THE PORTUGUESE ECONOMY IN THE FIRST HALF OF 1999

1. INTRODUCTION

The behaviour of the Portuguese economy in the first half of 1999 was characterised by a reduction of inflation, economic activity slowdown, the continued growth of credit to the private sector and an increase in the current plus capital account deficit.

The behaviour of the Portuguese economy continued to be decisively determined by the behaviour of the euro area economy, which concentrates the bulk of Portuguese external relations. The slowdown of several extra-EU economies had already determined, in the second half of 1998, a deceleration of activity in the euro area — translated into a slowdown of merchandise exports and industrial output. As a result, confidence in industry decreased (chart 1).

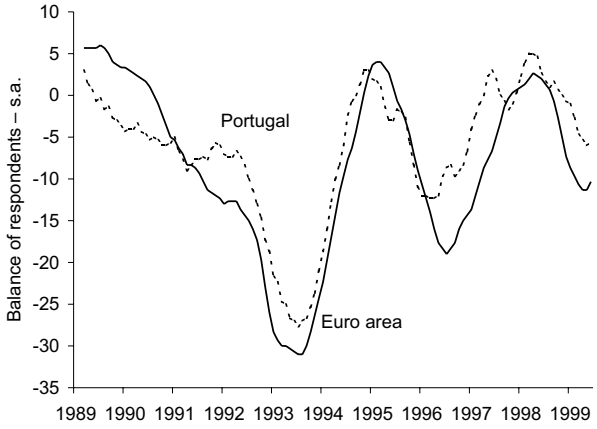
The current level of interest rates and the growth of real disposable income — reflecting both job creation and inflation reduction — contributed to the improvement of consumers' confidence in the euro area (chart 1). As a result of these developments, private consumption is currently accelerating in the euro area, rendering an increasing contribution to output growth.

The latest indications confirm the expectations of activity recovery in the euro area over the course of 1999 — especially in the second half — reflecting the improvement of the international background and the developments in monetary conditions. In fact, confidence in industry already began to recover throughout the second quarter of 1999 (chart 1).

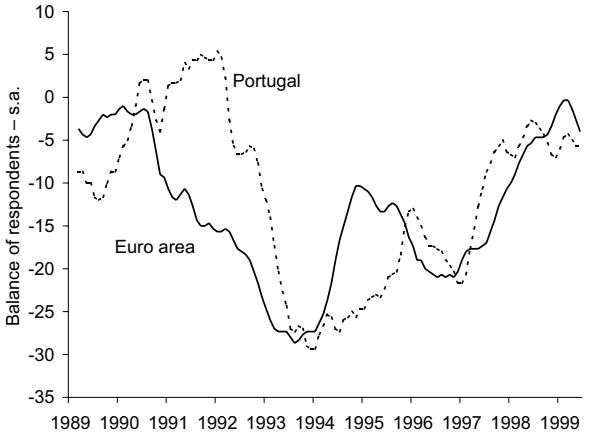
Consumers and industrials' confidence behaved quite similarly in Portugal and in the euro area (chart 1). However, specific conditions to the Portuguese economy — namely the convergence of nominal interest rates to substantially lower levels than those previously recorded and real interest rates below the euro area average levels — explain the stronger growth of output, domestic demand and credit to the private sector in the Portu-

Chart 1

CONFIDENCE INDICATOR IN INDUSTRY



CONSUMERS' CONFIDENCE INDICATOR



Source: European Commission.

Table 1

MAIN ECONOMIC INDICATORS

Rates of change in percentage

	1998	1999
Private consumption	5.6	4¼ - 4¾
Public consumption	3.8	2
GFCF	9.8	4½ - 5½
Domestic demand	6.5	4 - 4½
Exports	8.8	3¾ - 4¾
Overall demand	7.0	4 - 4½
Imports	14.7	6¾ - 7¾
GDP	3.9	2¾ - 3¼
Current plus capital account (as a % of GDP)	- 4.3	-5½ ; -4½

Note:The figures in this table were disclosed in the March 1999 *Economic Bulletin*.

guese economy, which also recorded a more negative contribution of net external demand to output growth.

The forecasts disclosed in the previous *Economic Bulletin*(1) of the *Banco de Portugal* point towards a slowdown of output, from 3.9 per cent in 1998 to a growth rate ranging between 2 3 and 3 1 in 1999, due both to the slowdown of domestic demand and exports (table 1). Several factors accounted crucially for this slowdown: the worse international background than in 1998, the gradual fading out of the effects of interest rate reductions, and the intention of lower public expenditure growth (as regards both consumption and investment) assumed by the government in the Stability and Growth Pact. In intra-annual terms, these forecasts assumed the progressive slowdown of domestic demand throughout the year. On the contrary, exports were expected to recover in the second half-year, after behaving less favourably in early 1999 — in line with the expected intra-annual behaviour of external demand directed towards the Portuguese economy.

The available data for the first months in 1999 tends to confirm the scenario presented in the March Economic Bulletin. Economic activity is recording some slowdown, though maintaining a strong growth. As regards the forecasting risks pointed out in the March *Economic Bulletin*, the recent behaviour and perspectives point towards some attenuation of downside risks. Indeed, the international perspectives underlying the forecast did not worsen additionally, hence lowering the risks of international growth becoming particularly different from that expected. Meanwhile, the latest data suggests greater chances of a domestic demand growth above that previously expected. Indeed, the behaviour of the Portuguese economy in early 1999 continued to be characterised by strong domestic demand growth, greatly due to the buoyancy of private consumption, since investment is estimated to have slowed down early in the year.

As projected, net external demand continued to render a negative contribution to GDP growth in early 1999. Though the available data on foreign trade are precarious — and are strongly bound to be revised in forthcoming months — merchandise exports are estimated to have continued to decelerate in early 1999. The recovery of external demand directed towards the Portuguese economy, expected for the second half-year, shall allow for a recovery of exports. For 1999 as a whole, the forecast for the real growth of exports of goods and services remains unchanged — between 3,75 and 4,75 per cent. Imports of goods and services also slowed down in early 1999, as a result of the lower dynamism of overall demand, especially Gross Fixed Capital Formation (GFCF) and exports.

The behaviour of exports — only partly offset by the slowdown of imports — gave rise to a further deterioration of the trade balance in the first months of 1999. Together with the lower surplus in the capital transfer account — due to calendar effects in the receipt of funds from the EC — the behaviour of the trade balance led to a widening of the current plus capital account deficit in the January to April 1999 period, when compared with one year before.

The current plus capital account deficit kept being mainly financed through capital inflows resulting from increases to both General Government and resident monetary financial institutions' net foreign liabilities. The latter sector continued to resort to short-term external indebtedness and to a reduction in its public debt portfolio as a means of financing the strong growth of credit to the private sector, as bank deposits — the tradi-

(1) "The Portuguese Economy in 1998 and Perspectives for 1999" (especially section 8, "Forecasts for 1999"), *Economic Bulletin, Banco de Portugal*, March 1999, pp.5-24.

tional scheme banks use for raising resources — continued to grow moderately. In fact, 1999 has seen a further acceleration of credit to private individuals and non-financial corporations from the already high growth rates recorded in previous years (especially in 1998).

Inflation measured by the year-on-year rate of growth of the Harmonised Index of Consumer Prices (HICP)[2] decreased to 2.1 per cent in May and June, after having stabilised around 2.7 per cent since the third quarter of 1998. The resumption of inflation levels similar to those recorded in the middle of the first half of the previous year reflected the fading out of the effects of the escudo depreciation occurred in 1998, but above all the behaviour of the prices of some foodstuff goods — which corrected the abnormally high growths recorded in 1998. Simultaneously, though yielding a smaller contribution to the behaviour of the general index, recent months have seen a slowdown in the prices of some services — affected in 1998 by the Expo-98 — and the reduction of electricity tariffs earlier in 1999. As a result, the inflation differential vis-à-vis the euro area narrowed from 2.0 percentage points (p.p.) in December 1998 to 1.2 p.p. in June 1999.

2. INTERNATIONAL BACKGROUND TO THE PORTUGUESE ECONOMY

The perspectives regarding the world economic situation — which had deteriorated sharply in the second half of 1998 — became more favourable in recent months. Confidence was restored in the international financial markets, as the fears of contagion of the Brazilian crisis to other areas in early 1999 did not take place. Presently, encouraging signs indicate that the situation in the emerging markets is improving. Stress should be laid on the faster than expected recovery of economic activity in some Asian countries, especially in South Korea. Some of these markets shall have restarted to receive international capital inflows. In addition, the latest data point towards the maintenance of a strong growth in the USA and to a more favourable behaviour of activity in the United Kingdom. Uncertainty continues to surround the expectations about the Japanese economy. Therefore, perspectives for the euro area external background appear more favourable than before, and the risk balance for economic activity growth no longer tends to the downward — as testified by the latest OECD forecasts (table 2).

Table 2

OECD PROJECTIONS (June 1999) FOR 1999 AND 2000

Gross Domestic Product

	Rates of change in percentage		
	1998	1999	2000
OECD	2.3	2.2	2.1
Euro area	2.6	2.1	2.6
Germany	2.0	1.7	2.3
France	3.2	2.3	2.6
Italy	1.3	1.4	2.2
Spain	4.0	3.3	3.3
United Kingdom	2.1	0.7	1.6
USA	3.9	3.6	2.0
Japan	-2.9	-0.9	0.0

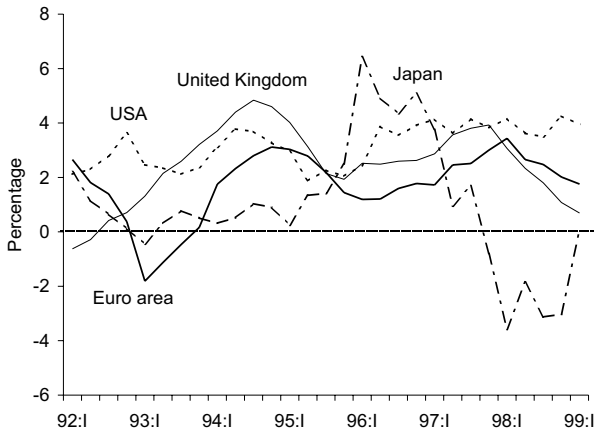
Source: Datastream, Eurostat and OECD.

In the **USA**, activity continued to grow strongly in the first half of 1999 (chart 2), accompanied by high job creation and a further increase in the trade deficit. Inflation remained close to 2 per cent. In the first quarter GDP grew 4.0 per cent from one year before (4.3 per cent in the previous quarter), reflecting the maintenance of domestic demand dynamism, and in particular of private consumption. Consumption shall have remained strong in the second quarter, reflecting the favourable behaviour of households' income and consumers' confidence. Households' saving rate continued to decrease until May. For 1999 as a whole, the OECD forecasts a 3.6 per cent output growth (3.9 per cent in 1998), despite the fact that the latest forecasts disclosed by private institutions point on average to a growth closer to the previous year rate.

Consumer and producer price indicators accelerated in the first half of 1999, reflecting the rise in the international price of oil (chart 3). However, excluding food and energy, consumer prices grew 2.1 per cent year-on-year in the first half, against

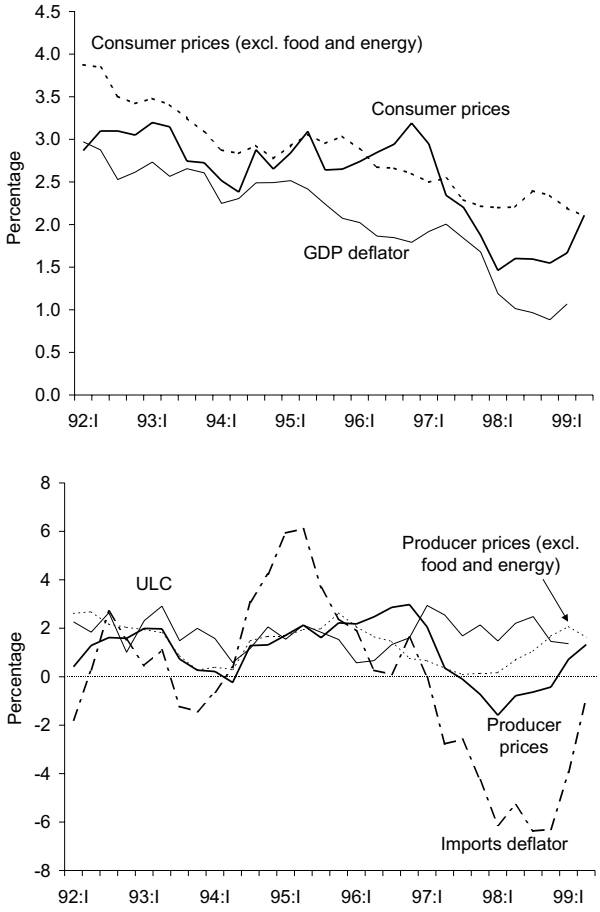
(2) After the correction of the effects of sales and promotions in 1998, as well as the change to the sample of goods and services – see Box III.1– "*Changes to the HICP: an estimate of the revision of the 1998 inflation levels*" in Chapter III of the 1998 *Annual Report.*

Chart 2
GROSS DOMESTIC PRODUCT
Year-on-year rates of change



Source: Datastream and Eurostat.

Chart 3
USA - PRICE INDICATORS
Year-on-year rates of change



Source: Datastream.

2.3 per cent in 1998 as a whole. In the first quarter of 1999, unit labour costs grew at a similar rate to late 1998 (1.4 per cent year-on-year), reflecting the maintenance of high productivity gains in the economy. The latest indicators show that the pace of growth of wages shan't have changed significantly in the second quarter. On 18 May, the Federal Reserve announced that it admitted a greater probability of a forthcoming increase to the tightness of monetary policy, which came to take place on 30 June. On this date, the Fed increased the federal funds reference rate by 0.25 p.p., to 5 per cent. The Fed considered that the size of the cuts carried out last fall was no longer necessary, given the latest developments at both domestic and international levels.

After five consecutive quarters of activity reduction, in the first quarter of 1999 the **Japanese** economy shall have grown 1.9 per cent from the previous quarter (according to preliminary estimates), clearly more than previously expected. GDP grew 0.1 per cent in year-on-year terms (-3.0 per cent in the last quarter of 1998) (chart 2). Output acceleration was due to a greater contribution of private consumption and to both public and private GFCF. However, as the economy has come to benefit mostly from the stimulus of the public sector, and since the remaining activity indicators available do not unequivocally indicate a sustained recovery of the private sector's expenditure, perspectives for 1999 as a whole remain uncertain.

Consumer prices recorded negative year-on-year changes from February onwards, reaching -0.4 per cent in May (0.6 per cent growth in 1998 as a whole). In this context, on 12 February the Bank of Japan cut the reference rate for the overnight call rate from 0.25 to 0.15 per cent, and continued to increase the liquidity injection in the money market, leading overnight rates to virtually null levels.

In the **United Kingdom**, the latest developments eradicated the fears of a recessive situation in the economy, after the particularly sharp activity slowdown recorded over the course of 1998. Therefore, a moderate recovery is expected to take place throughout 1999, especially in the second half. In the first quarter of 1999, GDP stagnated at the previous quarter level, slowing down again in year-on-year terms (0.7 per cent growth, against 1.1 per cent in the last quarter of 1998) (chart 2).

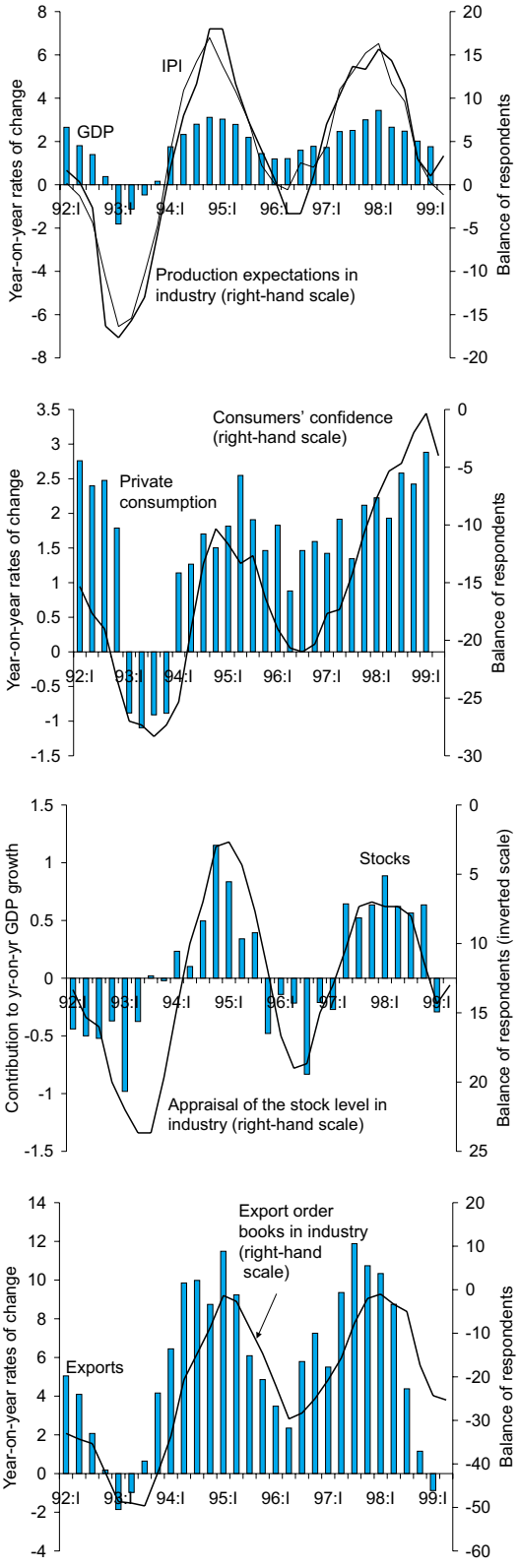
This behaviour reflects the lack of dynamism of domestic demand — despite the acceleration private consumption recorded in the first quarter — and the maintenance of a negative contribution of net external demand to growth. However, the confidence of economic agents (industrials and consumers) has improved markedly since early 1999. Alongside the sharp fall in interest rates and some stabilisation of the world economic situation, this development points towards a more favourable behaviour of activity up to the end of 1999. According to the OECD forecasts, GDP shall grow 0.7 per cent in real terms in 1999 (2.1 per cent in 1998). Inflation measured by the consumer price index excluding mortgage lending interest decreased in the first half of 1999. The year-on-year rate of change stood at 2.2 per cent in June, compared with 2.6 per cent in December 1998. In a context of favourable perspectives for inflation, the Bank of England carried out further cuts to the reference rate over the course of the first half of 1999, adding up to 2.5 p.p. since October 1998, to 5.0 per cent.

In the first half of 1999, contrasting with the previous year, **oil** prices in the international markets rose significantly — especially from March onwards, following to the agreement on the reduction of world production of oil ratified by the OPEC countries on 23 March. In June, the average price of Brent was USD 15.9 per barrel, around 60 per cent more than in December 1998. International prices of other industrial commodities continued to exhibit negative year-on-year changes in the first half of 1999 as a whole (about 8 per cent). However, from March, the pace of reduction became less marked, culminating in a null change recorded in June.

In the first quarter of 1999, economic activity in the **euro area** interrupted its slowdown trend recorded throughout 1998. According to the first estimate of Eurostat, real GDP grew 0.4 per cent in the first quarter of 1999 from the previous quarter (0.3 per cent growth in the last quarter of 1998). However, output slowed down in year-on-year terms (1.8 per cent growth against 2.0 per cent in the previous quarter) (chart 2). Activity in this period was negatively affected by the correction to the prior stock building process (chart 4). On the contrary, the remaining domestic demand items accelerated. Private consumption grew 2.9 per cent in year-on-year terms (2.4 per cent in the last quar-

Chart 4

ACTIVITY IN THE EURO AREA



Source: Eurostat, European Commission and *Banco de Portugal*.

Note: IPI – the second quarter of 1999 corresponds to the quarter to April.

ter of 1998), in tune with the high confidence level consumers exhibited in early 1999. GFCF accelerated from 3.0 to 3.9 per cent, partly due to the more favourable behaviour of the construction sector. Net external demand rendered a less negative contribution to growth in the first three months of 1999 (-0.5 p.p., against -0.8 p.p. in the previous quarter). The slowdown exports showed in this quarter (0.9 per cent reduction in year-on-year terms, against a 1.2 per cent growth in the fourth quarter of 1998) was accompanied by a sharp slowdown of imports (from 3.6 to 0.5 per cent).

The latest indications confirm the expectation of activity recovery over the course of 1999, especially in the second half. Alongside the moderation of the negative influence of the stock building correction and net exports on GDP, growth in the euro area shall also reflect the relative dynamism of the remaining domestic demand components. Other indications pointing in the same direction are the improvement of the external background of the euro area in recent months and the developments in domestic monetary conditions (on 8 April the European Central Bank Council cut the interest rate on main refinancing operations by 0.5 p.p., to 2.5 per cent; in the first half of 1999, the euro depreciated about 8 per cent in real effective terms in relation to end 1998). In industry — which concentrated the weakening of activity throughout 1998 — production continued to slowdown in year-on-year terms up to April, although some indications point towards some stabilisation from the falls recorded in previous months. Industrials' confidence in the euro area improved over the course of the second quarter of 1999, after the particularly lower level recorded in March. This development reflects not only better expectations regarding production behaviour but also a slight reduction in the number of industrials considering that the current stock level is excessive (chart 4). In addition, industrials' appraisal regarding export order books interrupted its downward trend recorded up to the first quarter of 1999. Consumers' confidence showed some weakening since March, from the high level reached earlier in the year. This development narrowed the unusual divergence between the behaviour of consumers and industrials' confidence which had been recorded since mid-1998.

The behaviour of activity in the euro area since the beginning of 1999 does not seem to jeopardise the available growth forecasts for the year as a whole nor for the intra-annual pattern of recovery. According to the OECD projections, GDP shall grow 2.1 per cent in the euro area in 1999 as a whole, which nevertheless accounts for a slowdown from the previous year (2.6 per cent growth in 1998). The distinct behaviour of the euro area economies — especially the largest ones — is expected to attenuate from 1998, according to the OECD projections. According to the data available for the first quarter of 1999, the German and Italian economies grew from the previous quarter — slightly more than expected — following to the real contraction exhibited in the last quarter of 1998. However, both economies grew slowly from the year before levels (0.8 per cent and 0.9 per cent, respectively in Germany and Italy). In France and in Spain, GDP continued to grow strongly in year-on-year terms (2.3 and 3.4 per cent in the first quarter of 1999, respectively in France and Spain); however, in the former case activity slowed down strongly from the previous quarter.

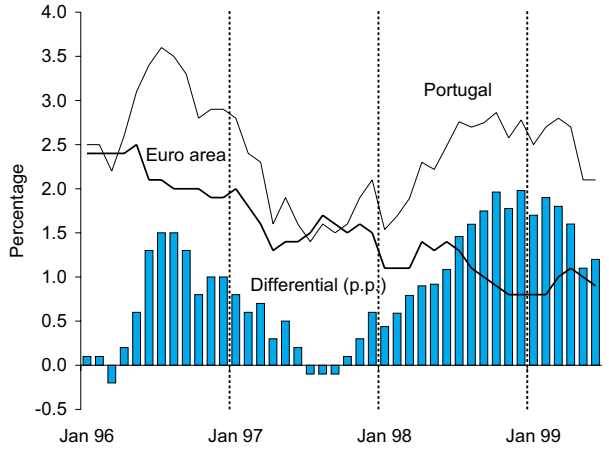
Price behaviour perspectives for the euro area in 1999 remain favourable, and in accordance with the concept of price stability. In the first half of 1999, inflation measured by the HICP stood at 0.9 per cent in year-on-year terms (1.1 per cent average growth of in 1998). Most HICP components recorded smaller price growths in this period, contrasting with the behaviour of energy prices — which reflected the rise in oil prices in the international markets (the year-on-year change of prices of energy products increased from -4.8 per cent at the end of 1998 to 1.4 per cent in June).

3. INFLATION

Inflation measured by the year-on-year rate of change of the Harmonised Index of Consumer Prices (HICP) was of 2.1 per cent in May and June, after having remained relatively stable around 2.7 per cent since the third quarter of 1998 (charts 5 and 6). In annual average terms, the HICP had grown 1.9 per cent in 1997 and 2.4 per cent in 1998[3].

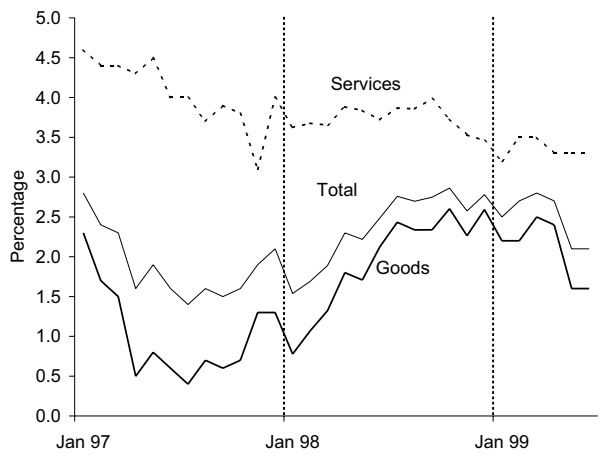
(3) See footnote 2.

Chart 5
INFLATION DIFFERENTIAL
HICP, year-on-year rates of change



Source: Eurostat, INE and *Banco de Portugal*.

Chart 6
HICP
Year-on-year rates of change



Source: Eurostat and *INE*.

The slowdown of prices recorded in May and June confirms the expectations of a lower HICP annual average growth in 1999, when compared with 1998. As expected, recent months saw the correction of the abnormally high increase in foodstuff goods prices occurred in 1998. Furthermore, the pressures on some service prices due to the Expo - 98 faded out. In the same direction contributed the dissipation in 1999 of the effects of the escudo depreciation vis-à-vis the ERM-EMS currencies as a whole — linked to the convergence of these currencies towards their central parities during the period of transition to the euro.

Despite the variability of the year-on-year change of the HICP, it should be noted that the trend inflation indicators calculated by the Banco de Portugal have exhibited a quite stable behaviour since 1997. The trimmed mean at 10 per cent and the first principal component in chart 7 illustrate this(4). However, it should be noted that throughout the first half of 1999 the year-on-year rate of change of both trend indicators there was a reduction. In June, the trimmed mean at 10 per cent reached 2.1 per cent (2.5 per cent in December), while the first principal component stood at 2.4 per cent (2.7 per cent at the end of 1998). In June, the year-on-year rate of growth of the CPI — the index from which those indicators are calculated — was of 2.3 per cent (3.2 per cent in December).

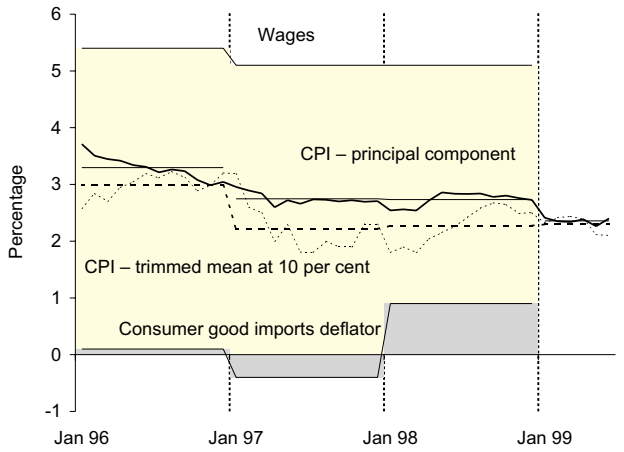
The recent behaviour of inflation is in tune with the behaviour of its main determinants. No information is currently available on import prices in the first half of 1999. However, import prices (in escudos) of consumer goods are expected to have continued behaving favourably, as in the previous half-year(5). This development shall be partly due to the moderate inflation level recorded in our leading trade partners, the reduction of some international prices and the dissipation of the temporary effects of the escudo depreciation — part of which resulted from its convergence towards the central parities vis-à-vis the remaining euro area currencies.

The available indicators do not suggest that 1999 will record significant changes in the remaining determinants of inflation. Indeed, in the first half of 1999, the labour market continued to record some pressures, translated into the maintenance of a high rate of growth of wages (see section 5). Meanwhile, domestic demand — and especially private consumption — continue to grow strongly

(4) On the calculation of the trend inflation indicators usually analysed by the Banco de Portugal see C. Coimbra and P. D. Neves (1997), "*Trend Inflation Indicators*", *Economic Bulletin* of the *Banco de Portugal* Vol. 3, n º 1, March 1997.

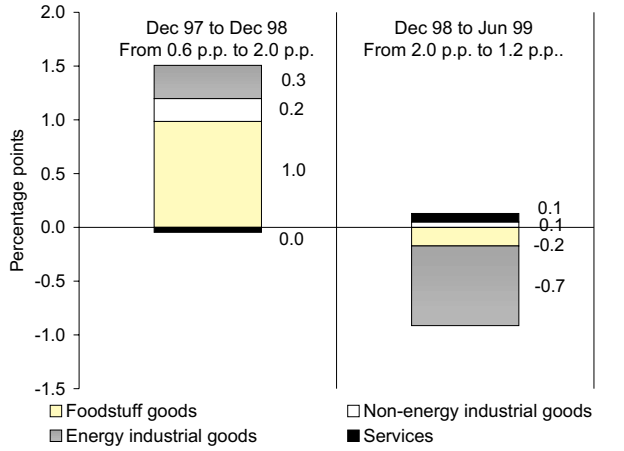
(5) According to the *Direcção-Geral das Relações Económicas Internacionais*, import prices of consumer goods grew 3.1 and 0.8 per cent, respectively in the first and second half of 1998. These changes were significantly influenced by the price of imported dried fish, which contributed 0.9 p.p. to the annual average rate of growth of consumer goods import prices in 1998.

Chart 7
TREND INFLATION, WAGES AND CONSUMER GOOD IMPORT PRICES
Rates of change



Source: *INE, Banco de Portugal and Direcção-Geral das Relações Económicas Internacionais.*
Note: Wages and the consumer good imports deflator are in annual rates of change.

Chart 8
HICP
Contributions to the change in the differential



Source: Eurostat and *INE.*

(see section 4). It should be noted that, when a small open economy like the Portuguese one is in a situation close to full resource utilisation, domestic demand pressures will tend to reflect chiefly on the worsening of the trade deficit, and only partly on the behaviour of prices.

According to the HICP, the inflation differential vis-à-vis the remaining euro area countries narrowed to 1.2 p.p. in June 1999, after having risen from 0.6 p.p. in December 1997 to 2.0 p.p. in December 1998 (chart 5). The widening of this differential in 1998 was strongly influenced by the above mentioned irregular or temporary effects, and also by the exchange rate behaviour.

Chart 8 plots the path of the inflation differential in 1998 and in the first half of 1999, broken-down approximately by the contributions of the main HICP groups. In 1998, the prices of foodstuff goods and energy industrial goods contributed respectively 1.0. p.p. and 0.3 p.p. to the 1.4 p.p. increase of the inflation differential. This shows not only that the inflation differential widening in 1998 was closely linked to the behaviour of foodstuff goods prices, but also that in Portugal the reduction of oil prices — unlike in most other euro area countries — was not reflected in the consumer prices of fuel. As in 1996-1997 where oil prices increased — the Government chose to maintain the maximum sale prices.

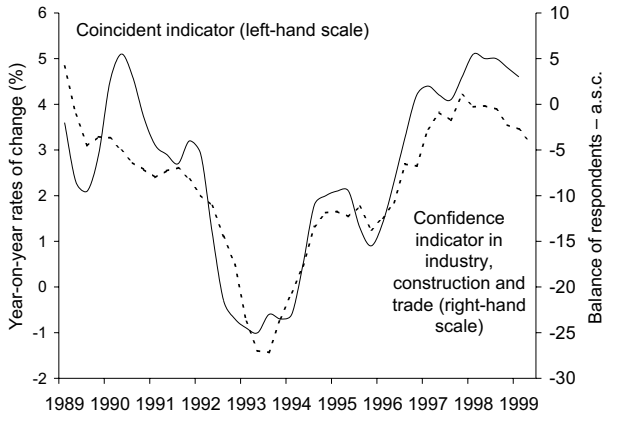
In 1999, the growth differential of foodstuff goods prices averaged 3 p.p. up to April, narrowing to 2.3 p.p. in May — when the correction of the irregular effects registered in 1998 began. Following to the previous year, fuel prices in the euro area rose in 1999, reflecting the increase in oil prices in the international markets. These prices remained stable in Portugal, while there also occurred a decrease in electricity tariffs. As a result, the growth differential of industrial energy goods prices fell from +4.8 p.p. in December 1998 to -3.4 p.p. in June 1999. In between, the inflation differential fell 0.8 p.p., with 0.7 p.p. and 0.2 p.p. contributions respectively of energy goods and foodstuff goods[6]. As in 1998, the inflation differentials for the remaining groups (services and non-energy industrial goods) remained virtually stable.

4. DEMAND AND OUTPUT

According to the information available for the Portuguese economy, economic activity shall have slowed down in the first months of 1999, despite maintaining a strong growth. This indication is illustrated by the coincident indicator of the Banco de Portugal, which in the first quarter slowed down slightly from 1998 (chart 9). The behaviour of economic activity in the first months of 1999

(6) The impact of the prices of foodstuff goods on the inflation differential was smaller than on the inflation rate in Portugal, since these prices slowed down in the euro area.

Chart 9
COINCIDENT INDICATOR OF ACTIVITY AND CONFIDENCE IN INDUSTRY, CONSTRUCTION AND TRADE



Source:European Commission, *INE*, "Monthly Trade Survey" and *Banco de Portugal*.

continued to feature strong domestic demand growth. Private consumption shall have maintained a high dynamism, while investment is estimated to have slowed. In the first quarter, according to the available data, net external demand continued to render a negative contribution to growth; the stabilisation of merchandise exports took place alongside a slowdown of imports.

The developments in the Portuguese economy in the period under review basically met the forecast disclosed in the March Economic Bulletin (EB), which pointed to a GDP growth ranging between 2.75 and 3.25 per cent in 1999 (3.9 in 1998). Regarding the forecasting risks pointed out in the March EB, the risks of a more unfavourable international background — that would lead to a lower growth of exports and output — is presently lower. However, the likelihood of a stronger buoyancy of domestic demand than previously expected is currently higher — which may lead to a GDP growth closer to the upper limit of the forecast interval.

Short-term indicators suggest that private consumption maintained a high pace of growth in the first half of the year. The growth of this aggregate in the year as a whole may stand closer to the upper limit of the March EB forecast interval (4.25-4.75 per cent, compared with 5.6 per cent in 1998). The behaviour of private consumption in the first months of 1999 continued to reflect households' high confidence levels, resulting from an overall positive appraisal of their financial situation and the general economic situation. The growth of disposable income continued to be supported by employment gains — especially those regarding wage-earners — and by the growth of real wages. Meanwhile, interest rates recorded a further (though smaller) reduction — strengthening the reduction exhibited in previous years — hence maintaining an expansionary impact on households' consumption and investment decisions. It should be noted that bank credit to private individuals for purposes other than housing kept growing quite strongly up to May (table 3).

Qualitative indicators point towards a strong growth of private consumption in the first half of 1999. The coincident indicator of consumption of the Banco de Portugal, which synthesises this information, grew in the first quarter of 1999 above the previous year as a whole (chart 10). In the first half-year, the balance of respondents regarding retail trade turnover increased from the previous half (chart 11). Consumer good manufacturing industrials' appraisal of domestic demand also remained on average at high levels in this period. However, both indicators point towards some private consumption slowdown in the second quarter.

Up to April, consumer good imports grew 8.6 per cent in nominal terms from the corresponding period in 1998 (18.1 per cent growth in 1998 as a whole)[7][8]. However, imports of transport material — where purchases abroad of light passenger cars are included — grew quite strongly (18.9 per cent year-on-year in the first four months in 1999), which shall be related with the acceleration of households' expenditure on this kind of goods. Up to April, the industrial production of consumer goods slowed down — the Industrial Production Index (IPI) of these goods fell 2.2 per cent, which compares with a 5.0 per cent growth in the last quarter of 1998[9]. This

(7) Except mentions otherwise, all rates of change referred in the text are year-on-year rates of change.

(8) The rates of change of foreign trade data for 1998 and 1999 are calculated by comparing the figures of the first versions of the period with equally preliminary figures for the same period in the previous year. As discussed below, the rates of change of exports and imports calculated for 1999 using this procedure tend to underestimate the true rates of change of these variables.

(9) The Turnover Index of the consumer goods industry also slowed down, decreasing 1.6 per cent in the January to April period (1.5 per cent growth in the last quarter of 1998).

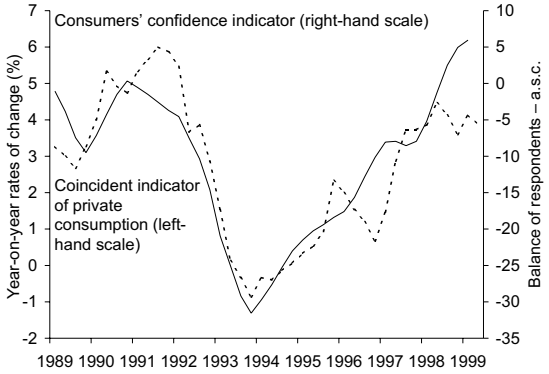
Table 3

DEMAND INDICATORS

		1997	1998	1999[a]	Last	1997		1998		1999	1997				1998				1999	
					month	1st H	2nd H	1st H	2nd H	1st H	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q
Private consumption																				
Retail trade turnover index	yrc	5.1	11.1	7.9	(Mar)	4.5	5.6	12.3	10.2		4.5	4.5	4.9	6.3	11.3	13.1	9.5	10.7	7.9	
Registrations of light passenger vehicles	yrc	7.3	13.2	19.6	(Jun)	7.6	6.9	8.7	18.1	19.6	6.4	8.7	7.4	6.4	6.3	11.0	11.7	24.5	23.3	16.1
Sales of light passenger vehicles (incl. 4x4)	yrc	-0.8	18.1	24.7	(Jun)	-2.7	1.5	13.6	23.0	24.7	-3.3	-2.1	-1.3	4.0	5.4	21.7	23.6	22.5	35.0	15.9
Bank credit to private individuals (excl. mortgage lending)	yrc	22.9	23.0	29.0	(May)	22.4	22.9	18.0	23.0		22.4	22.4	20.9	22.9	17.9	18.0	18.9	23.0	18.3	
Investment																				
Cement sales	yrc	11.9	4.7	2.1	(Jun)	19.5	5.3	4.6	4.7	2.1	22.6	16.8	9.4	0.9	10.0	-0.2	0.2	9.9	-0.6	4.8
Contracted works	yrc	26.1	-26.8	-28.9	(Jun)	66.9	-4.8	-26.4	-27.4	-28.9	73.1	61.5	-10.7	1.2	-14.7	-37.3	-13.1	-40.3	-28.3	-29.6
Mortgage lending to private individuals	yrc	27.4	34.8	35.2	(May)	25.7	27.4	31.4	34.8		25.8	25.7	28.0	27.4	29.5	31.4	32.6	34.8	36.5	
Bank credit to corporations for investment purposes	yrc	26.6	19.0	20.7	(May)	22.5	26.6	25.8	19.0		21.2	22.5	30.1	26.6	21.7	25.8	12.3	19.0	20.7	
IPI of equipment goods, excl. manufacturing of cars and waggons	yrc	-0.1	8.8	-0.2	(Apr)	-1.4	1.3	9.6	8.0		-0.4	-2.4	1.0	1.6	8.6	10.5	8.3	7.6	0.6	
Equipment good imports excl. transport material [b]	yrc	14.7	18.9	6.7	(Apr)															
Equipment good exports excl. transport material [b]	yrc	22.2	17.9	27.5	(Apr)															
Sales of light commercial vehicles	yrc	20.9	11.9	5.2	(Jun)	27.0	15.6	8.8	15.0	5.2	28.3	25.6	19.6	12.8	14.6	2.8	6.8	21.3	-0.5	11.6
Sales of heavy commercial vehicles	yrc	32.0	10.6	33.1	(Jun)	28.3	35.4	18.2	4.1	33.1	14.7	41.0	44.5	28.8	26.6	11.8	7.1	1.6	42.8	24.6
Foreign trade [b]																				
Total exports	yrc	10.5	7.4	-1.4	(Apr)	6.1	15.1	12.2	2.6		2.7	9.5	12.7	17.4	13.7	10.7	6.8	-1.3	0.1	
Consumer good exports	yrc	7.9	5.8	-3.0	(Apr)															
Equipment good exports	yrc	12.6	13.1	9.5	(Apr)															
Intermediate good exports	yrc	12.8	6.8	-7.7	(Apr)															
Fuel exports	yrc	9.7	-27.8	-25.7	(Apr)															
Total imports	yrc	13.1	13.1	3.1	(Apr)	10.8	15.4	16.9	9.4		9.0	12.6	16.0	14.9	16.7	17.0	10.8	8.2	3.9	
Consumer good imports	yrc	11.3	18.1	8.6	(Apr)															
Equipment good imports	yrc	14.2	21.3	12.7	(Apr)															
Intermediate good imports	yrc	12.8	10.0	-8.8	(Apr)															
Fuel imports	yrc	15.2	-22.4	-1.0	(Apr)															

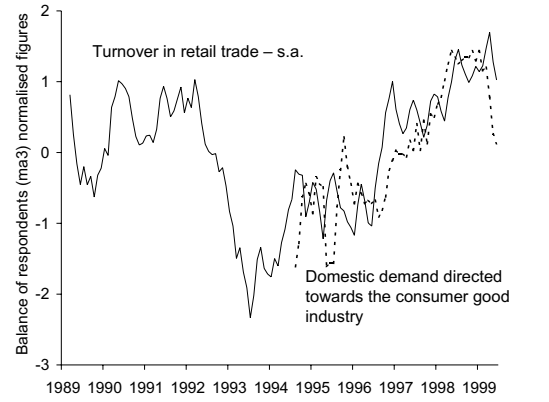
Source: *INE, Direcção-Geral de Viação,* ACAP, Cimpor, Secil and ANEOP.
yrc = year-on-year rate of change.
(a) Accumulated figures up to the latest month available.
(b) The rates of change of exports and imports result from comparing definitive versions in 1997; from comparing preliminary declared values for the period January-December, in 1998; and from comparing preliminary declared values for the period January-April, in 1999. Regarding 1999 see footnotes (14) and (16) to this text.

Chart 10
COINCIDENT INDICATOR OF PRIVATE CONSUMPTION AND CONSUMERS' CONFIDENCE INDICATOR



Source: European Commission and *Banco de Portugal*.

Chart 11
QUALITATIVE INDICATORS OF PRIVATE CONSUMPTION



Source: INE, "Monthly Trade Survey" and "Monthly Manufacturing Industry Survey".

slowdown was concentrated in the production of non-durable consumer goods, and shall be related to a great extent with the behaviour of exports. In the January to April period, nominal consumer good exports fell 3.0 per cent (5.8 per cent growth in 1998).

The consumption of durable goods remained particularly strong, according to retailers' appraisal of turnover and activity in this segment. Worth noting is that purchases of passenger vehicles grew 19.6 per cent in the first half of 1999, measuring by the number of licenses issued by the *Direcção-Geral de Viação* (13.2 per cent growth in 1998 as a whole)[10]. The Retail Trade Turnover Index of furniture, lighting and other house articles grew 6.9 per cent in the first quarter of 1999 (10.9 per cent in 1998 as a whole); it should be noted that this kind of expenditure continues to be related with the dynamism of households' investment in housing.

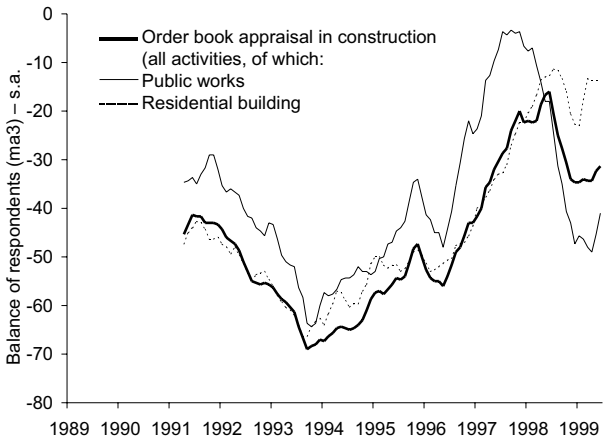
Investment shall have slowed down in the first months of 1999. This slowdown shall have been widespread to GFCF in construction and GFCF in equipment. The behaviour of GFCF is in line with the slowdown projected in the March EB for the year as a whole. Meanwhile, the information regarding the appraisal of the level of stocks, presented in the Monthly Manufacturing Industry and Monthly Trade Surveys, indicate a stock accumulation in the first half of the year.

Regarding GFCF in construction, the indicators of consumption of materials suggest that the slowdown recorded in 1998 proceeded in the first half of 1999. In the first six months of the year, cement sales grew 2.1 per cent (4.7 per cent in the previous half-year). The slowdown continued to be due to the behaviour of the public works sub-sector, where the value of contracted works decreased again in the first five months of the year (table 3). However, the Construction and Public Works Monthly Survey shows that the order book in this sub-sector recovered slightly in the last months of the first half of 1999 (chart 12). In turn, the order book in the residential building sub-sector continued to exhibit high levels. Investment in this sub-sector continued to be driven by the lagged effects of interest rate reductions, the behaviour of households' disposable income and consumers' high confidence levels. In the first months of 1999, mortgage lending to private individuals continued to exhibit very strong growth rates (table 3). Still uncertain are the effects of the changes to the subsidised credit to housing purchasing and building system[11], introduced to prevent excessive usage and frauds.

(10) It should be noted that the expenditure on new passenger cars also accelerated (21.2 per cent growth in the first half of 1999, against 16.5 per cent in 1998 as a whole).

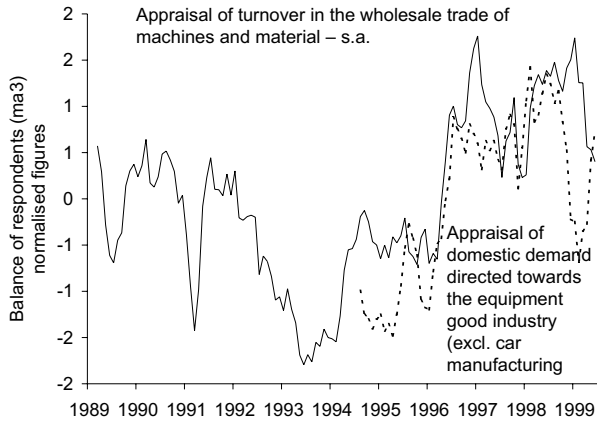
(11) These changes comprises:
- The establishment of maximum purchasing or construction values of housing (Decree-Law no. 349/98 of 11 November, with effects from 90 days after this date);
- The impossibility of contracting other loans for the same purpose under any credit regime, as well as the impossibility of disposing the asset as a guarantee in raising loans with other purposes, before the 5 years following to the date of the mortgage or construction lending contract established under the subsidised lending regime, (Decree-Law no. 137-B/99 of 22 April, with effects from 60 days after this date).

Chart 12
QUALITATIVE INDICATORS OF INVESTMENT IN CONSTRUCTION



Source: *INE*, "Construction and Public Works Monthly Survey".

Chart 13
QUALITATIVE INDICATORS OF INVESTMENT IN MACHINERY



Source: *INE*, "Monthly Manufacturing Industry Survey" and "Monthly Trade Survey".

Several factors account for the slowdown of GFCF in equipment recorded in the first months of 1999. Confidence in the industrial sector continued to decrease in the period, reflecting a less favourable behaviour of expectations regarding overall demand, and especially of external demand. The rate of productive capacity utilisation in industry decreased in the first quarter of the year (table 4), as well as the percentage of industrials indicating equipment shortage as a factor limiting activity [(12)]. However, the behaviour of interest rates continued to provide an incentive to investment expenditure. Between December 1998 and June 1999, interest rates on loans to non-financial corporations exhibited a further reduction. Hence, bank credit to non-financial corporations for investment purposes continued to grow strongly (20.7 per cent in May, compared with 19.0 per cent in December 1998).

The appraisal of wholesalers of machines and material for the agriculture, industry and trade sectors regarding turnover decreased in the first half of the year, suggesting a lower dynamism of GFCF in machines in the period (chart 13). The appraisal of the industrials of equipment goods excluding cars regarding the domestic demand directed towards their industries also behaved less favourably on average in the first half of 1999. In the first four months of 1999, the production of investment good industries[(13)] slowed down (0.2 per cent reduction, against a 7.6 per cent growth in the last quarter of 1998). In the January to April 1999 period, purchases abroad of equipment goods excluding transport material grew 6.7 per cent in nominal terms (18.9 per cent in 1998), while exports grew 27.5 per cent (17.9 per cent in 1998) (table 3).

Investment in transport material continued to grow strongly in the first half of the year. Sales of light commercial vehicles slowed down in the period (5.2 per cent growth against 15.0 per cent in the second half of 1998), while sales of heavy commercial vehicles accelerated strongly (33.1 per cent growth, against 4.1 per cent in the previous half-year) (table 3).

Net external demand maintained a negative contribution to growth in the first months of 1999, which continues to reflect a more significant growth of domestic demand in Portugal than abroad. According to the preliminary data available, nominal merchandise exports fell 1.4 per cent up to April, while nominal imports grew 3.1 per cent. However, these changes should be interpreted with caution,

(12) The percentage of industrials referring equipment shortage as an obstacle to activity decreased to 6 per cent in the first quarter of 1999 (11 per cent in the same period of 1998).

13) Excluding the assemblage of automobiles and waggons, trailers and semi-trailers.

Table 4

SUPPLY INDICATORS

		1997	1998	1999[(a)]	Last months	1997		1998		1997				1998				1999
						1st H	2nd H	1st H	2nd H	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q	1st Q
Industry																		
Industrial production index (base-year: 1995)																		
Manufacturing industry	yrc	2.9	3.7	0.4	(Apr)	3.2	2.6	4.2	3.2	3.7	2.7	1.6	3.6	4.4	3.9	3.9	2.6	0.8
Consumer good industry	yrc	-0.6	5.6	-2.2	(Apr)	0.7	-2.0	5.2	6.0	2.0	-0.5	-2.0	-1.9	4.1	6.2	6.9	5.0	-0.9
Equipment good industry	yrc	0.7	5.5	1.2	(Apr)	-4.2	6.5	8.0	2.8	-5.2	-3.3	-1.7	13.9	8.1	7.9	10.2	-2.9	2.4
Intermediate good industry	yrc	4.4	5.8	5.9	(Apr)	3.5	5.4	6.0	5.7	3.9	3.2	2.8	7.9	6.0	5.9	6.1	5.4	5.5
Turnover index (base-year: 1995)																		
Manufacturing industry	yrc	5.9	6.2	-1.4	(Apr)	4.0	7.7	8.9	3.5	1.2	6.7	7.2	8.2	11.1	6.9	5.4	1.8	-1.3
Consumer good industry	yrc	2.8	6.0	-1.6	(Apr)	1.0	4.5	8.5	3.6	-1.5	3.6	3.9	5.2	10.6	6.6	5.7	1.5	-1.8
Equipment good industry	yrc	8.1	12.2	1.9	(Apr)	1.3	15.1	17.7	7.2	-2.3	4.6	9.1	20.3	19.4	16.3	16.6	-0.1	5.3
Intermediate good industry	yrc	6.6	4.8	-0.3	(Apr)	6.7	6.5	6.5	3.2	3.2	10.2	6.6	6.5	8.9	4.4	3.0	3.3	-0.6
Rate of productive capacity utilisation																		
Manufacturing industry	%	81	82	80	(1st Q)	80	81	82	81	80	80	82	81	83	81	81	82	80
Consumer good industry	%	79	79	79	(1st Q)	78	79	79	80	77	79	81	78	80	78	80	80	79
Equipment good industry excl. car manufacturing	%	84	87	85	(1st Q)	83	86	87	87	84	82	86	85	85	90	89	85	85
Intermediate good industry	%	81	83	80	(1st Q)	80	82	83	82	80	81	83	82	84	83	82	83	80
Construction																		
Rate of productive capacity utilisation	%	79	79	73	(1st Q)	80	79	81	77	77	82	81	77	82	79	77	76	73

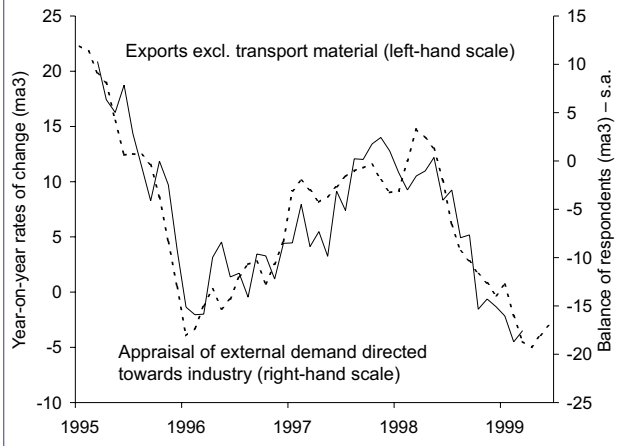
Source: *INE.*

yrc = year-on-year rate of change.

Note:

(a) Accumulated figures up to the latest month available.

Chart 14
MERCHANDISE EXPORTS AND EXTERNAL DEMAND



Source: *INE*, "International Trade Statistics" and "Monthly Manufacturing Industry Survey".

since the foreign trade data for 1999 have been subject to considerable revisions(14). These revisions exceed by far those recorded in the same periods in previous years and result from the fact that the data for 1999 are being disclosed earlier than usual(15). Therefore, the first version of the 1999 data is no longer fully comparable with the first version of the corresponding period of 1998; in fact, the rates obtained from comparing these first versions underestimate the nominal changes effectively recorded by both exports and imports in 1999.

According to manufacturing industrials' appraisal, their external order book recovered slightly late in the first half of 1999, after further slowdown in the first months of the year. In overall terms, merchandise exports continued to behave alike this indicator in the first months of 1999 (chart 14). If the recovery of merchandise sales abroad in the second quarter —suggested by industrials' appraisal — and the activity acceleration expected for the euro area economies (concentrating a significant part of Portuguese trade flows with abroad) in the second half of 1999 effectively take place, the growth of exports of goods and services in 1999 as a whole can be expected to meet the March EB forecast.

Merchandise imports also slowed down in the year to April, due to the lower dynamism of overall demand. The slowdown of total nominal imports in the period resulted from the nominal reduction of purchases of intermediate goods — reflecting not only the slowdown of industrial activity but also the behaviour of the international prices of these goods — and the more moderate growth of consumer good and equipment good imports (table 3). Nevertheless, imports of transport material (where purchases abroad of light passenger vehicles are included) continued to grow strongly.

The behaviour of demand is corroborated by the analysis of supply indicators. In the first half of 1999, activity in the main sectors continued to record different behaviours (chart 15). The services sector shall have continued to grow strongly — especially the retail and wholesale trade sectors — translated into significant employment creation. On the contrary, activity in manufacturing industry and construction slowed down on average in the first half-year.

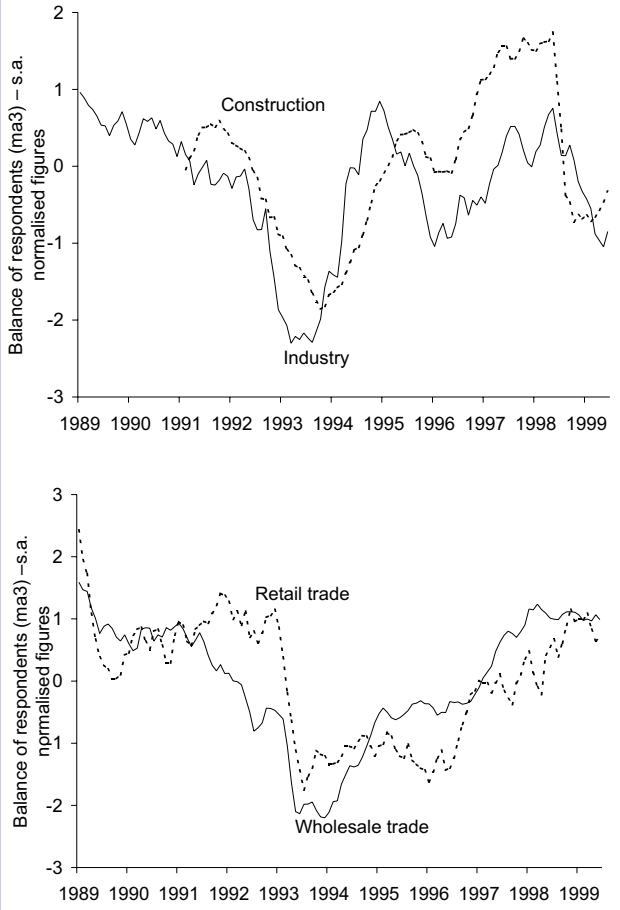
Production in industry decelerated in the first half of 1999. According to the IPI in manufacturing industry, production grew 0.4 per cent in the January to April period (2.6 per cent growth in the fourth quarter of 1998)(16). This slowdown reflected the behaviour of consumer good industries (table 4). The Turnover Index in manufacturing industry conveys a similar behaviour. This indicator fell 1.4 per cent in the first four months of 1999 (1.8

(14) For example, the monthly year-on-year rate of change of exports in January was revised upwards by 4.1 p.p. between the January and the April publications. The year-on-year rate of change of exports in February was revised upwards by 5.8 p.p. and the March rate was revised 4.7 p.p.. Likewise, the year-on-year rate of change of imports in January was revised upwards by 3.6 p.p. between the January publication and the April publication. The February and March rates were also revised upwards, by 4.9 and 1.0 p.p. respectively.

(15) In 1999, the first foreign trade data is disclosed up to the tenth week following to the end of the corresponding month, as opposed to the usual 12-week lag.

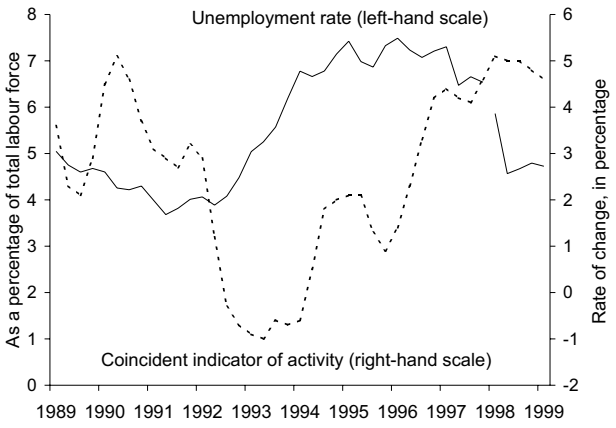
(16) It should be noted that the data for the IPI of manufacturing industry for 1998 and 1999 have recorded significant revisions, due to the replacement of non-response estimates (which existed by the time of the calculation of the index) by the answers of corporations meanwhile received by the INE. For instance, the annual average rate of change of the IPI in manufacturing for 1998 was revised from 2.9 per cent in the March publication to 3.7 per cent in the April publication. Likewise, the rate of change of the IPI for the first quarter of 1999 was changed from -0.9 per cent in the March publication to +0.8 per cent in the April publication.

Chart 15
ACTIVITY APPRAISAL - PRODUCTION



Source: *INE*, "Monthly Manufacturing Industry Survey", "Construction and Public Works Monthly Survey" and "Monthly Trade Survey".

Chart 16
UNEMPLOYMENT RATE AND COINCIDENT INDICATOR



Source: *Banco de Portugal* and *INE*, "Employment Survey".

per cent increase in the last quarter of 1998). As a result, the rate of productive capacity utilisation decreased to 80 per cent in the first quarter of 1999 (83 per cent one year before). However, industrials' appraisal of the behaviour of production points towards a recovery of activity in this sector late in the first half-year (chart 16). This appraisal is linked to a more favourable assessment of the behaviour of the external order book.

Activity in construction slowed down in the first half of 1999. This development is reflected in the level of productive capacity utilisation in the sector, which fell to 73 per cent in the first quarter of 1999 (82 per cent in the same period in 1998). However, activity appraisal recorded a slight improvement in the second quarter. This reflected a slight recovery of the order book in the public works sub-sector, alongside the maintenance of the high buoyancy exhibited by the housing sub-sector. Credit granted to the construction sector continued to grow very strongly (around 33 per cent in May 1999, unchanged from December 1998).

Activity in the services sector maintained its dynamism in the first months of 1999. Employment growth in this sector in the first quarter (4.4 per cent) points towards this. Activity in trade evolved favourably over the course of the first six months of 1999, according to the available qualitative data (chart 16). Wholesalers' appraisal of activity remained quite stable in the period. In retail trade, activity appreciation stood on average above the levels recorded in the second half of 1998. This behaviour shall be related with the dynamism of private consumption in the period.

5. LABOUR MARKET

Labour market variables continued to reflect the cyclical conditions of the economy. Indeed, total employment, the number of wage earners and the participation rate increased, alongside the reduction of unemployment. The behaviour of economic activity allowed for a further reduction in the unemployment rate in the first quarter of 1999. According to the Employment Survey of the INE, the unemployment rate decreased to 4.7 per cent in the first quarter of 1999, 1.1 p.p. less than one year before and standing below the 1998 average

(5.0 per cent). This development confirms the downward trend the unemployment rate has followed since the second half of 1996 (chart 16).

As referred before[17], the new Employment Survey of the INE gave rise to a break in the unemployment rate series between 1997 and 1998. An evidence of this break is provided by the 1998 unemployment rate estimate yielded by an Okun law[18], which exceeds by about 1.0 p.p. the observed unemployment rate. Taking this series break into account, it is possible to obtain estimates for the natural unemployment rate consistent with the unemployment rate series given by the new Survey. These estimates stand between 4.5 and 5.0 per cent[19]. Therefore, the current level of the unemployment rate stands close to the lower limit of the interval estimated for the natural unemployment rate. However, the change in the economic regime raises some uncertainty regarding the nature of this estimate.

In the first quarter of 1999, the number of unemployed individuals fell 18.5 per cent. This was due to a reduction in the number of new job-seekers (by 15.1 per cent) but especially to the fall in the number of first job-seekers (33.2 per cent reduction). Long-term unemployment also continued to decrease as a share of total unemployment in the first quarter of the year.

In the first quarter of 1999, the total participation rate — which generally behaves pro-cyclically — increased 0.4 p.p. from the corresponding quarter of 1998, to 50.5 per cent. Taking into account only individuals aged between 15 and 64 years old, the participation rate increased in the same period from 70.3 to 70.5 per cent.

Total employment grew 2.3 per cent in year-on-year terms in the first quarter of the year. The number of wage earners grew more (4.1 per cent), which reflects the increase in the number of fixed-term contracted workers (12.8 per cent). The number of permanently contracted workers also increased (2.1 per cent). On the contrary, the number of self-employed workers contributed negatively to the change in employment in the quarter, decreasing 2.8 per cent.

In the first quarter of 1999, employment grew in the services sector and the construction sector, while decreasing in industry and in agriculture and fishing, according to the Employment Survey of the INE. Stress should be laid on the contribution of the services sector to the overall change in employment — 2.2 p.p., in a total of 2.3 per cent. Worth highlighting is the growth of employment in wholesale and retail trade — 5.5 per cent - which shall be related with the strong growth these sectors exhibited. In manufacturing industry, employment decreased 0.6 per cent.

The change in wages implicit in collective agreements for the private sector reached 3.3 per cent in the first half of 1999, compared with 3.1 per cent in the same period in 1998. 800.9 thousand workers were covered by these collective agreements, slightly less than one year before (1,041.5 thousands).

6. BALANCE OF PAYMENTS AND NET EXTERNAL POSITION

In the January to April 1999 period, the current plus capital account balance rose 451.8 million euros (m.e.), to 2,115.5 million euros (table 5). This increase in the borrowing requirements of the Portuguese economy vis-à-vis the rest of the world was again translated into a growth of the external indebtedness of the General Government and of the resident monetary sector.

As throughout 1998, the increase of the Current Account balance greatly reflected the growth of the trade deficit[20], from 415.5 m.e. to 3,743.9 m.e. in the first four months of 1999. Merchandise imports slowed down in this period, though continuing to grow above exports — in line with the growth differential between domestic demand in Portugal and in its leading trade partners. In the same period, the Services surplus rose 100.5 m.e.

(17) See for instance the March 1999 *Economic Bulletin* article.

(18) The Okun law relates the unemployment rate (of the former Employment Survey) with the deviation of GDP from a linear trend. Up to 1997, this relationship always predicted unemployment rate levels close to those observed, hence being a particularly stable relation.

(19) This interval is obtained subtracting to the natural unemployment rate estimates — calculated using the unemployment series from the former Employment Survey of the INE (5.5-6.0 per cent) — the estimated size of the series break (0.9 to 1 p.p.).

(20) The foreign trade data used in the trade balance in the period January-April 1999 are subject to significant revisions due to the change in the period of compilation of the results by the *INE*. See footnotes 14 and 15.

Table 5

BALANCE OF PAYMENTS – Transactions basis

Million euros

	January-April 1998			January-April 1999		
	Debit	Credit	Balance	Debit	Credit	Balance
Current account	**15 667.5**	**13 407.6**	**-2 259.9**	**15 542.5**	**12 898.8**	**-2 643.7**
Merchandise f.o.b.	11 223.9	7 895.5	-3 328.4	11 583.4	7 839.5	-3 743.9
Services	2 074.5	2 131.9	57.4	1 816.9	1 974.8	157.9
Transport	552.5	435.5	-117.0	544.5	404.4	-140.2
Travel	650.2	1 174.9	524.7	613.2	1 075.0	461.8
Insurance services	31.4	19.6	-11.8	33.3	25.1	-8.2
Royalties and license fees	99.7	7.6	-92.0	83.5	6.9	-76.7
Other services	639.6	463.6	-176.0	639.6	441.6	-35.4
Government operations	101.1	30.7	-70.5	65.4	21.9	-43.5
Income	1 652.3	1 413.3	-239.0	1 535.3	1 425.5	-109.8
Compensation of employees	30.9	37.7	6.8	32.2	40.0	7.8
Investment income	1 621.4	1 375.6	-245.8	1 503.1	1 385.5	-117.5
Current transfers	716.8	1 966.9	1 250.1	606.9	1 659.0	1 052.1
Official transfers	538.6	894.0	355.5	423.3	545.9	122.6
Private transfers	178.2	1 072.9	894.6	183.6	1 113.1	929.6
Capital account	**55.4**	**651.7**	**596.2**	**68.7**	**596.9**	**528.2**
Transfers	48.3	640.5	592.2	59.1	587.9	528.8
Official transfers	5.1	590.7	585.6	4.5	552.4	547.9
Private transfers	43.3	49.8	6.5	54.7	35.5	-19.1
Acquisition / disposal of non-produced non-financial assets	7.1	11.2	4.1	9.6	9.0	-0.6
Financial account	**102 134.9**	**104 593.2**	**2 458.2**	**227 565.0**	**230 582.9**	**3 018.0**
Direct investment	3 025.7	2 935.6	-90.0	4 976.9	4 855.8	-121.1
Portuguese investment abroad	738.3	259.9	-478.5	1 786.3	1 345.9	-440.4
Foreign investment in Portugal	2 287.3	2 675.7	388.4	3 190.6	3 509.9	319.3
Portfolio investment	53 869.9	51 998.3	-1 871.5	57 605.9	57 626.6	20.7
Assets	36 122.5	32 634.0	-3 488.6	37 597.5	35 216.8	-2 380.7
Liabilities	17 747.3	19 364.4	1 617.0	20 008.4	22 409.9	2 401.4
Other investment	44 485.2	48 533.8	4 048.6	152 539.4	155 316.6	2 777.3
Assets	28 233.2	27 551.9	-681.3	56 949.8	58 609.0	1 659.2
Liabilities	16 252.0	20 982.0	4 729.9	95 589.6	96 707.7	1 118.1
Financial derivatives	173.8	239.5	65.7	331.3	359.8	28.5
Reserve assets	580.4	886.0	305.6	12 111.5	12 424.1	312.6
Monetary gold	0.3	0.0	-0.3	0.0	141.4	141.4
Special drawing rights	4.4	0.0	-4.4	30.0	119.9	89.8
Reserve position in the IMF	145.7	5.0	-140.7	473.4	510.0	36.6
Foreign exchange	429.9	880.9	451.0	11 603.2	11 649.7	46.5
Errors and omissions			**-794.6**			**-902.5**
Pour mémoire:						
Current plus Capital Account	**15 722.9**	**14 059.3**	**-1 663.7**	**15 611.2**	**13 495.7**	**-2 115.5**

(from 57.4 to 157.9 m.e.), greatly as an outcome of the lower deficit of technical assistance services. In the first months of 1998, imports of these services had grown strongly due to the implementation of Expo-98. The Income Account deficit narrowed 129.2 m.e., to 109.8 m.e., continuing to reflect the behaviour of investment income — especially portfolio investment income. Up to April 1999, portfolio investment income received from abroad exceeded that paid, contrary to what occurred one year before. On the other hand, the deficit of income due to deposit operations continued to widen in the first months of 1999, in line with the increase in banks' net foreign liabilities. The Current Transfers balance decreased 198.0 m.e., chiefly reflecting the smaller official transfers received by Portugal up to April 1999 when compared with the same period of 1998. This reduction was linked to delays in receipts from the European Social Fund. The Capital Account surplus reached 528.2 m.e., in the period January-April 1998.

The Financial Account presented a 3,018.0 m.e. surplus in the first four months in 1999, 559.7 m.e. higher than one year before. As in 1998, General Government and the resident monetary financial institutions rendered the greatest contribution to this capital inflow into the Portuguese economy.

In the January to April 1999 period, direct investment operations between Portugal and the rest of the world originated a 121.1 m.e. deficit, compared with 90.0 m.e. one year before. In net terms, Portuguese direct investment abroad decreased slightly (by 38.1 m.e.), but foreign direct investment in Portugal also decreased (by 69.1 m.e.).

In the first four months of 1999, portfolio investment operations between Portugal and the rest of world originated a virtually null balance (20.7 m.e. surplus), contrasting with the 1,871.5 m.e. deficit recorded in the same period of 1998. On the one hand, net investments of residents in foreign securities decreased 1,107.9 m.e.. On the other hand, non-residents' net investments in Portuguese securities increased 784.4 m.e. from the same period in 1998. Regarding Portuguese portfolio investment abroad, purchases of foreign bonds were smaller than one year before (502.2 m.e. and 3,056.1 m.e., respectively). Meanwhile, purchases of equity securities (made especially by monetary financial institutions) increased from the same period in 1998. The bulk of non-residents' portfolio investment in Portugal was directed towards public debt bonds. Purchases of these securities by non-residents increased 2,066.2 m.e. from one year before. This greater capital inflow resulted basically from the net investment in bonds issued in the domestic market (1,550.8 m.e.), which contrasts with the net disinvestment recorded in the corresponding period of 1998 (-512.5 m.e.). In the equity securities segment, the net disinvestment recorded contrasts with the strong investment of one year before (-232.9 m.e. against 1,019.7 m.e., respectively).

In the first four months of 1999, financial operations included under "Other investment" (basically loans and deposits) again originated significant capital inflows into the Portuguese economy (2,777.2 m.e.), though smaller than those recorded in the period January-April 1998 (4,048.6 m.e.). However, it should be noted that the comparability between these figures is distorted by the change to the concept of reserves of Monetary Authorities on 1 January 1999 (see box – "*Impact of the Portuguese Participation in the Economic and Monetary Union on the Balance of Payments Statistics*").

Monetary financial institutions accounted for the bulk of "Other Investment" capital inflows. Operations carried out directly by these institutions with the rest of the world — mostly loans and deposits — gave rise to a 2,375.1 m.e. capital inflow, 1,569.1 m.e. smaller than one year before. However, it should be noted that from January 1999, a significant part of these operations is recorded in the Balance of Payments as increases to Monetary Authorities' liabilities in the context of the TARGET system (see box– "*Impact of the Portuguese Participation in the Economic and Monetary Union on the Balance of Payments Statistics*"). Indeed, in the period January-April 1999, the liabilities of Monetary Authorities due to operations carried out through the TARGET system increased 2,351.4 m.e.. In the same period, Monetary Authorities' assets recorded under Other Investment (872.1 m.e.) also increased, greatly resulting from the transfer of reserve assets to the European Central Bank in January. Finally, operations carried out by non-financial corporations and private individuals recorded under Other Investment gave rise to a net capital outflow greater than one year before (1,575.6 m.e. and 225.2 m.e., respectively). These

THE IMPACT OF THE PORTUGUESE PARTICIPATION IN THE ECONOMIC AND MONETARY UNION ON THE BALANCE OF PAYMENTS STATISTICS

The balance of payments statistics compiled and disclosed by the Banco de Portugal were subject to significant changes in both the presentation and in the coverage and quality of the data used, incorporating the methodological recommendations of the 5th edition of the International Monetary Fund Balance of Payments Manual. These changes were explained in the March 1999 Economic Bulletin. From January 1999 onwards, the Portuguese participation in the euro area led to other important changes to the recording of some financial operations in the Balance of Payments, hence in the Net External Position Statistics.

Firstly, the concept of Reserve Assets of Monetary Authorities was substantially changed, in the context of the participation of Portugal in the Economic and Monetary Union, and reflecting the recommendations of the European Central Bank (ECB). From January 1999, the concept of "Reserve Assets" includes only the assets of Monetary Authorities that simultaneously meet both of the following conditions: assets vis-à-vis euro area non-residents and assets denominated in non-euro area currencies. This implies a break in the series of Reserve Assets from January 1999 onwards. The item "Other Investment — Assets of Monetary Authorities" includes the participation of Portugal in the ECB (amounting to 96.2 m.e.), as well as the reserve assets transferred to the ECB in January (valued 961.6 m.e.). Transactions of all other assets in the form of loans and deposits of Monetary Authorities vis-à-vis residents in other euro area countries — regardless of the currency of denominated — and vis-à-vis euro area non-residents (provided they are denominated in euro area currencies) are from now on included under item "Other Investment — Assets of Monetary Authorities". This is also the case of securities with these characteristics that are traded by the Monetary Authorities: they are no longer classified as Reserves, being hereafter recorded as Portfolio Investment — Assets of Monetary Authorities(1). The treatment given to Monetary Authorities' foreign assets and liabilities at the level of Net External Position was also changed, in tune with the changes to the recording of the corresponding flows in the balance of payments (table 1).

Table 1

STATISTICAL TREATMENT OF RESERVE ASSETS OF MONETARY AUTHORITIES

Positions on 31 March 1999

Million euros

	Reserve concept up to 31.12.1998	Reserve concept after EMU
Portfolio investment	-	6 338
Other investment	96	1 504
Claims on the ECB	96	1 058
Other assets	-	446
Reserve assets	19 963	12 217
Total	20 059	20 059

Second, on 1 January 1999 TARGET (Trans-European Automated Real-Time Gross Settlement Express Transfer System) became operational. The TARGET system allows to carry out cross-border payments under speed and safety conditions identical to those of domestic systems, which constitutes a key aspect of the efficient conduction of monetary policy operations of the European System of Central Banks (ESCB), and to the unity of the euro money market. The TARGET system plays a central role in the management of liquidity in euros, allowing a fast circulation of high amounts denominated in euros between European Union Member-States.

International settlements carried out through the TARGET involve two settlement agents. One of these is the National Central Bank (NCB) of the monetary financial institution of country A, which orders the pay-

(1) This implies that also the items "Other Investment" and "Portfolio Investment" exhibit breaks in the series from January 1999 onwards.

(2) As a counterpart, the account that the monetary financial institution has in the NCB of country A is debited.

ment to country B[2]; the other is the NCB of the agent receiving the payment. The NCB of country A constitutes a liability vis-à-vis country B, while in the NCB of country B this operation originates a claim over country A. In terms of the Balance of Payments, these operations are recorded as changes in the foreign assets or liabilities of Monetary Authorities in the Financial Account, under item "Other Investment", sub-heading Loans/Currency and Deposits[3]. In the period January-April 1999, operations carried out through the TARGET system gave rise to significant net capital "inflows" into the Portuguese economy over 2,350 m.e. Resident monetary financial institutions began to use the TARGET system to carry out part of their financial operations with other banks in the European Union. In this period, the amount of settlements payable to abroad exceeded by far payments receivable from abroad. This resulted in an increase in the net foreign liabilities of the Banco de Portugal recorded under Other Investment.

(3) Recall that prior to the functioning of the TARGET system, this kind of operations only affected the foreign assets/liabilities of resident monetary financial institutions.

entities increased their investments abroad and recorded a reduction in their liabilities — as opposed to the increase seen in the same period of 1998 — resulting from the net redemption of both short- and long-term loans.

Over the course of the first quarter of 1999, and in line with the borrowing requirement, the net external position[21] of the Portuguese economy continued to decrease. At the end of March 1999, the Portuguese economy stood as a net debtor of 3,226.3 m.e., compared with a net creditor position of 391.3 m.e. at the end of 1998. This development reflects the reduction in the monetary sector's net foreign assets, since the non-monetary sector reduced its debtor position in the first three months of 1999. At the end of March, Portuguese banks' external position amounted to -11,193.4 m.e. (-8,666.3 at the end of December 1998), chiefly reflecting the strong growth of banks' short-term net foreign liabilities. The net foreign assets of Monetary Authorities also decreased in the first quarter of the year (from 16,009.4 m.e. at the end of 1998 to 14,019.5 m.e. at the end of March), as an outcome of the significant increase of these entities' foreign liabilities. However, as mentioned above, a significant share of this increase in Monetary Authorities' liabilities (about 80 per cent) is due to financial operations carried out in the context of the TARGET system, while the remainder continued to reflect the gold repurchase agreements.

(21) However, it should be noted that a range of foreign assets and liabilities still do not enter the calculation of the net external position. Indeed, no information available exists on end--of-period positions resulting from direct investment operations. In addition, the security portfolios considered in the net external position include only long-term debt securities and short-term securities, therefore not including equity securities.

7. PUBLIC FINANCE

According to the Monthly Bulletin of the *Direcção-Geral do Orçamento*, the State's tax revenue, on a Public Accounts basis, grew 10.0 per cent in the January to May 1999 period (table 6). For the sake of comparison it should be mentioned that the 1999 Budget forecast represents a growth rate of 7.6 per cent relative to the 1998 budgetary execution estimate (used in the preparation of the 1999 State Budget) and 6.8 per cent relative to the 1998 actual budgetary execution.

In the first five months of the year, revenue from income taxes rose by 7.4 per cent relative to the same period of last year. The rates of growth of IRS and IRC reached respectively 2.6 and 15.4 per cent. However, the collection of these taxes is not directly comparable with the last year figures, since they are influenced by different intra-annual patterns.

In the same period, taxes on goods and services grew 12.0 per cent from one year before. This behaviour partly reflects the strong growth of domestic demand. In the year as a whole, VAT and the Car Tax (IA) are expected to exceed by far the 1999 State Budget projections. However, the revenue from the Tax on Oil Products (ISP) shall record a sharp slowdown over the course of the

Table 6

STATE REVENUE

Million euro

	1998			1999			Growth rates	
	Jan-May	Exec.	(1)/(2)x100	Jan-May	State Budget	(4)/(5)x100	Jan-May	State Budget-99 Exec.98
	(1)	(2)	(3)	(4)	(5)	(6)		
Current revenue	10 028.8	24 061.5	41.7	10 927.2	25 623.2	42.6	9.0	6.5
Tax revenue	9 119.0	22 043.9	41.4	10 033.8	23 535.5	42.6	10.0	6.8
Income taxes	3 894.6	9 316.0	41.8	4 180.9	10 200.4	41.0	7.4	9.5
of which:								
IRS	2 372.3	5 606.0	42.3	2 434.1	6 173.1	39.4	2.6	10.1
IRC	1 485.4	3 629.3	40.9	1 714.4	3 955.0	43.3	15.4	9.0
Taxes on goods and services	5 224.4	12 727.8	41.0	5 852.9	13 335.1	43.9	12.0	4.8
of which:								
VAT	2 973.8	7 094.9	41.9	3 295.6	7 353.8	44.8	10.8	3.6
Tax on oil products	971.7	2 476.5	39.2	1 093.9	2 660.6	41.1	12.6	7.4
Car tax	388.1	1 014.6	38.2	521.7	1 015.6	51.4	34.4	0.1
Other current revenue	909.8	2 017.6	45.1	893.3	2 087.7	42.8	-1.8	3.5
of which:								
Dividends	294.8	753.7	39.1	204.5	425.7	48.0	-30.6	-43.5
Capital revenue	35.1	424.0	8.3	31.9	378.9	8.4	-9.1	-10.6
Total revenue	10 063.9	24 485.5	41.1	10 959.1	26 002.1	42.1	8.9	6.2

Source: *Direcção-Geral do Orçamento.*

Table 7

STATE EXPENDITURE

Million euro

	1998			1999			Growth rates	
	Jan-May	Exec.	(1)/(2)x100	Jan-May	State Budget	(4)/(5)x100	Jan-May	State Budget -99 Exec.98
	(1)	(2)	(3)	(4)	(5)	(6)		
Current expenditure	9 676.0	23 146.7	41.8	10 225.7	24 533.8	41.7	5.7	6.0
Compensations of employees	3 211.3	8 503.0	37.8	3 439.4	8 983.1	38.3	7.1	5.6
Goods and services	313.2	1 241.0	25.2	368.8	1 371.9	26.9	17.7	10.5
Subsidies	133.2	573.1	23.2	157.8	532.2	29.7	18.5	-7.1
Interest on public debt	1 936.1	2 924.5	66.2	1 914.4	2 920.0	65.6	-1.1	-0.2
Current transfers	4 082.2	9 905.1	41.2	4 345.2	10 726.6	40.5	6.4	8.3
General Government	3 269.6	8 205.2	39.8	3 569.4	9 020.8	39.6	9.2	9.9
Others	812.0	1 699.9	47.8	776.1	1 705.9	45.5	-4.4	0.4
Capital expenditure	1 235.0	3 235.7	38.2	1 122.8	3 301.2	34.0	-9.1	2.0
Total expenditure	10 911.0	26 382.4	41.4	11 348.5	27 835.0	40.8	4.0	5.5
Memo items:								
Primary expenditure	8 974.9	23 458.0	38.3	9 434.1	24 915.1	37.9	5.1	6.2
Compensations of employees + curr. Transfers to General Government	6 480.9	16 708.2	38.8	7 008.8	18 003.8	38.9	8.1	7.8

Source: *Direcção-Geral do Orçamento.*

year, as a result from the rise in the international prices of oil — assuming that the current oil products pricing policy remains unchanged.

The State's total expenditure rose by 4.0 per cent in the period January-May 1999 (table 7). It should be noted that in the first months of 1999, current and capital expenditure exhibited distinct behaviours; while the former grew 5.7 per cent, the latter decreased 9.1 per cent. In annual terms, the 1999 State Budget figures assume a 5.5 per cent growth from the 1998 budgetary execution.

Although the shift from Public Accounts to National Accounts is not a direct one, if the expenditure of General Government as a whole remains within the budgeted limits, the behaviour of the State's revenue will allow the deficit which is relevant for budgetary appraisal purposes at the level of the European Union (i.e., the General Government deficit on a National Accounts basis) to stand in 1999 slightly below the 2 per cent of GDP objective defined in the 1999 State Budget and in the Stability and Growth Programme.

8. INTEREST RATES AND CREDIT

In the first months of 1999, interest rates on credit to private individuals and corporations maintained the downward trend recorded since 1991 (chart 17). Indeed, interest rates of new loans to individuals for over 5 years fell 80 basis points in the first five months of 1999, standing at 4.9 per cent in May. Further, the rates on loans to non-financial corporations between 91 and 180 days and on commercial paper between 85 and 95 days fell respectively 70 and 80 basis points (to 5.3 and 2.7 per cent). This reduction of nominal interest rates was accompanied by a reduction of real interest rates to particularly low levels. This fact has provided a strong stimulus to consumption and to the demand of credit.

In Portugal, as in the remaining euro area countries, the interest rates on banks' lending operations do not immediately and fully incorporate the changes in the official interest rates. Thus, the reduction in April of the Eurosystem intervention rates may not have been fully reflected to the interest rates on loans yet. Therefore, a margin for a further reduction of the latter may still exist.

Chart 17
INTEREST RATES OF BANK CREDIT

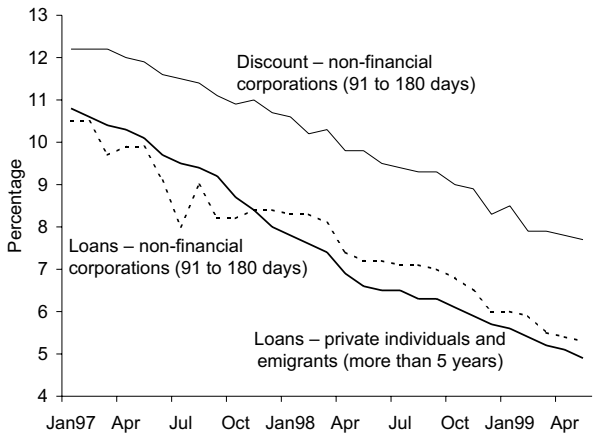
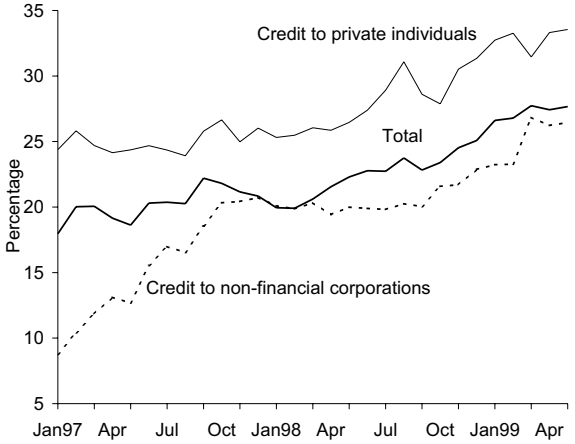


Chart 18
DOMESTIC BANK CREDIT TO THE NON-MONETARY RESIDENT SECTOR (EXCLUDING GENERAL GOVERNMENT)
Year-on-year rates of change

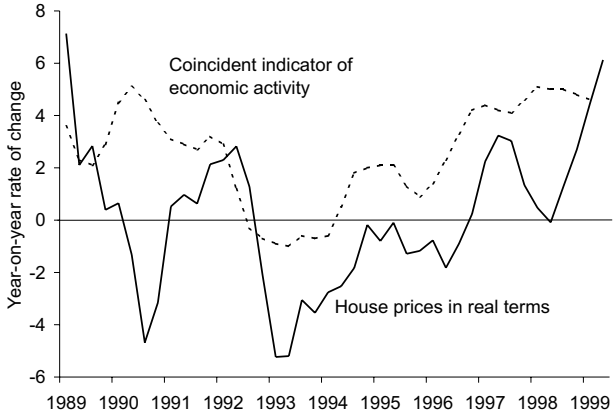


In the year to May, credit to individuals and non-financial corporations clearly accelerated (chart 18). The annual average rates of change of these aggregates stood at the decade's maximum levels in May (30.9 per cent and 22.8 per cent, respectively). Between December 1998 and May 1999, the acceleration of bank credit was noticeable. The year-on-year rate of growth of credit to non-financial corporations rose from 22.9 per cent in December to 26.4 per cent in May, while rising from 31.3 to 33.5 per cent as regards credit to private individuals. In the latter, stress should be laid on the growth of mortgage lending, which has recorded year-on-year rates of growth above 35 per

PRICES IN THE HOUSING MARKET AND THE BUSINESS CYCLE[1]

As in most OECD economies, housing prices in Portugal are characterised by (a) a strong pro-cyclical behaviour (chart 1)[2], (b) a positive real average change when measured over long periods (between March 1988 and June 1999, house prices grew 0.8 per cent in real annual average terms), and especially (c) a greater volatility than consumer prices (charts 2 and 3 and table 1). Housing purchasing preserves the real value of amounts invested for long periods, which constitutes a leading factor behind the demand for housing. In turn, the greater cyclical fluctuation of house prices when compared with consumer prices is related with the specific conditions of supply in this market, which is inelastic in the short run and responds to changes in demand with a lag. Under these conditions, prices are the leading adjustment mechanism, in the short run, to short-term changes in demand, and may determine significant changes in households' wealth[3].

Chart 1
REAL HOUSE PRICES AND ECONOMIC ACTIVITY



Source: *Confidencial Imobiliário, INE* and *Banco de Portugal.*
Note: The house price index in real terms is the house price index deflated with the CPI of the last month of each quarter, with base 100 in January 1988. The last record of the coincident indicator refers to the first quarter of 1998, while the real house prices series runs up to June 1999.

The recent developments in the housing market in Portugal suggest an acceleration of prices in this market, in a context where aggregate domestic demand exhibits a strong dynamism — especially households' investment in housing, greatly supported by the access to mortgage lending. Indeed, according to the price index presented in this text, house prices grew 8.6 per cent in year-on-year terms in June 1999, 6.3 p.p. above the year-on-year rate of change of the CPI. However, it is possible that the change in house prices was greater than that indicated[4]. Being a national aggregate, this price index embodies different situations at a local scale. For instance, the index measuring only house prices in the Lisbon outskirts[5] grew 13.3 per cent in June 1999.

After having completed the nominal convergence process and having consolidated the financial liberalisation process, the Portuguese economy is undergoing a period of transition to a new regime, where economic growth opportunities are broader. Alongside the expectations of increased future income — which are

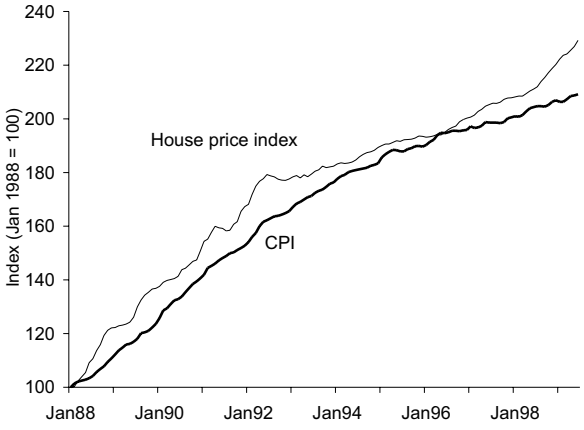
(1) *The Banco de Portugal thanks "Confidencial Imobiliário Newsletter", which supplied the data used in the construction of the house price indicators analysed in this box.*

(2) *The construction of this kind of indices presents several methodological difficulties, namely the difficulty in screening for quality differences among houses and the difficulty associated with the choice of an adequate set of regional weights over time. Excepting mentions otherwise, the price index aims at reflecting the behaviour of the house price national average, and was calculated from the monthly chain rates of change of supply prices per square meter of usable area of housing for a range of standard regions, between January 1988 and June 1999. Fixed weights were used in two sub-samples: between January 1988 and December 1993, the index uses data on 43 specific geographical areas; the sub-sample from January 1994 includes 11 additional standard regions, and the 54 resulting zones that contribute to the aggregate index are re-weighted. The house price index referred in this text differs from the "Confidencial Imobiliário-Supply Index", since the latter also includes prices of land (for housing and industry), trade areas and bureaux.*

(3) *The fluctuations in households' wealth induced by changes in house prices are widened with households' resource to credit for financing house purchasing - as happens with corporations' profitability when these resort to debt.*

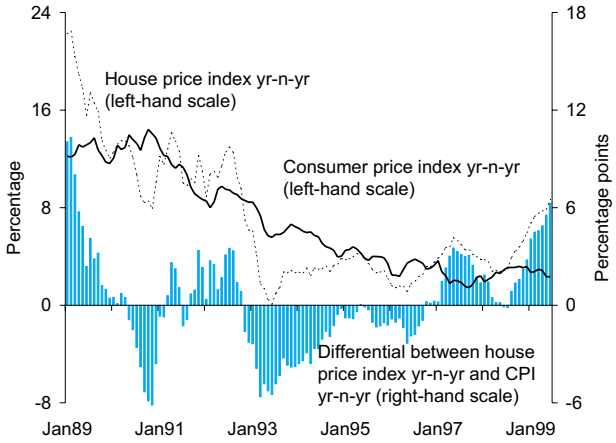
(4) *The house price index calculated as explained above indicates that the real growth of prices in Portugal was, in the sample period, one of the lowest in the set of countries considered. However, it should not be ignored that this index might have underestimated the growth of house prices in the period under analysis.*

Chart 2
HOUSE PRICES AND THE CONSUMER PRICE INDEX
January 1988 – June 1999



Source: *Confidencial Imobiliário* and *INE*.

Chart 3
HOUSE PRICE INDEX AND THE CONSUMER PRICE INDEX
Year-on-year rates of change
January 1989 – June 1999



Source: *Confidencial Imobiliário* and *INE*.

Table 1

HOUSE PRICES IN PORTUGAL AND IN OTHER EUROPEAN COUNTRIES
Rates of growth in the period March 1989 / June 1999 (a)

	Nominal growth rate: annual average (b)	Real growth rate: annual average (b)(c)	Volatility (d)	
			CPI	House prices
Portugal	7.3	0.8	4.1	5.1
Spain	6.7	2.1	1.8	8.2
Netherlands	7.1	4.8	0.7	3.5
Belgium	7.1	4.7	0.9	2.5
Finland	1.9	-0.7	2.1	13.7
Germany (e)	3.8	0.5	1.4	6.8
United Kingdom	3.3	-0.9	2.1	7.2
Denmark	3.9	1.6	0.8	7.3
Ireland	9.7	5.6	0.9	7.4
Sweden	4.2	0.6	3.7	9.1

Sources: *Confidencial Imobiliário; INE*; BIS; for Germany, Association of German Real Estate Agents (data provided by the Bundesbank).

Notes:

a)) Quarterly data except for Germany (annual data). The period of availability of the data is not exactly the same for all countries. Portugal: 1st quarter 1989 / 2nd quarter 1999; Spain, Finland, Ireland and Sweden: 1st quarter 1989 / 1st quarter 1999; Belgium: 1st quarter 1989 / 4th quarter 1998; Denmark: 1st quarter 1989 / 3rd quarter 1998; Netherlands: 1st quarter 1989 / 2nd quarter 1998; Germany: annual data for the first quarter of each year in the period 1989/1998.

(b) Geometric mean.

(c) House prices deflated with the CPI.

(d) Volatility measured by the standard deviation of the quarterly year-on-year rates of change. These columns aim at showing the higher volatility of house prices relative to the CPI in each country. These columns should not be read on the basis of a cross-country comparison of volatility, since in the sample period the level of the year-on-year change rates exhibits particularly different behaviours in the countries considered.

(e) The price volatility indices for Germany should be interpreted with caution since the data have annual frequency, unlike the remaining countries for which quarterly data are available.

linked to economic growth —, the current monetary conditions in the euro area — which determined very low real interest rates in Portugal — provided an incentive to consumption and investment expenditure with resource to indebtedness.

The reduction of households' liquidity constraints in acceding to credit — made possible by the sharp fall in nominal interest rates — together with the increased sophistication and diversification of the financial instrument — available to households under conditions of strong competition between credit institutions — constituted additional factors favouring households' resource to credit.

Under the new monetary regime, characterised by low and stable inflation rates, it is likely that, in real terms, house prices maintain a cyclical pattern identical to that recorded in the past: the short-run rigidity of supply and the sensitivity of house prices to changes in economic perspectives shall continue to determine a greater volatility of house prices in relation to the general level of prices. In a context of consumer price stability, this mean that house prices may exhibit real or even nominal reductions in some stages in the business cycle[(6)].

The recent increase of households' aggregate indebtedness for housing purchasing — which continues to grow faster than in other euro area countries — suggests an increasing sensitivity of households' financial situation to changes in the labour market situation and in the position of monetary policy. In the credit granting process, lending institutions must take into account that the development of the business cycle may not only reduce households' ability to meet the debt service, but in some cases also shift the value of real guarantees handed out by households to levels below the amounts in debt.

(5) For this purpose, the following zones were considered: Algés/Miraflores, Almada, Oeiras, Cascais, Sintra, Amadora/Loures, Setúbal, Barreiro and Montijo/Alcochete.

(6) To illustrate this remark, see the real behaviour of house prices between 1992 and 1996 in chart 1, or the differential between the year-on-year rates of change of the housing index and the CPI in chart 3, in 1994 and 1995. Furthermore, the available data suggests for instance that some zones in Lisbon, especially those exhibiting higher price growth rates in the late 1980s — for example, in 1988 some cases saw price increases over 40 per cent —, recorded nominal house price reductions afterwards, in the latest stage of the business cycle.

cent since the beginning of 1999. Households' strong investment in housing has been recently followed by an acceleration of prices in this market (see box – "*Housing market prices and the business cycle*").

As a result of the expansion of credit granted by banks and other credit institutions, individuals' indebtedness has grown sharply. This fact implied a rise in the debt service payments as a percentage of individuals' disposable income, compared to the levels recorded early in this decade (see box –"*Individuals' indebtedness and debt service*").

Despite the sharp fall in the domestic credit to General Government, the expansion of total domestic credit has exceeded by far the resources raised by monetary financial institutions (through deposits and equivalent and the increase in permanent capitals). Consequently, the expansion of credit granted to the private sector was to a large extent reflected in a reduction of the monetary sector's net foreign assets. This trend was strengthened in the first quarter of 1999.

9. CONCLUSION

The information available for the first half of 1999 is compatible with the macroeconomic scenario disclosed in the March Economic Bulletin. However, the risks of a stronger domestic demand growth than previously forecasted have risen. The current scenario reflects the maintenance of high borrowing requirements by households and corporations. Indeed, the current account deficit widened and credit to these sectors continued to grow substantially in the first months of 1999. Regarding households, the available estimates point towards a further increase in their indebtedness ratio in the current year, even if assuming that credit may slow down until the end of the year. In parallel, households' debt service may be expected to

INDIVIDUALS' INDEBTEDNESS AND DEBT SERVICE

Since the beginning of the decade individuals' indebtedness has grown significantly in Portugal. Considering end-of-year debt levels, the annual rates of change always exceeded 20 per cent. Throughout 1998 and in the first months of 1999, bank credit to private individuals accelerated, recording year-on-year rates of growth above 30 per cent since December 1998 (33.6 per cent in May 1999).

Given the behaviour of individuals' indebtedness, the debt to disposable income ratio increased significantly, from 19.6 per cent in 1990 to 65.9 per cent at the end of 1998. Assuming that credit decelerates to 27.5 per cent in December 1999 and disposable income grows around 6.5 per cent, the level of indebtedness as a percentage of disposable income at the end of 1999 shall be close to 80 per cent.

Given the current and forecasted indebtedness levels it is important to assess whether these levels are excessive, raising liquidity and solvency problems to individuals in the medium run. To address these issues it is important to measure the individuals' degree of effort related with the debt service (defined as the ratio of debt service — interest plus capital redemptions — to disposable income in a given period). This degree of effort shall provide an indication of the importance of this expenditure to households. Moreover, it is also useful to analyse the sensitivity of the degree of effort to changes in the economic background.

The calculations used data on bank credit to individuals broken-down by maturity classes (credit up to one year, between 1 and 5 years and at more than 5 years) and on the lending interest rates of banks for several maturity classes, as disclosed in the Statistical Bulletin of the Banco de Portugal. After choosing the average maturities of debt (taking 6, 36 and 180-month maturities as representative of the classes considered above), monthly estimates for the debt service payments were built, assuming the absence of any roll-over of debt.

Chart 1

INDEBTEDNESS AND LEVEL OF EFFORT OF INDIVIDUALS

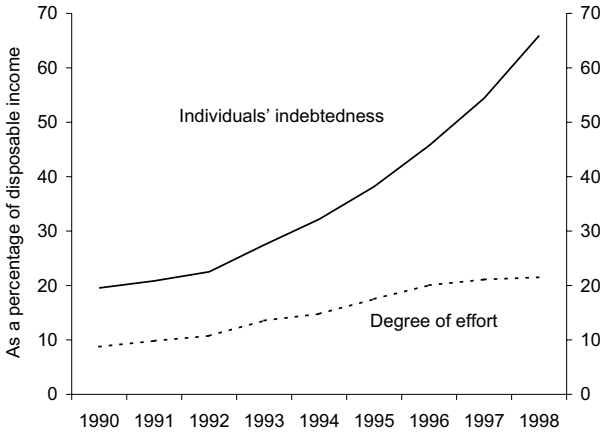


Table 1

CHANGE IN THE MONTHLY DEBT SERVICE DUE TO A 1 PERCENTAGE POINT INCREASE IN THE INTEREST RATE FROM THE MAY 1999 LEVEL

	Amount (PTE thousand)	Term to maturity of loans (in years)					
		5	10	15	20	25	30
Debt	5 000	2.2	2.3	2.5	2.7	2.8	3.0
	10 000	4.4	4.7	5.0	5.3	5.6	5.9
	15 000	6.6	7.0	7.5	8.0	8.4	8.9
	20 000	8.8	9.4	10.0	10.7	11.3	11.8
Percentage change		2.3%	4.5%	6.4%	8.2%	9.8%	11.3%

As chart 1 shows, the growth of indebtedness corresponded to an increase in the degree of effort of individuals, which at the end of 1998 reached 21.5 per cent of disposable income (compared with 8.8 per cent in 1990, 20.1 per cent in 1996 and 21.1 per cent in 1997)[(1)]. This behaviour can be broken-down into the behaviour of the share of interest paid and the share of capital redemptions. Despite the significant rise in indebtedness, the share of interest has remained quite stable over the course of the decade, representing 4 per cent of the disposable income in 1998 (4.7 per cent in 1997). This stability reflects the joint effect of the increase in the amount

(1) Given the underlying assumptions used, the estimates for the degree of effort of individuals should be interpreted as an upper limit. Indeed, if any roll-over of short-term debt takes place (i.e., if debt service is partly met through resorting to new debt), the degree of effort will be lower than the figures disclosed.

of credit and the sharp fall in bank lending interest rates. Therefore, the increase in the individuals' degree of effort was mainly due to the behaviour of the share of capital redemption.

To measure the sensitivity of this result to interest rate changes, the monthly service corresponding to the capital due and interest in May 1999 was firstly calculated, resorting to the methodology presented above. Afterwards, the impact of a 1 percentage point increase to the respective interest rates was simulated, holding the capital due constant. In this scenario, the monthly debt service increases 1.7 per cent.

However, the growth of the debt service is positively related with the loan maturity (table 1). The impact on the monthly service resulting from a 1 p.p. increase to lending interest rates is more significant in loans with longer terms to maturity. For instance, for a loan with a 25-year term to maturity, the increase in the monthly service amounts to 9.8 per cent, while for 5-year term to maturity loans this increase amounts to 2.3 per cent (for a PTE 15,000 thousand loan, monthly payments would increase PTE 8.4 and 6.6 thousand, respectively).

The conclusions of this exercise should be evaluated bearing in mind its limitations. Indeed, the results presented for the indebtedness and the degree of effort are averages of aggregated data, and do not reveal neither the heterogeneity of situations there included nor the distinct capabilities of different individuals to accommodate changes in the economic background.

record a further rise as a percentage of disposable income, namely due to the strong increase in households' indebtedness — which most probably will not be compensated by a sharp fall in the lending interest rates, contrary to what has occurred in recent years.

The participation of Portugal in the euro area limits the range of instruments that Portuguese authorities can harness to meet conditions which are specific to the Portuguese economy. In a setting where monetary and exchange rate policies are conducted bearing in mind the economic conditions of the euro area as a whole, budgetary policy becomes the leading instrument with the capacity for influencing domestic demand. Since Portugal is currently in a more advanced stage of the business cycle than the euro area average, it is crucial that the budgetary consolidation process proceeds in line with the Stability and Growth Programme objectives.

Written with the information available on 26 July 1999.

THE DEMAND FOR MONEY BY FIRMS*

*Bernardino Adão***
*José Mata***

In Portugal, as in several OECD countries, since the 1980s money velocity (i.e., the ratio GDP/M1) stopped growing. This recent development is interesting for two reasons. First, because several studies indicate that money utilisation enjoys scale economies. "Ceteris paribus", GDP growth should translate into the continuation of the increase of money velocity. Second, because the level of financial sophistication seems to have been rising. This should also have raised money velocity. This article aims at understanding further this phenomenon. We estimate a money demand function for a group of economic agents — firms — in Portugal. The results reveal that firm size is important to understand the change in the velocity of money used by firms.

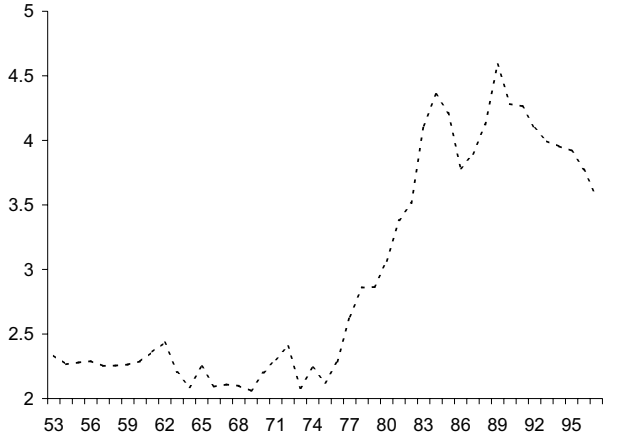
1. INTRODUCTION

From the mid-1970s, money velocity in Portugal has exhibited an upward trend. This growth was discontinued, eventually inverting its trend from the late 1980s onwards (chart 1). This recent development is interesting since the level of financial sophistication of the economy seems to have been improving — for instance, the expansion and availability of new products such as money market funds, investment funds, credit cards, ATM, deposit certificates, transfers and electronic payments.

Ceteris paribus, the increase in the level of financial sophistication would favour a more efficient utilisation of money, leading to the maintenance of the growth in money velocity. An additional point of interest in this phenomenon — the discontinued growth in money velocity — results from the fact that a wide range of other OECD countries have exhibited the same trend.

To identify the reasons behind this behaviour of money velocity, the factors behind economic agents money holdings — i.e., the money demand function — must be investigated on a quantitative basis. Most studies addressing money demand have been based on aggregate time series. This approach is bound to conceal distinct behaviours resulting from different investment opportunities available to households and to firms; aggregate data may hide different patterns of money demand on the part of households and firms, and the estimation of money demand with time series data presents a number of problems which are not present in cross-section data.

Chart 1
MONEY VELOCITY
GDP / M1



* The opinions of this paper represent the views of the authors, they are not necessarily those of the *Banco de Portugal.*

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This article analyses firms' contribution to the mentioned behaviour of money velocity. The research on firms' demand for money uses data on the quantity of money held by a set comprising over 10,000 firms, drawn from the Central Balance Sheet Data office of the *Banco de Portugal*. Our results show that money utilisation enjoys significant scale economies, and that the fact that firms' money circulation velocity did not increase — despite the continued rise in the level of financial sophistication of the economy — may be due to the reduction in firms' size. The full set of results, methodological details and the relevant references are contained in the forthcoming *Working Paper* version of this article.

2. MONEY UTILISATION BY FIRMS

Firms use money to carry out transactions required by their business. The greater the amount of transactions firms make, the greater is the money quantity needed. However, the money quantity held by firms does not need to be proportional to the firms' size. Firms may exhibit different levels of sophistication in the utilisation of financial products available to them. A reason why firms might resort differently to financial products might be the existence of sizeable fixed costs on the adoption of the leading financial technologies. In this case, money utilisation may exhibit scale economies, and thus firms use a money quantity that is less than proportional to their size.

Firms neither need nor want to hold all their reserves in the form of money. Firms wish to hold smaller quantities of money since those amounts can be invested in financial products that generate greater income. *Ceteris paribus*, the higher the interest rate raised by these assets, the smaller is the amount of money firms will want to hold.

However, holding lower amounts of money forces the firm to support more frequently the costs due to withdrawing the cash required to perform transactions. In the past these withdrawals implied a visit to the bank; nowadays these may take the form of a phone call. Nonetheless, if the firm holds lower quantities of money, it will probably incur in higher costs measured in terms of the effort its staff dedicates to the management of these resources. These costs increase with the wage paid by the firm.

These arguments suggest that the amount of money held by each firm is a function of its size (of its sales), the interest rate and average wages paid. It is important to measure quantitatively the relevance of each factor to understand the changes that have occurred in firms' utilisation of money. The aim of this exercise is to obtain estimates for the relationship between money held by each firm and each of these three variables.

3. THE DATA

The data used in this paper were drawn from the Central Balance Sheet Data Office of the *Banco de Portugal*. The *Banco de Portugal* has gathered data on firms' accounts since 1986. The data available at the date this research was carried out ran up to 1995. The survey supporting the data collection was changed in 1990, implying that for some variables figures are unavailable for the whole period. As regards the current research, the major change deals with the fact that from 1990 onwards the Balance Sheet no longer separates the bank deposits in demand deposits and time deposits. This fact prevents us from employing the M1 definition, forcing us to use M2 instead — although we are ultimately concerned with analysing the circulation velocity of M1.

The distinction between time deposits and demand deposits has become increasingly blurred over time. Up to the 1970s, time deposits could not be converted into demand deposits at face value prior to their date of maturity. This is possible nowadays, requiring only that the bank is addressed the respective request. This transfer became simple and direct, and is made at the face value of the time deposit. Since time deposits are close substitutes for demand deposits as means of exchange — assuming that firms wish to use the former to this end — it seems reasonable to conclude that this asset should be included in the definition of a variable that measures the amount of money held by firms. However, this does not imply that households' time deposits should also be considered among the assets used by households as a means of settlement. It is known that, in the sample period, households resorted to time deposits as a reserve of value to a greater extent than firms.

The analysis of the data for the period for which the breakdown of deposits into demand deposits and time deposits is available suggests that the utilisation of M2 instead of M1 will not influence the results decisively. Indeed, in the period 1986-1989 demand deposits never accounted for more than 13 per cent of total deposits. Furthermore, both kinds of deposits behaved quite similarly in the firms of our sample. The logarithm of both monetary aggregates considered exhibit a correlation coefficient above 0.99.

Therefore, the concept of money used in our analysis corresponds to the sum of the item "cash" with the item "bank deposits" at the end of each year. Firm size is measured by firms' annual sales, while wages are measured by staff costs divided by the number of employees at the end of the year. Capital cost is measured by financial costs paid over the course of the year, divided by total liabilities at the end of the corresponding year.

All variables are expressed at constant prices of 1991, and are defined consistently for the whole period. The set of firms for which it was possible to observe all these variables comprises over 11,866 firms, observed over the course of the period 1986-1995. However, not all firms are observed every year. This explains that the total number of observations is 47,550. Chart 2 plots the behaviour of the sample mean of the relevant variables.

4. RESULTS

The basic equation estimated includes money in the left-hand side and the firms' size, labour cost and capital cost measures in the right-hand side (all variables are in logarithms).

Beyond these variables, two additional kinds of variables were added to control for non-observed effects that may affect the quantity of money held by firms. The first of these consists of a set of annual fixed effects, namely to take into account the possibility that the increase in the financial sophistication of the economy through time has led to a reduction in the utilisation of money by firms taken as a whole. The second consists of a set of firm-specific effects to control for the possibility of firms having some idiosyncrasy leading them to use amounts of money persistently different from what their size, capital cost and labour cost would indicate.

Table 1

ESTIMATED ELASTICITIES

Elasticity	Estimate
Scale	[0.5 0.7]
Interest rate	[-0.026 -0.024]
Wage	[0.08 0.13]

Table 1 presents the intervals of change of the estimated elasticities, obtained through different estimation procedures. The results are relatively robust and are qualitatively identical regardless of the estimation method and the specification used. All estimates were obtained with high accuracy.

The estimates for the size elasticity (i.e., regarding real turnover) range between 0.5 and 0.7, indicating that substantial economies of scale exist in firms' utilisation of money. The signs of the estimated elasticities of the interest rate and the (real) wage confirm our expectations: higher interest rates lead to lower money utilisation and higher wages yield the opposite effect. However, the absolute value of these estimates indicates that these are quantitatively unimportant. The estimates for the interest rate elasticity are particularly surprising since former analyses using different methodologies and data estimated substantially higher values for this parameter(1).

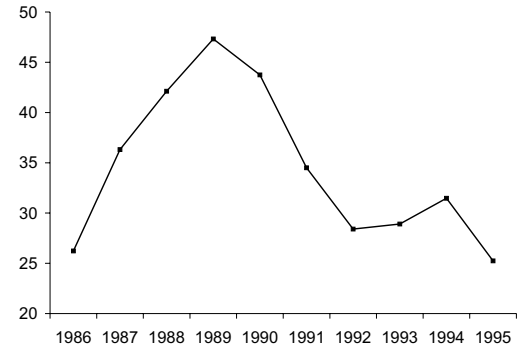
5. BEHAVIOUR OF MONEY VELOCITY

Overall money velocity behaved similarly to firms' money velocity. The data in our sample (chart 2) suggest that the circulation velocity of firms' money, defined as the ratio of firms' sales to the money held by these, decreased from the late 1980s onwards.

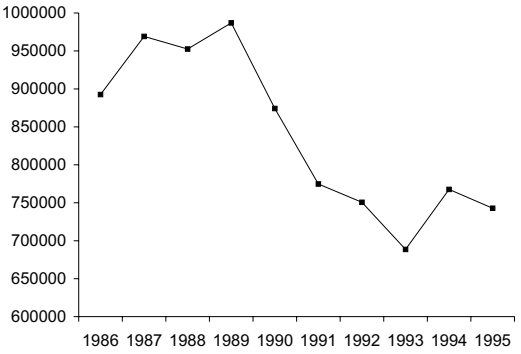
As an alternative definition — comparable with the usual definition of money circulation velocity

(1) However, it should be noted that in the current approach the interest rate elasticity is identified after the inter-temporal and idiosyncratic interest rate variability have been isolated. The crucial assumption underlying this identification is that firms have the same reaction to interest rate changes regardless of changes being specific to the firm or common to all firms.

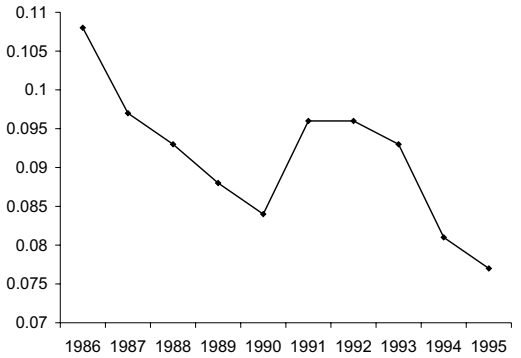
Chart 2
MONEY CIRCULATION VELOCITY
Sales / M2



Firms' size



Capital cost



Wage

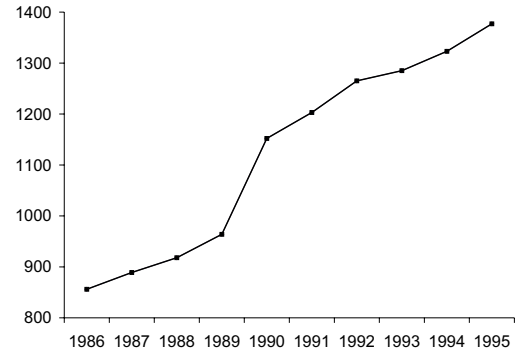


Chart 3
CIRCULATION VELOCITY
GDP / M1 firms

— would be ratio GDP/(M1 of firms), where firms' M1 sums demand deposits with bank notes and coins held by the firms in the economy. The data on firms' demand deposits are drawn from the *Statistical Bulletin* of the *Banco de Portugal*. Since no data exists on bank notes and coins held by firms, this amount was estimated using the relationship between currency and deposits in our sample. Chart 3 depicts this velocity. As chart 3 shows, except for 1995 money velocity for firms in Portugal ranged between 11 and 13 in the period 1983-1997, and did not present a clear trend. However, even a constant behaviour would be difficult to explain in the light of the observed increase in financial sophistication.

Both the interest rate and the real wage rendered a negligible contribution to the behaviour of the circulation velocity of firms' money. Both variables recorded significant changes — i.e., the real wage increased and the interest rate decreased — in the period. Both effects contributed to an increase in the amount of money held by firms. However, the overall effect was very small according to the estimated elasticities of the interest rate and the real wage[(2)].

We now analyse the effect of scale economies on circulation velocity. Usually, the interest in knowing if scale economies exist in money utilisa-

(2) The conclusion that interest rate reductions cannot explain reductions to circulation velocity is strengthened if it is assumed that interest rate reductions yield a positive effect on GDP.

tion has to do with the fact that optimal money growth can be less than proportional to GDP growth. If the number of economic agents is constant and both economic growth and scale economies in money utilisation exist, money velocity should be expected to show an upward path. It seems reasonable to admit that the number of households does not change significantly, though the same might not hold true as regards firms.

According to our estimates, the change in firms' size is the most plausible explanation for the behaviour of firm's money velocity. Since scale economies exist, the reduction in sales per firm may lead to a reduction in money velocity. This sales reduction did indeed happen, calculations made from the *Quadros de Pessoal* — the most comprehensive survey to firms carried out in Portugal — reveal that between 1987 and 1994 real sales per firm grew -3.7 per cent in annual average terms for the same period, the firms in our sample recorded — a -2.7 per cent growth rate. Unfortunately, no comparable data exist for the previous decades, which could allow to test if during that period the change in the trend of growth in velocity can be linked to a change in the pace of growth of sales per firm. However, the Industrial Census data available for 1971 and 1984 show that average sales per establishment in manufacturing industry grew 4.5 per cent in annual average terms between both censuses. This suggests that in periods where velocity increased, the size of industrial establishments has also grown, while in periods of decreasing velocity, firms' size decreased as well[3].

To estimate the effect of firm size on money velocity we calculate between 1983 and 1996 the percentage change in velocity that would result from a given reduction in firms' size. To attain this, we took into account that GDP grew 2.7 per cent in annual average terms in the period, and that the ratio "GDP / aggregate sales" implicit in the National Accounts rose from 0.49 to 0.55. Using the scale elasticity estimated, we found that annual reductions in firms' size between 2.7 per cent and 3.7 per cent would yield velocity reductions between 6 and 12 per cent over the course of the period[4].

6. CONCLUSION

The estimation of a money demand function for firms revealed substantial scale economies in money utilisation and small effects of both wages and the opportunity cost of capital. Given the presence of scale economies, the reduction in the average size of firms recorded over the course of the period explains a significant part of the reduction in firms' money velocity.

A more complete explanation of the behaviour of aggregate money velocity would require a money demand function for households. Empirical evidence shows that households' money velocity behaved similarly to that of firms. Furthermore, given the real growth recorded by GDP, the amount of transactions carried out by each household shall have increased. Assuming that households do not exhibit diseconomies of scale in money utilisation, our research suggests that changes in both wages and the interest rate will have greater effects on the quantity of money held by households than those found for firms.

(3) It is also curious to notice that the pattern observed in Portugal is quite similar to that recorded in the USA, increasing up to the 1980s, decreasing onwards, while the revenue of firms (resident in the USA) reported per corporate income tax return grew at an annual rate of 0.2 per cent in the 1960s, 0.6 per cent in the 1970s and -3.4 per cent in the 1980s. Reductions in both firm size and money velocity appear to be phenomena widespread to many other developed countries.

(4) This analysis follows several steps. In 1983 we take index 100 for sales per firm and for the referred ratio "GDP / aggregate sales" to calculate Gross Value Added per firm. Using this value we calculate the "number of firms" required to generate 1983 GDP. Meanwhile, using sales per firm and the estimated elasticity we calculate the money quantity used by each firm. Multiplying the latter by the "number of firms" yields total money demand for the corporate sector. The exercise is repeated for 1995, using for firms' size the figure compatible with the referred rate of growth of firms. Finally, the rate of growth for velocity is calculated using total money demand in both years and the observed GDP growth.

THE IMPACT OF THE EURO ON LONG-TERM GROWTH IN PORTUGAL*

*Alfredo Marvão Pereira***

This paper investigates the effects of the participation of Portugal in the Euro area. The most important channel through which joining the Euro affects the economy is a reduction in long-term interest rates. This reduction is expected to affect positively the domestic growth fundamentals and, therefore, to improve long-term GDP "per capita". Simulation results suggest that long-term GDP "per capita" will improve by between 2.9 per cent and 13.6 per cent, with the most likely scenario placing gains at 10.0 per cent. This corresponds to an increase of 0.4 p.p. in the annual average rate of growth of GDP, that is a shift from a long-term trend of 3.1 per cent to a 3.5 per cent one.

1. INTRODUCTION

The participation of Portugal in the Euro area is expected to affect the Portuguese economy through several channels. However, one may argue that the leading channel through which monetary unification renders an impact on the Portuguese economy is the reduction in the interest rates that domestic agents will face in the future (see, for example, Barbosa et all [1998]).

Interest rate reductions result from two different mechanisms. First, the strict application of the Economic and Monetary Union (EMU) rules should reduce public indebtedness in the Euro area substantially. An interest rate reduction through this mechanism would benefit the Portuguese economy regardless of the Portuguese participation in the Euro. Second, one can expect an interest rate reduction due to the effects of increased credibility of the domestic politics of macroeconomic stability. This increase in credibility is associated with the fact that, due to the participation in the Euro area, national authorities abdicate from the exchange rate devaluation option. This corresponds to the elimination of the associated risk premium incorporated in the interest rate.

Access to financing at a lower interest rate is expected to affect the economy in different ways. First and foremost, private investment will increase with the reduction in the interest rate. In addition, this reduction will allow the public sector to increase public and human capital investment. With greater investment in private capital, public capital, and human capital, the fundamental determinants of long-run growth of the Portuguese economy shall be strengthened.

At the same time, the Portuguese participation in the Euro area places clear restrictions on the ability of the domestic authorities to manipulate the public budget. It is true that under the Euro regime the national authorities continue to be responsible for the budget. Domestic budgetary policy, however, is greatly constrained by discipline rules and procedural supervision and evaluation at the EU level as well as by domestic commitments under the Stability and Growth Pact. Therefore, national authorities are obligated to follow very stringent budgetary rules, with all the added pressures that this entails.

The reduction in interest rates generated by the participation in the Euro area affects the budgetary process in a positive manner. First, lower inter-

* The views expressed in this article are of the exclusive responsibility of the author and do not necessarily coincide with the position of the *Banco de Portugal.*

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est rates allow the public sector to refinance its debt and thereby benefit from lower interest payments on its outstanding debt. Second, by increasing GDP, lower interest rates enlarge the tax base and, for given tax rates, increase tax revenues. The relevant empirical question is to ascertain to what extent the reduction in interest rates will generate positive effects that are sufficient to neutralize the budgetary pressures induced by the conditions of the Stability and Growth Pact.

The objective of this paper is to analyze the effects of the reduction in interest rates associated with the Portuguese participation in the Euro area on the long-term performance of the Portuguese economy as well as the budgetary strategies available to the domestic authorities. The analysis is carried out in the context of an endogenous growth model of the Portuguese economy, which highlights the domestic growth fundamentals. The endogenous growth model in this paper builds upon the work of Barro [1990], Barro and Sala-i-Martin [1992], King and Rebelo [1991], Rebelo [1991], Romer [1986], and more specifically the recent work by Gaspar and Pereira [1995] and Pereira [1998].

The endogenous growth model presented in this paper accommodates the evolution of private, public capital and human capital, as well as domestic public borrowing and the foreign account. The endogenous growth approach is particularly appropriate since the participation in the Euro area is expected to enhance the accumulation of the factors of production that can affect the long-term growth rates and, therefore, GDP *per capita*. In addition, by accommodating the modeling of the twin deficits, the public and the current account deficits, the model allows the incorporation of the constraints that participation in the Euro area itself impose on the domestic budgetary process.

2. AN EXOGENOUS GROWTH MODEL

2.1 The model

The evolution of the economy is represented by the paths of five variables: private capital, K_t, public capital, PK_t, human capital, HK_t, foreign financing, F_t, and public debt, PD_t.

The equations of motion for the different types of capital are:

$$K_{t+1} = I_t - AC_I(I_t, K_t) + (1 - d_K)K_t \quad (1)$$

$$PK_{t+1} = Pi_t - AC_{PI}(PI_t PK_t) + (1 - d_{PK})PK_t \quad (2)$$

$$HK_{t+1} = HI_t - AC_{HI}(HI_t, HK_t) + (1 - d_{HK})HK_t \quad (3)$$

where d_K, d_{PK}, and d_{HK}, are the rates of depreciation of private, public, and human capital; I_t, Pi_t, and HI_t are investment in private, public, and human capital; and $AC_I(.)$, $AC_{PI}(.)$, and $AC_{HI}(.)$ are the corresponding adjustment cost functions.

The adjustment of the different stocks of capital toward their optimal levels is costly. This idea is captured by investment-specific adjustment-cost functions representing foregone capital accumulation. The adjustment-cost functions are non-negative, monotonically increasing, and strictly convex in investment and capital. These functions are assumed to be quadratic in investment per unit of installed capital:

$$AC_I(I_t, K_t) = 0.5u_I(I_t)^2 / K_t \quad (4)$$

$$AC_{PI}(PI_t, PK_t) = 0.5u_{PI}(PI_t)^2 / PK_t \quad (5)$$

$$AC_{HI}(HI_t HK_t) = 0.5u_{HI}(HI_t)^2 / HK_t \quad (6)$$

where u_I, u_{PI}, and u_{HI} are the adjustment-cost parameters associated with private, public, and human capital accumulation, respectively.

The economy produces one tradable good, Y_t, using a well-behaved production technology. Production utilizes private capital, labor, and public capital. As in King and Rebelo [1991] and Rebelo [1991], the labor input is reproducible and the stock of human capital is embodied in workers. The labor input can be adjusted by changing the number of workers, L_t, or by changing human capital. The total number of workers is exogenous and grows at a constant rate, n. In turn, public capital represents a positive externality for the private sector. Public capital does not generate explicit compensation such that an intertemporal equilibrium can exist. Public capital is a pure public good in the tradition of Diewert [1988], and Romer [1986], who focuses on externalities related with the average capital level of the economy.

The production function is Cobb-Douglas with constant returns to scale to private and human capital, displaying increasing returns when public capital is also considered:

$$Y_t = F\left(K_t, PK_t L_t HK_t\right) = A_0 K_t^b \left(L_t HK_t\right)^{1-b} PK_t^v \quad (7)$$

where A_0 is the output scaling factor, $0 < b < 1$ is the cost share of capital in total expenditure, and $0 < v < 1$ is the public capital externality factor.

Domestic production and imports are absorbed by domestic expenditure on consumption, Ct, the different types of investment, and exports. Net imports, M_t, are:

$$M_t = C_t + PC_t + I_t + PI_t + HI_t - Y_t \quad (8)$$

The equation of motion for foreign financing represents the current account position:

$$F_{t+1} = \left(1 + r_t\right)F_t + M_t - R_t - CF_t \quad (9)$$

where R_t represents the unilateral private transfers (emigrants' remittances, for example) and CF_t represents unilateral public transfers (EU transfers, for example). The domestic country is a small open economy that can obtain the desired foreign financing at a rate of return, r_t, which is determined in the international financial markets.

It should be pointed out that in the context of EMU, equation (9) loses much of its traditional meaning as an intertemporal budget constraint. This is certainly the case with respect to Portuguese transactions within the EMU borders. Furthermore, one would expect Portuguese foreign trade in the future to be even more increasingly concentrated within the EMU area. Therefore, in EMU equation (9) essentially plays the role of a mere accounting device.

The equation of motion for public debt reflects the fact that government expenditures have to be financed by taxes and by changes in public indebtedness. Government expenditures include spending on consumption and investment activities, PC_t, PI_t and HI_t, as well as interest payments on public debt at a rate r_t. Given the progress in the last decade in the areas of financial integration and financial desintermediation, it is natural to assume that the relevant rate for public borrowing is the same as the rate on international borrowing. In addition, the government receives unilateral public transfers, CF_t, and transfers funds to the private sector, PT_t. Finally, tax revenues are obtained by applying a flat and exogenous tax rate, ty, to the domestic output. The equation of motion for public debt is:

$$PD_{t+1} = \left(1 + r_t\right)PD_t + PC_t + PI_t + HI_t + PT_t - CF_t - t_y Y_t \quad (10)$$

The optimal path for the domestic economy is obtained from the maximization of a social welfare function. This function is the present discounted value, at the social rate *r*, of a well-behaved utility function defined on private and public consumption *per capita*. As is Barro [1990] government finances services, such as health, which enter into household utility. The social discount rate may be interpreted as the marginal rate of substitution between present and future consumption, for a given level of composite consumption. The utility function is CES with share parameter aC and elasticity of substitution $1/(S_c - 1)$.

2.2 Budgetary projections in the context of the growth model

National economic authorities have the discretionary power to set the trajectories of the public sector variables. Given these budgetary rules, the optimal paths generated by the model reflect the optimal decisions of the private agents, in terms of both consumption and private investment activities.

The different components of the public budget are assumed to evolve at fixed growth rates:

$$PC_{t+h} = \left(1 + g_{pc}\right)^h PC_t \quad (11)$$

$$PI_{t+h} = \left(1 + g_{pi}\right)^h PI_t \quad (12)$$

$$HI_{t+h} = \left(1 + g_{hi}\right)^h HI_t \quad (13)$$

$$PT_{t+h} = \left(1 + g_{pt}\right)^h PT_t \quad (14),$$

where g_{pt}, g_{pi}, g_{hi} and g_p represent the growth rates of public consumption, public investment, human capital investment, and public transfers, respectively. It is assumed that all of these components of the public budget grow at the growth rate of the GDP. This means that the composition of the pu-

blic budget as well as the importance of each of these components, as a percentage of GDP, remain constant.

Finally, tax revenues are determined by the evolution of GDP (the tax rates being held constant) while interest payments on the public debt depend on the evolution of interest rates.

3. IMPLEMENTATION ISSUES

3.1 Numerical implementation strategy

The characterization of the optimal solution to the endogenous growth problem can be interpreted as a two-point boundary problem. Given the complexity of the problem, no attempt is made to develop an analytic solution. Instead, the model is parameterized and solved numerically. Comparative dynamic analysis is approximated by solving the model numerically for different configurations of the relevant exogenous variables.

The numerical implementation is based on a strategy similar to that in Jones, Manueli, and Rossi [1993], Pereira [1994], and Gaspar and Pereira [1995]. To solve the infinite horizon problem numerically, truncated versions with finite time horizons are considered. To minimize terminal effects associated with truncation, terminal constraints are introduced which are consistent with post-terminal steady-state values. Simulations were found to be very robust to truncation for a time horizon of 60 years.

Given truncation, the optimization problem is solved using nonlinear programming methods. These techniques are very flexible in that they do not depend on the formulation of the optimality conditions but only on the general specification of the problem. Furthermore, they have been widely tested, have known error properties, and are very robust for ill-conditioned problems. They also guarantee, by the use of non-negativity constraints on both state and shadow price variables, that the solution generated is a *bona fide* saddle-point solution to the optimization problem under consideration. A sequential programming method was used where each iteration solves a linear approximation to the nonlinear problem. Each iteration generates a search direction for the maximization of an augmented-Lagrangian merit function. Final convergence of the sequence of linear approximations is achieved according to preset default levels of a modified quadratic penalty function. (See Gill, Murray, and Wright [1981] and Murtagh and Saunders [1982] for a discussion of these techniques.)

3.2 The data, parameter specification and calibration

The data set used in the numerical implementation of the model is obtained mostly from the Statistical Annex of the European Economy No. 63 [1997] and is reported in Table 1. It reflects GDP and stock variable values in 1996. The decomposition of the aggregate variables, however, follows the average for the period 1986-1996. This approach for the decomposition of aggregate variables reflects the nature of the model. The model captures the behavior of the economy around a smooth trend but does not capture business cycle

Table 1

DATA

Billions of 1996 PTE, unless indicated otherwise

Balance of Payments	
Trade / service balance	-1.089
Interest payments	-0.183
Private unrequited transfers	1.048
Current account balance	-0.224
Public Sector Accounts	
Tax revenues	5.636
Public consumption	2.018
Public investment	0.592
Public human capital investment	0.672
Public transfers	2.292
Interest public debt	0.779
Public balance	-0.817
National Accounts	
GDP	16.012
Private consumption	9.783
Public consumption	2.018
Private investment	3.507
Public investment	0.592
Human capital investment	1.200
Stock variables	
Private capital stock	30.585
Public capital stock	7.928
Human capital stock	34.615
Labour force (as a % of population)	0.478
Active labour force (as a % of population)	0.449
Foreign debt	2.434
Public debt	10.392

Source: Data documentation is available from the author upon request.

Table 2

PARAMETERS

Households parameters	
Discount rate	0.9650
Population growth rate	0.0017
Share private consumption	0.7930
Elasticity of substitution	0.6500
Effective tax rate	0.3520
Production parameters	
Output scaling factor	0.2090
Private capital share	0.3700
Public capital share	0.1000
Capital depreciation	0.0600
Public capital depreciation	0.0300
Human capital depreciation	.0000
Private capital adjustment cost	2.1800
Public capital adjustment cost	3.3480
Human capital adjustment cost	7.2120
Other parameters	
Interest rate	0.075
Growth of foreign transfers	0.031
Growth of public transfers	0.031

Source: Data documentation is available from the author upon request.

fluctuations. As a corollary, temporary deviations of the actual economy from its long-run trend will not be captured in the simulations. Since the data covers a complete business cycle, however, the model implementation is not contaminated by business cycle effects.

The period 1980-1996 was chosen to reflect the most recent available information. In addition, one can argue that the data regarding this period has not been contaminated by the effects resulting from expectations about the participation of Portugal in the Euro area. Therefore, calibrating the model for 1980-1996 allows the simulations to capture the changes generated by the Euro, since a comparison is established between the optimal paths that would result from continuing the trends recorded in 1980-1996 and the new optimal trajectories under the Euro conditions.

Parameter values are reported in Table 2. Parameters are obtained in different ways. Whenever possible, parameter values are taken from the available statistics or the literature. This is the case for population growth rate, the share of private consumption in total consumption spending, the effective tax rate, the output scale parameter, the share of labor and private capital in production, and the interest rate. For the parameters for which no empirical information is available, one of two strategies was followed. In some cases reasonable values were arbitrarily chosen. These were the cases of the elasticity of substitution, the public capital externality parameter, and the depreciation rates.

The remaining parameter values — such as the discount rate and the cost-of-adjustment function parameters — were obtained by calibration. They were chosen in such a way that the numerical model exactly replicate the data for 1996 and exactly extrapolate into the future the trajectories of GDP growth rates, the composition of consumption and investment spending, public deficits, and current account position. These parameters are central to the descriptive power of the simulation results: the discount rate mostly affects foreign debt while adjustment costs mostly affect the relative composition of the different types of investment. The choice of the discount rate is guided by the fact that endogenous growth requires that the discount rate should not exceed the after-tax interest rate. The specification of the adjustment cost parameters presumes that adjustment costs are 20 per cent of investment in the base year for all types of investment.

The calibrated values for the endogenous variables in the model are presented in Table 3. This base case scenario, which will be referred to as Case 1 reflects the *status quo,* i.e., the optimal trajectory for the Portuguese economy in the absence of the structural changes under consideration.

The numerical implementation of the model was extensively tested in terms of the sensitivity of the benchmark trajectories with respect to different parameter specifications. Naturally, different parameter specifications lead to different levels, say, of GDP growth and long-term GDP *per capita*. For example, the greater the public capital externality, the greater is the marginal productivity of both private and public capital, and hence the greater is GDP growth. Despite the differences in the optimal trajectories under different parameter values, the size and pattern of changes induced by the Euro are remarkably robust.

4. ON THE EFFECTS OF THE EURO ON THE LONG-TERM GROWTH

4.1 Modelling the participation in the euro area

In terms of the numerical simulations, the evaluation of the impact on the Euro depends critically on the changes in interest rate considered. This is true both in terms of the *status quo* considered as well as the magnitude of the interest rate reduction. Consider first the issue of the definition of the relevant *status quo.* It could be argued that the *status quo* used to calibrate the model, which considers an interest rate of 7.5 per cent, would also be a realistic description of the economy in the case of Portugal not joining the Euro area. This is because the Portuguese authorities have been consistently engaged in policies that promote macroeconomic stability which, presumably, would continue in such event. In addition, some of the benefits from the Euro, due to reduced public indebtedness in the Euro area, would accrue regardless of the Portuguese participation.

The argument could also be made that the effects of the Portuguese participation in the Euro area should be measured against a scenario with an interest rate higher, albeit temporarily so, than the one used to calibrate the model. In fact, in the case of non-participation, the strong priors on the Portuguese participation would be defrauded and the possibility of exchange rate and financial crisis could not be summarily dismissed. A speculative attack against the Escudo would make exchange rate stability increasingly costly. Substantial increase in the interest rate could be necessary to prevent a devaluation of the domestic currency. To accommodate these considerations a scenario is considered which contemplates an increase of one percentage point in the interest rate

The question of the magnitude of the interest rate reduction induced by the participation of Portugal in the Euro area is a complex one. This research used estimates presented by Barbosa et all [1998]. The long-term interest rate reduction is estimated to be between one and three percentage points vis-à-vis the observed long-term interest rate. This corresponds to a reduction of between two and four percentage points if non-participation gave rise to a one percentage point worsening of the observed interest rate levels. Of this total a reduction of about half a percentage point could be attributed to the reduction in public indebtedness in the Euro area which would occur as a results of the application of stringent budgetary rules and is, therefore, independent of the Portuguese participation.

Table 3

CALIBRATION VALUES

Percentage

GDP growth	3.1
Private consumption / GDP	61.1
Public consumption / GDP	12.6
Private investment / GDP	21.9
Public investment / GDP	3.7
Human capital investment / GDP	7.5
Public deficit / GDP	65.0
Public deficit / GDP	5.1
Current Account deficit / GDP	1.4

According to the discussion above, this paper considers three scenarios in addition to the base case scenario. One of these, Case 2, considers a one percentage point increase in the interest rate, reflecting a pessimistic outcome in the case of non-participation. In the other extreme, Case 4, considers a three percentage points interest rate reduction. A comparison between both cases provides an upper limit to the Euro effects. In one of the other cases, Case 3, a one percentage point reduction in the interest is considered. The difference between this case and the central scenario provides the lower limit one can attribute to the euro effects.

4.2 The long-run effects on the euro on GDP

Let us start by considering the effects of the Euro on the GDP in the long term as measured by comparing Case 1, the base case, and Case 4, which reflects an interest rate decline of three percentage points over the base case. Under these condition the Euro would induce a substantial increase in private investment. Private investment would increase by approximately six percentage points of the GDP. As a results the GDP growth rate would be increased over time by between 0.2 and 0.6 percentage points. Ultimately, the long-term GDP *per capita* would be enhanced from 207.0 to 227.6, a 10.0 per cent increase, approximately. This corresponds to an average yearly increase in

the GDP growth rate of approximately 0.4 percentage points, i.e., a change from 3.1 per cent to 3.5 per cent.

The same pattern of results is identified if we consider the other Euro scenarios. In fact, the lower bound for the effects, obtained by comparing Case 1 and Case 3, is a 2.9 per cent gain in the long-term GDP *per capita*. In turn, the upper bound for the effects, obtained by comparing Case 2 and Case 4, is a 13.6 per cent gain in the long-term GDP *per capita*.

Consider now the budgetary implications of a reduction in the interest rate. By design, the projected public deficits in Case 1, the base case, are around 5 per cent of the GDP. These projections, one may recall, are based on the assumption that all components of the budget grow at the same rate as the GDP in the base case, i.e., at a yearly rate of 3.1 per cent. Clearly, such deficits would not be acceptable under the conditions of the Stability and Growth Pact. The relevant question, however, is what the public deficits would be under the new interest rate associated with the participation in the Euro area

In Case 4, and under the same projection rules, public deficits would decline progressively. The public budget would reach a balanced budget situation around the year 2006. After this, the budget would show increasingly larger surpluses. This change of the budgetary situation under Case 4 is the result of lower interest payments on the outstanding public debt and greater tax revenues due to an expanding tax base. In addition, the growth of the different components of the budget, which has been set at 3.1 per cent, is now relatively lower than the GDP growth rates. These results suggest that the positive effects of lower interest rates greatly reduce the pressures placed on the domestic authorities by the Stability and Growth Pact.

The fact that the public debt shows an automatic tendency to decrease under the new interest rate conditions is important in itself. This situation places a lower premium on running budget surpluses as is projected in Case 4. It is, indeed, relevant to inquire what additional gains in terms of long-term GDP performance could be achieved by marginally changing the design of the budgetary projection.

Let us consider a budgetary strategy that determines that the public budget has to be balanced within a five-year period and should remain in balance thereafter. This new budgetary strategy is fully consistent with the rules of the Stability and Growth Pact. At the same time, it allows for the surpluses projected in Case 4 to be used in ways that can enhance long-term growth. Three scenarios were considered as regards the differences between the budget position under Case 4 and the target deficits. In Case 5 differences are accommodated by changes in tax revenues, in Case 6 by changes in public investment, and in Case 7 by changes in human capital investment.

To the extent that the reduction in interest rates makes public funds available for other purposes, investment activities can be expanded. In Case 5, lower tax rates would lead to higher private investment and, therefore, higher GDP. In turn, in cases 6 and 7, higher public investment and investment in human capital would directly lead to a higher GDP, but also indirectly, through its effects on the marginal productivity of private investment and on private investment itself.

As Table 4 reports, all three cases allow for increases, though marginal, in the long-run position of GDP *per capita* in the economy. The corresponding upper bounds for the effect of the interest rate reduction would be 13.8 per cent, 14.8 per cent and 13.9 per cent in Cases 5, 6, and 7, respectively, compared to 13.6 per cent under Case 4. This increase in the long term GDP *per capita* is to be understood as a direct consequence of the fact that the reduction of interest rates reduces budgetary pressures. This reduction in budgetary pressures acts to an extent such that not only the conditions of the Stability and Growth Pact can be satisfied but also that public spending can still be further increased in ways that increase the long-term GDP growth prospects.

4.3 How important are the long-term effects of the euro?

We have already established that the effects of the Portuguese participation in the Euro area are substantial in absolute terms. We would like, however, to have an idea of the relative importance of these effects. A good way of measuring the relative importance of the effects of the participation in the Euro area is by comparing such effects to the effects of EU structural transfers. This

Table 4

EFFECTS OF THE EURO

GDP *per capita* (1996 = 100.0)	Case 1	Case 2	Case 3	Case 4
1996	100.0	100.0	100.0	100.0
2000	112.2	111.4	112.9	114.2
2005	130.0	127.9	132.0	135.8
2010	151.3	147.8	154.6	161.5
2015	176.7	171.7	181.5	191.9
2020	207.0	200.4	213.1	227.6
GDP *per capita* *(1996 = 100.0)*	Case 1	Case 5	Case 6	Case 7
1996	100.0	100.0	100.0	100.0
2000	112.2	114.2	114.9	115.0
2005	130.0	135.9	138.5	139.3
2010	151.3	161.7	165.1	165.7
2015	176.7	192.1	194.0	192.3
2020	207.0	228.0	230.1	228.1

Remarks:
Case 1: base case.
Case 2: increase of 1 percentage point in the interest rate.
Case 3: reduction of 1 percentage point in the interest rate.
Case 4: reduction of 3.0 percentage points in the interest rate.
Case 5: Case 4, under a balanced budget target (tax replacement).
Case 6: Case 4, under a balanced budget target (public investment replacement).
Case 7: Case 4, under a balanced budget target (human capital investment replacement).

is a natural experiment since the two policies do, at least partially, overlap in their effects on the Portuguese economy. Indeed, both policies have the potential to enhance the long-term growth potential through the stimulation to investment activity. The participation in the Euro area does that mostly through market mechanisms while the EU structural polices achieve that mostly through administrative mechanisms.

For the purpose of the numerical simulation exercise, the design of the structural transfer programs follows the Community Support Framework for Portugal for 1994-1999 (see Commission of the European Communities [1994] for details). The Community Support Framework details the value of annual transfers, the composition of these transfers (private and public physical capital, and human capital), and the co-financing requirements (EU transfers, private and public domestic matching funds). Due to lack of more accurate data, transfers under the new Community Support Framework for 2000-2006 — under negotiation at the date of the preparation of this article — follow exactly the same pattern of the current transfer programs.

Case 8 considers the effects of EU structural transfers. Simulation results reported in Table 5 suggest that the GDP *per capita* in the long term is enhance by 3.4 per cent by the structural programs under consideration. This corresponds to an average yearly increase in the GDP growth rate of approximately 0.15 percentage points, i.e., a change

Table 5

ON THE RELATIVE IMPORTANCE OF THE EFFECTS OF THE EURO

GDP *per capita* (1996 = 100.0)	Case 1	Case 4	Case 8
1996	100.0	100.0	100.0
2000	112.2	114.2	114.5
2005	130	135.8	136.8
2010	151.3	161.5	159
2015	176.7	191.9	184.1
2020	207	227.6	214.1

Remarks:
Case 1: base case.
Case 4: reduction of 3.0 percentage points in the interest rate.
Case 4: reduction of 3.0 percentage points in the interest rate.
Case 8: structural transfers for the period 1996-2006.

from 3.1 per cent to 3.25 per cent. Clearly, the potential effects of structural transfers are very close to the lower bound of the effects of the participation in the Euro area. This suggests that the effects of the Portuguese participation in the Euro area are very substantial also in relative terms.

5. SUMMARY

This paper investigates the effects of the participation of Portugal in the Euro area. The most important channel through which joining the Euro affects the Portuguese economy is a reduction in long-term interest rates. This reduction is expected to affect positively the fundamentals of economic growth in Portugal and, therefore, to improve long-term GDP *per capita*. Simulation results suggest that the participation of Portugal in the Euro area improves long-term GDP *per capita* by between 2.9 per cent and 13.6 per cent. The most likely scenario places the gains at just under 10.0 per cent. This corresponds to an increase in the annual GDP growth rate of approximately 0.4 percentage points, say from a long-term trend of 3.1 per cent to 3.5 per cent.

An important question is the budgetary impact of the Euro. On one hand, the Stability and Growth Pact places important constraints on the domestic public budget. On the other hand, the reduction of interest rates associated with the participation in the Euro area tends to reduce such pressures. Simulation results suggest that the reduction in interest rate and greater GDP growth associated with the Euro, indeed, greatly reduce the budgetary pressures imposed by the EMU rules. As a corollary, simulation results suggest that the long-term gains associated with lower interest rates may be further enhanced by changes in the design of the underlying budgetary exercise. Allowing for the growth of public investment in the context of the Stability and Growth Pact constraints would give rise to a 14.8 per cent increase of GDP per head in the long-run.

Finally, simulation results suggest that in the most likely scenario, the long-term effects of the Euro, i.e. an improvement in long term GDP *per capita* of about 10 per cent, are substantially larger than the effects of structural transfers for the period 1996-2006, i.e. a long-term improvement of 3.4 per cent. In fact, the effects of structural transfers are only marginally greater than the lower bound of the effects of the Euro. This means that it is reasonable to assume that the effects of the Portuguese participation in the Euro area are larger than the combined effects of the Community Support Framework programs for the period 1986-2006.

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January*

7 January (Regulation no. 25/98 of the Stock Market Commission, Official Gazette no. 5/99, Series II)	Lays down a set of rules regarding the compulsory reporting and advertising of transferable securities transactions by the issuing companies to the managing companies of the respective market. Revokes Regulation no. 92/6 of 7 January 1993.
7 January (Executive Order no. 8/99, Official Gazette no. 5/99, Series I, B)	According to the provisions laid down in Decree-Law no. 138/98 of 16 May, on the rules to be complied with in the process of transition to the euro, fixes at 3.25 per cent the benchmark rate to which the aforementioned Decree-Law, article 10, no. 2 refers. This is an equivalent rate, which will replace the discount rate of the Banco de Portugal as of 1 January 1999.
11 January (Decree-Law no. 11/99, Official Gazette no. 8/99, Series I, A)	Introduces changes in the calculation basis of the annual base rate. This Decree-Law takes effect on the first day of the month following its entry into force.
15 January (Notice of the Banco de Portugal no. 1/99, Official Gazette no.12/99, Series I, B)	Determines the operations included in no. 1 of Article 5 of Decree-Law no. 13/90 of 8 January, which defines the scope of foreign exchange operations, introducing the changes arising from the entry into force of the euro. Revokes Notice no. 6/93 of 15 October.
15 January (Executive Order no. 28/99, Official Gazette no. 12/99, Series II)	Under the terms laid down in no. 4 of Article 8 of Decree-Law no. 138/98 of 16 May, entrusts the Directorate-General of the Treasury with the powers to guarantee the exact correspondence between the daily cash flows arising from the global settlement of means of payment denominated in euro and the respective accounting records, on an item-by-item basis, both at the fiscal level and at the level of the Treasury accounts.
19 January (Regulation no. 3/99, Official Gazette no. 15/99, Series II)	Lays down the rules governing the use of derivative products by insurance companies operating in Portugal or abroad, which are subject to the supervision of the Portuguese Insurance Institute.
19 January (Regulation no. 4/99, Official Gazette no. 15/99, Series II)	Lays down the rules governing the use of derivative products in pension funds by the respective managing companies operating in Portugal.
26 January (Notice of the Banco de Portugal no. 2/99, Official Gazette no. 21/99, Series I, B)	In use of the powers conferred to it by Article 99 (e) of the Legal Framework of Credit Institutions and Financial Companies, approved by Decree-Law no. 298/92 of 31 December, introduces changes in the setting up of provisions for general credit risks by credit institutions and financial companies, taking into account the growth level of credit granted to individuals for consumption purposes, namely the ratio risk/profitability associated with it. Rewords nos. 3 and 7 and revokes nos. 20 and 21 of Notice no. 3/95 of 30 June.
28 January (Instruction no. 1, Official Gazette no. 23/99, Series II)	Lays down the general rules governing the operation of the primary and secondary markets of Treasury bills.
28 January (Decree-Law no. 22/99, Official Gazette no. 23/99, Series I, A)	Lays down several rules governing the registration and settlement of transferable securities of a monetary nature by the Banco de Portugal.

February

10 February (Executive Order no. 118/99, Official Gazette no. 34/99, Series II)	Under the terms laid down in no. 4 of Article 295 of the Companies Act (*Código das Sociedades Comerciais*) (legal reserve), stipulates that the provisions set forth in no. 2 of the aforementioned Act shall not be applicable to the companies subject to the supervision of the Banco de Portugal and the

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

	Portuguese Insurance Institute, as regards the reserves set up for the amounts referred to in paragraph a) of this Act. It further stipulates that reserves cannot be utilised for the payment of dividends or the acquisition of own shares.
11 February (Decision no. 2481/99, Official Gazette no. 35/99, Series II)	Stipulates the new amounts in euro for the issue of fixed rate and variable rate Treasury Bonds, following the process of redenomination to which Decree-Laws no. 138/98 of 16 May and no. 343/98 of 6 November refer, to take effect on 1 January 1999.
18 February (Instruction no. 2/99, Official Gazette no. 41/99, Series II)	Rewords Articles nos. 12, 16, 21, 22 and 23, and introduces other changes in Instruction no. 2-A/98 (Series II) of 22 December, as regards the rules governing the issue of Treasury bonds.
20 February (Regulation no. 3/99 of the Stock Market Commission, 4th Supplement to Official Gazette no. 43/99, Series II)	Rewords no. 5 of Regulation no. 94/4 of 20 June, governing the special market for wholesale transactions.

March

2 March (Decree-Law no. 58/99, Official Gazette no. 51/99, Series I, A)	Regulates the setting up and operation of risk capital funds. Revokes Decree-Law no. 187/91 of 17 May, and Decree-Law no. 214/92 of 13 October.
8 March (Circular Letter of Banco de Portugal no. 16/DOC)	Informs credit institutions and financial companies that the rules governing operations on the primary and secondary markets of Treasury bills, through the SITEME (Electronic Market Transfer System) are laid down in Instruction No. 6/99.
10 March (Regulation no. 4/99 of the Stock Market Commission, Official Gazette no. 58/99, Series II)	Rewords paragraphs 2.3.2 – Accounting Principles – Valuation Criteria – Securities Portfolio - of Regulations nos. 95/14 and 96/16, adding a new paragraph, which will become effective on 1 January 2000.
12 March (Regulation no. 8/99 of the Portuguese Insurance Institute, Official Gazette no. 60/99, Series II)	Lays down a set of rules on the calculation and setting up of the solvency margin and of the guarantee fund of pension fund managing companies. Revokes Rule no. 3/98-R of 18 February, retaining no. 61 of Rule no. 298/91 of 13 November, previously revoked.
12 March (Regulation no. 9/99 of the Portuguese Insurance Institute, Official Gazette no. 60/99, Series II)	Lays down a set of rules governing the calculation and setting up of the solvency margin and guarantee fund of insurance companies. Revokes Rule no. 2/98-R of 18 February.
16 March (Decree-Law no. 75/99, Official Gazette no. 63/99, Series I, A)	Valuation of the gold of Banco de Portugal. Brings into line the gold valuation criterion with the one defined for the European System of Central Banks and harmonises the nomenclature and the meaning of the current "Gold revaluation reserve" with that adopted in the Chart of Accounts of the Banco de Portugal. Revokes Decree-Law No. 229-H/88 of 4 July, effective as of 1 January 1999.
22 March (Circular Letter of the Banco de Portugal no. 9/DSB)	Sends a copy of Instruction no. 8/99, to be published in the BNBP no. 4, of 15 April 1999, relating to the procedures to be adopted by credit institutions and financial companies, as regards their clients, in the conversions between the escudo and other euro area currencies.
30 March (Notice of Banco de Portugal no. 3/99, Official Gazette no. 75/99, Series I, B)	Provides for the flexibilisation of the procedures governing the setting up of country-risk provisions, enabling its adaptation by the Banco de Portugal to new situations, through the issue of instructions. Rewords no. 1 of no. 12 of Notice no. 3/95 of 30 June.
31 March (Decree-Law no. 102/99, Official Gazette no. 76/99, Series I, A)	Changes the legal system governing mutual agricultural credit and agricultural credit co-operatives. Rewords articles 28, 44, 50, 53, 66, 68, 74 and 80 and adds articles 81 and 82 to Decree-Law no. 24/91 of 11 January,

amended by Decree Law no. 230/95 of 12 September and Decree-Law no. 320/97 of 15 November.

April

1 April (Official Journal of the European Communities no.94, Series C)

Interest rate applied by the European Central Bank to its repurchase agreements since 1 April 1999: 3.00%; euro exchange rates.

1 April (Executive Order no. 227/99, Official Gazette number 77, Series I, B)

Pursuant to the provisions set forth in no. 3 of Article 1 of Decree-Law no. 88/94, of 2 April, establishes that the securities representing the public debt, issued under the terms of the Resolution of the Council of Ministers no. 9-A/99, of 23 February, shall be added to the list published through Executive Order no. 377-A/94, of 15 June.

16 de April (Regulation no. 5/99 of the Stock Market Commission, Official Gazette no 89, Series II)

Lays down the general rules governing the setting of the fees to be paid by the issuing entity to the Association of the Lisbon Stock Exchange (Portuguese acronym: ABVL) for the services provided by the latter, regarding the listing and relisting of securities, as well as their maintenance in the spot exchange markets. Revokes nos. 7 to 9 of Regulation no. 91/12 and no. 9 of Regulation no. 91/14 of the Stock Market Commission.
Amended by Regulation no. 11/99, of 19 April, Official Gazette no. 113, Series II, of 15 May 1999.

28 April (Circular Letter of the Banco de Portugal no. 24/DOC)

Informs that on 10 May 1999 a redenomination shall be made by the Banco de Portugal of the outstanding Certificates of Deposit, and explains the method to be used in the referred operation.

28 April (Executive Order no. 293/99, Official Gazette no. 99, Series B)

Under the terms laid down in no. 2 of Article 27 of Decree-Law no. 415/91, of 25 October, adapts to the euro the rules governing the application of pension funds. Revokes Executive Orders no. 1152-E/94, of 27 December, no. 195/97, of 21 March and no. 46/98, of 30 January.

30 April (Executive Order no. 299/99, Official Gazette no. 101, Series B)

Under the terms laid down in no.1 of Article 90 and in Article 187 of Decree-Law no. 94-B/98, of 17 April, adapts to the euro the rules governing assets representing the insurance companies' technical reserves. Revokes Executive Orders no. 1152-D/94, of 27 December, no. 194/97, of 21 March and no. 48/98, of 4 February.

30 April (Circular Letter of the Banco de Portugal no. 26/DOC)

Informs that the rate of return on Certificates of Deposit, Series B, was fixed at 2.35%, to prevail on the quarter started on 4 May 1999.

May

5 May (Notice no. 4/99, Official Gazette no. 104, Series I)

Fixes the contributions to the Agricultural Credit Guarantee Fund; lays down a transitional system to be applicable to the contributions of the Central Agricultural Credit Bank and the mutual agricultural credit banks, providing for their reassessment for the year 2000.

12 May (Circular Letter of the Banco de Portugal no. 28/DOC)

Informs that an amended credit-risk centralisation for January 1999 shall be disclosed, thereby cancelling the one issued on 22 April last.

16 May (Decision of the European Central Bank, of 1 December 1998 (1999/331/EC))

Decision on the national central banks' percentage shares in the key for the capital of the European Central Bank (ECB/1998/13). This decision replaces the ECB's Decision of 9 June 1998 (ECB/1998/1). The effects of this Decision are backdated to 1 June 1998. Pursuant to the provisions laid down in this Decision, the ECB's Executive Board is authorised to take all measures deemed necessary so as to make the adjustments to the amounts already settled by the NCBs, under the terms of the ECB's Decision of 9 June 1998, laying down the measures necessary for the paying-up of the capital of the European Central Bank.

20 May (Decree-Law no. 172/99, Official Gazette no. 117, Series I, A)

Lays down the legal system governing autonomous warrants issued, negotiated or traded in Portugal. Adds Article 157-A to the Stock Market Code, approved by Decree-Law no. 142-A/91, of 10 April, and rewords Article 3 of the Commercial Registration Code, approved by Decree-Law no. 403/86, of 3 December.

August

20 August (Decree-Law no. 329/99, Official Gazette no. 194, Series I, A)

Regulates the process relating to the minting, storage, safekeeping, payment and entry into circulation of current euro metal coins, intended to replace the escudo from 1 January 2002 onwards.

31 August (Decision no. 17704, Official Gazette no. 212, Series II)

Determines, pursuant to article 10 (1) of Decree-Law no. 349/98, of 11 November, that all credit institutions authorised to grant housing credit under the terms of the general system in force in Portugal may carry out the operations envisaged in subsidised housing credit schemes, provided that they are in a position to ensure the supply of the necessary information to the management, control and supervision of the subsidised credit granted, in compliance with the above-mentioned Decree-Law and respective legislation, as well as with the regulations published by the Directorate-General of the Treasury.

September

15 September (Decree-Law no. 357/99, Official Gazette no. 216, Series I, A)

Creates the education-saving schemes (Portuguese acronym: PPE), integrating registered certificates of an education-saving fund (Portuguese acronym: FPE), or registered certificates of a retirement/education-saving fund (Portuguese acronym: FPR/E), established expressly for the purpose or resulting from the adaptation of an already existing FPR, with the purpose of coping with the expenses with education in a professional or higher education course incurred by the participant or the member of his household, benefiting, with the adequate changes, from the fiscal system envisaged in article 21 of the Fiscal Incentives Statute, approved by Decree-Law no. 215/89, of 1 July.

16 September (Regulation of the Stock Market Commission no. 15/99, Official Gazette no. 228, Series II)

Establishes a set of regulations according to which the entities of stock market investment funds shall prepare a simple leaflet for each stock market investment fund, supplying all the major information in accessible and synthetic terms, enabling the investor to take a correct and informed investment decision.

21 September (Circular Letter no.20/99/DSBDR)

Recommends that, during the pre-contractual stage, the clients of credit institutions and financial companies shall be informed, in writing, of the impact that a 1 percentage point interest rate rise may have on the effective debt servicing of the corresponding loan, on the date the rate takes the form of a "variable" rate.

October

13 October (Decree-Law no. 394/99, Official Gazette no. 239, Series I, A)

Approves the legal system restructuring and reorganising the entities managing regulated and non-regulated stock markets and the entities supplying services related with the management of those markets. Articles 190, 192, 194 to 263 and 481 to 498 of the Stock Market Code, approved by Decree-Law no. 142-A/91, of 10 April, are hereby revoked, wherefore the current associations are converted into companies. Should this not occur, article 194 (3) and (4) and articles 250, 494 and 495 of the same Decree-Law shall remain in force.
(Related Decree-Laws) Executive Order no. 1182/99 (Series II), of 22 October 1999, published in the Official Gazette no. 257, Series II, of 4 November 1999. Executive Order no. 1183/99 (Series II), of 22 October 1999, published in the Official Gazette no. 257, Series II, of 4 November 1999.

27 October (Circular Letter of the Banco de Portugal no. 347/DMR)	Informs that, in the wake of the decision to link the rate of return of the Certificates of Deposit, Series B, to the rate of return of the minimum reserves of the European System of Central Banks, the rate of return of the Certificates of Deposit, Series B, is fixed at 2,5%, to prevail on the quarter started on 4 November 1999.

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