduction of long-term nominal interest rates from mid-1995 onwards. 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. During the same period the long-term interest rate differential against the German mark narrowed from over 5 p.p. to about 0.3 p.p., signalling a significant decline of the risk premium of the Portuguese currency.

On 2 May 1998, the European Council decided on the group of countries that would adopt the euro as from January 1999[30]. On the same date, the Ministers and Central Bank Governors of those countries announced that the ERM bilateral central parities would be used in determining the official ECU (and therefore the euro) conversion rates on 31 December 1998. Central banks committed to ensure "through appropriate market techniques" that on the last day of the year, i.e., on 31 December 1998, market rates would be equal to the central parities. The announcement of a terminal condition to the exchange rate path and the prospect of convergence to a common intervention rate led to a smooth convergence of the currencies of the future euro area countries towards their respective central parities. In this period, and in contrast with previous occasions of tension in world financial markets, significant instability at the global level — linked to the Asian and Russian crises — did not affect the functioning of the ERM. The convergence of official interest rates was basically completed on 3 December, when the central banks of the future euro area countries decided to cut their respective intervention rates in different degrees, so as to set them at 3.0 per cent[31].

The significant degree of monetary easing in the run-up to EMU provided a huge stimulus to domestic demand growth in Portugal at the turn of the century. Demand growth was fuelled by rising indebtedness and a widening current account deficit, as the private sector adjusted to permanently lower (nominal and real) interest rate levels. As had happened in 1990-91, excess demand in the economy was exacerbated by a procyclical fiscal policy. Indeed, even if lower interest payments allowed for a steady reduction of the overall budget deficit as a per cent of GDP, interest savings were to a large extent used to finance extra current expenditure. As a result, the cumulative deterioration of the cyclically-adjusted primary balance exceeded 3 p.p. of GDP in the period 1995-2001[32]. This expansionary stance of fiscal policy added to rising imbalances in the economy in the early years of EMU, making the subsequent adjustment process more painful.

## 4. CONCLUSION

This article reviewed the experience of the Portuguese escudo in the exchange rate mechanism of the European Monetary System in the period 1992-1998. The Portuguese experience may provide useful insights to the acceding countries as

(29) The Irish pound was a notable exception. It has in general been appreciated relative to its central parities against the other ERM currencies, and exhibited significant volatility. On 16 March 1998, the Irish pound was revalued by 3 per cent.

(30) These countries were Germany, France, Italy, Spain, The Netherlands, Belgium, Austria, Portugal, Ireland, Finland and Luxembourg.

(31) Italy was the only exception. Its discount rate was first set at 3.5 per cent, and then lowered to 3.0 per cent on 23 December 1998.

(32) Data are from the European Commission. On the use of interest savings to finance current expenditure, see the article by Claudia Braz and Jorge Correia da Cunha published in the current issue of the *Economic Bulletin*.

they consider applying for ERM II membership. Indeed, a number of similarities can be found between the Portuguese economy prior to ERM accession and the current situation in many of those countries, including the need to make further progress on nominal convergence; the fact that acceding countries are in a catching-up process, and thus face a tendency for an equilibrium appreciation of their real exchange rates; and the exposure of these countries to volatile capital flows, which poses difficult challenges for the conduct of monetary policy.

In the case of Portugal, the ERM has proved a useful framework to pursue the disinflation process initiated in the mid-1980s, and to foster macroeconomic stability more generally. During the period of ERM membership, inflation declined steadily from 11 to the 2-3 per cent range, and the differential against the EU average was virtually eliminated.

Somewhat surprisingly, the credibility of the commitment by the Portuguese authorities towards exchange rate and price stability was not significantly hurt by the nominal depreciation of the escudo during the turmoil that affected European exchange markets in 1992/93. This probably reflects the fact that the escudo realignments took place in a context of systemic adjustments, and were likely regarded as unavoidable in the context of the devaluations of the Spanish peseta central rate. In addition, the determination showed by the Banco de Portugal to maintain high interest rates in defence of the escudo, and to penalise speculators after episodes of exchange rate pressure, has strengthened the central bank anti-inflation credentials. Finally, a sharp deceleration of economic activity in the second half of 1992 and in 1993 helped contain the transmission of the depreciation to domestic prices. After the enlargement of the ERM bands, the successful preservation of exchange rate stability by the central bank, and renewed efforts at fiscal consolidation in 1994, anchored expectations preventing a rebound of inflation as the Portuguese economy recovered from the 1993 recession. From 1995 onwards, progress towards nominal convergence enhanced the likelihood of compliance with the EMU convergence criteria, while at the same time the prospect of EMU participation facilitated exchange rate stability, the convergence of interest rates to the lowest levels in the EU and the improvement of the fiscal balance. As a result, Portugal was in a position to be one of the eleven founding members of the euro area in January 1999.

This overall success of the Portuguese experience in the convergence period hides inadequate developments in a number of areas — particularly in the fiscal policy domain — with negative consequences for the economy after the adoption of the euro. Indeed, while the (inevitable) monetary stimulus in the run-up to EMU called for some fiscal policy tightening that would attenuate the impact of interest rate declines on private domestic demand, fiscal policy was instead clearly procyclical. The expansionary stance of fiscal policy contributed to rising imbalances in the economy in the early years of EMU, making the subsequent adjustment more painful.

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## Annex 1

### THE PORTUGUESE ESCUDO IN THE ERM

Chronology of the main developments

| | |
|---|---|
| 1992 | |
| April 4. . . . . | The Portuguese authorities apply for ERM membership |
| April 6. . . . . | The Portuguese escudo joins the ERM wide band (±6 per cent); central rate against the ECU set at 178.735 escudos per ECU |
| June 2 . . . . . | Maastricht Treaty rejected in Danish referendum |
| August 13. . . . . | Full capital movement liberalization announced |
| September 13. . . . . | 7 per cent devaluation of the Italian lira central rate |
| September 16. . . . . | British membership of the ERM suspended<br>Italian authorities temporarily suspended foreign exchange market intervention obligations<br>5 per cent devaluation of the Spanish peseta central rate |
| November 23. . . . . | 6 per cent devaluation of the Spanish peseta and Portuguese escudo central rates |
| December 16 . . . . . | Liberalization of capital movements completed |
| 1993 | |
| February 1 . . . . . | 10 per cent of the Irish pound central rate |
| May 13 . . . . . | 8 per cent devaluation of the Spanish peseta central rate |
| August 2. . . . . | Enlargement of ERM fluctuation bands to ±15 per cent |
| 1995 | |
| March 6 . . . . . | ESP central rate devalued by 7 per cent<br>PTE central rate devalued by 3.5 per cent |
| 1998 . . . . . | |
| May 2 . . . . . | The European Council decides that Germany, France, Italy, Spain, the Netherlands, Belgium, Austria, Portugal, Ireland, Finland and Luxembourg will adopt the euro as from January 1, 1999<br>The Ministers of Finance and central bank Governors of the future euro area countries announce that ERM bilateral central parities will be used to determine the euro conversion rates on December 31 |
| December 3 . . . . . | Intervention rates of future euro area countries set at 3 per cent in a concerted move |
| December 31 . . . . . | Announcement of conversion rates into euro. PTE converted at 200.482 PTE per euro. |

## Annex 2

### BANCO DE PORTUGAL OFFICIAL RATES DURING ERM MEMBERSHIP

Per cent

| Date of change | Liquidity absorption | Regular liquidity providing | Overnight credit facility |
|---|---|---|---|
| 03-Apr-92. . . | 15.625 | 18.9375 | |
| 06-Apr-92. . . | 15.375 | 17.9375 | |
| 13-Jul-92. . . . | 15.250 | 17.7500 | |
| 12-Aug-92 . . | 15.000 | 17.0000 | |
| 19-Aug-92 . . | 14.000 | 16.0000 | |
| 21-Sep-92 . . . | Suspended | Suspended | |
| 12-Oct-92 . . . | 14.000 | | |
| 26-Nov-92 . . | Suspended | | |
| 04-Dec-92. . . | 14.000 | | |
| 05-Jan-93 . . . | 13.625 | | |
| 12-Jan-93 . . . | 13.250 | | |
| 19-Jan-03 . . . | 13.000 | | |
| 12-Feb-93 . . . | 12.750 | | |
| 26-Feb-93 . . . | 13.000 | | |
| 12-Mar-93 . . | 13.500 | | |
| 19-Mar-93 . . | Suspended | | |
| 04-May-93 . . | 17.000 | | |
| 19-May-93 . . | 13.000 | | |
| 26-May-93 . . | 12.000 | | |
| 14-Jun-93 . . . | 11.250 | | |
| 21-Jun-93 . . . | 11.000 | | |
| 28-Jun-93 . . . | 10.500 | | |
| 05-Jul-93. . . . | 10.250 | | |
| 12-Jul-93. . . . | | 11.2500 | 12.0000 |
| 26-Jul-93. . . . | Suspended | Suspended | 14.5000 |
| 04-Aug-93 . . | | | 13.0000 |
| 12-Aug-93 . . | | | 12.7500 |
| 19-Aug-93 . . | | | 12.5000 |
| 26-Aug-93 . . | | | 12.3750 |
| 13-Sep-93 . . . | | | 12.2500 |
| 19-Oct-93 . . . | | | 12.1250 |
| 26-Oct-93 . . . | 10.375 | 11.3750 | 12.0000 |
| 19-Nov-93 . . | 10.250 | 11.2500 | |
| 6-Dec-93. . . . | 10.125 | 11.1250 | |
| 13-Dec-93. . . | 10.000 | 11.0000 | |
| 04-Jan-94 . . . | 9.875 | 10.8750 | |
| 12-Jan-94 . . . | 9.750 | 10.7500 | |
| 19-Jan-94 . . . | | | 11.5000 |
| 26-Jan-94 . . . | 9.500 | 10.5000 | 11.5000 |
| 4-Feb-94 . . . . | 9.250 | 10.2500 | 11.5000 |
| 14-Feb-94 . . . | 9.125 | 10.1250 | 11.5000 |
| 21-Feb-94 . . . | 9.000 | 10.0000 | 11.5000 |
| 04-Mar-94 . . | | | 11.0000 |
| 31-Mar-94 . . | | | 13.0000 |
| 05-Apr-94. . . | Suspended | Suspended | |
| 19-Apr-94. . . | | 11.0000 | 12.0000 |
| 04-May-94 . . | 10.000 | | |
| 12-May-94 . . | 9.750 | 10.7500 | 11.7500 |
| 19-May-94 . . | 9.375 | 10.3750 | 11.3750 |

| Date of change | Liquidity absorption | Regular liquidity providing | Overnight credit facility |
|---|---|---|---|
| 26-May-94 . . | Suspended | Suspended | Suspended |
| 12-Jul-94. . . . | 11.000 | 11.5625 | 13.500 |
| 19-Jul-94. . . . | | 11.2500 | |
| 26-Jul-94. . . . | 10.500 | 10.7500 | 13.000 |
| 4-Aug-94 . . . | 9.750 | 10.5000 | 12.500 |
| 19-Aug-94 . . | | 10.3750 | |
| 26-Aug-94 . . | 9.250 | 10.0000 | 12.000 |
| 5-Sep-94 . . . . | | 9.7500 | |
| 12-Sep-94 . . . | | 9.5000 | |
| 19-Sep-94 . . . | 8.750 | 9.2500 | 11.500 |
| 4-Oct-94 . . . . | | 9.1250 | |
| 19-Oct-94 . . . | | 9.0000 | |
| 26-Oct-94 . . . | 8.500 | 8.8750 | |
| 13-Mar-95 . . | | 11.2500 | |
| 20-Mar-95 . . | | 10.7500 | |
| 27-Mar-95 . . | | 9.0000 | |
| 26-May-95 . . | | 8.8750 | |
| 14-Aug-95 . . | | 8.7500 | |
| 28-Aug-95 . . | 8.250 | | 11.000 |
| 19-Dec-95. . . | 7.7500 | 8.5000 | 10.5000 |
| 12-Jan-96 . . . | | 8.3750 | |
| 19-Jan-96 . . . | | 8.2500 | |
| 5-Feb-96 . . . . | | 8.1250 | |
| 19-Feb-96 . . . | | 8.0000 | |
| 12-Mar-96 . . | 7.5000 | 7.9000 | 10.2500 |
| 26-Mar-96 . . | | 7.8000 | |
| 12-Apr-96. . . | 7.2000 | 7.6000 | 9.5000 |
| 19-Apr-96. . . | 6.8000 | 7.5000 | 9.0000 |
| 6-May-96 . . . | | 7.5000 | |
| 26-Aug-96 . . | | 7.2500 | |
| 4-Oct-96 . . . . | | 7.1000 | |
| 21-Oct-96 . . . | | 7.0000 | |
| 4-Nov-96 . . . | | | |
| 19-Nov-96 . . | 6.4000 | 6.9000 | 8.5000 |
| 19-Dec-96. . . | 6.2000 | 6.7000 | 8.3000 |
| 13-Jan-97 . . . | | 6.5000 | |
| 14-Apr-97. . . | 5.8000 | 6.3000 | 7.8000 |
| 12-May-97 . . | 5.7000 | 6.0000 | 7.7000 |
| 14-Jul-97. . . . | 5.4000 | 5.7000 | 7.4000 |
| 19-Aug-97 . . | 5.2000 | 5.5000 | 7.2000 |
| 19-Nov-97 . . | 4.9000 | 5.3000 | 6.9000 |
| 19-Jan-98 . . . | 4.8000 | 5.1000 | 6.8000 |
| 26-Feb-98 . . . | 4.6000 | 4.9000 | 6.6000 |
| 19-Mar-98 . . | 4.4000 | 4.7000 | 6.4000 |
| 12-May-98 . . | 4.2000 | 4.5000 | 6.2000 |
| 12-Oct-98 . . . | 3.7000 | 4.0000 | 5.7000 |
| 04-Nov-98 . . | 3.5000 | 3.7500 | 5.5000 |
| 04-Dec-98. . . | 2.7500 | 3.0000 | 4.7500 |
| 29-Dec-98. . . | | | 3.2500 |

# *Chronology of major financial policy measures*

## January*

| | |
|---|---|
| ***15 January (Notice of Banco de Portugal no. 1/2003, Official Gazette no. 12, Series I - B)*** | Pursuant to the provisions set forth in Article 42 - A and in Article 199-G of the Legal Framework of Credit Institutions and Financial Companies, provides for the regime to be complied with in the establishment of subsidiaries of credit institutions and financial companies in non-EC member countries. |
| ***15 January(Notice of Banco de Portugal no. 2/2003, Official Gazette no. 12, Series I - B)*** | Pursuant to the provisions set forth in Article 43 - A and in paragraph 4 of Article 117 of the Legal Framework of Credit Institutions and Financial Companies, provides for the regime to be complied with in the acquisition by credit institutions of certain types of participations in other credit institutions having their head office abroad or in financial institutions. |
| ***15 January (Notice of Banco de Portugal no. 3/2003, Official Gazette no. 12, Series I - B)*** | Redefines the information particulars that must be submitted together with the communications on qualifying holdings. Rewords the preamble and paragraph 1 and adds paragraph 2 - A to Notice no. 3/94, of 22 June. |
| ***15 January (Notice of Banco de Portugal no. 4/2003, Official Gazette no. 12, Series I - B)*** | Taking into account the changes introduced in the Legal Framework of Credit Institutions and Financial Companies by Decree-Law no. 201/2002, of 26 September, rewords Notice no. 10/94, of 18 November (limits to "large exposures"), redefining the types of credit institutions and financial companies subject to its discipline. |
| ***15 January (Notice of Banco de Portugal no. 5/2003, Official Gazette no. 12, Series I - B)*** | Pursuant to the provisions set forth in Article 113 of the Legal Framework of Credit Institutions and Financial Companies, as amended by Decree-Law no. 201/2002, of 26 September, redefines the limits on the net value of the fixed assets of credit institutions, as well as on the total value of shares or other equity capital that credit institutions may hold. |
| ***15 January (Notice of Banco de Portugal no. 6/2003, Official Gazette no. 12, Series I - B)*** | Pursuant to the provisions set forth in paragraph 3 of Article 115 of the Legal Framework of Credit Institutions and Financial Companies, as amended by Decree-Law no. 201/2002, of 26 September, lays down the terms and conditions and the periodicity of the publication of accounts by institutions subject to the supervision by Banco de Portugal. This Notice shall be applicable to the publication of the 2002 fiscal year accounts. |
| ***15 January (Notice of Banco de Portugal no. 7/2003, Official Gazette no. 12, Series I - B)*** | In accordance with the provisions set forth in paragraph 2 of Article 75 and in Article 195, both of the Legal Framework of Credit Institutions and Financial Companies, amends Notice no. 1/95, of 17 February, adding paragraph 4 - A, on the establishment of value dates related to debit and credit entries in demand deposit accounts, namely for the purpose of interest calculation and withdrawal of credited amounts. This Notice takes effect within 60 days as of the date of its publication. |
| ***23 January (Regulation no. 1/2003 of the Stock Market Commission, Official Gazette no. 19, Series II)*** | Sets the annual rate to be paid by issuing entities to the Stock Market Commission, on account of the supervision of the periodic reporting of financial information. Adds Article 12 - A and revokes subparagraph c) of paragraph 1 of Article 10 of Regulation no. 8/2001 of the Stock Market Commission, of 28 December. |
| ***29 January (Circular Letter of Banco de Portugal no. 7/03/DSBDR)*** | Makes known that the biannual report to be prepared by the institutions' external auditors, referred to in Circular Letter no. 17/2002/DSB, of 14 February, shall be submitted to the Banco de Portugal until the end of the quarter after the reference date of the report. The adoption of this procedure shall start with the information relating to 31 December 2002. |
| ***30 January (Decision of the Ministry of Finance no. 1825/2003, Official Gazette no. 25, Series II)*** | Pursuant to the provisions set forth in paragraph 2 of Article 66 of Law no. 32-B/2002, of 30 December, authorizes the Public Credit Management Institute to intervene in the secondary public debt market as a party to repur- |

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

chase operations on securities representing the direct public debt quoted in the special public debt market (MEDIP - *mercado especial de dívida pública*).

***30 January (Circular Letter of Banco de Portugal no. 1/DMR)***

Following Circular Letter no. 347/DMR, of 27 October 1999, fixes at 2.87% the rate of return of Deposit Securities, Series B, for the quarterly interest calculation period to start on 4 February 2003.

***31 January (Circular Letter of Banco de Portugal no. 8/03/DSBDR)***

Taking into account the provisions set forth in paragraphs 1.2 and 1.3 of the Annex to Notice no. 4/2002, makes known that the Banco de Portugal accepts that in the calculation of capital losses inherent in participations in *Sociedade Interbancária de Serviços*, SA (SIBS, Interbank Services Company), the 'presumable transaction value" shall be based on the price set by SIBS in the last outright sale of shares.

***31 January (Circular Letter of Banco de Portugal no. 9/03/DSBDR)***

Gives some explanations on Banco de Portugal's interpretation of certain precepts contained in the Legal Framework of Credit Institutions and Financial Companies, as worded by Decree-Law no. 201/2002, of 26 September, related to the registration of the accumulation of posts (Article 33), the registration of the members of the management and auditing boards (Article 69), as well as time limits, supplementary information and certificates (Article 71).

## February

***8 February (Notice of Banco de Portugal no. 8/2003, Official Gazette no. 33, Series I - B)***

Revises the provisioning regime of credit fallen due (according to the type of guarantee and the progressivity principle of minimum provisioning levels), rewords the concept of bad debt (according to the initial maturity of the operations, the likelihood of future default, and from a portfolio perspective) and differentiates among provisions for general credit risks, lending secured by mortgages on owner-occupied housing. Amends paragraphs 3, 4, 5 and 7 of Notice no. 3/95, of 30 June. This Notice takes effect on the last working day of the month in which it is published, save for the alterations introduced in no. 1 of paragraph 4 of the above-mentioned Notice, which takes effect six months after this date.

***11 February (Directive 2002/87/EC of the European Parliament and of the Council, Official Journal of the European Union L03000005)***

Lays down provisions on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate and amending Council Directives 73/239/EEC, 79/267/EEC, 92/49/EEC, 92/96/EEC, 93/6/EEC and 93/22/EEC, and Directives 98/78/EC and 2000/12/EC of the European Parliament and of the Council. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive before 11 August 2004. They shall forthwith inform the Commission thereof.

***17 February (Instruction of the Banco de Portugal no. 3/2003)***

Lays down the conditions under which excess metal coins can be deposited with the Banco de Portugal.

***19 February (Executive Order no. 160/2003,Official Gazette no. 42, Series I - B)***

Under the provisions of paragraph 4, of Article 295 of the Commercial Companies Code, lays down that companies issuing shares listed in regulated markets under the supervision of the Stock Exchange Commission shall not be subject to the provisions set forth in paragraph 2, of article 259 of the Commercial Companies Code as regards reserves set up to the amounts mentioned in subparagraph a) of the afore-mentioned paragraph, when they are intended for the coverage of losses or negative results carried forward.

## March

***1 March (Regulation of the Instituto de Seguros de Portugal (Portuguese Insurance Institute) no. 12/2003,Official Gazette no. 51, Series II***

Pursuant to the provisions set forth in paragraph 2, of Article 10, of Decree-Law no. 158/2002, of 2 July, lays down a set of rules related to the legal framework of savings funds set up as pension funds. Revokes paragraphs 50 to 58 of Rule no. 298/91, of 13 November.

***12 March (Circular Letter of the Banco de Portugal no. 21/2003/DSB)***

Within the scope of the measures preventing money laundering, recommends that credit institutions and financial companies must examine with particular care the operations negotiated with natural or legal persons residing in some territories. Revokes Circular Letter no. 91/2002/DSB of 6 November and Circular Letter no. 5/2003/DSB of 16 January.

***20 March (Circular Letter of the Banco de Portugal no. 25/03/DSBRE)***

Explains the understanding of the Directorate-General of Taxes as regards the transfer, without loss of tax benefits, of balances on housing-savings accounts to other credit institutions.

***21 March (Notice of the Banco de Portugal no. 9/2003, Official Gazette no. 68, Series) I - B***

Introduces changes in Notice no. 3/95 of 30 June, adding subparagraph n), to paragraph 1.1, of paragraph 1, of paragraph 15, so as to include the Mutual Counter-guarantee Fund in the list of entities whose assets are subject to the compulsory setting of provisions for specific and general credit risks.

***22 March (Regulation no. 14/2003 of the Instituto de Seguros de Portugal, Official Gazette no. 69, Series III)***

Taking into consideration the rules relating to the composition of the assets of pension funds provided for in Rule no. 21/2002 of 28 November, in Decree-Law no. 158/2002 of 2 July, in Executive order no. 1451/2002 of 11 November, and in Decree-Law no. 204/95 of 5 August, lays down the rules to be complied with by pension fund managing companies as regards the reporting of data on the composition of the assets of pension funds managed by them. Revokes Rule no. 10/99-R of 7 September, although keeping in force the data processing Instruction no. 26 annexed to it. This rule is applied for the first time to the reporting of data on the composition of the assets of pension funds as at 31 December 2002.

***25 March (Circular Letter of the Banco de Portugal no. 26/03/DSBDR)***

Recommends that income declarations for purposes of housing credit must be examined with particular care, given that the Directorate-General of Taxes has drawn attention to the fact that some of them are not in accordance with those submitted at tax offices.

***26 March (Regulation no. 2/2003 of the Stock Market Commission, Official Gazette no. 72, Series II)***

Amends Article 68 of Regulation no. 12/2000, so as to guarantee that financial intermediaries make available to their clients the value of operations on securities on the day on which settlement takes place. This Regulation takes effect on 1 April 2003.

***27 March (Circular Letter of the Banco de Portugal no. 2/DMR )***

Makes known the new prices - effective from 1 April 2003 onwards - of services provided by SITEME, replacing the former price list annexed to Circular Letter no. 6/DMR of 10 February 2000.

## April

***1 de April (Regulation no. 3/2003 of the Stock Market Commission, Official Gazette no. 77, Series II)***

Limits the scope of the compulsory opening of individual accounts with financial intermediaries to transferable securities held by collective investment undertakings and pension funds. Rewords Article 35 of Regulation no. 14/2000 of 23 March. This Regulation takes effect on 1 April 2003.

***11 April (Executive Order no. 296/2003, Official Gazette no. 86, Series I - B)***

In accordance with the provisions of paragraph 3 of Article 1 of Decree-Law no. 88/94, of 2 April, lays down that transferable securities representing the public debt, issued pursuant to the provisions set forth in the Resolution of the Council of Ministers no. 10/2003, of 28 January, shall be added to the list published through Executive Order no. 377-A/94, of 15 June.

***17 April (Circular-Letter of the Banco de Portugal no. 31/03/DSBDR)***

Discloses guidelines relating to the accounting treatment of *Agrupamentos Complementares de Empresas* (Complementary Company Groupings) with links to credit institutions.

***24 April (Decree-Law no. 83/2003, Official Gazette no. 96, Series I - A)***

In the use of the legislative powers granted by Law no. 25/2002, of 2 November, introduces changes in Decree-Law no. 454/91, of 28 December, granting access to all credit institutions to the data disclosed by the Banco de Portugal related to cheque risk users.

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| *26 April (Decree-Law no. 86/2003, Official Gazette no. 97, Series I - A)* | Establishes the general rules applicable to the intervention of the State in the definition, design, preparation, competition, award, alteration, surveillance and general monitoring of public and private partnerships. Introduces changes in Articles 1, 12 and 18 and revokes Article 4 of Decree-Law no. 185/2002, of 20 August. |
| *28 April (Circular-Letter of the Banco de Portugal no. 3/2003/DMR)* | Informs that the rate of return of the Certificates of Deposit, Series B, to prevail in the quarter started on 4 May 2003 is set at 2.53%. |
| *30 April (Decree-Law no. 91/2003, Official Gazette no. 100, Series I - A)* | Introduces changes in the legal framework of Treasury bills. Rewords Articles 2 and 7 of Decree-Law no. 279/98, of 17 September. |

## May

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| *3 May (Executive Order no. 530/2003, Official Gazette no. 102, Series II)* | Under the provisions of paragraph 1 of Article 173 of the Legal Framework of Credit Institutions and Financial Companies, approved by Decree-Law no. 298/92, of 31 December, introduces changes in the Regulation of the Deposit Guarantee Fund. Revokes subparagraph c), of paragraph 1 of Article 3 and rewords Articles 4, 6, 16, 17 and 19 of the said Regulation, approved by Executive Order no. 285-B/95, of 15 September. |
| *12 May (Circular Letter of the Banco de Portugal no. 33/03/DSB)* | Clears doubts on the scope of the subjects on which the supervisory body issues its opinions, so as to ensure a higher harmonisation of the content of the Opinions to be sent to the Banco de Portugal on the internal control system. |
| *13 May (Decree-Law no. 99/2003, Official Gazette no. 110, Series I - A)* | Introduces changes in the legal system governing emigrants' savings accounts. Rewords articles 7 and 12 and revokes article 3 (1) e) and article 17 of Decree-Law no. 323/95, of 29 November, in compliance with the rewording laid down in Decree-Law no. 65/96, of 31 May. |
| *15 May (Instruction no. 4/2003 of the Public Credit Management Institute, Official Gazette no. 112, Series II)* | Establishes, pursuant to article 7 of Decree-Law no. 279/98 of 17 September, the general conditions applicable to Treasury bills, as well as the market operator statutes. |
| *15 May (Instruction of the Banco de Portugal no. 9/2003)* | Following the regulatory changes introduced in the credit risk provisioning system, lays down that credit institutions and financial companies shall send a provisions' table, duly filled in, within 30 days as of the end of each quarter. Revokes Instruction no. 91/96, published in BNBP no. 1, of 17 June 1996. |
| *19 May (Circular Letter of the Banco de Portugal no. 34/03/DSB)* | Recommends that credit institutions, which from a group perspective have a significant involvement in securitisation operations, shall keep their own funds at an adequate level in order to cover the overall risks arising from such operations; as far as new securitisation operations are concerned, releases of own funds shall not be recognised; capital gains resulting from the sale of assets shall be accrued up to the settlement date of such operations. |
| *28 May (Report and Annual Accounts for 2002 of the Stock Market Commission, Official Gazette no. 123, Series III, 3rd Supplement, Part A)* | Publishes the report of the activities undertaken by the Stock Market Commission in 2002. |

## June

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| *4 June (Decree-Law no.107/2003, Official Gazette no. 129, Series I -A )* | Introduces changes in the provisions of the Stock Market Code (inter alia), within the scope of the registration of issues of bonds in public offerings and the requirements related to the audit of special accounts. |
| *11 June (Law no. 18/2003, Official Gazette no. 134, Series I - A)* | Approves the legal system governing competition. |

***14 June (Decision of the European Parliament and of the Council no. 2003/429/EC, OJ no. 147, Series L)***

Decision of the European Parliament and of the Council on the adjustment of the financial perspective for enlargement. See also the Decision of the European Parliament and of the Council of 19 May 2003 (2003/430/EC) on the revision of the financial perspective, published in the abovementioned OJ.

***16 June (Instructions of the Banco de Portugal nos. 11 and 12/2003, Boletim Oficial (Official Bulletin) no. 6/2003)***

Establishes that credit institutions and financial companies shall compulsorily supply financial information broken down by segments (areas of activity and geographical regions).

***27 June (Regulation of the Stock Market Commission no. 4/2003, Official Gazette no. 146, Series II)***

Sets the value of the rate to be paid for the services supplied by the Stock Market Commission to credit securitisation companies. Adds item i) to article 5 (1) of Regulation no. 8/2001, of 28 December.

***28 June (Decree-Law no. 132/2003, Official Gazette no. 147, Series I - A)***

Defines the sanctions to be applied in the event of non-compliance with the obligations imposed by Council Regulation (EC) no. 2560/2001, of the European Parliament and of the Council, of 19 December, which enshrines the principle of equal charges between euro denominated cross-border and domestic payments up to EUR 50,000.

## July

***8 July (Cabinet Resolution no. 89/2003, Official Gazette no. 155, Series I - B)***

Amends Cabinet Resolution no. 10/2003, of 28 January, which authorises the Portuguese Government Debt Agency (*Instituto de Gestão do Crédito Público*) to contract, on behalf and representation of the Portuguese Republic, loans intended to the financing of the fiscal deficit, to the assumption and settlement of liabilities and to the refinancing of public debt. These result from the Government decision to resume the issue of Treasury bills as a State's permanent financing instrument and also from the changes introduced by Decree Law no. 91/2003, of 30 April, in the legal framework of this type of transferable securities. This Resolution changes the issue ceiling for government debt represented by Treasury bills to a maximum amount of EUR 5,500 million, and of EUR 2 million for other types of government debt, denominated or not in a legal tender currency in Portugal, with representation forms other than those previously existing.

***11 July (Decree-Law no. 148/2003, Official Gazette no. 158, Series I - A)***

Transposes into national law Commission Directive no. 2000/52/EC, of 26 July, amending Directive no. 80/723/EEC, of 25 June, on the transparency of financial relations between Member States and public undertakings as well as on financial transparency within certain undertakings. Financial transparency relations regulated by this Decree-Law do not apply to Banco de Portugal.

***11 July (Circular Letter of Banco de Portugal no. 54/03/DSBDR )***

Discloses the understanding of Banco de Portugal on commissions and other fees paid by borrowers to credit institutions according to the provisions set forth in subparagraph d) of paragraph 1 of Article 4 of Decree Law no. 220/94, of 23 August, regarding the management and keeping of demand deposit accounts associated with housing credit contracts.

***17 July (Regulation no. 6/2003 of the Stock Market Commission, Official Gazette no. 163, Series II)***

Introduces changes in Regulation no. 4/2002, of 9 February, which establishes the conditions under which investment-fund managing companies may set up exchange traded funds and guaranteed funds, publishing it again in its entirety with the amendments introduced.

***17 July (Directive 2003/51/EC of the European Parliament and of the Council, Official Journal of the European Union no. 178, Series L)***

Directive of the European Parliament and of the Council amending Directives 78/660/EEC, 83/349/EEC, 86/635/EEC and 91/674/EEC on the annual and consolidated accounts of certain types of companies, banks and other financial institutions and insurance undertakings. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 1 January 2005 at the latest and they shall forthwith inform the Commission thereof.

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| *21 July (Instruction no. 5/2003 of the Portuguese Government Debt Agency, Official Gazette no. 166, Series II)* | Under the provisions laid down in Article 7 of Decree Law no. 279/98, of 17 September, as amended by Decree-Law no. 91/2003, of 30 April, introduces changes in Instruction no. 4/2003, which establishes the general conditions of Treasury bills, as well as the status of market operators. |
| *22 July (Regulation no. 5/2003 of the Stock Market Commission, Official Gazette no. 167, Series II)* | Under the provisions laid down in Articles 230 and 242 of the Securities Code, regulates the admission to trading of open-ended undertakings for collective investment in transferable securities (UCITS) of a contractual or corporate type. Rewords Article 52 and amends annex IV to Regulation no. 10/2000, which is published again with the amendments introduced. |
| *28 July (Circular Letter of Banco de Portugal no. 70/2003/DSBDR)* | Recommends that credit institutions and financial corporations shall examine with particular care the operations contracted with natural or legal persons, resident or established in the following countries and territories: Cook Islands, Egypt, Philippines, Guatemala, Indonesia, Myanmar, Nauru, Nigeria and Ukraine, within the scope of money laundering preventive measures. With regard to Nauru, supplementary counter-measures continue to be applicable, due to the fact that this jurisdiction has not corrected satisfactorily the serious shortcomings of its system for preventing and combating money laundering. Revokes Circular Letter no. 21/2003/DSB, of 12 March. |
| *31 July (Circular Letter of Banco de Portugal no. 5/DMR )* | Following Circular Letter no. 347/DMR, of 27 October 1999, fixes at 2.09% the rate of return of Deposit Securities, Series B, for the quarterly interest calculation period to start on 4 August 2003. |

## August

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| *4 August (Regulation no. 34/2003 of the Instituto de Seguros de Portugal (Portuguese Insurance Institute) Official Gazette no. 178, Series II)* | Establishes, under Article 90 (1) of Decree-Law no. 94-B/98, reworded by Decree-Law no. 8-C/2002 of 11 January, a set of rules applicable to the assets representing technical reserves, to the ceilings on prudential diversification and dissemination and to the general matching principles applicable to those assets, as well as a list of principles to be complied with by insurance undertakings in the definition, implementation and monitoring of investment policies. With the publication of this regulation, the rules governing assets representing technical provisions provided for in Executive Order no. 299/99 of 30 April cease to apply. Referrals to the abovementioned Executive Order are considered to be made to the present rule. Provisions laid down in Chapter II of Rule no. 9/99-R of 7 September are revoked. Insurance undertakings should comply with the provisions applicable to the definition, implementation and monitoring of investment policies, at the latest by 31 December 2003. |
| *8 August (Regulation no. 38/2003 of the Instituto de Seguros de Portugal (Portuguese Insurance Institute) (Rule no. 12/2003-R), Official Gazette no. 182, Series II* | In conformity with Article no. 6 (9) of Decree-Law no. 90/2003 of 30 April, introduces changes in the special register of assets representing technical provisions, reflecting the winding-up of insurance undertakings, with a view to protecting the interests of insurance creditors, in compliance with Directive 2001/17/EC of the European Parliament and of the Council of 19 March 2001, transposed into Portuguese law by means of the above Decree-Law, and changes rule no.19/2002-R of 24 July accordingly. |
| *9 August (Regulation no. 39/2003 of the Instituto de Seguros de Portugal (Portuguese Insurance Institute) Official Gazette no. 183, Series II)* | Defines a set of principles and rules applicable to the coding of assets that form the investment portfolios of insurance undertakings and the assets of pension funds. The present rule enters into force on the day following its publication. In the information pertaining to the representation of technical provisions and to the composition of pension funds' assets, as at 30 September, the asset code shall be filled in with the base code defined in this rule. |
| *13 August (Circular-Letter of the Banco de Portugal no. 74/03/DSBDR)* | Provides information on the understanding of the Banco de Portugal as to the criteria applicable to tranches of notes that do not have the same degree |

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| | of subordination and that do not have a rating for the purpose of calculating ratios and other prudential limits. |
| ***18 August (Circular-Letter of the Banco de Portugal no. 75/03/DSBDR)*** | In view of the existence of "substitution clauses" in medium- and long-term credit securitisation operations within the scope of mortgage loans for house purchase, it provides information on the understanding of the Banco de Portugal as to the replacement of securitised asset pool credits resulting from changes in contractual arrangements. |
| ***18 August (Instruction of the Banco de Portugal no. 18/2003)*** | Introduces changes in Instruction no. 27/2000, particularly with a view to adapting the provisioning regime as regards those cases in which institutions selling credits in securitisation operations are holders of clean-up calls. |
| ***18 August (Instruction of the Banco de Portugal no. 19/2003)*** | Introduces changes in Instruction no. 94/96, with a view to clarifying the notion of organised market for the purpose of country-risk provisioning, and to defining methods for the valuation of assets traded on those markets. |
| ***18 August (Instruction of the Banco de Portugal no. 20/2003)*** | Establishes the system for the provision of information on losses of financial shareholdings and respective provisions, and determines when the reporting map completed with this information shall be sent to the Banco de Portugal. |
| ***19 August (Decree-Law no. 183/2003, Official Gazette no. 190, Series I-A)*** | Amends articles 9 and 26 and adds article 25-A to the Statutes of the Stock Market Commission, approved by Decree-Law no. 473/99 of 8 November, and revokes article 211 of the Stock Market Code, approved by Decree-Law no. 486/99 of 13 November, as well as Executive Order no. 1303/2001 of 22 November, reworded by Executive Order no. 323/2002 of 27 March. The present Decree-Law enters into force on 30 August 2003. |
| ***22 August (Law nº 38/2003, Official Gazette no. 193, Series 1-A)*** | Authorises the Government to issue legislation within the scope of the protection of investors in transferable securities. |
| ***29 August (Regulation no. 7/2003 of the Stock Market Commission, Official Gazette no. 200, Series II, Supplement)*** | Establishes the new structure of the supervision rates to be paid to the Stock Market Commission, eliminating some rates and cutting other rates. It will enter into force on 1 September 2003. |
| ***30 August (Executive-Order no. 913-I/2003, Official Gazette no. 200, Series I-B, 4th Supplement)*** | Establishes the new system of supervision rates applicable in the stock market. The present Executive Order enters into force on 1 September 2003. |

## September

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| ***10 September (Decree-Law no. 203/2003, Official Gazette no. 209, Series A)*** | Lays down a special regime to raise support and incentives to be exclusively applicable to major investment projects falling within the scope of the tasks of *Agência Portuguesa para o Investimento, E.P.E.* (API – Portuguese Investment Agency), pursuant to the provisions set forth in Decree-Law no. 225/2002 of 30 October. Revokes the regime governing the recording of foreign investment operations. |
| ***10 September (Notice of the Banco de Portugal no. 10/2003, Official Gazette no. 215, Series I – B)*** | Defines the regulatory framework regarding the collection through account debit for intrabank deposits, standardizing the process of electronic collection and clarifying the rights and duties of the parties involved, requiring them to apply subsidiarily the rules that regulate the direct debit system. This Notice enters into force on 1 January 2004. |
| ***17 September (Notice of the Banco de Portugal no. 11/2003, Official Gazette no. 222, Series I – B)*** | Introduces changes in Notice no. 11/94 of 21 February, with regard to the base contributory rate for the determination of annual contributions to the Deposit Guarantee Fund, setting it at 0.05% for 2004. |
| ***18 September (Instruction of the Banco de Portugal no. 23/2003)*** | Sets at 50% the limit for the irrevocable payment commitment to be applied in contributions to the Deposit Guarantee Fund for 2004. |

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| *24 September (Instruction of the Banco de Portugal no. 24/2003)* | Sets forth that the transitional regime provided for in paragraph 9 of Notice no. 10/2001 ceases to be applicable to securitisation operations conducted from 30 September 2003 onwards. |

## October

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| *2 October (Regulation No. 8/2003 of the Stock Market Commission, Official Gazette No. 239, Series II)* | Adapts the current competition framework for the market, as regards reporting requirements to which companies managing non-regulated markets are subject, in relation to companies managing regulated markets. Introduces changes in Articles 5 and 6 and revokes paragraph 4 of Article 5 and paragraph 5 of Article 6 of Regulation No. 5/2000. |
| *2 October (Regulation No. 9/2003 of the Stock Market Commission, Official Gazette No. 241, Series II)* | Lays down the terms and conditions for the setting up and operation of special investment funds (fundos especiais de investimento), to which the legal system governing securities investment funds shall be subsidiarily applicable. |
| *7 October (Regulation No. 51/2003 of the ISP (Portuguese Insurance Institute) (Rule No. 18/2003-R), Official Gazette No. 250, Series II)* | Lays down a set of rules related to the reporting of data on the representation and collateralisation of insurance technical reserves. The above-mentioned rule applies for the first time to data to be reported on the representation of technical reserves as at 30 September 2003. Revokes regulatory rules Nos. 9/99-R of 7 September and 9/2003-R of 18 February. |
| *7 October (Regulation No. 52/2003 of the ISP (Portuguese Insurance Institute) (Rule No. 19/2003-R), Official Gazette No. 250, Series II)* | Lays down a set of rules related to the reporting of data on the composition of pension fund assets. The above-mentioned rule applies for the first time to data to be reported on the composition of pension fund assets as at 31 December 2003. Revokes regulatory rule No. 8/2003-R of 18 February. |
| *8 October (Regulation No. 10/2003 of the Stock Market Commission, Official Gazette No. 245, Series II)* | Introduces changes in Article 10 of Regulation No. 12/2000 on financial intermediation, so as to assign to market-managing companies the responsibility for defining the conditions for the persons carrying on duties in a market on behalf of financial intermediaries, namely those responsible for settlement systems and settlement terminal operators. |
| *15 October (Instruction of the Banco de Portugal No. 23/2003)* | Sets at 50% the limit for the irrevocable payment commitment to be applied in 2004 contributions. |
| *15 October (Instruction of the Banco de Portugal No. 24/2003)* | Sets forth that the transitional regime laid down in paragraph 9 of Notice 10/2001 ceases to apply to securitisation transactions carried out after 30 September 2003. |
| *15 October (Instruction of the Banco de Portugal No. 25/2003)* | Regulates the Interbank Clearing System, which covers the sub-systems for the automated clearing of cheques, commercial bills, direct debits, electronic fund transfers (TEI) and operations processed via ATM network. Revokes Instruction No. 125/96, published in the BNBP No. 5 of 15 October 1996. |
| *15 October (Instruction of the Banco de Portugal No. 26/2003)* | Standardises the cheque document, by defining the technical features with which all types of cheques must comply, when submitted to clearing in Portugal. Revokes Instruction No. 9/98 published in the BNBP No. 5 of 15 May 1998. |
| *17 October (Decree-Law No. 252/2003, Official Gazette No. 241, Series I-A)* | Approves the legal regime governing collective investment undertakings and their managing companies and transposes into the national legal system Directives 2001/107/EC and 2001/108/EC of the European Parliament and of the Council. |
| *24 October Circular Letter of the Banco de Portugal No. 6/DMR)* | Makes known, in the wake of Circular Letter No. 347/DMR of 27 October 1999, that the rate of return on Deposit Securities, Series B, to be in force in the quarterly interest calculation period starting on 4 November 2003, is 2.05%. |

## November

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| *5 November (Circular Letter of the Banco de Portugal No. 99/03/DSBDR)* | Informs that, as from 1 January 2004, the Banco de Portugal will start to calculate, on a systematic basis, the defaulting credit/total credit indicator. Announces that credit institutions are required to adopt, as from the same date, a similar methodology when preparing information to be disclosed to the public, whenever this information makes reference to a credit quality indicator. Revokes Circular Letter No. 98/03/DSBDR of 31 October. |
| *7 November (Decision of the ECB No. 2003/797/EC, OJ L No. 297)* | Decision of the European Central Bank concerning the administration of the borrowing-and-lending operations concluded by the European Community under the medium-term financial assistance facility (ECB/2003/14). Decisions ECB/1998/NP2 and BCE/1998/NP15 are revoked. |
| *7 November (Notice of the Banco de Portugal No. 12/2003, Official Gazette No. 258, Series I-B)* | Pursuant to the provisions of Article 6 of Decree-Law No. 262/2001 of 28 September, lays down the ceiling on financing through borrowed resources of brokers and dealers. |
| *17 November (Instruction of the Banco de Portugal No. 27/2003)* | Based on the Commission Recommendation 2001/193/EC, lays down the information elements to be given by lenders offering home loans, namely those elements that should be provided in the Standardised Information Sheet and the expenses underlying the opening of a deposit account and its maintenance during the life of the loan. |
| *17 November (Instruction of the Banco de Portugal No. 28/2003)* | Introduces several changes in the Chart of Accounts for the Banking System (Instruction No. 4/96), namely within the scope of operational leasing operations and swaps. |
| *21 November (Decree-Law No. 294/2003, Official Gazette No. 270, Series I-A)* | Sets forth the rules governing the process of checking the requirements applied to associations for the defence of investors in securities, referred to in Article 32 of the Securities Code, approved by Decree-Law No. 486/99 of 13 November. |
| *21 November (Decree-Law No. 295/2003, Official Gazette No. 270, Series I-A)* | Approves the new legal system governing economic and financial operations with abroad and domestic foreign exchange operations, including dealing in foreign exchange and gold operations. This Decree-Law enters into force 60 days following its publication. Revokes Decree-Laws Nos. 481/80 of 16 October, 13/90 of 8 January, 64/91 of 8 February, 176/91 of 14 May and 170/93 of 11 May, as well as Article 7 of Decree-Law No. 138/98 of 16 May. |
| *21 November (Decree-Law No. 296/2003, Official Gazette No. 270, Series I-A)* | Transposes into the national legal system Council Directive 2001/44/EC of 15 June and Commission Directive 2002/94/EC of 9 December, both on mutual assistance for the recovery of claims in European Community Member States. Revokes Decree-Law No. 504-N/85 of 30 December, as well as Decree-Laws No. 186/89 of 3 June and No. 69/94 of 3 March which have amended the former. |

## December

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| *5 December (Decree-Law no. 303/2003, Official Gazette no. 281, Series I)* | Introduces changes in Decree-Law no. 453/99, of 5 November, which lays down the system governing credit securitisation and regulates the setting up and operation of credit-securitisation funds, the respective management companies and credit-securitisation companies. It also introduces changes in Decree-Law no. 219/2001, of 4 August, which establishes the tax system applicable to credit-securitisation operations. It stipulates regulations especially applicable to the transfer for securitisation of credits from the State and social security, and explains some aspects related to the identification of types of credit eligible for securitisation, of procedural effects on the respective transfer for securitisation and of management and collection operations. It re-publishes the full text of the abovementioned documents with the changes introduced. It regulates the terms according to which the State and social security transfer fiscal and tax credits for securitisation, by |

means of Executive Order no. 1375-A/2003, of 18 December. It introduces changes in different articles, adds Article 65 and renumbers previous Articles nos. 65 to 67, as well as new Articles 66 to 68, all included in Decree-Law no. 453/99, of 5 November. It also introduces changes in Articles 2 and 7 of Decree-Law no. 219/2001, of 4 August.

***16 December (Regulation no. 11/2003 of the Stock Market Commission, Official Gazette no. 278, Series II)***

Introduces changes in Regulation no. 7/2001, which covers part of the recommendations of the Stock Market Commission on corporate governance, after the approval of the European Commission recommendation on the independence of auditors and of the European Commission Action Plan on Companies Law. It also introduces changes in regulation no. 11/2000, authorising companies to publish their accounts on the Internet. It re-publishes, in a consolidated version, the abovementioned regulation no. 7/2001, of 28 December. It introduces changes in Articles 1, 2 and 3, adds Article 3-A and introduces changes in the annex to regulation no. 7/2001, of 28 December. It also introduces changes in Article 8-A of regulation no. 11/2000, of 23 February, reworded by regulation no. 13/2002, of 26 August.

*Working papers*

## WORKING PAPERS

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