INFLATION — RECENT DEVELOPMENTS AND PERSPECTIVES

1. INTRODUCTION

In 1997, inflation in Portugal reached levels compatible with price stability, and converged to the average values recorded in the European Union. Monetary policy, based on the stability of the escudo exchange rate vis-à-vis a group of currencies from countries traditionally exhibiting price stability, played a key role in the sustained disinflationary process began in 1990.

Inflation increased in 1998, to which contributed the effects linked in first place to the escudo depreciation throughout 1997 and early 1998, but also to the dynamism of domestic demand. Also worth noting is the change in the structure of demand in 1998, less favourable to price stability, as well as other factors of a temporary and momentarily nature(1). This behaviour took place in a context where the effectiveness of the monetary and exchange rate policy in dealing with the specific conditions of the Portuguese economy was substantially reduced(2), and where the pace of budgetary consolidation decreased(3).

In the March 1997 *Economic Bulletin*, the Banco de Portugal indicated as a relevant reference for conducting monetary policy, a rate of inflation, measured by the average change of the Harmonised Index of Consumer Prices not higher than 2 per cent in 1998. Given the behaviour of prices in the first nine months of 1998, the probability of having inflation surpassing the announced referential at the end of the year is particularly high, though the deviation should not be expected to exceed 0.25 percentage points.

2. INFLATION: RECENT DEVELOPMENTS

Inflation, measured by the annual average change in the HICP, rose from 1.8 per cent in January to 2.0 per cent in September. In year-on-year terms, the HICP grew 2.2 per cent in September. This figure compares with a minimum of 1.3 per cent reached in February and a maximum of 2.8 per cent recorded in July (4). The recent behaviour of prices in Portugal resulted in a widening of the

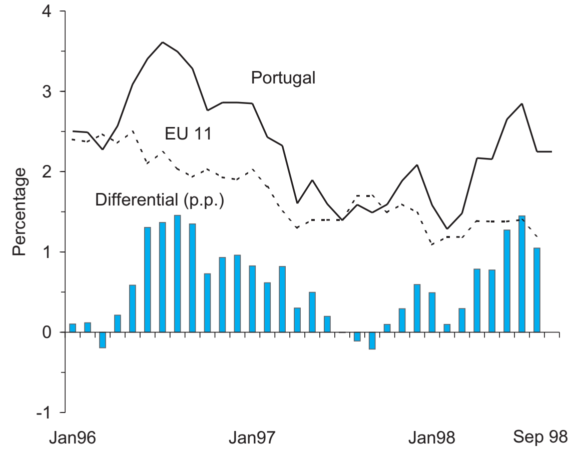
(1) These factors do not affect inflation directly, but by changing relative prices (whether temporarily or not) these factors may render an impact on the general level of prices. Such factors comprise, for instance, the effects of the realisation of the EXPO 98.

(2) The Portuguese participation in the euro area implies the convergence towards the monetary conditions prevailing in the remaining participating countries until end 1998. In May 1998, the eleven EU Member-states which shall integrate the euro area from January 1999 onwards was announced. On the same date, the bilateral rates to be used in determining the euro conversion rates on 31 December 1998 were also announced. See the Communication of the Finance Ministries and the national central bank Governors on the determination of the irrevocable euro conversion rates. European Community Official Gazette, no. C160, of 27.05.1998.

(3) See box "Budgetary policy: recent developments" in this bulletin.

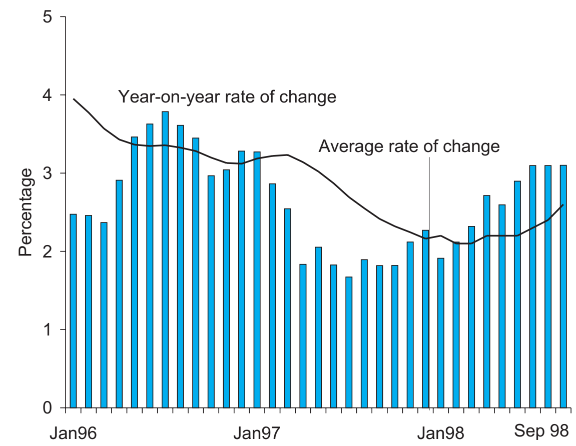
(4) The irregular behaviour exhibited by the year-on-year rates of change of the HICP since early 1998 is related to the introduction of the new series of this index in January 1998, and to the series break adjustment method. The new series, calculated upon the structure of expenditure resulting from the Family Budget Survey (FBS) of 1994/95, started to include prices of sales and promotions. This series is available only from December 1997 onwards, which means that the year-on-year rates of change in 1998 are calculated from comparing the new and the old series. This results in an underestimation of inflation measured by the year-on-year changes in the months recording a greater incidence of sales and promotions. See box "Change in the Consumer Price Index" in the 1997 *Annual Report*, Banco de Portugal, 1998.

Chart 1
HARMONISED INDEX OF CONSUMER PRICES IN PORTUGAL AND IN THE EU 11
Year-on-year rate of change



Source: Eurostat.

Chart 2
CONSUMER PRICE INDICES
Year-on-year rate of change



Source: INE.

inflation differential vis-à-vis the average of the eleven countries integrating the euro area from 1999 onwards (EU-11). Regarding the year-on-year rates of change of the HICP, the differential vis-à-vis the EU-11 widened from 0.5 percentage points (p.p.) in January to 1.0 p.p. in August[5] (chart 1). However, in annual average terms, the inflation differential vis-à-vis the euro area increased from 0.3 p.p. in January to 0.6 p.p. in August.

This differential did not result in a real appreciation of the escudo vis-à-vis the currencies of the EU-11 countries, since the convergence towards the central parities within the Exchange Rate Mechanism of the European Monetary System (EMS) translated into a depreciation of the escudo vis-à-vis those currencies. In August 1998, the escudo depreciation amounted to about 1.1 per cent in annual average terms.

The year-on-year rate of change of the Consumer Price Index (CPI)[6] has increased since early 1998, from 1.9 per cent in January to 3.1 per cent in September (chart 2). In the same period, the annual average growth of the CPI rose from 2.2 to 2.6 per cent. The behaviour of the CPI reflects an inversion in the rate of growth of the prices of tradable goods, which was not compensated by the behaviour of non-tradables' prices (chart 3). The differential between the year-on-year growth of non-tradables' and tradables' prices continued to narrow in 1998, reaching 1.9 p.p. in September (2.5 p.p. in December 1997). The trend indicators[7] confirm the price acceleration in the first nine months of 1998. Nevertheless, trend inflation stands at lower levels than those indicated by the behaviour of the CPI. The year-on-year change of the "trimmed mean at 10 per cent" rose from 1.8 per cent in January to 2.7 per cent in September. In the same period, the growth of the "first principal component" increased from 2.5 to 2.7 per cent (chart 4).

The recent behaviour of prices should be analysed in the context of the behaviour of the usual determinants of inflation — specially the foreign trade deflators and the behaviour of wages and economic activity[8]. Furthermore, the fact that trend inflation exhibits a lower increase than the

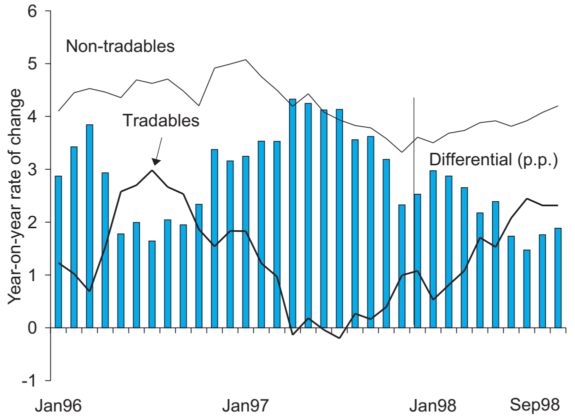
(5) The last month for which data for the eleven euro area countries are available.

(6) As with the HICP, the INE started to disclose a new series of the CPI in January 1998, based upon the FBS 1994/95. However, in the case of the CPI, the INE disclosed back data on the new series, for the period January-December 1997. Therefore, the year-on-year rates of change for 1998 are calculated over the new CPI series only, which avoids the irregular behaviour that has characterised the year-on-year changes of the HICP.

(7) On the methodology of calculation of the trend measures usually used by the Banco de Portugal, see Coimbra, C. and Neves, P. D. (1997), "Trend Inflation Indicators", *Economic Bulletin* vol. 3 no. 1, Banco de Portugal, March 1997.

Chart 3

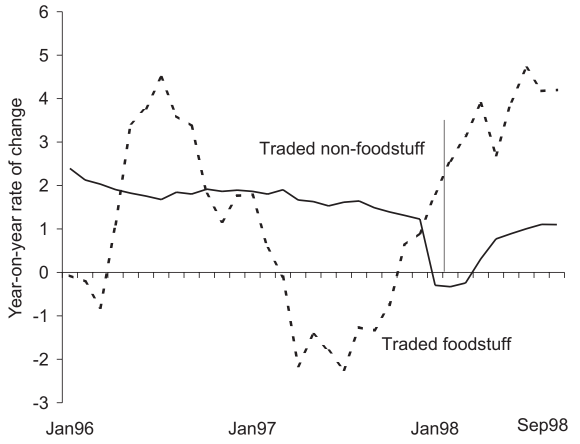
INFLATION



Source: INE and Banco de Portugal.

Chart 4

TRADABLES PRICES

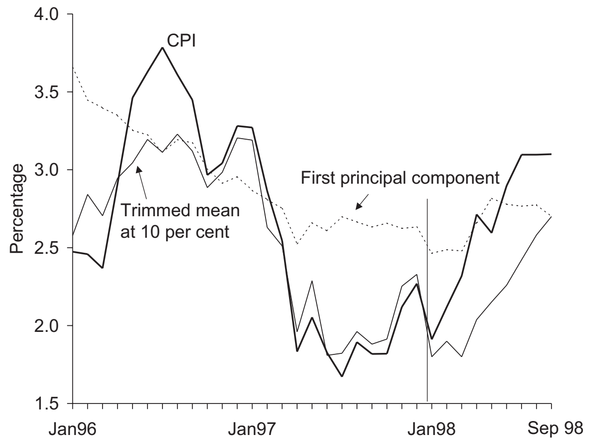


Source: INE and Banco de Portugal.

Chart 5

TREND MEASURES

Year-on-year rate of change



Source: INE and Banco de Portugal.

year-on-year change in the CPI suggests that price acceleration in 1998 is also partly due to anomalous behaviours of some prices. Indeed, an analysis of the elementary items of the CPI reveals a set of factors of a temporary nature that contributed to an increase of prices in the current year. In this context, the significant price growth in some foodstuff goods, the increase in schooling fees in early 1998 and the price acceleration of some services — namely accommodation services — should be singled out.

The year-on-year change of tradables' prices rose from 0.5 per cent in January to 2.3 per cent in September. In the same period, the respective average change rose from 0.4 to 1.5 per cent. The price increase in the traded goods sector was more evident in the traded foodstuffs. Traded foodstuffs prices grew 4.2 per cent in year-on-year terms in September 1998 (1.8 per cent in January). In turn, traded non-foodstuffs' prices grew 1.1 per cent in year-on-year terms in September (-0.3 per cent in January). As in 1997, the behaviour of traded goods' prices in 1998 has been significantly influenced by the price volatility in some foodstuff goods (chart 4). The acceleration of the prices of traded foodstuff goods in the first nine months of 1998 reflects, among other factors, an abnormally high growth in the prices of some goods — e.g. fresh products, possibly related to the bad harvest year.

As mentioned in the March 1998 *Economic Bulletin*[9], the expected increase in inflation in the tradable sector stressed the need for the slowdown of prices in the non-traded sector. However, the latter have developed less favourably. The year-on-year growth of non-traded goods' prices

(8) Section 3 analyses the behaviour of the main determinants of inflation.

(9) See article "Inflation — Recent Behaviour and Prospects", *Economic Bulletin* vol. 4 nº.1, Banco de Portugal, March 1998.

rose from 3.5 per cent in January to 4.2 per cent in September. The annual average change was 3.8 per cent in September, compared with 3.7 per cent from April to August (4.1 per cent in December 1997). The administered adjustment to the value of schooling fees early in the year, the price acceleration in accommodation services (linked to the EXPO-98) and the significant price increases in a set of other services contributed to the interruption of the price slowdown in the non-tradable goods sector in 1998.

3. BEHAVIOUR OF THE INFLATION DETERMINANTS

As mentioned, the recent behaviour of prices should be analysed from the viewpoint of the behaviour of the usual determinants of inflation. In this context, worth highlighting are the behaviour of international prices and the escudo exchange rate — yielding a particularly relevant impact on the prices of the tradable sector — as well as the behaviour of economic activity and wages — specially affecting the behaviour of prices in the non-tradable sector.

3.1 Behaviour of the exchange rate and of international prices

In 1998, the behaviour of imports and exports prices expressed in escudos has rendered a less favourable impact on inflation than in previous years.

In the first quarter of 1998, the prices in escudos of merchandise imports fell 0.2 per cent in year-on-year terms[10]. This development is basically due to the fall in fuel prices, and conceals distinct behaviours of the prices of different economic categories. In fact, the deflator of imports excluding fuel rose 2.2 per cent in year-on-year terms, which compares with a -0.2 per cent change in 1997 as a whole. By economic categories, significant price increases were recorded in food consumer goods and in intermediate goods (5.9 and 4.8 per cent growths, respectively, in year-on-year terms). Meanwhile, exports prices excluding fuel grew 3.1 per cent in year-on-year terms, in the first quarter of 1998 — compared with 0.3 per cent growth in 1997. The growth of exports prices was also particularly substantial in the consumer goods and intermediate goods categories — which grew respectively 3.8 and 4.7 per cent in year-on-year terms.

The changes in imports and exports prices in escudos transmitted to domestic prices with different magnitudes and lags. These depend on the importer and exporters' price marking strategies, which in turn are influenced by the cyclical position of the economy, among other factors. Indeed, increases in foreign trade prices tend to be transmitted faster and stronger to domestic prices whenever domestic demand is accelerating — as happens with the current situation of the Portuguese economy. In addition, the convergence towards central parities in the context of the transition to the single currency implied a depreciation of the escudo vis-à-vis most currencies participating in the mechanism. From a certain point this phenomenon was anticipated, and hence the impact on domestic prices is expected to have been faster than in the past.

The behaviour of international prices expressed in escudos depends on two factors: the behaviour of the escudo exchange rate vis-à-vis the currencies in which trade flows are denominated, and the behaviour of prices practised in the international markets. These factors recorded distinct behaviours in the period under scrutiny.

i) Exchange rate behaviour

The acceleration of the prices of imports and exports (excluding fuel) in the first quarter of 1998 reflects the depreciation of the escudo effective exchange rate in 1997 and early 1998 (chart 6). In the first quarter of 1998, the year-on-year change rate amounted to -3.8 per cent[11]. This behaviour was linked to the generalised appreciation of the US dollar and the Sterling in the international finan-

(10) According to the information of the *Direcção-Geral das Relações Económicas Internacionais.*

(11) It should be noted that from the second quarter of 1998 onwards, following to the depreciation of the yen and to the partial correction of the US dollar and Sterling appreciation, the escudo appreciated in effective terms. In September 1998, the escudo effective exchange rate exhibited a 0.5 per cent appreciation in year-on-year terms.

Chart 6

ESCUDO EXCHANGE RATES VIS-À-VIS THE DEUTSCHE MARK, THE US DOLLAR AND EFFECTIVE EXCHANGE RATE

August 1993 = 100

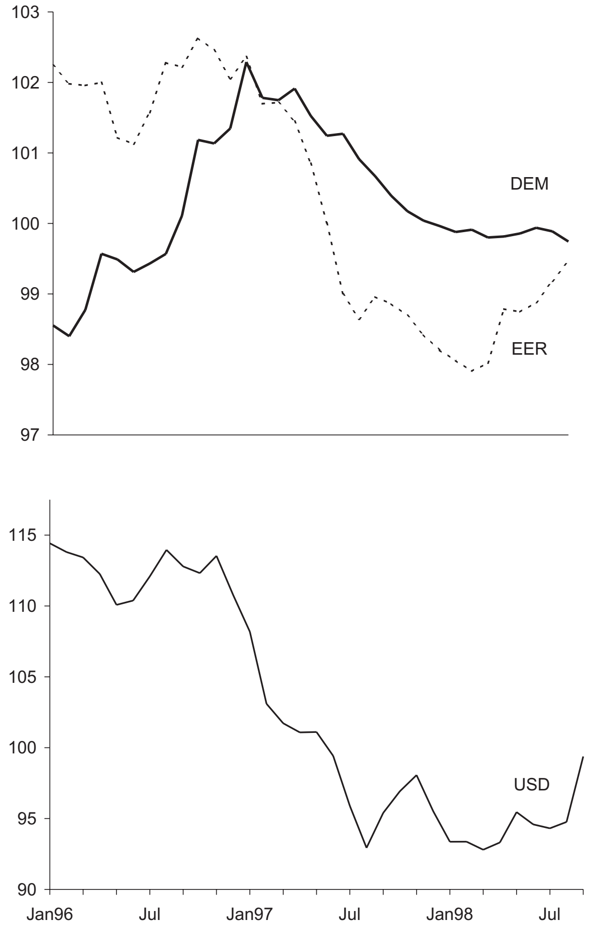
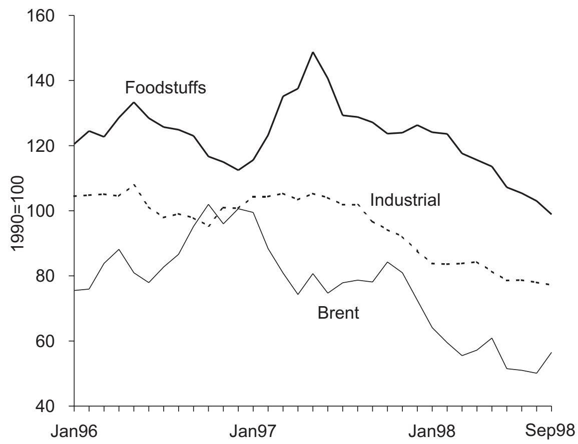


Chart 7A

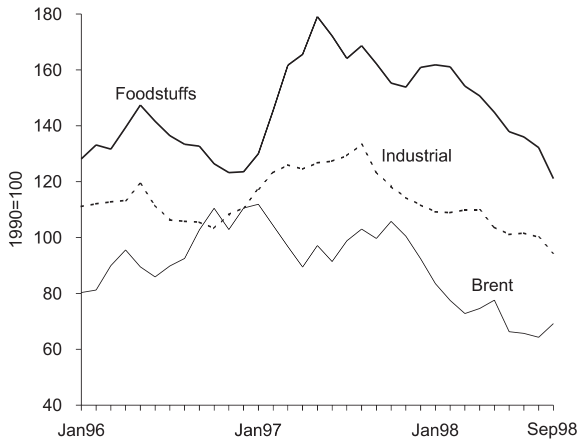
INTERNATIONAL PRICE INDEX OF RAW-MATERIALS (IN US DOLLARS)



Source: The Economist and Financial Times.

Chart 7B

INTERNATIONAL PRICE INDEX OF RAW-MATERIALS (IN ESCUDOS)



Source: The Economist and Financial Times.

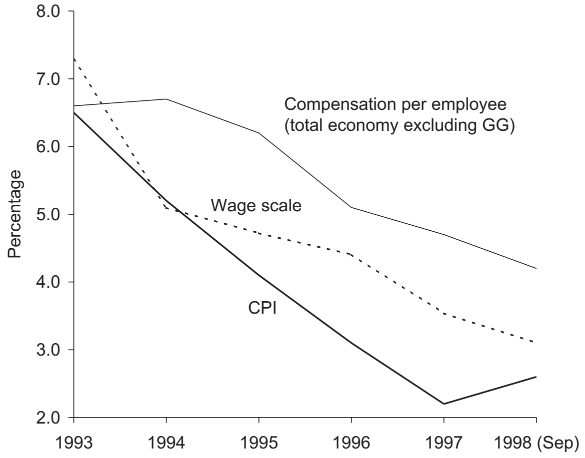
cial markets, as well as the convergence of the escudo exchange rate towards its central parity vis-à-vis the remaining currencies in the Exchange Rate Mechanism of the European Monetary System. In the first quarter of 1998, the year-on-year change of the escudo effective exchange rate vis-à-vis the remaining currencies in the ERM-EMS was -1.9 per cent.

ii) International prices

International prices of commodities, expressed in US dollars, have dropped strikingly, mitigating the impact of the dollar appreciation throughout 1997 on imports prices in Europe. This development reflects greatly the effects of the financial crisis affecting the Asian economies since mid-1997, progressively affecting also Latin America, Russia and other Central and European countries. The international financial crisis translated into a sharp slowdown in world demand, and in significant depreciation of the currencies of the affected countries vis-à-vis the dollar and the EU currencies.

The prices in US dollars of industrial commodities and oil, which in 1997 had fallen on average 1.5 and 7.1 per cent respectively, continued to exhibit a downward trend in 1998 (chart 7 A). Prices of foodstuff commodities also decreased in 1998, following to a 5.7 per cent increase in 1997, in av-

Chart 8
PRICES AND WAGES
Rates of change



Source: INE, Ministério do Trabalho e da Solidariedade and Banco de Portugal.

erage terms. In September, the prices of foodstuff commodities fell 22.2 per cent in year-on-year terms, while industrials prices fell 20.2 per cent and oil prices dropped 28.3 per cent.

The favourable behaviour of commodities' international prices, the cyclical position of the euro area as a whole — where output is still below its reference path — and the maintenance of high unemployment levels in Europe have contributed to the continuation of price stability in the EU-11. Together with the absence of inflationary pressures in the euro area, the behaviour of commodity prices in dollars has continued to provide a favourable setting for the behaviour of prices in Portugal.

3.2 Economic activity and wages

Economic activity acceleration tends to exert pressures on prices, due both to the growth of domestic demand, as well as indirectly, through pressures on wages. The pressure on some prices tends to appear when productive capacity utilisation is so high that output reaches its trend level and the unemployment rate converges to its natural rate.

The Banco de Portugal forecasts for 1998 indicate a further acceleration of economic activity [(12)]. After a real growth of 3.6 per cent in 1996 and 4.0 per cent in 1997, GDP is expected to grow between 4.0 and 4.25 per cent. This forecast reflects the dynamic behaviour of most components of overall demand. The acceleration of private consumption — expected to grow 4.2 per cent in real terms in 1998, following to 3.0 per cent in 1997 — should be singled out. Public consumption and exports are also expected to accelerate, while investment is estimated to continue recording a high pace of growth. Investment is expected to grow 9.9 per cent in real terms, following to 12.8 per cent in 1997. The contribution of domestic demand to GDP growth shall strengthen in 1998, while the contribution of net external demand is estimated to decrease from 1997. The acceleration of private consumption in 1998 led to a growth path of demand which is less favourable in terms of price behaviour.

The maintenance of a high pace of economic growth has translated into an increase in the rates of productive capacity utilisation and in a lower unemployment rate. The rate of productive capacity utilisation in manufacturing industry reached 82 per cent in the first half of 1998, compared with 80 per cent in the same period in the previous year. Furthermore, according to the data from the (new) Employment Survey of the *Instituto Nacional de Estatística*, the unemployment rate stood at 4.6 per cent in the second quarter of 1998 [(13)].

The growth of employment and the reduction in the unemployment rate are reflected in the behaviour of wages. According to the forecasts of the Banco de Portugal, nominal wages per employee in the corporate sector[(14)] are expected to grow 4.2 per cent in 1998, after a 4.7 per cent growth in 1997. In turn, the growth of wages per employee in the economy as a whole is estimated to decrease from 5.6 per cent in 1997 to 5.0 per cent in 1998. If effective, this development will yield a further slowdown in nominal wages in 1998 (chart 8).

(12) See article "The Portuguese economy in 1998" in this bulletin.

(13) This figure should be interpreted with caution, since it is not comparable with previous unemployment rate levels. Indeed, methodological changes introduced in the Unemployment Survey imply a series break from the last quarter of 1997 to the first quarter of 1998. See "The Portuguese economy in 1998" in this bulletin.

(14) The corporate sector corresponds to the total economy excluding General Government.

However, this slowdown is smaller than those previously expected by the Banco de Portugal and implicit in the macroeconomic scenery disclosed in the March 1998 *Economic Bulletin* — hence contributing to the less favourable behaviour of inflation than that previously expected, specially in the non-traded goods sector. Also worth noting is that unit labour costs in companies are expected to grow 2.6 per cent in 1998, hence accelerating slightly vis-à-vis 1997 (2.5 per cent growth).

4. CONCLUSION

Portugal is one of the eleven countries which will adopt the euro from January 1999 onwards, and that will begin to share a single monetary policy which takes the maintenance of price stability as its main objective. The European Central Bank, responsible for conducting the single monetary policy, defined "price stability" as "an annual increase in the Harmonised Index of Consumer Prices (HICP) in the euro area below 2 per cent" [15].

Being guided towards the maintenance of price stability in the euro area, monetary policy shall not be available to respond to countries' economic conditions taken individually. Therefore, the role of wages and budgetary developments at the national scale in determining economic conditions in each Member-state is considerably strengthened in the process. Inflation in Portugal cannot diverge significantly from price growth in the euro area. Persistently positive deviations between the growth rate of prices in Portugal and the average inflation rate in the euro area should only be considered admissible if these reflect a real equilibrium appreciation due to real convergence.

The behaviour of real wages in Portugal should consequently reflect changes in productivity in the economy. Increases in real wages that go beyond gains in productivity lead to a worsening of relative unit labour costs, and therefore to reductions in employment. In this context, budgetary policy is increasingly important. The compliance to the Stability and Growth Pact, that foresees a budgetary position "close to equilibrium or in surplus" in the medium-run, would ensure budgetary policy sustainability and contribute to general macroeconomic stability.

Written with the information available as on 20 October 1998.

(15) See the ECB press release, 13 October 1998.

THE PORTUGUESE ECONOMY IN 1998

1. INTRODUCTION

In 1998, the Portuguese economy continued to present a strong growth. The Banco de Portugal forecasts disclosed in the present *Economic Bulletin* indicate a GDP growth between 4.0 and 4.25 per cent in 1998. Although the current forecast for economic growth does not differ greatly from that presented in March, contributions to GDP growth are particularly different. The growth of domestic demand is now clearly above that estimated, compensating for a more negative contribution of net external demand.

The high confidence levels of economic agents, the pace of growth of private consumption, the continued reduction in the unemployment rate and the high level of productive capacity utilisation in the leading sectors of the economy provide an illustration of the fact that in late 1998, the Portuguese economy is in a relatively advanced stage of the current economic cycle.

Three main factors shall have accounted for the strong growth of the Portuguese economy: the reduction of interest rates in a context where monetary conditions in Portugal are increasingly determined by our participation in the euro area from 1 January 1999 onwards, the conduction of budgetary policy and economic activity acceleration in our leading trade partners.

The Portuguese participation in the Economic and Monetary Union has resulted in a sharp reduction in interest rates[(1)], particularly noticeable since 1997. Together with the favourable perspectives on the behaviour of economic activity — illustrated by the high confidence levels of consumers and companies in the leading producing sectors in the economy — this behaviour of interest rates led to a particularly strong growth of domestic demand, reflecting the strong dynamism of households' consumption and house purchasing, and of companies' investment. More specifically, the reduction in nominal interest rates reduced the incidence of liquidity constraints for both households and companies, inducing greater consumption and investment expenses.

In 1998, the conduction of budgetary policy was an additional factor of expansion of domestic demand (see box *Fiscal policy: recent developments* at the end of this article). Indeed, the significant increase of staff costs, the growth of expenditure on goods and services, the increase in transfers to households and investment in public infrastructure provide an additional stimulus to the growth of domestic demand.

According to the values submitted by the *Ministério das Finanças* to the European Commission in the context of the Excessive Deficit Procedure, public consumption shall accelerate in nominal terms in 1998, despite the reduction in overall deficit. However, the General Government primary surplus is expected to decrease in 1998. Nevertheless, it may still happen that the definitive figures for the current year lead to lower closing values for some items in expenditure, as in previous years.

The acceleration of economic activity in Portugal took place in a context of stronger growth in most European Union (EU) economies, recorded since the second half of 1996. As a result, external demand directed towards Portuguese exports increased, creating a favourable background to the strong expansion of the Portuguese economy. The crisis in the financial markets continued to result

(1) On this issue, see box "Interest rates and inflation" in the June 1998 *Economic Bulletin*.

Table 1

IMF - FORECASTS: GDP GROWTH

	Rates of change, in percentage						
	1997	1998			1999		
		May 98 (1)	Oct 98 (2)	Revision (2)-(1)	May 98 (1)	Oct 98 (2)	Revision (2)-(1)
World economy	4.1	3.1	2.0	-1.1	3.7	2.5	-1.2
Industrialised economies	3.1	2.4	2.0	-0.4	2.5	1.9	-0.6
Transition economies	2.0	2.9	-0.2	-3.1	3.4	-0.2	-3.6
Russia	0.9	1.0	-6.0	-7.0	1.9	-6.0	-7.9
Developing economies	5.8	4.1	2.3	-1.8	5.3	3.6	-1.7
Latin America	5.1	3.4	2.8	-0.6	4.3	2.7	-1.6
Asia	6.6	4.4	1.8	-2.6	5.9	3.9	-2.0
ASEAN-4	3.7	-2.7	-10.4	-7.7	2.5	-0.1	-2.6
EU - 15	2.7	2.8	2.9	0.1	2.8	2.5	-0.3
EU - 11	2.5	2.9	3.0	0.1	3.0	2.8	-0.2
Germany	2.2	2.5	2.6	0.1	2.8	2.5	-0.3
France	2.3	2.9	3.1	0.2	3.0	2.8	-0.2
Italy	1.5	2.3	2.1	-0.2	2.7	2.5	-0.2
United Kingdom	3.4	2.3	2.3	0.0	2.1	1.2	-0.9
Spain	3.4	3.4	3.8	0.4	3.7	3.6	-0.1
Portugal	4.0	3.7	4.2	0.5	3.2	3.7	0.5
USA	3.9	2.9	3.5	0.6	2.2	2.0	-0.2
Japan	0.8	0.0	-2.5	-2.5	1.3	0.5	-0.8

Note: ASEAN-4: comprises Indonesia, Thailand, Philipines and Malaysia.

in downward revisions of world inflation and economic growth forecasts. However, the effects of this crisis on the Portuguese economy are yet very limited. Indeed, Portuguese trade with the Asian economies is particularly inexpressive and increases to these products' competition in the leading export markets is limited by the existence of constraints to their entry in the EU. On the contrary, the detour of financial flows to more developed capital markets and the flow of funds from shares to bonds continued to result in a greater reduction of interest rates. The sharp fall in the international prices of commodities and oil, due to the reduction of demand in the Asian countries, resulted in gains in the terms of trade.

In 1998, the Portuguese economy continued to exhibit a stronger growth than the eleven countries that shall integrate the euro area from 1 January 1999 onwards (EU-11) as a whole. According to the estimates of the International Monetary Fund (IMF), economic growth in the EU-11 shall reach 3.0 per cent in 1998 (2.5 per cent in 1997) (table 1). Therefore, the annual growth of the Portuguese economy exceeded on average that of the EU-11 by about 1.6 percentage points (p.p.) in the period 1996-1998.

The combination of the effects of interest rate reductions, budgetary policy and activity acceleration in the euro area led to a growth characterised by a very dynamic behaviour of domestic demand — in acceleration since the beginning of recovery of the Portuguese economy — and by the negative contribution of net external demand to GDP growth. Consequently, the current forecasts of the

Banco de Portugal point towards a greater Current Account deficit in 1998 than previously indicated in the March Economic Bulletin.

2. INTERNATIONAL BACKGROUND

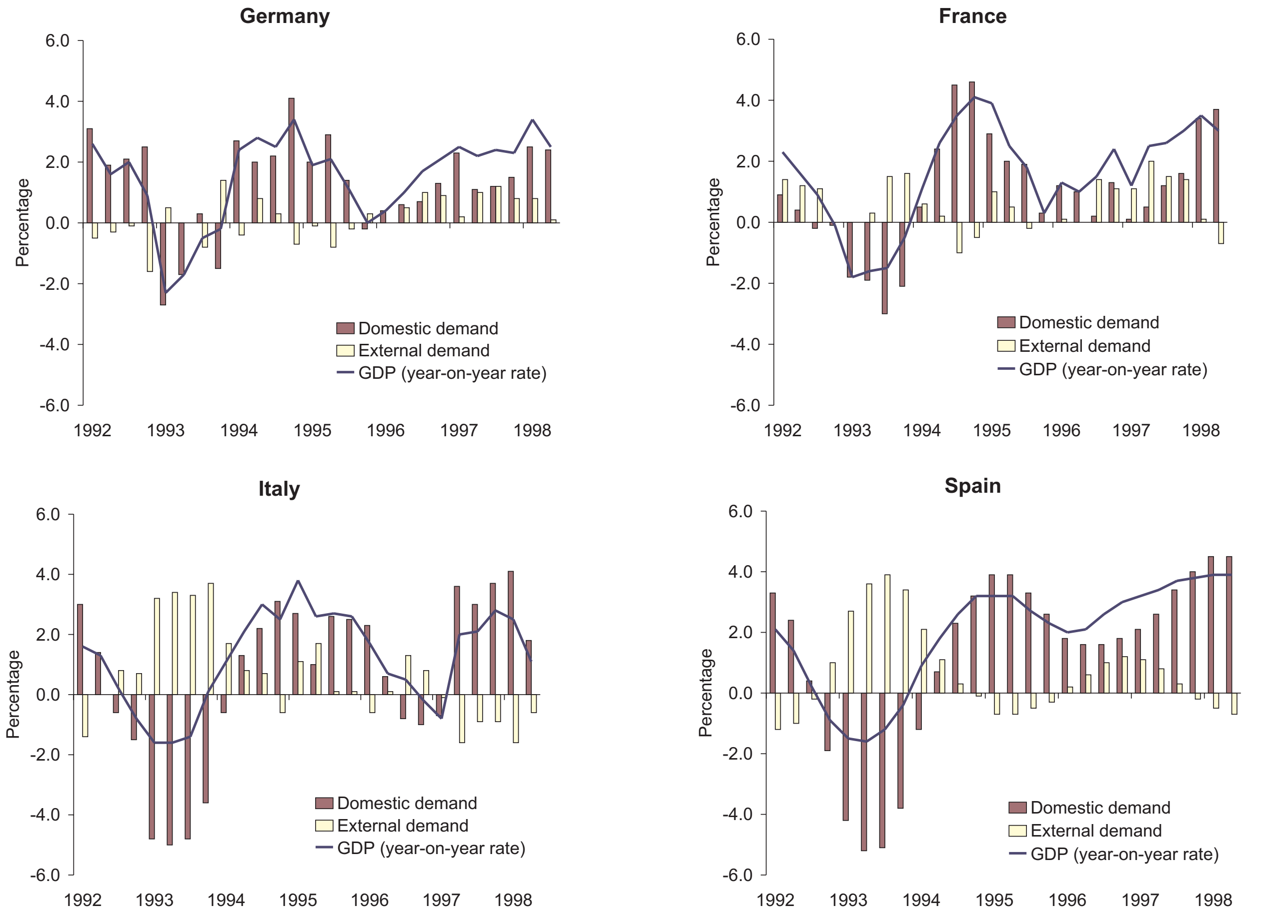
The international macroeconomic background worsened significantly in recent months. Uncertainty about world economic and financial conditions increased. The Asian crisis worsened significantly, and the financial instability situation spread to other emerging markets — specially Russia. As a result, according to the recently released forecasts of the International Monetary Fund (IMF) the world economy shall grow by only 2.0 per cent in 1998, compared with 4.1 per cent in the previous year (table 1). In 1999, world economic activity shall accelerate slightly, to 2.5 per cent. These forecasts represent -1.1 and -1.2 percentage points (p.p.) revisions for 1998 and 1999, respectively, from the IMF forecasts disclosed in May. The greater revisions were those of growth in the countries most affected by the international financial crisis — namely the Asian countries, which have recorded much more negative developments in economic activity than previously expected. The recession in the Japanese economy — for which growth forecasts were substantially revised downwards — continued to influence negatively the perspectives of an improvement in the Asian situation in the short-run. Russia entered deep economic and financial crisis in August, which culminated with the rouble devaluation, and the announcement of an unilateral restructuring of external debt. The IMF foresees that economic activity in Russia shall fall by about 6 per cent in 1998 and 1999.

The aggravation of the Russian crisis increased the sentiment of uncertainty in the international financial markets and contributed to increase international investors' risk aversion — resulting in generalised financial instability. Several emerging markets were affected — in Latin America, and to a lesser extent in Central and Eastern Europe — worsening their financing conditions; indeed, interest rate differentials widened significantly, while some currencies were subject to substantial pressures. The lower inflows of external capitals into these economies are expected to lead to a significant slowdown of economic activity, given the need to cut the current account deficits. The IMF forecasts for Latin America were revised downwards; this area is now expected to grow 2.8 per cent in 1998 and 2.7 per cent in 1999. Growth perspectives for countries traditionally exporting commodities were also revised downwards, affected by the particularly low levels international prices of these products have reached. Therefore, a significant part of the world economy is in hands with a strong slowdown of activity, or is already in recession at the end of the third quarter of 1998.

The effects of the international financial crisis on activity in the advanced economies of Europe and North America were, to the moment, quite small. Growth perspectives for 1998 in the United States of America (USA) and in the euro area were revised upwards (0.6 and 0.1 p.p., respectively), unlike perspectives for 1999 — which were downwards revised (-0.2 p.p. in both cases). The available data for these economies confirm the continuation of the reduction of exports to the Asian countries, with impacts on the behaviour of industrial production. The reduction of external demand has been compensated by the acceleration of domestic demand — positively influenced by the very low levels of long-term interest rates. In recent months, the deviation of international financial flows to the capital markets considered to be safer increased, as well as the transfer of financial investments from shares to bonds, resulting in further reductions in long-term interest rates in the USA as in Europe. Simultaneously, following to the aggravation of the Russian crisis in August, the western stock indices exhibited a generalised fall, partly offsetting the high accumulated gains up to the first half of the year. To the extent that the fall in the western stock markets affects households' wealth and companies' financing capacity, economic agents' confidence may be negatively influenced, also inducing some moderation of economic activity in 1999. In fact, the IMF refers that the risks implicit in the forecasts for 1999 point mainly downwards.

The Japanese economy shall experience an output reduction of 2.5 per cent in 1998, following to a 0.8 per cent growth in 1997. The IMF foresees a slow recovery, with GDP growing by only 0.5 per cent in 1999. Economic activity fell by 2.7 per cent in the first half of 1998, since domestic demand continued to decrease. The contribution of net ex-

Chart 1
ECONOMIC GROWTH IN THE EUROPEAN UNION
Contributions to GDP growth



ternal demand to GDP growth remained positive, due to a stronger reduction of imports than exports. The growing difficulties in companies' access to credit and the low confidence levels of households and companies — related to the problems affecting the Japanese financial sector — continued to reflect negatively to consumption and investment in the private sector. Industrial production fell over 6 per cent up to August, while industrials' perspectives regarding activity point towards an aggravation of recession in the forthcoming months. Following to the measures of budgetary stimulation and of regeneration of the financial sector presented in the first half of the year, the Bank of Japan cut in early September the reference rate for the overnight call rate, from 0.5 to 0.25 per cent, in an attempt to increase liquidity in the monetary system. In addition, a set of laws allowing a greater allocation of public capital to solve the serious problems of the Japanese financial sector were approved on 16 October.

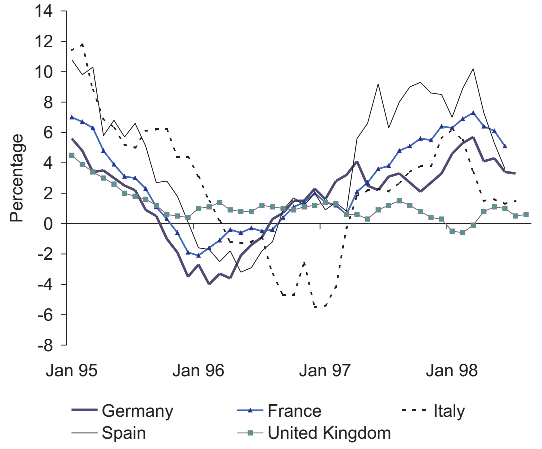
The IMF revised substantially upwards the growth forecast for the USA in 1998 — from 2.9 to 3.5 per cent — due to the behaviour of activity in the first half-year. The greater growth of economic activity shall continue to be followed by a reduction in inflation: the IMF foresees a reduction of inflation from 2.3 per cent in 1997 to 1.6 per cent in 1998 (0.4 p.p. less than in the previous forecasts). Economic growth is expected to record a slowdown in 1999 (to 2.0 per cent), while inflation shall rise to 2.3 per cent. The USA continued to record a high pace of growth in the first half of 1998 (3.9 per cent), due to the strong dynamism of domestic demand. The slowdown recorded in the second quarter of the year resulted from an adjustment in the stock building process and from a much more negative contribution of net external demand to

GDP growth. Although the available indicators for the third quarter suggest a relatively sustained growth of domestic demand, the USA monetary authorities cut the Fed Funds rate from 5.5 to 5.25 per cent on 29 September. This decision was justified by the need for minimising the impact of the worsening of the international economic situation on the USA growth perspectives. On the same day, the Central Bank of Canada cut its repo rate from 6.0 to 5.75 per cent. On 15 October, the Fed cut the Fed Funds rate again, by 0.25 p.p., to 5.0 per cent. The discount rate was cut from 5.0 to 4.75 per cent. This measure was followed by the Bank of Canada, which cut its repo rate from 5.75 to 5.5 per cent. On 8 October, the Bank of England cut the official interest rate from 7.5 to 7.25 per cent, after the successive rises carried out throughout 1997.

Still according to the IMF forecasts, real output growth in the euro area (EU-11) shall reach 3.0 per cent in 1998 and 2.8 per cent in 1999. Compared with the May forecasts, these new figures account for an upward revision of the growth forecast for 1998 (+ 0.1 p.p.). In the first half of 1998, economic activity grew 2.8 per cent in year-on-year terms (2.9 per cent in the second half of 1997). In this period, domestic demand strengthened in most EU-11 economies. The lower interest rate levels and the improvement of the labour market situation in most European countries contributed to this acceleration of domestic demand. On the other hand, the contribution of net external demand continued to decrease, reflecting the worsening of the international background in the first half of this year, and the greater dynamism of domestic demand (chart 1). Recent data point towards a lower growth of industrial production in the euro area, reflecting the impact of the Asian crisis on exports (chart 2). The IMF revised downwards its growth projection for 1999 (-0.2 p.p.). As a result, unlike its May forecasts, the recent projections indicate a slight slowdown of activity in the EU-11 in 1999. The main reason behind this slowdown is the substantially lower growth expected for emerging markets, which account for a significant share of total extra-EU exports (about 40 per cent).

Meanwhile, inflation perspectives for the EU-11 as a whole remain favourable: the IMF foresees an increase of the Consumer Price Index of 1.4 per cent in 1998 and 1.6 per cent in 1999 — which are compatible with price stability. In recent months, inflation in the EU-11 as a whole continued to exhibit a moderate trend, partly reflecting the sharp fall in the international prices for commodities. The year-on-year rate of change of the Harmonised Index of Consumer Prices (HICP) decreased to 1.2 per cent in August (1.4 per cent in July). The distinct cyclical positions of the EU-11 economies resulted in wider inflation differentials. In August, the year-on-year rates of change of the HICP ranged between 3.0 per cent in Ireland and 0.6 per cent in France. The participation in the euro area implies the convergence of monetary conditions in these countries. In this sense, on 6 October the Bank of Spain cut its repo rate by 0.5 percentage points, to 3.75 per cent. On 9 October, the Banco de Portugal announced a 50 basis points cut in its intervention rates, with effects from 12 October. Hence, the repo rate was cut to 4.0 per cent, the rate of liquidity absorption to 3.7 per cent and the daily credit facility to 5.7 per cent. Also on 9 October, the Bank of Ireland cut its repo rate from 6.19 to 4.94 per cent.

Chart 2
INDUSTRIAL PRODUCTION
Year-on-year rates of change in the quarter to each month



Source: Datastream.

3. DEMAND

In 1998, Gross Domestic Product (GDP) in Portugal is expected to grow between 4.0 and 4.25 per cent (table 2), compared with 4.0 per cent in 1997.

Table 2

MAIN ECONOMIC INDICATORS

Forecasts for 1998

Rates of change in percentage

	1996	1997	1998
Private consumption . .	2.8	3.0	4.0-4.5
Public consumption . . .	1.7	2.6	3.25-3.5
Investment	6.4	12.8	10.0-11.0
Domestic demand	3.4	5.1	5.25-5.75
Exports.	9.6	8.2	10.25-11.25
Imports	7.8	10.3	13.0-14.0
GDP	3.6	4.0	4.0-4.25
CA (% GDP)	-1.4	-1.8	[-2.25;-1.75]

The pattern of growth is still characterised by a very dynamic behaviour of domestic demand — in all its components — and by a negative contribution of net external demand to GDP growth.

The structure of growth is substantially different from that presented in the March *Economic Bulletin*. Domestic demand is now estimated to exhibit a stronger growth than previously expected, while net external demand shall render a more negative contribution to GDP growth. According to the current forecasts, domestic demand shall grow between 5.25 and 5.75 per cent in 1998 (5.1 per cent in 1997). This growth exceeds the upper limit of the interval disclosed in March 1998, due to the greater dynamism expected for most of its components. On the other hand, the contribution of net external demand to GDP growth shall be more negative than previously indicated in the March *Economic Bulletin*. The growth of imports of goods and services shall exceed by far the previous estimate, in line with the revision of the forecast for domestic demand growth.

In 1998, private consumption shall grow between 4.0 and 4.5 per cent in real terms, thus accounting for a strong acceleration from the previous year (3.0 per cent). This acceleration results from the behaviour of disposable income, the improvement of households' confidence and the continuation of the reduction in interest rates. Households' real disposable income excluding external transfers is expected to grow around 3.8 per cent in 1998 (3.0 per cent in 1997). In 1998, both total employment and wage earners increased again. The Banco de Portugal estimates that nominal compensations per employee for the economy as a whole shall grow around 4.9 per cent[2], above inflation recorded in 1998. The estimated growth of disposable income also reflects the strong increase of transfers to households in 1998.

The growth now expected for private consumption in 1998 as a whole exceeds the upper limit presented in the March 1998 *Economic Bulletin* for this item of demand. Several indicators illustrate

Chart 3

PRIVATE CONSUMPTION COINCIDENT INDICATOR

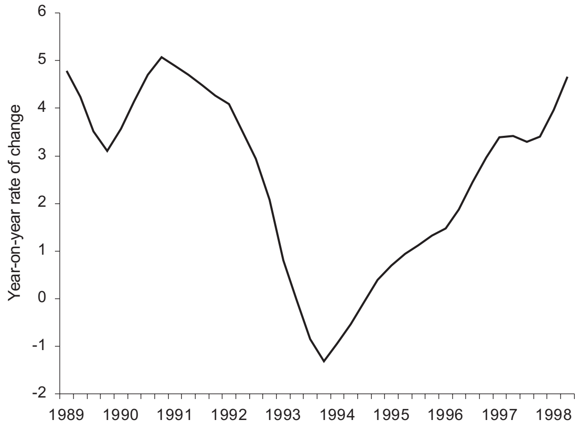
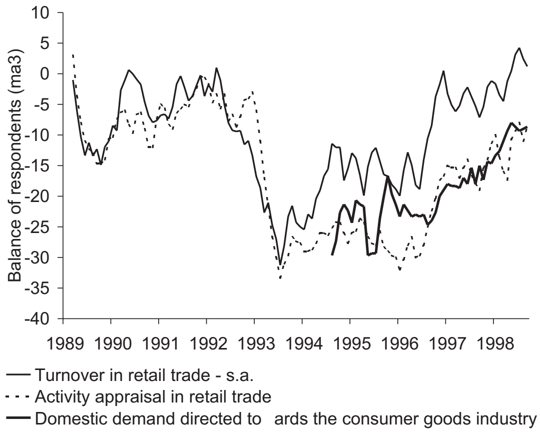


Chart 4

PRIVATE CONSUMPTION QUALITATIVE INDICATORS



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

(2) Excluding the State subsidy to the *Caixa Geral de Aposentações* (civil servants' social security system) from staff costs in General Government.

Table 3

DEMAND INDICATORS

		1996	1997	1998[a]	Last month	1997		1998	1997				1998		
						1st Sem.	2nd Sem.	1st Sem.	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q
Private consumption															
Retail trade turnover index	yoy	6.3	5.1	12.0	Jun	4.5	5.6	12.0	4.5	4.5	4.9	6.3	11.1	12.9	
Licenses of light passenger cars	yoy	17.4	7.3	9.6	Sep	7.6	6.9	8.7	6.4	8.7	7.4	6.4	6.3	11.0	11.7
Bank credit to individuals for purposes other than housing	yoy	24.6	27.0	31.8	Jun				24.4	24.0	20.5	27.0	30.2	31.8	
Investment															
Cement sales	yoy	6.6	11.9	3.1	Sep	19.5	5.3	4.6	22.6	16.8	9.4	0.9	10.0	-0.2	0.2
Contracted construction works	yoy	31.3	26.1	-22.2	Aug	67.1	-4.9	-26.4	73.4	61.6	-10.7	1.1	-15.7	-36.4	
Mortgage lending to individuals	yoy	26.4	26.6	30.7	Jun				26.2	26.2	27.3	26.6	28.2	30.7	
Bank credit to companies for investment purposes	yoy	14.8	23.1	25.3	Jun				22.3	23.7	32.3	23.1	23.3	25.3	
IPI of equipment goods excluding transport material[b]	yoy	7.5	5.0	8.0	Jul	6.0	4.0	8.7	6.9	5.1	6.7	2.0	10.1	7.3	
Imports of equipment goods excluding transport material[c]	yoy	12.2	14.5	17.3	Jun										
Exports of equipment goods excluding transport material[c]	yoy	2.6	16.1	13.1	Jun										
Sales of light commercial vehicles	yoy	27.1	20.9	8.1	Sep	27.0	15.6	8.6	28.3	25.6	19.6	12.8	14.7	2.4	6.9
Sales of heavy commercial vehicles	yoy	4.4	32.0	14.4	Sep	28.3	35.4	18.2	14.7	41.0	44.5	28.8	26.6	11.8	7.1
Foreign trade[c]															
Total exports		8.4	10.3	11.6	Jun										
Consumer goods exports		6.2	8.9	10.6	Jun										
Equipment goods exports		33.7	10.5	14.6	Jun										
Intermediate goods exports		-2.1	12.4	13.5	Jun										
Fuel exports		-23.5	8.9	-31.0	Jun										
Total imports		7.9	11.6	15.2	Jun										
Consumer goods imports		8.7	10.8	20.9	Jun										
Equipment goods imports		14.9	10.3	17.5	Jun										
Intermediate goods imports		3.0	12.7	15.9	Jun										
Fuel imports		1.2	15.5	-12.6	Jun										

Source: INE, *Direcção-Geral de Viação, ACAP, Cimpor, Secil* and ANEOP.

Yoy - year-on-year rate.

(a) Accumulated values up to the last month available.

(b) The rates of change of the industrial production index are calculated on comparable versions of the indices.

(c) The rates of change of exports and imports result from comparing preliminary values of the current year with equally preliminary values for the same period in the previous year. The exception are the rates for 1996, where definitive versions are used.

the strong growth of private consumption. The Consumer Confidence Indicator points to an acceleration of consumption in the first half of the year (chart 3). The Monthly Trade Survey presented a significant increase in the balance of respondents on turnover and past activity appraisal in retail trade up to September. Consumer goods industrials' opinion on the level of domestic demand in the period also improved (chart 4).

The growth of imports of consumer goods from January to June 1998 (20.9 per cent in nominal terms) also provides an indication of the strong growth of private consumption in the period[3] (10.8 per cent in 1997 as a whole). The bad harvests shall have contributed quite significantly to this growth of imports. Expenditure on durable goods has exhibited a particularly dynamic behaviour, which is usually related to high levels of consumers' confidence. The strong growth of the Retail Trade Turnover Index of furniture and other

(3) According to the data of the *Direcção-Geral de Relações Económicas Internacionais*, the average price of consumer goods imports rose 2.7 per cent in the first quarter of 1998.

household durable goods should be singled out (13.8 per cent up to June, compared with 7.4 per cent in 1997 as a whole). Purchases of passenger cars also accelerated in the year up to September, measuring by the increase in the number of driving licences issued by the *Direcção-Geral de Viação* (table 3)[(4)]. This kind of expenditure has been induced by the reduction in interest rates. Indeed, credit granted to individuals for purposes other than housing accelerated again in the first half of 1998 (table 3).

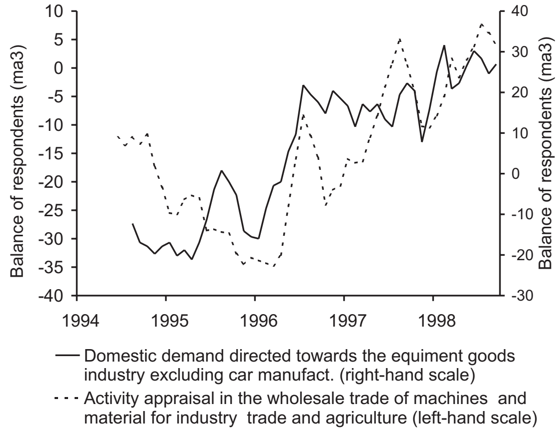
According to the forecasts of the Banco de Portugal, public consumption shall grow between 3.25 and 3.5 per cent in real terms in 1998 (2.6 per cent in 1997). This growth of public consumption is explained, to a great extent, by the increase in the number of civil servants and by the real growth of consumption of goods and services — namely in the health sector. The *Ministério das Finanças* presented, in the context of the excessive deficit procedure, a new forecast for budgetary execution in 1998. In this forecast, public consumption grows 9.7 per cent in nominal terms in relation to 1997 (comparing with 6.1 per cent in the February forecast). The growth projection for staff costs was revised from 7.7 to 9.4 per cent, while expenditure on goods and services is now estimated at 10.7 per cent (0.6 per cent in the February forecast). 85 per cent of the increase in this item is due to the rise in the State's expenditure on goods and services. After the Eurostat decision dated 19 October, the Government reaffirmed its forecast of 2.3 per cent of GDP for public deficit.

According to the estimates of the Banco de Portugal, investment shall continue to grow strongly in volume terms in 1998 (between 10.0 and 11.0 per cent), though decelerating from the previous year (12.8 per cent). The slight slowdown is due to the lower gross fixed capital formation in construction, basically determined by the public works sub-sector. This slowdown was already expected, as it follows to the exceptional growth of this sub-item in 1997.

Nevertheless, the slowdown is smaller than that indicated in the March 1998 *Economic Bulletin*, greatly reflecting the stronger growth of gross

Chart 5

INVESTMENT IN MACHINERY: QUALITATIVE INDICATORS



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

fixed capital formation in machinery than previously expected. Expectations regarding the behaviour of demand — specially domestic demand — the level of productive capacity utilisation, the favourable behaviour of prices of equipment goods in the international markets and the interest rate falls continued to incentive investment in companies. Worth noting that bank credit to companies for investment purposes grew again at a strong pace in the first half of the year (25.3 per cent, compared with 23.1 per cent in 1997).

The qualitative indicators available up to September illustrate the strong growth of gross fixed capital formation in machinery (chart 5). The opinion of both industrials of machinery goods regarding the level of domestic demand, and that of wholesalers of machinery and material for agriculture, industry and trade regarding activity improved in this period. Among the available quantitative indicators, worth highlighting the strong growth of industrial production of equipment goods, excluding transport material, and the acceleration of imports of these goods in the first half of the year (table 3).

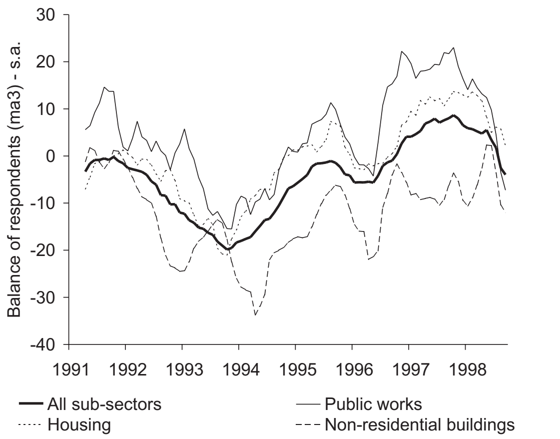
Investment in transport material also continued to grow strongly. Sales of light and heavy commercial vehicles continued to grow strongly up to September, though exhibiting a slowdown in relation to the previous year (table 3).

(4) Note that purchases of new passenger cars recovered strongly (15.5 per cent growth until September 1998, compared with a 2.2 per cent fall in 1997 as a whole).

Chart 6

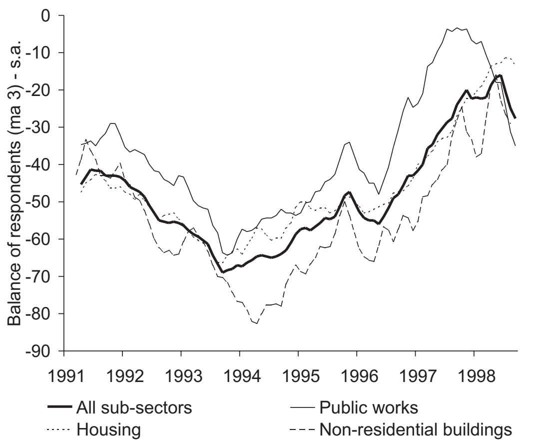
INVESTMENT IN CONSTRUCTION QUALITATIVE INDICATORS

Activity appraisal in the construction and public works sector



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

Order book of the construction and public works sector



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

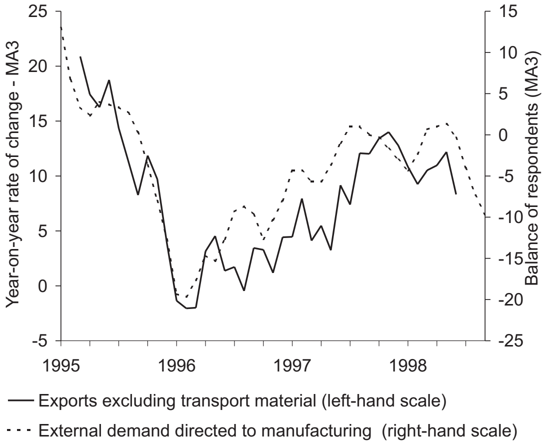
Investment in construction has recorded a slowdown vis-à-vis the previous year. Cement sales grew 3.1 per cent from January to September, compared with 11.9 per cent in 1997 as a whole (table 3). According to the Construction and Public Works Monthly Survey, this slowdown basically reflects the behaviour of the public works sub-sector. This sub-sector has recorded a less favourable appraisal of activity and a reduction of the order book since mid-1997, due to the fall in the value of contracted public works from the extremely high levels recorded the previous year — related to large projects (chart 6 and table 3). In turn, the qualitative indicators point towards the maintenance of a strong growth in the housing sub-sector, where the order books continued to increase (chart 6). The dynamism of investment in housing continued to be chiefly determined by the reduction in interest rates and the improvement of households' economic situation. Individuals' resource to bank credit for housing purchasing, already at very high levels in previous years, increased again in the first half of 1998 (30.7 per cent growth in June 1998, compared with 26.6 per cent at the end of 1997). Meanwhile, the total number of new contracted loans grew 40.8 per cent in the first half of the year, according to the data from the *Direcção-Geral do Tesouro* (30.5 per cent in 1997). The average amount borrowed in the newly contracted loans also increased, by 9.1 per cent (8.1 per cent in the previous year), mainly due to the growth of the average value of loans in the subsidised regime (13.5 per cent in the first half-year).

In 1998, Gross Fixed Capital Formation shall grow strongly in all institutional sectors. Indeed, significant growths were recorded by investment of households, companies and the public sector.

According to the Banco de Portugal forecasts, exports of goods and services shall grow between 10.25 and 11.25 per cent in real terms in 1998 (8.2 per cent in 1997), which reflects the higher external demand for Portuguese-produced merchandise but also the strong growth of exports of services — specially due to the tourism receipts related to the EXPO-98. In the first half-year, merchandise exports grew 11.6 per cent[(5)] in nominal terms, according to the data on foreign trade of the INE (10.3 per cent in 1997 as a whole). Some slowdown of revenue from merchandise exports should be expected for the second half of the year, in consonance with the behaviour of external demand directed to Portugal and the expected behaviour of the exports deflator. Industrials' appraisal of external demand in manufacturing recorded a reversal

(5) Note that the data on foreign trade in the first half of 1998 are still provisional, and therefore are subject to revisions. From January to May 1998, merchandise exports recorded a 14.5 per cent nominal growth in year-on-year terms. The growth rates of exports result from comparing preliminary figures of the current year with equally preliminary figures for the same period in the previous year.

Chart 7
MERCHANDISE EXPORTS AND EXTERNAL DEMAND



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

in recent months (chart 7). This reversal was determined by the appraisal of the intermediate goods industrials, linked to the recent slowdown of industrial production in our leading trade partners.

According to the estimates of the Banco de Portugal, the competitiveness of Portuguese exports, measured by the relative unit labour costs in manufacturing, shall have experienced an improvement in the first half of 1998. As in the previous year, this improvement chiefly reflected the behaviour of the escudo effective exchange rate. Indeed, the escudo depreciated on average 3.0 per cent in year-on-year terms, in the first half of 1998. In the same period, the escudo exchange rate vis-à-vis the set of currencies participating in the Exchange Rate Mechanism of the European Monetary System (ERM-EMS) depreciated 1.9 per cent in year-on-year terms. This development reflected the generalised convergence of the exchange rates towards the respective bilateral central rates in the ERM-EMS.

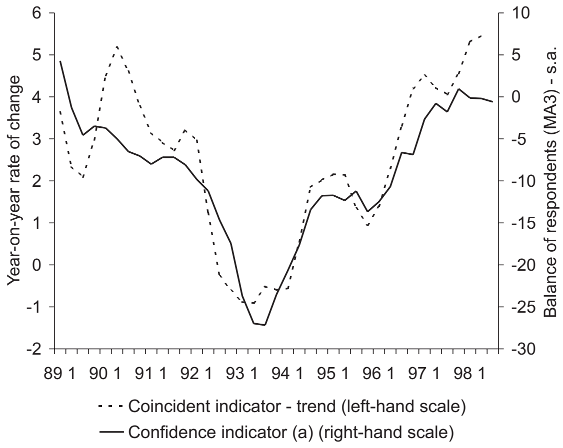
Still according to forecasts of the Banco de Portugal, the real growth of imports of goods and services shall range between 13.0 and 14.0 per cent in 1998 (10.3 per cent in 1997). This growth clearly surpasses that previously estimated in the March *Economic Bulletin*, resulting from a more dynamic overall demand than previously expected. Until June, merchandise imports grew 14.7 per cent in real terms (11.5 per cent in 1997 as a whole). As referred above, imports of consumer goods grew particularly strongly, reflecting the strong dynamism of private consumption, as well as the bad harvest year. Also worth noting is the increase of intermediate goods imports, in line with the behaviour of activity in industry (table 3).

In this context, the Banco de Portugal foresees a current account balance between -2.25 and -1.75 per cent of GDP in 1998 (-1.8 per cent in 1997). The worsening of the current account deficit basically reflects a considerable increase of the merchandise trade deficit, partly offset by an increase in the balance of public transfers and the continuation of the trend of reduction in the income account deficit.

4. SUPPLY

The coincident indicator of the Banco de Portugal, which synthesises the behaviour of activity in industry, construction and trade, accelerated in the first half of 1998. This behaviour is in consonance with the particularly high levels exhibited by the confidence indicator in these sectors (chart 8).

Chart 8
COINCIDENT INDICATOR OF ACTIVITY AND CONFIDENCE INDICATOR
Industry, Construction and Trade



Note:
(a) This indicator is a simple average of the confidence indicator in the following sectors: industry, construction, retail trade and wholesale trade.
Source: Banco de Portugal, European Commission "Monthly Surveys" and INE "Monthly Trade Survey".

Table 4

SUPPLY INDICATORS

		1996	1997	1998(a)	Last month	1997 1st Sem.	1997 2nd Sem.	1998 1st Sem.	1997 1st Q	1997 2nd Q	1997 3rd Q	1997 4th Q	1998 1st Q	1998 2nd Q
Industry														
Industrial production indices (b)														
Manufacturing industry	yoy	1.6	4.4	3.4	Jul	4.4	4.4	4.1	3.8	5.1	5.2	3.6	6.2	2.1
Consumer goods industry	yoy	1.7	0.8	-0.1	Jul	1.5	0.0	0.2	1.1	1.8	1.1	-1.0	2.5	-2.0
Investment goods industry	yoy	10.1	5.1	10.3	Jul	5.0	5.2	10.8	5.9	4.1	3.4	6.6	11.6	10.1
Intermediate goods industry	yoy	0.0	6.7	4.4	Jul	6.3	7.2	5.3	5.2	7.4	8.5	6.0	7.5	3.1
Turnover index														
Manufacturing industry	yoy	6.1	5.9	9.1	Jul	4.0	7.7	9.3	1.2	6.7	7.2	8.2	12.0	6.8
Consumer goods industry	yoy	6.0	2.8	9.4	Jul	1.0	4.5	9.3	-1.5	3.6	3.9	5.2	11.5	7.3
Investment goods industry	yoy	27.3	8.1	17.0	Jul	1.3	15.1	17.4	-2.3	4.6	9.1	20.3	19.4	15.8
Intermediate goods industry	yoy	1.4	6.6	6.5	Jul	6.7	6.5	6.7	3.2	10.2	6.6	6.5	9.7	3.9
Rate of productive capacity utilisation														
Manufacturing industry	%	79	81	82	2nd Q	80	81	82	80	80	82	81	83	81
Consumer goods industry	%	78	79	79	2nd Q	78	79	79	77	79	81	78	80	78
Investment goods industry excluding car manufacturing	%	83	84	87	2nd Q	83	86	87	84	82	86	85	85	90
Intermediate goods industry	%	81	81	83	2nd Q	80	82	83	80	81	83	82	84	83
Construction														
Rate of productive capacity utilisation (c)	%	71	79	81	2nd Q	80	79	81	77	82	81	77	82	79

Source: INE.

yoy = year-on-year rate.

(a) Accumulated values up to the last month available.

(b) The rates of change of the industrial production index are calculated on comparable versions of the indices.

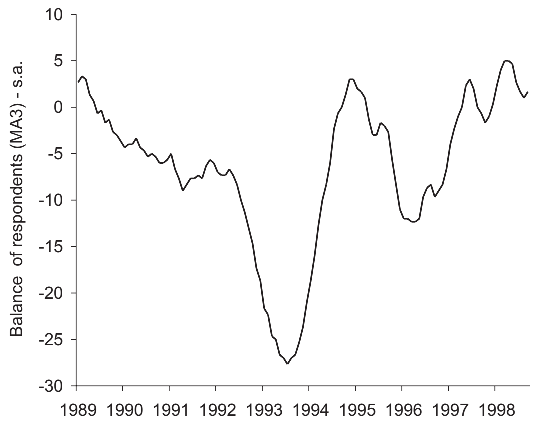
(c) New series from 1997.

The acceleration of economic activity in the first half of 1998 is mostly due to the strong growth in the services sector. In this period, gross value added (GVA) in industry grew virtually as much as in 1997 as a whole. Meanwhile, activity in construction recorded a slowdown — compared with the particularly high levels recorded in 1997 — reflecting the behaviour of the public works sub-sector. Finally, worth noting the fall of output in agriculture, due to the adverse weather.

The available information suggests that industrial production shall have continued to grow strongly in the first half of the year. According to the Industrial Production Index, production in manufacturing grew 4.1 per cent in the first half of 1998 (4.4 per cent in 1997 as a whole). The Manufacturing Industry Turnover Index also exhibited a very strong increase in the first six months of the year (9.3 per cent, compared with 5.9 per cent in 1997 as a whole) (table 4). The rate of productive capacity utilisation in manufacturing industry also indicates the high level of activity in the sector, reaching 82 per cent in the first half-year — 2 p.p. more than in the same period in 1997. Confidence in industry also recorded a further improvement in the first half of 1998 (chart 9). However, in recent months industrials are less optimistic about both past activity and expectations on future production; this behaviour is particularly evident in the intermediate goods industry. Therefore, activity should be expected to slowdown in the second half of the year, since the external order book shall decrease as a result of the lower growth of industrial production already recorded in our leading trade partners.

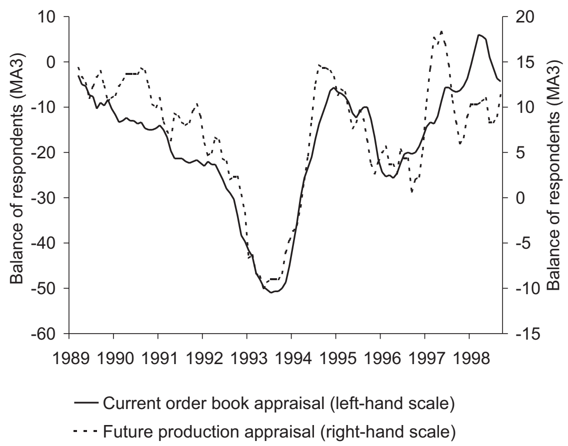
As expected, GVA in construction decelerated in the first half of 1998. The rate of productive capacity utilisation in this sector in the second quarter stood already below that recorded in the same period of 1997 (table 4). Furthermore, the confi-

Chart 9
INDUSTRY – CONFIDENCE INDICATOR



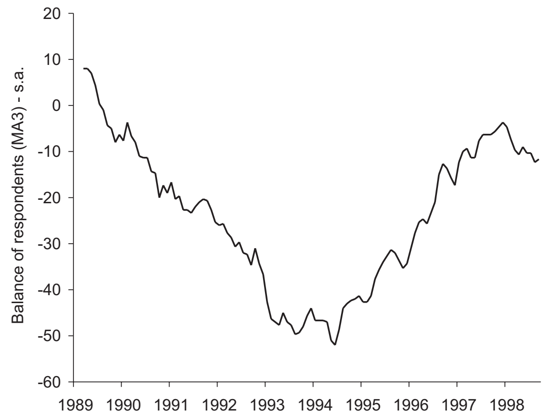
Source: European Commission.

INDUSTRY – PRESENT AND FUTURE ACTIVITY APPRAISAL



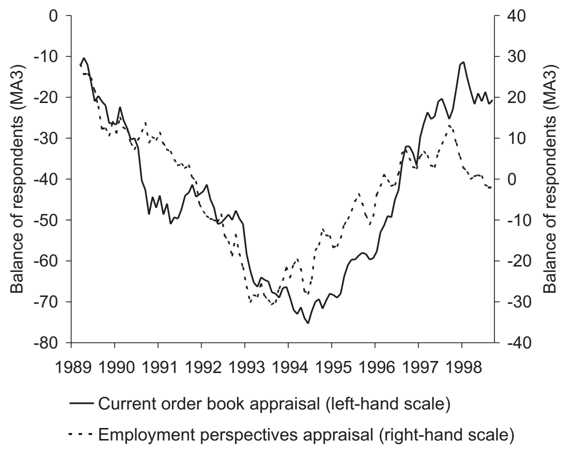
Source: European Commission.

Chart 10
CONSTRUCTION – CONFIDENCE INDICATOR



Source: European Commission.

CONSTRUCTION – PRESENT AND PAST ACTIVITY APPRAISAL



Source: European Commission.

dence indicator in construction has recorded progressively lower levels (chart 10). It should be noted that the lower optimism of industrials in this sector is particularly evident as regards production expectations, which allows to foresee that activity slowdown shall proceed in the second half of the year. However, activity in the building sub-sector continues to exhibit a strong dynamism.

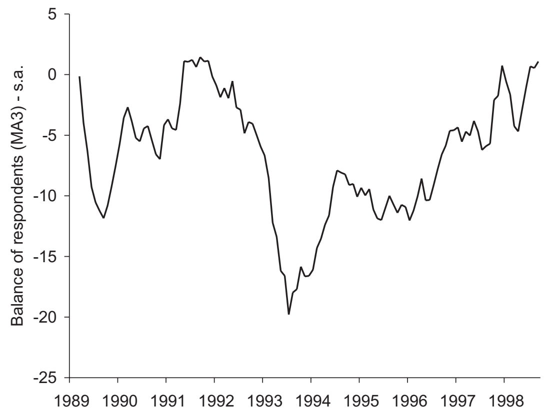
In the first half of 1998, the services sector accelerated vis-à-vis 1997 as a whole. Trade contributed strongly to the behaviour of GVA in this sector. Indeed, trade — its greatest sub-sector — accelerated strongly in the period. This acceleration is illustrated by the increase in the average confidence levels in both wholesale and retail trade (charts 11 and 12). Expectations regarding future activity remained high in both sub-sectors, suggesting the maintenance of strong growth in the second half of the year. Activity in the restaurants and hotels sector and in the transports sector also accelerated in the first half of the year; acceleration shall have been even stronger in the second half of 1998, reflecting the effects of the EXPO-98. Finally, worth noting is the strong growth of GVA in telecommunications services.

5. LABOUR MARKET

The expansion of the Portuguese economy above the estimated growth rate of potential out-

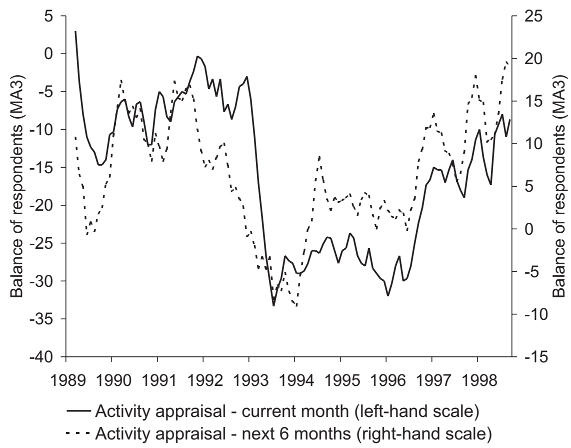
Chart 11

RETAIL TRADE – CONFIDENCE INDICATOR



Note: European Commission methodology used on the seasonally-adjusted series (tramo seats).
Source: Banco de Portugal and INE, "Monthly Trade Survey".

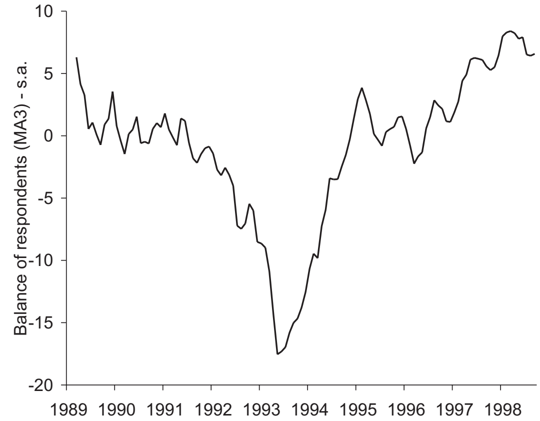
RETAIL RATE – PRESENT AND FUTURE ACTIVITY APPRAISAL



Source: INE, "Monthly Trade Survey".

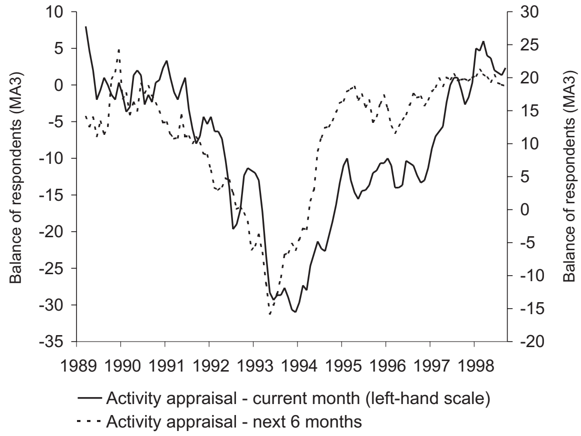
Chart 12

WHOLESALE TRADE – CONFIDENCE INDICATOR



Note: European Commission methodology used on the seasonally-adjusted series (tramo-seats).
Source: Banco de Portugal and INE, "Monthly Trade Survey".

WHOLESALE TRADE – PRESENT AND FUTURE ACTIVITY APPRAISAL



Source: INE, "Monthly Trade Survey".

put has translated into a reduction of the unemployment rate since the second half of 1996. In the last quarter of 1997, this rate was of 6.5 per cent.

According to the new Employment Survey of the INE, the unemployment rate was 5.9 and 4.6 per cent in the first and second quarters of 1998, respectively. However, these rates should be interpreted with caution, since they are not comparable with previous levels for the unemployment rate. Indeed, the methodological changes in the new survey imply a break in the series, between the fourth quarter of 1997 and the first quarter of 1998. For instance, the new questionnaire leads to a more strict definition of unemployed individual than previously, hence yielding lower unemployment rates(6). Note that the magnitude of the reduction in the unemployment rate in the first half of 1998 could not have been anticipated by an

(6) More specifically, the question on job searching was changed. The question in the previous survey was "Have you sought a job in the last 30 days"; in the current survey this question was changed to "Have you dedicated time to job searching from ….to …or in the last three weeks, even if only a part-time activity, occasionally or to become an employer?".

Okun equation[7] — estimated for the Portuguese economy, based on the Employment Survey up to end 1997 — which also provides evidence of a break in the series[8].

These methodological changes also compromise the comparison of all the other labour market aggregate series, like the participation rate and the growth of employment. According to the information contained in the new survey on the surveyed individuals' situation one year before, total employment grew 2.5 per cent in the first half of 1998. The growth of employment in the services sector surpassed this figure, reflecting activity acceleration in the sector. Job creation in General Government and the EXPO-98 also contributed to the growth of employment in this sector.

In line with the current stage of the economic cycle, the data from the Job Centres point towards a reduction in the number of unemployed individuals, and to an increase in job vacancies and placements in 1998. At the end of September, the number of unemployed individuals registered in the Job Centres stood 6.6 per cent below that recorded one year before. In turn, job vacancies and placements exceeded those recorded in the same months in 1997 (respectively by 16.6 and 8.9 per cent in average terms, between January and September).

According to the qualitative surveys, most sectors in the economy are yet not facing serious difficulties in hiring staff. Construction continues to be an exception, where a significant percentage of companies indicates the difficulty in hiring skilled staff as a limitation to activity. With the gradual reduction in the unemployment rate, this situation will tend to generalise to other sectors. Indeed, although the percentage of companies indicating difficulties in hiring skilled staff as a limitation to activity is still low in manufacturing industry and in both wholesale and retail trade, it has increased recently — specially in manufacturing and wholesale trade. The wage change implicit in collective agreements for the private sector was of 3.1 per cent in the January to September 1998 period, comparing with 3.5 per cent in 1997. These contracts comprise 1,256.1 thousand workers, more than in the same period of the previous year (1,122.5). Contractual wages recorded similar growths in industry, services and in construction. As in 1996 and 1997, the growth of compensations per employee including social security transfers surpassed that of contractual wages — as expected in the current stage of the cycle, where the variable-income items and extra-wage benefits tend to account for a greater share in total wages. According to estimates of the Banco de Portugal, compensations per employee in the private sector shall grow 4.2 per cent in 1998 (4.7 per cent in 1997). In the economy as a whole, excluding the state transfers to the *Caixa Geral de Aposentações* (civil servants' pension system), wages per employee are expected to grow more (4.9 per cent, compared with 5.3 per cent in 1997).

6. PUBLIC FINANCE

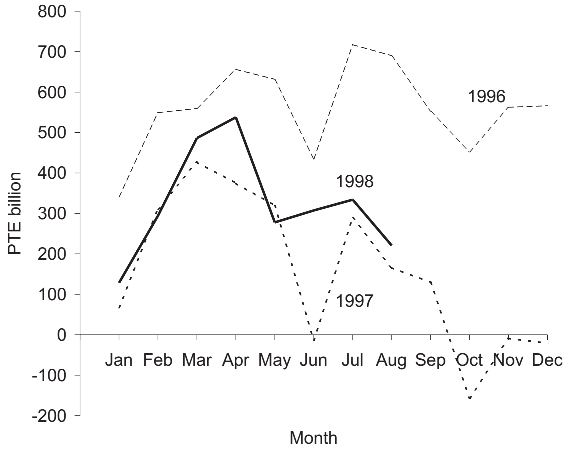
In late August, the *Ministério das Finanças* submitted to the European Commission the second notification of 1998 in the context of the Excessive Deficit Procedure (see box *Fiscal policy: recent developments*). According to the *Ministério das Finanças*, the overall deficit of General Government (GG), calculated on a National Accounts basis, shall reach PTE 437.4 billion in 1998 (PTE 449.5 billion in 1997), amounting to 2.3 per cent of GDP (2.5 per cent in 1997).

When compared with the figures of the February notification, the values presented by the *Ministério das Finanças* in late August yield a PTE 122.9 billion increase in the forecast for current revenue. This revision results from the PTE 164.4 billion increase in the forecast for tax revenue — greatly due to the stronger acceleration of economic activity than implicit in the State Budget Law scenery for 1998 — which was partially offset by the reduction of the estimate for other current revenue (by PTE 41.5 billion). On 19 October, the Eurostat announced the decision towards classifying as financial transactions those taxes on unrealised profits raised by public holdings within indirect privatisation operations. According to the

(7) The Okun law relates the unemployment rate with the deviation of GDP from a linear trend.

(8) According to the Okun relation estimated from the Employment Survey series running up to end 1997, and considering the GDP growth rate forecast for 1998, the annual average unemployment rate would be about 6.0 per cent. Therefore, it would be close to the estimated level of the natural unemployment rate — between 5.5 and 6 per cent — according to the previous series.

Chart 13
NET BORROWING TO GENERAL GOVERNMENT



Source: *Ministério das Finanças* and Banco de Portugal.

Eurostat, this decision implies in the Portuguese case a PTE 45.7 billion adjustment in the 1998 figure for taxes on income and wealth disclosed in late August, corresponding to 0.2 per cent of GDP. However, the Government, through the *Ministério das Finanças*, announced that despite this adjustment the public deficit forecast for 1998 remains unchanged at 2.3 per cent of GDP.

The current expenditure forecast was also revised upwards in August (by PTE 141 billion), due to the higher growth expected for public consumption, subsidies and current transfers. The upward revision of subsidies chiefly results from the increase in expenditure on interest subsidisation, due to the strong growth of subsidised loans for house purchasing.

In the January to August period, net borrowing to GG reached PTE 220.7 billion, PTE 55 billion more than in the same period of 1997 (chart 13). As regards instruments, financing to GG has concentrated in fixed-rate medium- and long-term securities, issued both in the domestic and the external markets. Indeed, in the first eight months of 1998, the net issuing of fixed-rate Treasury bonds in the domestic market reached PTE 505.7 billion, while other medium- and long-term securities, Treasury Bonds and Saving Certificates recorded net redemptions (of PTE 40.7, 502.6 and 75.9 billion, respectively). Foreign currency-denominated credit grew PTE 295.5 billion. It should be noted that, over the course of the current year, issued external debt was denominated in currencies that shall integrate the euro. Meanwhile, deposits of GG in the Banco de Portugal decreased PTE 76 billion, while GG deposits in other banks rose PTE 61.3 billion.

On 15 October, the Government presented the State Budget law proposal for 1999 to the Parliament. The forecast public deficit, on a National Accounts basis, amounts to 2.0 of GDP. This figure equals the objective of the Convergence, Stability and Growth Programme, and does not take into account that growth was stronger than previously expected. The public debt to GDP ratio is expected to continue to decrease in 1999, standing below that foreseen in the Convergence, Stability and Growth Programme.

7. CONCLUSION

The perspectives for the Portuguese economy in 1999 are closely dependent on the developments in the international economy. As referred, the recently disclosed forecasts of the International Monetary Fund point towards a significant downward revision of growth perspectives for 1999. Indeed, the world economy shall grow 2.5 per cent (1.2 p.p. less than indicated in the May 1998 forecasts), 2.0 per cent in the United States of America (0.2 p.p. revision) and 2.8 per cent in the euro area (0.2 p.p. revision). According to these forecasts, all euro area countries except Italy are expected to record a slowdown in 1999. Since Portuguese exports are strongly concentrated in European markets, the slowdown of these economies will contribute to a lower growth of the Portuguese economy in 1999. The current international macroeconomic background, characterised by an increasing uncertainty regarding the economic and financial conditions, give greater probability to a downward revision of world economic growth than to an upward revision.

Economic growth in Portugal in 1999 shall be lower than in the current year, partly as an outcome of the less favourable international background and the reduction of tourism receipts, given the exceptionally high levels reached in 1998. Nevertheless, the stimulus to growth created by the lagged effect of the reduction in interest rates shall allow for the Portuguese economy to grow above the European Union, as in previous years.

The change in regime linked to our participation in the Economic and Monetary Union is expected to render a positive effect on the productive potential of the economy. The suppression of the foreign exchange conversion costs, the elimination of exchange rate uncertainty and the adhesion to an economic area aiming at price stability and balanced public finance shall contribute to increase the growth rate of a potential output, although this impact is difficult to measure. Note that these positive effects will be distributed over time, part of which are already being felt.

The maintenance of the competitiveness of our production, both in the domestic and the external markets, demands moderation in the growth of wages. In a more competitive environment, as that resulting from the beginning of the Economic and Monetary Union, it is important that the growth of unit labour costs stands close to the average values of the remaining countries in the euro area.

The past experience has shown that real wage flexibility towards changes in unemployment is an important element for labour market stabilisation. In fact, this characteristic of the Portuguese economy may provide an adjustment mechanism in adverse situations, by ensuring a stronger adjustment of wages than of the level of employment. It is fundamental that this characteristic of our labour market, observed in periods of inflation, is preserved in a context of price stability.

After the reduction in the pace of budgetary consolidation in 1998, it would be desirable that this process would be recovered. In a context where monetary conditions in Portugal are determined by our participation in the Economic and Monetary Union from 1 January 1999 onwards, the role of budgetary policy is strengthened. More specifically, the conduction of budgetary policy should be guided towards the compliance to the objectives of the Stability and Growth Pact. To attain this, additional efforts of control of primary expenditure are required — specially of current expenditure — following to the increase recorded in recent years.

FISCAL POLICY: RECENT DEVELOPMENTS

In late August, the Ministério das Finanças submitted to the European Commission the second notification of 1998, in the context of the excessive deficit procedure (table 1 and chart 1). When compared to the previous notification (February 1998), the August notification implies an increase in the 1996 and 1997 deficits, by PTE 9.7 and 14.4 billion, respectively, while the deficit forecast for 1998 was revised downwards, by PTE 39.8 billion.

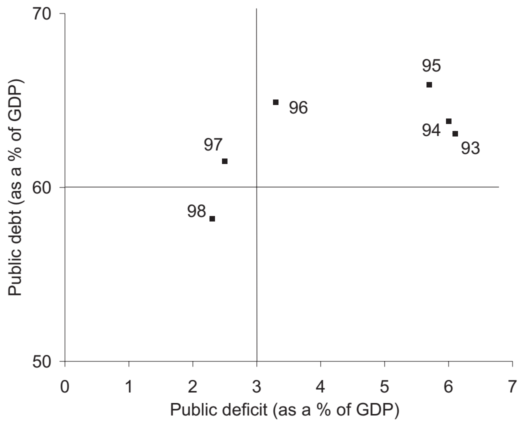
Table 1

NOTIFICATIONS TO THE EUROPEAN COMMISSION

	February 1998 notification				August 1998 notification			
	Deficit		Debt		Deficit		Debt	
	PTE billion	% GDP	PTE billion	% GDP	PTE billion	% GDP	PTE billion	% GDP
1993	822.4	6.1	8,497.1	62.8	822.2	6.1	8,497.1	63.1
1994	880.0	6.0	9,331.0	63.8	880.0	6.0	9,331.0	63.8
1995	905.7	5.7	10,417.3	65.9	905.7	5.7	10,417.3	65.9
1996	545.1	3.2	10,902.7	65.0	554.8	3.3	10,902.7	64.9
1997	435.1	2.5	11,007.3	62.0	449.4	2.5	11,016.9	61.5
1998	477.2	2.5	11,464.6	60.7	437.4	2.3	11,147.5	58.2

Source: *Ministério das Finanças*. The figures for 1993 are those of the February and August 1997 notifications.

Chart 1
FISCAL CONVERGENCE



Source: *Ministério das Finanças.*

The forecasts for the deficit and debt, in 1998, amount to 2.3 and 58.2 per cent of GDP, respectively (2.5 and 60.7 per cent, respectively, in the February notification). However, the August notification figures include revenue from taxes on public holdings profits resulting from capital gains in indirect privatisations, amounting to PTE 45.7 billion (0.2 per cent of GDP). On 19 October, Eurostat announced a decision, according to which these revenues should be classified as financial transactions, hence leaving public deficit unaffected. Simultaneously, the Government announced the maintenance of the deficit forecast for 1998 at 2.3 per cent of GDP.

These figures confirm the downward trend recorded in previous years. Furthermore, the recent experience has shown that the final versions of public accounts tend to show lower deficits than the provisional ones, chiefly due to closing figures for public consumption below the initial estimates.

As in 1997, these figures point towards deficit and debt to GDP ratios, in 1998, lower than the targets defined in the Convergence, Stability and Growth Programme.

Comparing the August notification figures for 1997 with those of the Convergence, Stability and Growth Programme, one notes that both current revenue and current expenditure were close to the forecast (plus PTE 2 billion more and PTE 10.4 billion less, respectively). As regards expenditure, this result was due to the fact that interest on public debt stood PTE 47.2 billion below the forecast, since primary current expenditure exceeded the Convergence, Stability and Growth Programme estimate by PTE 36.8 billion. The capital deficit amounted to PTE 595.8 billion, PTE 58.1 billion less than the initial forecast. The overall public deficit reached PTE 449.5 billion, PTE 70.5 billion below the projected figure. The lower deficit and the more pronounced growth of GDP allowed a deficit to GDP ratio 0.4 percentage points short of its initial estimate.

Comparing the figures in the General Government account for 1998, that supported the August notification, with the Convergence Programme, the new forecast for overall deficit falls short of its initial projection by PTE 24.4 billion (0.2 percentage points of GDP). However, the structure of the revenue and expenditure items is different. Indeed, current revenue is PTE 137.1 billion higher than before, partly reflecting a more favourable behaviour of the economic activity. Meanwhile, current primary expenditure exceeded the initial projection by PTE 258.4 billion, only partly offset by a sharper fall in interest expenditure (PTE 106.6 billion less than previously estimated). Finally, it is worth noting the downward revision of the capital deficit, by PTE 39 billion.

The primary and overall balances to GDP ratios do not provide good indicators of the budgetary policy stance, since these are partly endogenous to the behaviour of economic activity. Therefore, it becomes necessary to build indicators that separate the changes in those balances due to the working of automatic stabilisers from those resulting either from discretionary measures of a permanent or temporary nature, or from the developments in structural components — such as the social security or health systems.

The primary and overall deficits adjusted for cyclical effects are among the most used indicators in analysing budgetary policy. The first is not influenced by expenditure on public debt interest, evaluating contemporary budgetary policy more correctly. According to estimates of the Banco de Portugal, based upon the exercise supporting the notification of late August, the increase in the adjusted primary deficit (chart 2) recorded since 1994 was interrupted in 1997, eventually decreasing in 1998[1]*.*

---

(1) The estimate for the change in the cyclically-adjusted balances (charts 2 and 3) should be interpreted with caution. Indeed, the results presented depend closely on the procedures used in estimating a reference path for the economy output — and on the estimation of the sensitivity of the various tax revenues to changes in the growth rate of output.

Chart 2

CHANGES IN THE PRIMARY ACCOUNT

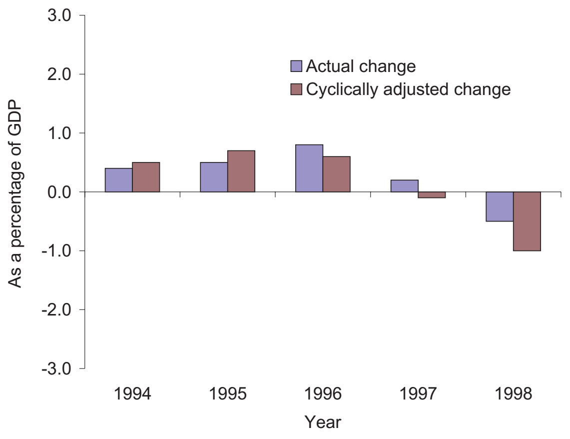
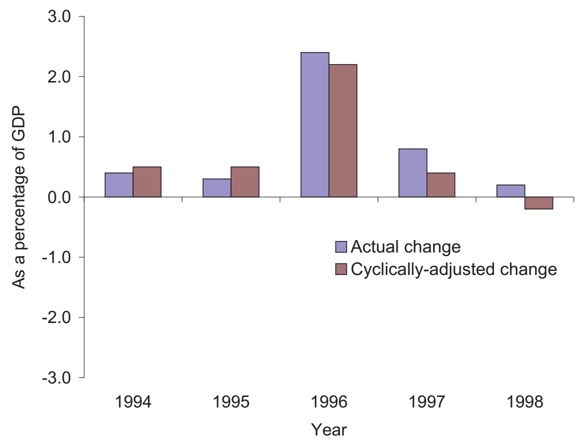


Chart 3

CHANGES IN THE OVERALL ACCOUNT



According to these estimates, public revenue adjusted for cyclical effects as a percentage of GDP, in 1998, remained virtually unchanged at the level recorded in 1997. However, primary expenditure adjusted for cyclical effects grew 1 percentage point (p.p.) of GDP. The 0.3 p.p. of GDP growth recorded by the compensation of employees reflects the effect of the scale updates and some other specific changes in wages, but also the developments in civil servants' social security system. Expenditure on goods and services grew 0.1 p.p. of GDP, greatly due to the growth of expenditure on the National Health Service (SNS). The growth of subsidised mortgage loans accounts for the bulk of the 0.2 p.p. of GDP increase in subsidies. The implementation of the Minimum Guaranteed Income Programme and the behaviour of the Social Security System explain the 0.2 p.p. growth of the transfers to GDP ratio. Finally, capital expenditure as a percentage of GDP grew 0.1 p.p.. Part of the increase in the cyclically-adjusted expenditure was offset by the reduction of expenditure on interest (-0.7 p.p. of GDP), which allowed for a less significant effect on the cyclically-adjusted overall balance (chart 3).

The figures for public debt show a reduction in the debt to GDP ratio for the third consecutive year, to 58.2 per cent at the end of 1998. Note that 1998 shall be the first year since the ratification of the European Union Treaty where debt stands below the reference value established for the debt ratio in the context of the excessive deficit procedure (60 per cent of GDP).

The sharp fall in public debt as a percentage of GDP in the period 1995-98 was the outcome of primary surpluses and the reduction of the interest rate differential vis-à-vis the rate of growth of the economy on the one hand, and the important amounts reached by revenue from privatisation allocated to debt redemption on the other hand. In fact, privatisations carried out in the context of the favourable behaviour of the Lisbon Stock Exchange, made possible the allocation of more than PTE 1,000 billion to public debt redemption between 1995 and 1997.

The accomplishment of the objectives of the Stability and Growth Pact continues to require a budgetary consolidation effort, namely through the control of the growth of GG current primary expenditure. This effort is more and more urgent as structural trends — e.g. the growth of pensions or of health expenditure — are bound to increase expenditure.

Written with the information available as on 20 October 1998.

BALANCE OF PAYMENTS

Main developments in the first half of 1998

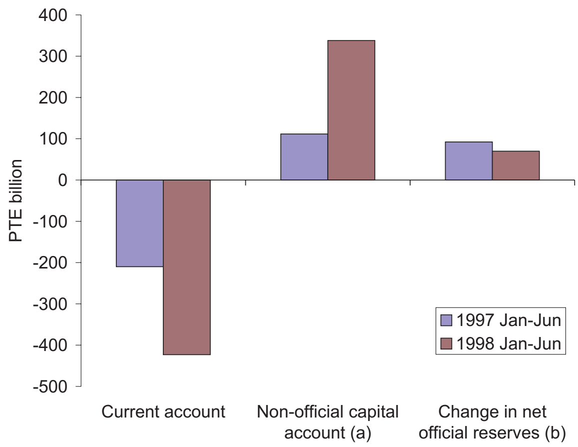
1. INTRODUCTION

In the first half of 1998, the current account (CA) deficit on a transactions basis increased PTE 213.1 billion from the same period in 1997[(1)], reaching PTE 423.1 billion. The CA deficit in this period was basically financed by non-official capital movements[(2)] between Portugal and abroad, giving rise to a net inflow of funds amounting to PTE 338.0 billion, while net official reserves decreased PTE 69.9 billion (chart 1 and table 1).

As in 1997, the widening of the current account deficit reflected the increase in the trade deficit from PTE 825.0 billion in the first half of 1997 to PTE 1,013.6 billion in the first half of the current year. The strong growth of merchandise imports exceeded the growth of exports in the period[(3)]. This is consistent with the cyclical position of the Portuguese economy — currently more advanced than in our leading trade partners. The unrequited transfers balance fell PTE 113.7 billion, reflecting lower public transfers received in the first half of 1998.

As in previous years, the PTE 338.0 billion surplus posted by the non-official capital account in the first half of 1998 resulted from the reduction in banks' short-term net foreign assets (PTE 1,264.1 billion), since non-monetary financial flows gave rise to a PTE 633.7 billion net outflow.

Chart 1
BALANCE OF PAYMENTS
Breakdown



Notes:
(a) Includes leads/lags and statistical adjustments and operations currently being classified.
(b) A plus (minus) sign indicates a net decrease (increase) of assets or a net increase (decrease) of liabilities.

2. CURRENT ACCOUNT

The current account calculated on a transactions basis recorded a PTE 423.1 billion deficit in the first half of 1998. This deficit is much higher than one year before (PTE 210.0 billion). The greater current deficit resulted from an increase in the deficit from goods and services and a reduction in net unrequited transfers received (chart 2).

In the first half of 1998, the **trade balance** (fob-fob) rose to PTE 1,013.6 billion (PTE 825.0 billion in the first half of 1997). The sharp increase in the trade deficit was again an outcome of the strong growth of imports, above that of exports. A gain in terms of trade was recorded in the first half

(1) Excepting mentions otherwise, all comparisons made in this article are changes vis-à-vis the same period in the previous year.
(2) The non-official financial account includes item "leads/lags and statistical adjustments". In the first half of 1998, this item amounted to PTE –292.5 billion (PTE –252.4 billion in the same period of 1997). A significant part of this statistical discrepancy continued to be explained by the difference between the merchandise balance on a transactions basis and the same balance on a cash basis.
(3) It should be noted that the data on foreign trade in the first half of 1998 are still preliminary, and hence are subject to revisions.

Table 1

BALANCE OF PAYMENTS

Transactions basis

PTE billion

	1997	January-June 1997			January-June 1998[P]		
	Balance	Debit	Credit	Balance	Debit	Credit	Balance
I. Current account	-322.2	4008.3	3798.3	-210.0	4558.3	4135.2	-423.1
Goods and services	-1410.3	3459.8	2711.3	-748.4	3968.2	3066.5	-901.6
Merchandise f.o.b. [(a)]	-1673.5	2946.9	2121.9	-825.0	3383.7	2370.0	-1013.6
Services	263.2	512.9	589.5	76.6	584.5	696.5	112.0
Transports	-63.4	143.1	111.4	-31.7	161.4	131.9	-29.4
Travel and tourism [(a)]	425.8	164.2	335.0	170.8	190.0	395.5	205.5
Insurance	-26.0	28.6	10.7	-17.9	31.1	15.8	-15.3
Other services	-44.0	154.5	126.2	-28.2	175.9	144.7	-31.1
Government services	-29.2	22.5	6.2	-16.4	26.2	8.6	-17.6
Income	-86.4	404.0	328.6	-75.4	421.0	399.3	-21.7
Labour income	8.8	8.2	11.9	3.8	8.9	16.6	7.6
Investment income [(b)]	-49.8	370.6	314.7	-55.9	384.6	380.6	-4.0
Other	-45.4	25.3	1.9	-23.4	27.5	2.2	-25.4
Unrequited transfers	1174.5	144.5	758.4	613.9	169.1	669.4	500.3
Official	587.0	121.7	472.5	350.8	142.9	380.8	237.9
Private	587.5	22.7	285.9	263.1	26.2	288.6	262.4
II. Non-official capital account	238.8			111.5			338.0
Non-monetary financial account	-148.4	16724.2	16652.7	-71.5	22669.2	22035.5	-633.7
Direct investment	12.6	493.0	486.2	-6.8	880.8	691.1	-189.7
Portuguese investment abroad	-290.3	104.3	7.4	-96.9	261.1	52.1	-208.9
Foreign investment in Portugal	302.9	388.7	478.9	90.1	619.7	639.0	19.3
Portfolio investment	213.0	10487.0	10483.7	-3.2	15105.4	14683.8	-421.6
Portuguese investment abroad	-1010.0	7271.8	6798.0	-473.7	10173.4	9545.1	-628.3
Foreign investment in Portugal [(b)]	1223.1	3215.2	3685.7	470.5	4932.1	5138.7	206.6
External credits	-20.9	1694.6	1688.6	-6.0	1818.3	1845.6	27.3
Granted to non-residents	-17.1	76.9	69.0	-7.9	220.3	192.7	-27.6
Received	-3.7	1617.7	1619.5	1.8	1598.0	1652.9	54.9
Other operations	-353.1	4049.6	3994.1	-55.5	4864.7	4815.0	-49.6
Assets	-354.1	4047.2	3991.0	-56.3	4860.6	4806.5	-54.1
Deposits	-358.7	3945.8	3882.5	-63.3	4699.5	4660.7	-38.8
Other	4.6	101.4	108.4	7.1	161.1	145.8	-15.3
Liabilities	0.9	2.4	3.2	0.8	4.0	8.5	4.5
Change in short-term net foreign assets of banks[(d) (e)]	834.2			435.4			1264.1
Leads/lags and statistical adjustments[(c)]	-446.9			-252.4			-292.5
III. Operations currently being classified	14.4			6.2			15.2
IV. Change in net official reserves [(e)]	69.0			92.3			69.9
Assets	68.2			109.5			81.6
Liabilities	0.8			-17.2			-11.7

Notes:

(a) Figures estimated by the Banco de Portugal.

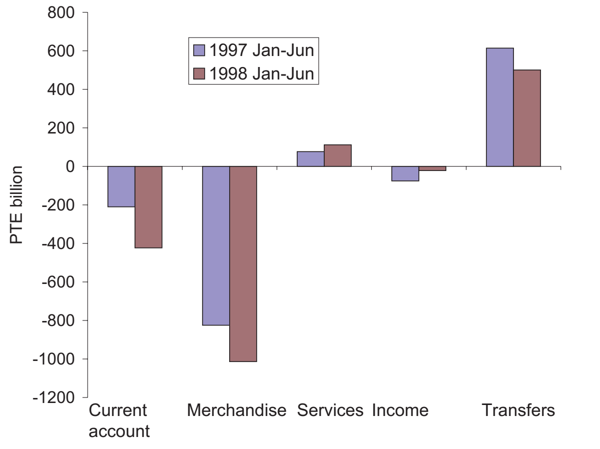
(b) Includes adjustments resulting of the accountancy of portfolio investment income on a transactions basis.

(c) The value of this item includes leads and lags in the settlement of operations involving merchandise and discrepancies at the level of the systems for gathering statistical information on such operations.

(d) The value of this item corresponds to the effect of operations with non-residents on the short-term assets and liabilities of banks, calculated on the basis of the system for drawing up the balance of payments on a cash basis.

(e) A plus (minus) sign indicates a net decrease (net increase) in assets or net increase (net decrease) in liabilities.

Chart 2
CURRENT ACCOUNT
Breakdown



of this year[4], greatly due to the sharp fall in oil prices.

In the first half of 1998, nominal merchandise **exports** grew 11.7 per cent, compared with 10.1 per cent in 1997 as a whole. On the contrary, real exports recorded a slight slowdown in relation to the previous year. Exports are estimated to have grown 8.8 per cent in volume terms in the first half-year[5] (9.5 per cent in 1997 as a whole). This reflects the favourable behaviour of external demand[6]. Economic activity acceleration in most European Union economies translated into a 9.9 per cent real growth of demand for Portuguese produced goods (9.3 per cent in 1997 as a whole).

According to estimates of the Banco de Portugal, the competitiveness of Portuguese exports measured by the relative unit labour costs in manufacturing industry improved in the first half of 1998. As in the previous year, this improvement chiefly reflects the depreciation of the escudo effective exchange rate (by 3.0 per cent in average terms, in the first half-year).

Up to June, nominal merchandise **imports** accelerated from the previous year as a whole, to 14.8 per cent (11.7 per cent in 1997). Since import prices in escudos remained virtually stable, this implies a strong real growth of merchandise imports — linked to the dynamism of domestic demand in the period. The very strong growth of imports was extensive to all categories. The boost of imports of consumer goods resulted from the significant acceleration of private consumption, and reflected also the bad harvest in 1998. Imports of equipment goods were driven by the maintenance of a high growth of gross fixed capital formation. Economic activity acceleration in this period also explains the behaviour of imported intermediate goods (see "The Portuguese economy in 1998" in this bulletin).

In the first half of 1998, the **services** surplus increased PTE 35.4 billion, to PTE 112.0 billion. This increase was chiefly due to the greater travel and tourism surplus. Both tourism expenses and receipts recorded higher growth rates than in 1997 as a whole. Residents' expenses in travel and tourism abroad grew 15.7 per cent (7.8 per cent in 1997 as a whole), while travel and tourism receipts increased 18.1 per cent (9.0 per cent in the previous year). The available real indicators also point towards an acceleration of tourism receipts. According to provisional information, nights spent by foreigners in hotels and similar establishments grew 7.2 per cent in year-on-year terms, in the six first months of 1998 (4.5 per cent in 1997 as a whole).

The **income account** deficit decreased again in the first half of 1998, from PTE 75.4 billion to PTE 21.7 billion, reflecting the behaviour of investment income. More specifically, net payments of income from credit operations decreased from PTE 72.5 billion in the first half of 1997 to PTE 26.5 billion, reflecting the reduction of payments and the increase in receipts in the first half of 1998. In addition, the portfolio investment income surplus increased (from PTE 37.3 billion to PTE 48.8 billion) (chart 3). The stronger growth of portfolio investment income received is related to the growth

(4) In the first quarter of 1998, export and import prices recorded 2.8 and –0.2 per cent changes respectively, according to data of the *Direcção-Geral de Relações Internacionais*. Excluding fuel, the merchandise imports deflator increased 2.2 per cent and the exports deflator grew 3.1 per cent in year-on-year terms in the first quarter of 1998.

(5) Worth noting that the lower growth of the volume of exports vis-à-vis 1997 as a whole chiefly reflected the behaviour of exports in June 1998. From January to May 1998, merchandise exports increased 14.6 per cent in nominal terms, which corresponds to a real growth above 11 per cent. Since these data are provisional, the growth rate of exports in the first half of 1998 may be revised.

(6) External demand was calculated on the basis of the real growth of the manufactured imports of 17 trade partners. Each country was weighted according to its share in Portugal's exporting market in the previous year.

Chart 3
INVESTMENT INCOME: BREAKDOWN
Balance on a transactions basis

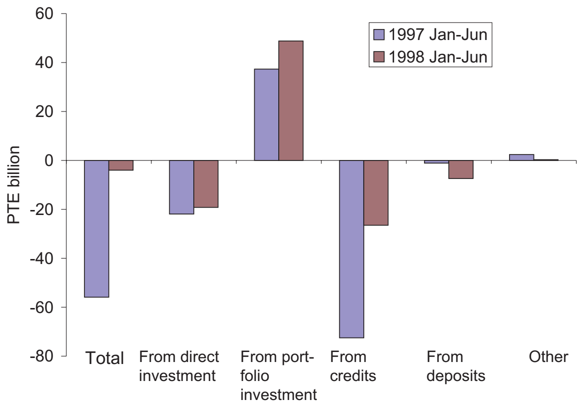
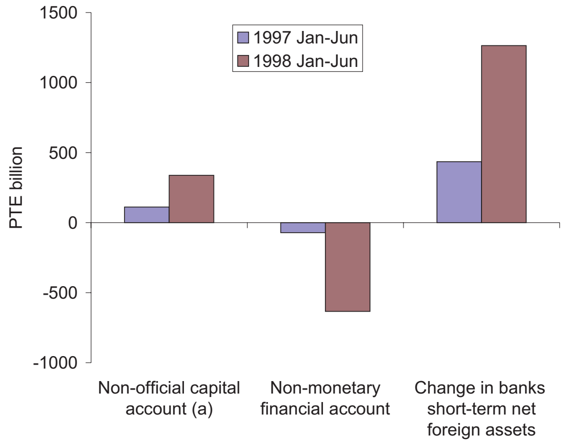
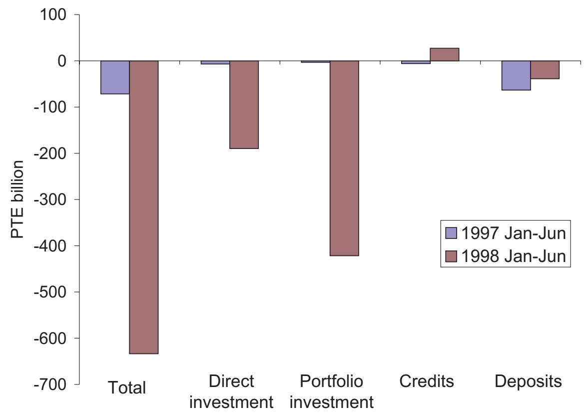


Chart 4
NON-OFFICIAL CAPITAL ACCOUNT
Balance



Note:
(a) Includes leads/lags and statistical adjustments and operations currently being classified.

Chart 5
NON-MONETARY FINANCIAL ACCOUNT
Balance



of the stock of foreign securities held by residents in recent years.

Net **unrequited transfers** received decreased to PTE 500.3 billion in the first half of 1998 (PTE 613.9 billion in the first half of the previous year), basically due to the lower public transfers received. Net transfers from the EU — which account for over 95 per cent of total public transfers — decreased PTE 103.3 billion from the value recorded one year before. This reduction is a consequence of the particularly high amount received in the first half of 1997, due to lags in 1996 receipts. Meanwhile, net private transfers received recorded a value similar to that of the first half of 1997.

3. NON-OFFICIAL CAPITAL MOVEMENTS

In the first half of 1998, the non-official capital account recorded a net capital inflow of PTE 338.0 billion, compared with PTE 111.5 billion in the same period of 1997. This surplus reflected the capital inflows due to the reduction in banks' short-term net foreign assets by PTE 1,264.1 billion (PTE 435.4 billion in the first half of 1997), as well as the much greater amount of non-monetary financial outflows than in the same period of 1997 (PTE 633.7 billion and PTE 71.5 billion, respectively) (chart 4). The higher non-monetary financial deficit was due to residents' greater net investments abroad, but also to the lower net capital inflows, extensive to both direct and portfolio investment[7] (chart 5). Both capital debits and credits continued to increase significantly in the first half of 1998, as in previous years. This development took place specially in the form of portfolio investment operations.

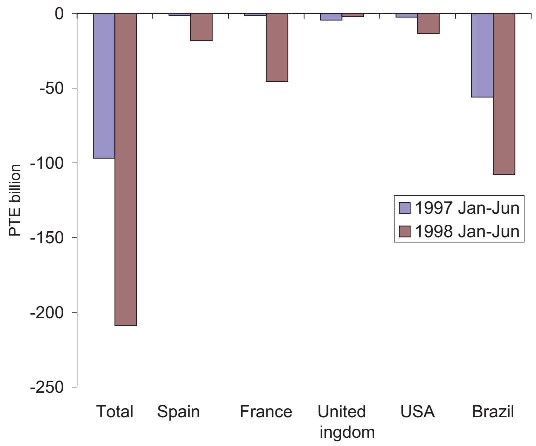
(7) Note, however, that the preliminary information for the period January – August 1998 points towards a strong increase of non-residents' portfolio investment in Portugal in July and August.

3.1 Direct investment

Foreign direct investment operations in Portugal and Portuguese direct investment abroad resulted in a PTE 189.7 billion net outflow in the first six months of 1998, chiefly reflecting a strong increase in the latter.

Portuguese direct investment abroad continued to increase substantially, standing clearly above the amount invested in the same period of 1997 (PTE 208.9 billion, against PTE 96.9 billion in the first half of the previous year). In the first half of 1998, over half of Portuguese investment abroad was directed to Brazil, reflecting resident companies' increasing interest on the privatisation operations currently being carried out in this country (chart 6). In this context, the relative share of investment made through equity acquisition rose to about 65.0 per cent (57 per cent in the first half of 1997). The financial sector stood as the leading net investor abroad in this period.

Chart 6
PORTUGUESE DIRECT INVESTMENT ABROAD
By main receiving countries
Balance



Net **foreign direct investment received by the Portuguese economy** in the first half of 1998 reached PTE 19.3 billion, less than in the same period in 1997[(8)] (PTE 90.1 billion). Up to June, both gross investment and disinvestment increased. Non-resident investors consolidated their position in some Portuguese companies. In this context, operations of capital increases amounted to PTE 45.3 billion in net terms. On the contrary, loans and additional capital operations resulted in a net outflow amounting to PTE 44.6 billion, more than half of which were short-term operations (PTE 23.0 billion). The bulk of foreign direct investment in the first half of 1998 was received by the financial sector (PTE 39.3 billion), while manufacturing industry recorded a PTE 34.8 billion net disinvestment.

3.2. Portfolio investment and deposits

In the first half of 1998, portfolio investment operations gave rise to a significant capital outflow (PTE 421.6 billion, compared with PTE 3.2 billion in the first half of 1997) (table 2). While residents continued to increase their investments in securities abroad, non-residents' portfolio investments in Portugal decreased. In line with the recent behaviour of these flows, transactions of securities between residents and non-residents continued to increase in the first half of 1998, reflecting the growing integration of the Portuguese economy in the international financial markets.

In the first half of this year, **residents' portfolio investment abroad**, on a transactions basis, gave rise to a substantial net outflow (PTE 628.3 billion) (table 2). This development is explained by the net investment in short-term securities, which contrasts with the disinvestment recorded in the same period in 1997 – basically due to a different behaviour of investment funds. Nevertheless, the bulk of residents' portfolio investment continued to concentrate in bonds (PTE 526.5 billion), more than half of which were issued in escudos by non-resident entities.

In the six first months of 1998, **non-residents' portfolio investment** in domestic securities on a transactions basis posted a PTE 206.6 billion balance, clearly below that recorded one year before (table 2). The lower capital inflow in the half-year resulted basically from the net disinvestment in fixed-rate public debt bonds issued in the domestic market, unlike in the first half of 1997. On the contrary, investment in shares continued to give rise to significant capital inflows. However, these investments exhibited distinct behaviours over the

(8) In July and August 1998, foreign direct investment in the Portuguese economy recorded significant amounts. Hence, between January and August 1998, foreign direct investment in Portugal reached PTE 94.5 billion in net terms, compared with PTE 155.4 billion in the same period of 1997.

Table 2

PORTFOLIO INVESTMENT

On a transactions basis

PTE billion

	January-June 1997			January-June 1998		
	Debit	Credit	Balance	Debit	Credit	Balance
Portfolio investment[a]	10487.0	10483.7	-3.2	15105.4	14683.8	-421.6
From Portugal abroad	**7271.8**	**6798.0**	**-473.7**	**10173.4**	**9545.1**	**-628.3**
Shares	291.0	222.0	-69.1	266.4	214.6	-51.8
Bonds	5628.2	5087.4	-540.8	8535.5	8009.0	-526.5
Short-term securities[b]	380.9	573.0	192.2	214.8	172.8	-42.1
Other securities	971.7	915.7	-56.0	1156.5	1148.6	-7.9
Foreign investment in Portugal	**3215.2**	**3685.7**	**470.5**	**4932.1**	**5138.7**	**206.6**
Shares	1084.7	1259.4	174.7	2664.6	2856.1	191.4
Bonds	1840.8	2096.9	256.0	2044.0	2108.4	64.4
of which:						
Public debt bonds issued in the domestic market	1190.2	1297.6	107.3	1719.0	1552.6	-166.4
Fixed	556.1	698.6	142.5	1492.8	1310.6	-182.2
Indexed rate	634.2	599.0	-35.1	226.2	242.0	15.8
Public debt bonds issued in the external markets	71.7	242.9	171.3	224.4	493.9	269.5
Short-term securities[b]	277.6	319.9	42.3	220.2	174.2	-46.0
of which:						
Commercial paper issued by the Portuguese State	100.1	134.5	34.4	189.1	139.0	-50.1
Other securities	12.0	9.5	-2.5	3.3	0.1	-3.2

Notes:

(a) Includes adjustments resulting of the accountancy of portfolio investment income on a transactions basis.

(b) Includes Treasury bills, commercial paper, deposit certificates and other short-term securities of maturity up to one year.

course of this period. Indeed, some capital transfers from shares to bonds are estimated to have been recorded in the second quarter of 1998, in line with the behaviour of most western stock and bond markets. In the first three months of 1998, non-residents' portfolio investment in shares amounted to PTE 225.8 billion, contributing to the significant rise in the Lisbon Stock Market price index. On the contrary, a PTE 34.4 billion net disinvestment was recorded in the following quarter. From May 1998 onwards, following the formal announcement of the Portuguese participation in the Third Stage of the Economic and Monetary Union, non-residents directed their investments to fixed-rate bonds issued in domestic markets, given the higher profitability of these investments and the reduction of exchange rate risk[9]. In the first six months in 1998, the Portuguese State resorted again to the issuing of public debt in external markets, giving rise to an increase in non-residents' investment in these securities. Likewise, the redemption of commercial paper issued in foreign currency, carried out by the Portuguese State in this period, is linked to non-residents' net disinvestment in short-term securities.

(9) According to preliminary data for the period January – August 1998, non-residents' investment in bonds issued in the domestic market continued to increase significantly.

As opposed to the purchase of securities, non-banking residents' net investments in **deposits** abroad decreased (from PTE 63.3 billion to PTE 38.8 billion). As in the first half of 1997, deposits in escudos increased, while foreign currency-denominated deposits decreased.

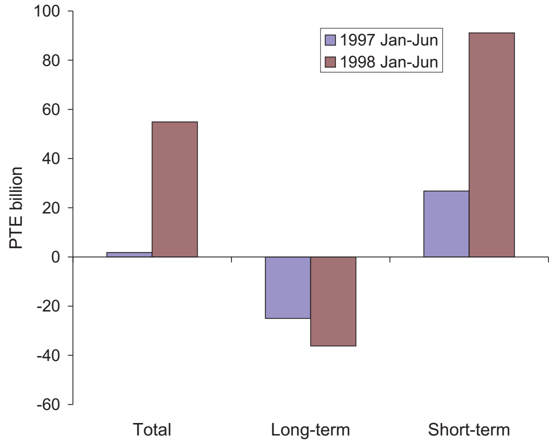
3.3 External credit

In the first six months of 1998, credit operations between residents and non-residents gave rise to a capital inflow of PTE 27.3 billion, contrasting with the net outflows recorded recently. External credit received by the Portuguese economy recorded a net constitution of PTE 54.9 billion (PTE 1.8 billion in the same half of 1997) (chart 7). As in the previous year, residents resorted increasingly to

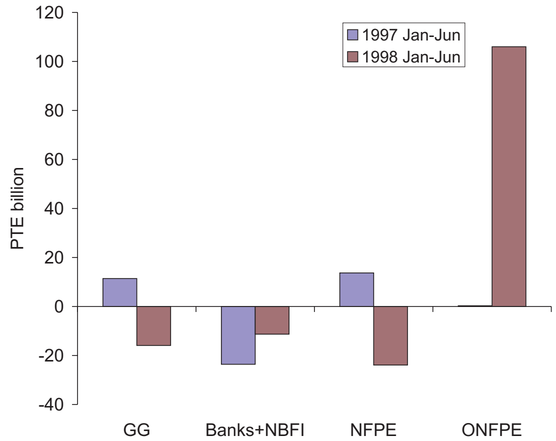
Chart 7

EXTERNAL CREDIT RECEIVED

Balance by maturity



Balance by receiving sector



short-term external credit in the first half of 1998 – specially non-financial companies. This sector accounted for the bulk of net external credit received in the period, having contributed to short-term credit constitution (PTE 89.6 billion, compared with PTE 11.3 billion in the first half of 1997) as well as long-term credit constitution (PTE 16.4 billion, against a net repayment of PTE 11.1 billion in the first half of 1997). Still regarding long-term credit, the remaining sectors gave rise to a PTE 36.2 billion net repayment.

3.4 Change in banks' short-term net external position

As in previous years, the current account and non-monetary financial account deficits in the first half of 1998 had as a counterpart a sharp reduction in domestic banks' short-term net foreign assets. The change in banks' short-term net external position gave rise to a capital inflow amounting to PTE 1,264.1 billion (PTE 435.4 billion in the same period of 1997)[(10)]. As in 1997, the increase in banks' short-term debtor position chiefly resulted from a sharp reduction in banks' escudo-denominated net external assets vis-à-vis foreign banks.

4. OFFICIAL RESERVES

In the first half of 1998, net official reserves excluding exchange rate fluctuations decreased PTE 69.9 billion, compared with a PTE 92.3 billion reduction in the same period of 1997. At the end of June 1998, total net official reserves amounted to USD 18,161 million with gold at book value. This value represented a USD 592 million reduction from the end of 1997. The stock of net official reserves, measured in escudos and with gold at book value, decreased PTE 75.9 billion in the first half of this year.

Completed with the available information until 20 October 1998.

(10) This development was partly reversed in July and August 1998. Therefore, between January and August, banks' short-term net foreign assets decreased PTE 639.4 billion, similar to that recorded in the same period of 1997 (PTE 627.6 billion).

DEVELOPMENTS IN THE BANKING SYSTEM IN THE FIRST HALF OF 1998

1. INTRODUCTION

This article describes and analyses the activity and results of the banking system, as well as the behaviour of credit and market risks underlying those activities, in the first half of 1998.

Excepting mentions otherwise, the sections regarding the characterisation of the banking sector and the developments in business and results refer to banks (including the *Caixa Geral de Depósitos*) subject to supervision by the Banco de Portugal[(1)], the *Caixa Económica Montepio Geral* and the branches of credit institutions having their head office in other European Union Member-states which are subject to the control of home country supervisory authorities.

However, in the section on the behaviour of credit and market risks, the analysis comprises only the institutions subject to the supervision by the Banco de Portugal.

The analysis utilises data on overall business[(2)] of banks on a non-consolidated basis.

The most relevant development in the period under review was the growth, without precedents in the last five years, of loans to clients (table 1). This development yielded a significant change in the structure of assets of the banking system — translated into the reduction of the relative share of interbank investments and the sectors' securities portfolio.

The increase in the volume of business determined, to a great extent, a widening of the financial margin. Together with the situation of the leading capital markets in the period under scrutiny, the economy of operating costs and the lower provisioning needs in this stage of the economic cycle, this development led to a strong increase in net results.

Finally, worth noting the further reduction of the ratio between credit and interest overdue, and total credit granted, as well as the slight reduction of the overall average capital adequacy ratio, which remains significantly above the minimum limits established.

2. CHARACTERISATION OF THE SECTOR

2.1 Background of the banking sector

At the end of June 1998, 61 banks and branches of foreign banks were registered (table 2). Since end 1997, one branch of an EC bank — which previously did not raise deposits (being classified as a "branch of other credit institutions") and one new bank were registered, while the registration of another bank was cancelled (due to the merger by incorporation in another bank). Among those banking institutions, 46 are subject to supervision by the Banco de Portugal.

Meanwhile, the group comprising the remaining credit institutions, financial companies and

(1) I.e., institutions having their head office in Portugal, subsidies of foreign banks and branches of non-European Union banks.

(2) The overall activity encompasses total domestic activity of banks operating in Portugal, the activity of branches located in off-shore areas and the activity of branches abroad. Except when mentioned otherwise, each institution is taken individually and not in a group perspective.

Table 1

BANKING SYSTEM SITUATION — SYNTHESIS[(a)]

PTE billion

	Jun 97	Jun98	Change	
			Absolute	Percentage
Assets (net)	37 476.6	42 389.9	4 913.3	13.1
Credit granted	13 180.0	16 130.9	2 950.8	22.4
Overdue credit and interest	606.1	581.5	- 24.6	- 4.1
Overdue credit and interest / credit granted (percentage)	4.6	3.6	- 1.0p.p.	
Provisions for the year (deducted of replacements)	99.3	88.0	- 11.3	- 11.3
of which:				
Overdue credit	48.7	51.6	2.9	5.9
Doubtful credit	4.7	17.2	12.6	268.9
Country risk	0.6	0.1	- 0.5	- 89.5
Securities (investment portfolio)	3.2	- 0.3	- 3.4	- 108.6
General risk	13.7	17.1	3.4	25.2
Provisions for credit (accumulated)	583.1	618.4	35.4	6.1
Overdue credit	393.4	383.3	- 10.1	- 2.6
Doubtful credit	32.1	47.6	15.5	48.2
Country risk	7.3	9.3	2.0	26.9
General risks	150.2	178.2	28.0	18.7
Provisions for unrealised losses	55.2	56.3	1.1	1.9
Total credit provisions / overdue credit and interest (percentage)	96.2	106.4	10.2p.p.	
Specific provisions / overdue credit (percentage)	70.2	74.1	3.9p.p.	
Resources from clients	18 524.0	20 475.5	1 951.5	10.5
Own capital	2 214.7	2 663.6	448.8	20.3

Profit and loss account	1st half 97	1st half 98	Change	
			Absolute	Percentage
Net interest income (financial margin)	388.0	426.9	38.8	10.0
Interest income and equivalent[(b)]	1 269.5	1 294.1	24.6	1.9
Income from securities [(c)]	25.2	41.8	16.7	66.2
Interest cost and equivalent	906.6	909.1	2.4	0.3
Other current results	174.8	179.3	4.5	2.6
Commissions (net value)	65.4	82.8	17.4	26.6
Profits in financial operations (net values)	76.2	58.2	- 18.0	- 23.6
Other profits (net values)	33.2	38.3	5.1	15.4
Banking product	562.8	606.2	43.3	7.7
Staff costs	187.3	187.9	0.6	0.3
Services and supplies from third parties	102.4	119.3	17.0	16.6
Operating cash-flow	273.2	298.9	25.7	9.4
Extraordinary income (net)	10.3	12.4	2.0	19.4
Cash-flow	283.5	311.2	27.7	9.8
Allocation:				
Provisions for the year (net of replacement of provisions)	99.3	88.0	- 11.3	- 11.3
Depreciation for the year	37.3	39.9	2.6	7.0
Tax on income	33.6	39.0	5.4	16.1
Net income	113.4	144.3	31.0	27.3
Own funds adequacy ratio (on a consolidated basis)	11.8	11.2	- 0.6p.p	

Notes:

(a) Includes branches of EC credit institutions (except for the own funds adequacy ratio).

(b) Includes interest from fixed-rate securities.

(c) Variable-income securities.

Table 2

INSTITUTIONS REGISTERED[(a)]

	Number of institutions	
	1997	1998
	Dec	Jun
Credit institutions	307	297
Banks and branches of foreign banks	60	61
Saving banks [(b)]	7	7
Mutual agricultural credit banks	170	164
Investment companies	3	3
Financial leasing companies	28	24
Factoring companies	10	10
Credit-purchase financing companies	23	23
Branches or other foreign credit institutions	6	5
Financial companies	150	148
Dealers	12	12
Brokers	8	8
Foreign exchange or money market mediating companies	3	3
Investment fund managing companies	55	55
Credit card issuing or managing companies	3	3
Wealth managing companies	18	18
Regional development companies	3	3
Risk capital companies	12	10
Group-purchase managing companies	7	7
Exchange offices	27	27
Other companies	2	2
Representative offices of credit institutions and financial companies having their office abroad	27	27
Holding companies	59	59
Total	543	531

Notes:
(a) Includes branches of EC credit institutions. Does not include institutions that, although registered in the Banco de Portugal, have gone into liquidation.
(b) Includes the C*aixa Económica Montepio Geral*.

holding companies[(3)] counted 443 institutions. In net terms, twelve institutions (ten of which are credit institutions) exited the financial system in the first half of 1998, namely due to the following developments:

— The number of agricultural credit co-operatives continued to decrease, due to merger operations carried out in the context of the process of financial restructuring and consolidation of the *Crédito Agrícola Mútuo*. Indeed, since June 1997 the number of agricultural credit co-operatives decreased from 175 to 164.

— The number of financial leasing companies decreased. This development continued to be related to the rationalisation processes carried out by the Portuguese financial groups. It also should be noted that, although some non-banking credit institutions maintain their registration in the Banco de Portugal, these were out of business at the end of the first half of the year; this may imply a further reduction in the number of non-banking credit institutions.

At the end of 1997, banking institutions continued to hold the bulk of financial intermediation; this is shown by the indicators presented in table 3. The fact that several kinds of credit institutions and financial companies belong to banking groups stresses this point.

2.2 Level of concentration of the banking system and market shares of foreign institutions

Except for the number of counters, all indicators for the banks integrating the five major financial groups point towards the generalised reduction in their market shares (table 4).

Regarding funds from clients, the market share of these banks decreased from 83.6 per cent in June 1997 to 82.1 per cent in June 1998; meanwhile these banks granted 76.7 per cent of credit to clients in June 1998, compared with 78.5 per cent in June 1997. The share in net results of the five greatest banking groups narrowed from 84.9 per cent in June 1997 to 79.8 per cent in June this year.

In what concerns the five greatest banks, after a period characterised by the significant increase in the level of concentration of activity, market

(3) According to the Legal Framework of Credit Institutions and Financial Companies, holding companies are only registered in the Banco de Portugal and subject to its supervision when:
- the total value of their holdings in credit institutions, financial companies or in both accounts for 50 per cent or more of total investment; or
- investments held directly or indirectly give them at least 50 per cent of voting rights in one or more credit institutions or financial companies.

Table 3

SOME STRUCTURE INDICATORS[(a)]

31 December 1997

PTE billion

	Banks	%	Savings banks [(b)]	%	Mutual agricultural credit banks	%	Other credit institutions	%	Financial companies	%	Total
Net assets	38 717.2	91.5	924.4	2.2	1 087.8	2.6	1 229.1	2.9	336.5	0.8	42 294.9
Credit to clients	13 368.6	83.8	762.2	4.8	622.6	3.9	1 143.2	7.2	59.2	0.4	15 955.8
Debts to clients	19 108.7	91.7	749.6	3.6	960.4	4.6	2.8	0.0	16.5	0.1	20 838.0
Cash-flow	664.2	82.4	25.4	3.1	39.1	4.9	47.0	5.8	30.6	3.8	806.2
Income for the year	235.9	82.0	10.6	3.7	11.9	4.1	15.0	5.2	14.3	5.0	287.7
Number of institutions	60	13.1	7	1.5	170	37.2	70	15.3	150	32.8	457

Notes:
(a) Includes branches of EC banks.
(b) Includes the *Caixa Económica Montepio Geral*.

shares decreased in the period under review — exception made for the net results indicator.

Regarding the evolution of market shares of the ten greatest banks, indicators should be interpreted with caution; since a merger occurred in the period in review, this group includes in 1998 one more bank besides the ten institutions included in June 1997.

Table 4

MARKET SHARE[(a)]

A - Five major banking groups[(b)]

Percentage

	Assets	Credit	Resources from clients	Net income	Number of branches
30.06.97	79.4	78.5	83.6	84.9	76.4
30.06.98	77.8	76.7	82.1	79.8	76.9

B - Five major banks[(b)]

Percentage

	Assets	Credit	Resources from clients	Net income	Number of branches
30.06.97	52.5	46.7	55.6	48.6	46.5
30.06.98	49.3	45.9	53.7	50.3	44.2

C - Ten major banks[(b)]

Percentage

	Assets	Credit	Resources from clients	Net income	Number of branches
30.06.97	70.5	62.0	72.2	67.3	65.3
30.06.98	70.8	60.8	72.4	70.1	62.6

Notes:
(a) Includes branches of EC banks.
(b) The five and ten greatest banks in each period are considered; choice is made taking assets as a reference, and on the basis of overall activity.

Table 5

SHARE OF SUBSIDIARIES AND BRANCHES OF FOREIGN BANKS

Percentage

	Number		Net assets		Net credit to clients		Resources from clients	
	Jun97	Jun98	Jun97	Jun98	Jun97	Jun98	Jun97	Jun98
Branches	16	20	2.5	2.7	3.3	3.7	1.5	1.5
Subsidiaries	9	9	8.5	8.5	4.7	5.3	4.4	5.1
Foreign banks	25	29	11.0	11.2	8.0	9.0	5.9	6.6

Note: Includes branches of EC banks.

Non-domestic banks (subsidiaries[4] and branches of foreign institutions) recorded a market share gain of about one percentage point as regards credit to clients (table 5) and 0.7 percentage points in “resources from clients”, although “net assets” (0.2 percentage points more) did not change significantly — thus confirming the still low share of these institutions in the Portuguese baking system.

Still in what concerns foreign banks, the behaviour of “credit to clients” was partly due to four new branches operating since June 1997, but also to the stronger growth of loans granted by the subsidiaries of foreign banks (39.3 per cent) than the sector’s average (23.1 per cent). An analysis of the aggregate values for non-domestic banks reveals also a stronger share of investment banking and capital market operations than retail activities. Consequently, these institutions resort more frequently to their head offices or to the interbank or capital markets for funding, than the banking system as a whole. These institutions also allocate these resources more strongly to non-credit investments than the system as a whole.

Nevertheless, it should be noted that the activity and strategies of foreign banks are particularly heterogeneous. Consequently, the conclusions for non-domestic banks as a whole are strongly influenced by the disparity of market shares of the branches and subsidiaries considered.

(4) Institutions having their head office in Portugal, and whose equity capital is mostly held by banking groups having their head office in other countries; joint control situations are excluded.

3. DEVELOPMENTS IN ACTIVITY AND RESULTS

3.1 Activity

The aggregated net assets of the banking system increased by 15.6 per cent in year-on-year terms[5], considering the average values of the first half of 1997 (table 6). Despite being an outcome of distinct behaviours of the main aggregates, this development evidences a slowdown in most aggregates in this half-year, when compared to the strong growth recorded in the same period in the previous year (18.4 per cent). This behaviour is even clearer in end-of-period terms — net assets grew 13.1 per cent, against 22.7 per cent at the end of the first half of 1997.

The growth of net assets was chiefly due to credit granted to clients. This contrasts with the first half of 1997, when the growth of investments in credit institutions accounted for the bulk of the growth in net assets. Furthermore, credit granted to clients recorded the greatest growth rate of all balance sheet items. Not only did this item record an impressive growth (23.1 per cent), but it also accounted for a strong acceleration from the corresponding half of the previous year (18.0 per cent growth) — which had already evidenced the strong acceleration of lending activities.

The reduction of the value of the aggregate “cash and liquid assets in central banks” was due

(5) Except when mentioned otherwise, the indicated growth rates are the percentage change in relation to the same period of the previous year.

Table 6

STRUCTURE OF ASSETS

PTE billion

	1996		1997		1998		Rate of growth (percentage)	
	Jun	%	Jun	%	Jun	%	Jun97 / /Jun96	Jun98 / /Jun97
Net assets	30 551.2	100.0	37 476.6	100.0	42 389.9	100.0	22.7	13.1
Cash and liquid assets in central banks	346.4	1.1	507.6	1.4	482.7	1.1	46.5	-4.9
Investments in credit institutions	9 674.8	31.7	13 504.8	36.0	14 359.5	33.9	39.6	6.3
In Portugal	4 992.1	16.3	5 974.5	15.9	7 105.6	16.8	19.7	18.9
Abroad	4 682.7	15.3	7 530.3	20.1	7 253.9	17.1	60.8	-3.7
Credit to clients (net)	10 804.4	35.4	12 747.2	34.0	15 690.7	37.0	18.0	23.1
of which:								
Live credit	10 607.9	34.7	12 574.0	33.6	15 549.4	36.7	18.5	23.7
Overdue credit	662.2	2.2	606.1	1.6	581.5	1.4	-8.5	-4.1
Provisions for overdue credit	436.2	1.4	393.4	1.0	383.3	0.9	-9.8	-2.6
Securities investments (net)	6 469.7	21.2	7 072.8	18.9	7 209.0	17.0	9.3	1.9
Financial fixed assets (net)	827.0	2.7	1 017.2	2.7	1 236.8	2.9	23.0	21.6
Non-financial fixed assets	660.5	2.2	686.1	1.8	742.9	1.8	3.9	8.3
Non-financial fixed assets	1 128.9	3.7	1 196.1	3.2	1 328.5	3.1	6.0	11.1
Depreciation	468.4	1.5	510.1	1.4	585.5	1.4	8.9	14.8
Other assets	569.8	1.9	750.5	2.0	1 187.4	2.8	31.7	58.2
Sundry accounts	1 198.5	3.9	1 190.4	3.2	1 480.9	3.5	-0.7	24.4
Memo: net average assets in the 1st half-year	29 951.4		35 468.9		40 989.2		18.4	15.6

Note: Includes branches of EC banks.

to the reduction of sight deposits in the Banco de Portugal. However, it should be noted that these deposits exhibit a strong intra-monthly volatility, since they are eligible for the minimum cash requirements — which are constituted according to the weekly average of daily values.

Investments in credit institutions grew 6.3 per cent in this period. The aggregate behaviour conceals particularly different developments of investments in Portugal (which grew 18.9 per cent, more than total net assets) and investments abroad, which decreased in absolute terms (PTE -276.4 billion).

However, it should be noted that investments in credit institutions abroad also comprise two distinct trends. While investments in the home-office or branches of the same institution increased PTE 300 billion, investments in other institutions fell PTE 500 billion — possibly due to the lower exposure of the Portuguese banking system to some geographical areas in a context of turbulence in the international financial markets. In February 1998, the Banco de Portugal issued a recommendation according to which the aggregate exposure to entities established in Latin America, Central and Eastern Europe and some countries of Southeast Asia should not exceed, in each area, 30 per cent of credit institutions' own funds in each area.

As stressed above, gross credit granted to banks' clients accelerated in the first half of 1998 (22.4 per cent growth), continuing the trend recorded in previous periods. Among the factors explaining this behaviour, the reduction of nominal interest rates, the upward stage of the current economic cycle and the growth of households' real disposable income, but also the existence of favourable expectations about the maintenance of these developments, shall have continued to play a key role.

The behaviour of bank credit greatly reflected the acceleration of (net) credit granted to resident clients, from 18.8 per cent in June 1997 to 22.5 per cent in June 1998. Credit granted to non-residents, although accelerating strongly as well (from 8.6 per cent in the first half of 1997 to 30.3 per cent in the first half of 1998) has a small share in net assets

Table 7

NON-SECURITISED DOMESTIC CREDIT TO COMPANIES AND INDIVIDUALS

PTE billion

	1996		1997		1998		Rate of growth (percentage)	
	Jun	%	Jun	%	Jun	%	Jun97 / / Jun96	Jun98 / / Jun97
Non-banking financial institutions . .	756.3	7.5	866.0	7.1	1 124.5	7.5	14.5	29.8
Non-financial companies	4 880.7	48.4	5 664.7	46.7	6 626.5	43.9	16.1	17.0
Individuals	4 454.7	44.1	5 596.7	46.1	7 331.6	48.6	25.6	31.0
Housing	3 309.3	32.8	4 176.0	34.4	5 459.1	36.2	26.2	30.7
Other purposes	1 145.4	11.4	1 420.7	11.7	1 872.5	12.4	24.0	31.8
Total	10 091.7	100.0	12 127.5	100.0	15 082.6	100.0	20.2	24.4

Note: Does not include branches of Portuguese credit institutions abroad; includes branches of EC banks in Portugal.

(2.9 per cent in June 1998, 0.4 percentage points more than one year before).

The system's bank lending[6] in the period under analysis (table 7) is characterised by the maintenance of high growth rates of lending to individuals (31.0 per cent), accelerating clearly from the same period in 1997. This resulted in a further increase of the proportion of this aggregate in non-securitised domestic credit to companies and individuals, to 48.6 per cent in June 1998. For the first time, this item exceeded the proportion of credit to non-financial companies.

The growth of domestic bank credit to individuals reflects, to a great extent, the growth of housing credit (30.7 per cent growth, 4.5 percentage points more than in the same period of 1997) since credit to other purposes accounts for 25.5 per cent of bank credit to individuals. Nevertheless, credit to other purposes is the most dynamic item of non-securitised domestic bank credit.

In overall terms, the behaviour of bank credit continues to translate into a growth of the level of indebtedness of households, both as a percentage of GDP (from 16.1 per cent in the early 1990s to 39.5 per cent at the end of 1997, and to an estimated 42.4 per cent in June 1998), and as percentage of disposable income (from 21.3 per cent at the beginning of the decade to 55.7 per cent at the end of 1997, and to an estimated 60.2 per cent in June 1997).

Bank credit to non-financial companies also recorded a strong pace of growth, around 17.0 per cent (16.1 per cent in the first half of 1997). Distinct behaviours characterise its items (table 8). As in the same period in 1997, the construction and public works sector stood again as the most dynamic, increasing 27.7 per cent — yielding a 1.4 percentage points increase of its share in total credit granted to non-financial companies (to 16.6 per cent).

The increasing concentration of credit to non-financial companies in the services sector — strengthened again in the first half of 1998 (to 53.0 per cent of total non-securitised loans to non-financial companies in June) — is probably overestimated, since non-financial groups resort frequently to bank credit through the respective holding companies, which are classified in the sector "other services" for statistical reasons. Nevertheless, credit granted to manufacturing industries — the greatest sub-sector of the secondary sector — grew 11.1 per cent, which follows to a virtual stagnation in the same period of 1997.

Finally, the growth of lending for investment purposes (table 9) rose by more than 25 per cent,

(6) The following analysis of the breakdown of gross credit to residents (including overdue credit) by sector and by purpose refers exclusively to the domestic activity of banks operating in Portugal and in the Madeira and Santa Maria off-shore areas. Hence, unlike in the remaining balance sheet items of the banking system, the activity of branches abroad is not included. Aggregates of credit to non-financial companies do not include financing through banks' acquisition of securities issued by these companies.

Table 8

NON-SECURITISED CREDIT TO NON-FINANCIAL COMPANIES ACCORDING TO SECTOR

Percentage

	Share			Rate of growth (percentage)	
	1996 Jun	1997 Jun	1998 Jun	Jun97/Jun96	Jun98/Jun97
Agriculture, forestry, hunting and fisheries	2.2	2.0	1.7	5.6	- 5.2
Mining	1.0	1.0	0.9	21.0	- 1.0
Manufacturing	30.1	26.2	24.9	1.1	11.1
Electricity, gas and water	3.9	3.5	3.0	4.7	- 0.4
Construction and public works	13.8	15.2	16.6	28.6	27.7
Services	49.0	52.0	53.0	23.1	19.2
Total	100.0	100.0	100.0	16.1	17.0

Note: Does not include branches of Portuguese credit institutions abroad; includes branches of EC banks in Portugal.

thus continuing the strong growth already evident in the first half of 1997.

The dynamism of the credit granting activity changed significantly the structure of the baking system's balance sheet, increasing the proportion of (net) credit to the non-financial sector (which became the major component of assets) and reducing the share of both interbank investments and the system's securities portfolio (whose proportion narrowed from 18.9 per cent in June 1997 to 17.0 in June 1998).

Indeed, investments in securities remained virtually unchanged (1.9 per cent change), while fixed-income securities recorded no significant change. However, investments in Portuguese public debt securities, which accounted for 47.6 and 40.3 per cent of the system's total portfolio, respectively in end June 1997 and June 1998, fell 13.9 per cent. Nevertheless, this reduction reflects distinct behaviours in the second half of 1997 and in the first half of the current year. Indeed, while these investments fell 16.7 per cent in the second half of 1997, a 3.2 per cent growth was recorded in the first half of 1998 — due to the recovery of the net issuing of Portuguese public debt securities (both medium- and long-term) and to a lower amount invested by non-resident entities in this type of securities.

Financial fixed assets grew 8.5 percentage points more than net assets, slightly slowing down from the first half of 1997. This behaviour continued to be related to the restructuring of Portuguese financial groups, reflecting the acquisition of shareholdings or shareholders' loans. Resources raised from clients (table 10), 95.5 per cent of which are deposits, accelerated in the period ana-

Table 9

NON-SECURITISED CREDIT TO NON-FINANCIAL COMPANIES ACCORDING TO PURPOSE

Percentage

	Shares			Rate of growth (percentage)	
	1996 Jun	1997 Jun	1998 Jun	Jun97/Jun96	Jun98/Jun97
Investment	22.6	24.1	25.8	23.7	25.3
Others	77.4	75.9	74.2	13.8	14.3
Total	100.0	100.0	100.0	16.1	17.0

Note: Does not include branches of Portuguese credit institutions abroad; includes branches of EC banks in Portugal.

Table 10

STRUCTURE OF RESOURCES

PTE billion

	1996		1997		1998		Rate of growth (percentage)	
	Jun	%	Jun	%	Jun	%	Jun97/ /Jun96	Jun98/ Jun97
Resources	30 551.2	100.0	37 476.6	100.0	42 389.9	100.0	22.7	13.1
Resources from credit institutions	8 642.0	28.3	12 453.6	33.2	14 108.2	33.3	44.1	13.3
In Portugal	2 981.4	9.8	4 581.6	12.2	5 425.8	12.8	53.7	18.4
Abroad	5 660.5	18.5	7 872.0	21.0	8 682.4	20.5	39.1	10.3
Resources from clients	17 287.3	56.6	18 524.0	49.4	20 475.5	48.3	7.2	10.5
Liabilities represented by securities	568.5	1.9	2 070.6	5.5	2 527.2	6.0	264.2	22.1
Other liabilities	127.5	0.4	203.1	0.5	250.3	0.6	59.3	23.3
Sundry accounts	1 231.1	4.0	1 010.0	2.7	1 250.3	2.9	-18.0	23.8
Provisions	301.7	1.0	283.6	0.8	268.7	0.6	-6.0	-5.3
Subordinated debt	407.5	1.3	717.0	1.9	846.1	2.0	75.9	18.0
Own capital	1 985.6	6.5	2 214.7	5.9	2 663.6	6.3	11.5	20.3
Average own capital in the half-year	1 951.3		2 174.4		2 513.8		11.4	15.6

Note: Includes branches of EC banks.

lysed (10.5 per cent growth). Unlike in the same period of 1997, resources from clients yielded the greatest contribution to the growth of the system's total resources. In this context, deposits held by other non-residents should be highlighted, as they grew 35.3 per cent, increasing their share in total deposits, from 9.2 in the first half of 1997 to 11.4 per cent at the end of June 1998. Still regarding the structure of deposits, worth noting is the increase in the proportion of sight deposits in total bank deposits, from 29.9 per cent at the end of June 1997 to 32.1 per cent one year after.

However, the increase in deposits was not enough to fulfil the borrowing requirements due to the behaviour recorded by total assets — and specially by credit — leading to a reduction of resources raised from clients as a share of banks' assets (from 49.4 per cent to 48.3 per cent in end June 1998).

In the period under analysis the leading international financial markets continued to develop favourably, which was translated into an increased interest of the public for alternative investments to time deposits (e.g., shares and investment fund units). In fact, the ratio between the portfolio of both securities investment funds and real estate investment funds and bank deposits reached 21.8 per cent at the end of June 1998, compared with 18.8 per cent one year before (table 11).

Throughout the period under analysis interbank financing grew virtually at the same pace as assets (13.3 per cent), hence remaining practically unchanged as a share of total resources. This is explained by the fact that the high growths recorded in previous years were greatly linked to operations between institutions belonging to the same group. Therefore, since the process of reorganisation of the leading banking groups becomes consolidated, these operations tend to stabilise.

The behaviour of resources represented by securities recorded a slowdown in the period. Nevertheless, these resources still grow more than total resources (22.1 per cent growth), mostly due to the issuing of non-subordinated cash bonds — specially by credit institutions that rely on funding through the financial markets.

Aggregate "financial subordinated debt + own capital" grew strongly, though recording a slight slowdown (19.7 per cent, against 22.5 per cent one year before). This growth resulted in a 0.5 percentage points increase in the proportion of this aggregate in total resources raised by the system. It should be noted that, while in the first half of 1997 subordinated loans yielded the greatest contribution to the growth of this aggregate, reserves and own equity increases explained around 64.5 per cent of its growth in the first half of 1998.

Table 11

INVESTMENT FUNDS: NUMBER OF AND TOTAL INVESTMENTS[1]

PTE billion

	Jun 97		Jun 98		Rate of change (percentage)	
	Number of funds	Total investments	Number of funds	Total investment	Number of funds	Total investment
1. Securities investments funds	193	3 342.3	250	4 656.3	29.5	39.3
1.1. Portuguese investment funds	176	3 259.4	223	4 518.5	26.7	38.6
1.1.1. Funds with shares	34	813.2	45	794.1	32.4	-2.4
1.1.1.1. Funds specialised on shares	23	232.2	29	401.2	26.1	72.8
1.1.1.2. Mixed funds	11	581.0	16	392.9	45.5	-32.4
1.1.2. Bonds funds	50	979.6	65	1 521.5	30.0	55.3
1.1.3. Treasury funds	35	846.9	37	1 052.0	5.7	24.2
1.1.4. Retirement savings funds	8	100.2	8	184.0	0.0	83.6
1.1.5. Shares savings funds	13	21.2	16	69.7	23.1	229.1
1.1.6. Funds of funds	36	498.3	50	874.6	38.9	75.5
1.1.7. Groups of funds	1	12.6	5	79.1	400.0	529.9
1.1.8. Guaranteed capital funds			2	22.7		
1.2. Investment funds specialised on foreign securities	17	82.9	27	137.8	58.8	66.2
1.2.1. Funds with shares	11	73.0	22	129.5	100.0	77.4
1.2.1.1. Funds specialised on shares	11	73.0	22	129.5	100.0	77.4
1.2.1.2. Mixed funds						
1.2.2. Bonds funds						
1.2.3. Treasury funds	6	9.9	5	8.3	-16.7	-15.9
2. Real estate investment funds	47	481.0	43	546.0	-8.5	13.5
2.1. Open funds	25	287.4	21	334.6	-16.0	16.4
2.2. Closed funds	22	193.6	22	211.5	0.0	9.2
3. Total investment funds (1.+2.)	240	3 823.3	293	5 202.3	22.1	36.1

Memo:	Jun 97	Jun 98	Change
a) Total investments funds, except for domestic unit trust funds	3 473.5	4 473.2	28.8%
b) Debits with clients of the banking system [2]	18 524.0	20 475.5	10.5%
c) = a / b	18.8%	21.8%	-

Notes:
(1) APFIN.
(2) CGD, CEMG,banks and branches of EU and third countries.

3.2 Results

As in the first half of 1997, the financial margin grew strongly (10.0 per cent growth) (table 12), though growing slightly less than one year before (by 2.1 percentage points). Although this item grew less than assets (the ratio between the financial margin and average net assets decreased from 2.19 to 2.08 per cent in the first half of 1998) (table 13), this development was not due to the behaviour of balance sheet activities with a lower margin (e.g., interbank operations), since excluding these activities the ratio would still yield a decrease (from 3.25 per cent to 3.12 per cent).

The growth of the financial margin in the first half of 1998 resulted mostly from the stronger growth of interest income and equivalent than that of interest costs and equivalent (growth rates of 1.9 and 0.3 per cent, respectively), due to a growth in business volume, and to a lesser extent to the so-called structure effect (i.e., the widening of the (positive) difference between financial assets and liabilities)[(7)]; also worth noting is the positive effect of the last redemption of non-remunerated deposit certificates issued by the Banco de Portugal in November 1997, amounting to PTE 300 billion. On the other hand, both the narrowing of the differential between the rate of return implicit in credit and

Table 12

PROFIT AND LOSS ACCOUNT[(a)]

PTE billion

	1996	1997	1998	Rate of growth (percentage)	
	1st half	1st half	1st half	1st half97 / / 1st half96	1st half98 / / 1st half97
Interest income and equivalent	1 289.3	1 269.5	1 294.1	-1.5	1.9
Income from securities[(b)]	33.4	25.2	41.8	-24.7	66.2
Interest costs and equivalent	976.5	906.6	909.1	-7.2	0.3
Financial margin	346.2	388.0	426.9	12.1	10.0
Commissions (net)	44.4	65.4	82.8	47.2	26.6
Financial operations (net)	64.3	76.2	58.2	18.5	-23.6
Other current income (net)	26.4	33.2	38.3	26.1	15.4
Banking product	481.2	562.8	606.2	17.0	7.7
Operating costs	270.0	289.7	307.3	7.3	6.1
Extraordinary income (net)	19.2	10.3	12.4	-46.0	19.4
Cash flow	230.4	283.5	311.2	23.0	9.8
Utilisation					
Provisions (replacement of provisions deducted)	71.6	99.3	88.0	38.6	-11.3
Depreciation	35.1	37.3	39.9	6.2	7.0
Tax on profits	24.8	33.6	39.0	35.4	16.1
Net income	98.9	113.4	144.3	14.6	27.3

Notes:
(a) Includes branches of EC banks.
(b) Only includes variable income securities.

deposits operations, and the reduction in the level of interest rates contributed negatively to the level of the financial margin.

The implicit average rate of return of credit to clients decreased 1.4 percentage points in relation to 30 June 1997, while the average rate of return of deposits fell 0.96 percentage points. The latter development resulted from the lower interest rate levels and the greater proportion of sight deposits in total bank deposits.

Net commissions grew 26.6 per cent, revealing a slight slowdown vis-à-vis the strong rate of growth recorded in the first half of 1997. The change in net commissions was totally due to profits (commissions received) — from which those referring to the supply of banking services and to operations on securities on behalf of customers should be highlighted.

Net income from financial operations inverted the growth recorded in the first half of 1997; indeed, this item decreased in absolute terms (by 23.6 per cent), which confirms its volatility.

The fall in net income from financial operations was chiefly due to exchange rate losses (i.e., unfavourable revaluation differences of the spot exchange rate position), but also to a lesser extent, to losses in off-balance sheet operations.

As a result of these facts, banking product grew 7.7 per cent (compared with 17.0 per cent in the first half of 1997), resulting in a "banking product / average assets" ratio on 30 June 1998 of 2.96 per cent, lower than that recorded one year before (3.17 per cent).

Regarding the structure of banking product, it is worth noting the 1.5 percentage points growth of the contribution of the financial margin, conversely to other current results (chart 1). However, among the latter, net commissions strengthened their contribution to banking product (by about 2.1 percentage points), unlike (net) income from financial operations (reduction of 3.9 percentage points).

The growth of operating costs (6.1 per cent) stood clearly below that recorded in the first half

(7) See chapter "The banking sector" in the *1997 Annual Report* / pages *192-194*

Table 13

PROFITABILITY INDICATORS[(a)(b)]

Percentage

	1996 1st half	1997 1st half	1998 1st half
Return on average assets (ROA)	0.66	0.64	0.70
Return on ajusted average assets (ROA) [(c)]	0.93	0.95	1.06
Return on equity (ROE)	10.14	10.43	11.48
Financial margin / average assets	2.31	2.19	2.08
Financial margin / adjusted average assets [(c)]	3.24	3.25	3.12
Cash flow / average assets	1.54	1.60	1.52
Cash flow / adjusted average assets[(c)]	2.16	2.38	2.28

Notes:

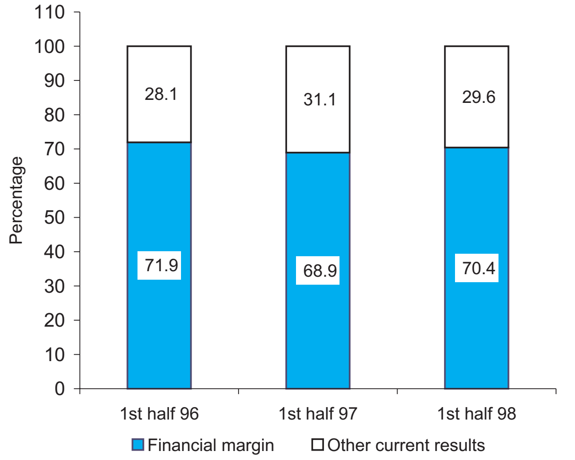
(a) Includes branches of EC banks.

(b) Annualised figures.

(c) Adjusted average assets — total average assets net of interbank resources.

Chart 1

BANKING PRODUCT: BREAKDOWN



of 1996 and 1997 (respectively 10.1 and 7.3 per cent).

However, it should be noted that this behaviour resulted from distinct developments in staff costs and supplies and services from third parties; while the former remained virtually unchanged (0.3 per cent growth), the latter grew 16.6 per cent.

The virtual stagnation of staff costs, which resulted in a lower share in operating costs (61.1 per cent on 30 June 1998, compared with 64.7 per cent at the end of the first half of 1997), was due not only to the behaviour of wage costs (1.1 per cent growth, as a result of the 3.3 per cent fall in the number of workers since the end of the first half of 1997), but also to the lower contributions to pension funds (PTE 1.9 billion less than one year before), as a result from the greater return of assets integrating the respective portfolio.

The gradual decrease in the share of labour costs took place alongside the maintenance of the pace of expansion of the number of agencies (8.1 per cent between June 1996 and June 1997, and 8.0 per cent from June 1997 to the end of the first half of 1998), resulting in a reduction of the number of workers per counter (from 16.7 in end June 1996 to 15.3 and 13.7 per cent in end June 1997 and 1998, respectively).

Meanwhile, the growth of supplies and services from third parties continues to be linked to the hiring of skilled services from third parties — namely information technology systems — and to higher costs due to advertisement and publishing.

Nevertheless, the ratio between operating costs and banking product did not go beyond 50.7 per cent on 30 June 1998, while reaching 51.5 and 56.1 per cent on 30 June 1997 and 1996, respectively.

The growth of net extraordinary income — which had fallen in absolute terms — resulted chiefly from the recovery of unrecoverable credit, and of interest or costs of overdue credit.

Net income increased substantially from the same period of 1997 (27.3 per cent), clearly more than the growth of cash-flow (9.8 per cent). This development is mostly due to the reduction in absolute terms of provisions (replacement of provisions deducted) and to the slowdown of taxes on income.

Consequently, the half-year profitability of the banking system, when measured by the most commonly used indicators (table 13), reached outstanding levels — specially as regards return on average equity (ROE) — which on 30 June 1998 and in non-annualised terms amounted to 11.5 per cent, compared with 10.4 per cent at the end of the first half of 1997.

Table 14

OVERDUE CREDIT AND PROVISIONING

PTE billion

	1996	1997	1998	Rate of growth (percentage)	
	Jun	Jun	Jun	1st half97 / / 1st half96	1st half98 / / 1st half97
1.Credit granted	10 951.1	12 785.4	15 592.8	16.7	22.0
2.Overdue credit and interest	653.1	596.9	572.7	-8.6	-4.1
3.Provisions for overdue credit	433.1	390.3	379.4	-9.9	-2.8
4.Provisions for general credit risks	127.1	146.2	173.7	15.0	18.9
5.Provisions for doubtful credit (credit)	17.1	27.5	43.6	61.2	58.6
6.Provisions for country risk (credit)	8.7	7.3	9.3	-16.2	26.9
7. Average risk of credit granted [(2) / (1)X100]	6.0%	4.7%	3.7%		
8. Average risk of credit net of provisions[(2-3) / (1-3)] X 100	2.1%	1.7%	1.3%		
9. Total credit provisioning {[(3)+(4)+(5)+(6)] / (1)}X100	5.4%	4.5%	3.9%		
10. Overdue credit provisioning [(3) / (2)]X100	66.3%	65.4%	66.2%		

Note: Does not include branches of EC banks in Portugal.

4. DEVELOPMENTS IN CREDIT AND MARKET RISK

4.1 Provisioning

In the first half of 1998, total overdue credit and interest decreased 4.1 per cent (table 14), falling less than in the same period of the previous year (8.6 per cent reduction).

This development results from the slowdown of the write-off of credits considered unrecoverable, as well as the smaller reduction in new overdue credits. Therefore, the capital component of credit overdue for less than one year virtually stabilised, after dropping significantly in the same period of the previous year (-16.2 per cent).

Meanwhile, the ratio between total overdue credit and interest, and (gross) credit to clients reached 3.7 per cent on 30 June 1998, which accounts for a much more sluggish slowdown than that recorded at the end of June 1998. The proportion of overdue credit (net of provisions) in net assets recorded a similar behaviour, decreasing from 0.57 per cent at the end of the first half of 1997 to 0.47 per cent one year later.

Also worth noting that the ratio between overdue credit and interest (provisions deducted) and credit granted (also net of provisions) decreased from 1.7 per cent on 30 June 1997 to 1.3 per cent on June 1998. Since provisions decreased less than overdue credit, the coverage of overdue credit increased slightly from 65.4 per cent in June 1997 66.2 per cent in June 1998.

The growth of provisioning for general credit risks (18.9 per cent) results from the growth of aggregate "credit to clients and guarantees and bails supplied".

Despite the behaviour of provisions for overdue credit and interest, and the increase in the remaining provisions for credit granted (by about PTE 45.6 billion), the overall level of credit provisioning fell from 4.5 per cent on 30 June 1997 to 3.9 per cent one year later, as an outcome of the acceleration of credit.

4.2 Global capital adequacy

As mentioned in the last *Annual Report*, the prudential requirements regarding the adequacy of own funds were significantly revised in 1997. In addition to the requirements necessary to ensure that the ratio between own funds and the banking portfolio reaches an 8 per cent minimum level, credit institutions are now subject to further requirements in turns of own funds for the coverage of risk markets in the trading portfolio, and of foreign exchange risks.

Table 15

OWN FUNDS ADEQUACY

Consolidated basis

PTE billion

	1997		1998
	Jun	Dec	Jun
1.Own funds			
1.1. Base own funds	1 487.5	1 520.6	1 822.7
1.2. Complementary own funds	614.8	709.0	765.2
1.3. Deductions	71.3	91.5	223.4
1.4. Supplementary own funds	8.1	12.5	3.3
Total own funds	2 039.1	2 150.7	2 367.8
2.Own funds requirements			
2.1. Solvency ratio	1 322.5	1 401.1	1 601.0
2.2. Position risks	40.2	51.4	58.0
2.3. Settlement and counterpart risks	2.7	4.1	6.7
2.4. Foreign exchange risks	13.4	18.5	21.4
2.5. Other requirements	0.9	0.0	0.1
Total own funds requirements	1 379.7	1 475.0	1 687.1
3.Ratios			
3.1. Own funds / total requirements	147.8%	145.8%	140.3%
3.2. Own funds / total requirements x 12.5 per cent	11.8%	11.7%	11.2%

In this new context, own funds should cover the legal requirement calculated as the sum of the above referred requirements (except for credit risk of the long open positions of the trading portfolio). However, the level of coverage of requirements can also be defined in the form of a ratio interpreted as the former solvency ratio, after divided by 12.5.

The analysis of the overall adequacy of own funds is based on values on a consolidated basis, although the average ratio of the system includes data of institutions not belonging to a financial group on an individual basis.

On 30 June 1998, the average overall ratio of adequacy of the system's own funds reached 11.2 per cent (tables 15 and 16); compared with that of the end of the first half of 1997, this ratio accounts for a slight decrease (0.6 percentage points), due to the growth of requirements resulting from the expansion of assets.

Requirements for the coverage of credit risks of the banking portfolio continued to record a significant importance (94.9 per cent on 30 June 1998), in

Table 16

OWN FUNDS ADEQUACY RATIO: BREAKDOWN

Consolidated basis

Percentage

	Base own funds / / weighted risk	Complementary own funds / weighted risk	Deductions / / weighted risks	Own funds adequacy ratio
1997				
Jun	8.6	3.6	0.4	11.8
Dec	8.2	3.9	0.5	11.7
1998				
Jun	8.6	3.6	1.1	11.2

line with the behaviour of credit granting by the banking system in the period under review.

A breakdown of the banking system's own funds reveals that base own funds (Tier 1) increased in relative terms, from 72.9 per cent at the end of the first half of 1997 to 77.0 per cent on 30 June 1998. This development is linked to the behaviour of deductions, but also to capital increases or additions to reserves carried out by institutions to sustain higher levels of activity.

Finally, it should be noted that, on 30 June 1998, all institutions recorded levels of the overall ratio of adequacy of own funds above the legally fixed minimum threshold, both on a consolidated and on an individual basis, according to the regime regulating these institutions.

Completed with information available as on 9 September 1998.

PREPARATORY WORKS FOR THE YEAR 2000 AND PRUDENTIAL SUPERVISION

1. Overview

In a strict perspective, the problems risen by the Year 2000 result from the fact that information technology systems, automatised applications and electronic computers have used the YYMMDD (year/month/day, in two digits) representation, since the 1960s. This representation became standard until recently since it made economic sense — because it economised computer memory utilisation and saved storage space.

As the year representation has two digits, input "00" may be interpreted as 1900, which would inevitably lead to file erasing (since these are automatically considered to be very old), but also to many other problems — namely in data gathering of the calculation of operations "cash flows".

These problems may grow into systemic problems, since the referred equipment, programmes and systems are an integrating part of all areas of financial activity, and because applications are usually interdependent.

Operating, reputational and legal risks are also evident. If systems are not adapted or substituted in a timely and consistent manner, basic financial operations may become non-performing, specially if alternative procedures are unavailable. According to the Basle Committee on Banking Supervision, the actions that financial institutions must take, which are complex and intensive in both financial and human resources, should include the following stages:

- *Establishing Year 2000 as a strategic objective within the financial institution.*
- *Creating awareness of the strategic importance of Year 2000 at all organisational levels.*
- *Developing inventories of problems and characterising concrete action plans, including the respective timetable.*
- *Adapting and/or renovating systems, applications and equipment, and developing contingency plans.*
- *Testings.*
- *Co-ordinated substitution of systems, applications and equipment.*

In turn, the effective development of the action plan operational stages requires that some sensitive issues are analysed and solved. Among these we find:

- *Testing of the quality of certification of products bought by the institution, ensuring that the vendor of the product is compliant with his contractual duties.*
- *Accompanying the preparation for Year 2000 of the institution's major customers.*
- *Cost control, retention of key staff and scarce outside technical consultancy services.*

— Ensuring that the internal audit function monitors and controls the implementation of the action plan.

In addition, according to the Basle Committee on Banking Supervision, the roles of supervisory authorities include:

— Promoting increased awareness and knowledge of the year 2000 problems in financial institutions.
— Establishing targets and benchmarks for these institutions, taking into account the country-specific features of financial systems.
— Monitoring institutions' action plans and issuing recommendations or imposing corrective measures whenever necessary.

Therefore:
— The preparation for the Year 2000 is essentially a management task, which shall be co-ordinated by the top management of institutions and financial groups and requires rigorous planning.
— Problems should be tackled with according to a "risks methodology", comprising a precise definition of priorities, and the establishment of adequate contingency plans.
— Testings are crucial, since these correspond to the longest and more complex stage — since a significant number of problems will only be detected at this stage, and because an effective co-ordination is required, both internally and with third parties.

2. The position of the Banco de Portugal in the context of preparatory works for the Year 2000

In November 1997, the Banco de Portugal disclosed a document of the Basle Committee on Banking Supervision ("The Year 2000: A Challenge for Financial Institutions and Bank Supervisors"). Its main purpose was to create conditions for collective awareness of the need for a systematised and controlled approach to the preparation efforts for the Year 2000.

In parallel, the Banco de Portugal has launched a consultation within the Portuguese banking system, in order:

— To ensure that institutions answer promptly to the questionnaire of the Working Group of the Year 2000, created by the Basle Committee.
— To obtain a first follow-up of the preparatory works carried out by the Portuguese banking system, and
— To offer credit institutions an assessment of their respective positioning in the context of the system.

Meanwhile, the Banco de Portugal has developed, in the context of the Euro, a set of specific projects, which due to their transversality, concern the Portuguese financial system as a whole (i.e., the financial "infrastructure").

In this context, worth noting are the projects regarding the development of the Great Transactions Payments System (SPGT), its linkage in Europe (TARGET — Interlinking), Interbank Electronic Transfers and the changes in the accounting, prudential and statistical reports.

These works, usually carried out in close contract with the SIBS, will also help to solve some of the problems linked to the Year 2000.

However, regarding issues intrinsic to each institution and financial group — hence directly related with prudential supervision — the adoption of specific measures became indispensable.

Therefore, in February 1998 the Instruction of the Banco de Portugal regarding internal control systems was modified, so that Annual reports on those systems started to include a new chapter on the "action plan to deal with the problems of the Year 2000 in the information and/or automatic systems, both in terms of applications used and electronic system, with a clear indication of the planned benchmarks for the beginning of the testing and the real functioning of the main applications and systems". Later, in May 1998, to allow for a more systematic and homogeneous description of action plans, credit institutions and financial companies were given a "check list" indicating the topics to be developed in the new Annual report chapter on internal control systems.

In May 1998, the Banco de Portugal determined that each financial group, as well as the remaining credit institutions and financial companies, would explicitly empower a "Co-ordinator for the Year 2000". This co-ordinator would be grated an internal position that would allow him or her to know in depth and to co-ordinate effectively the resolution of identified problems and results achieved in the context of the action plan.

In parallel, given the decisive importance of the validation stage, and with no prejudice to the joint tests of the Banco de Portugal and financial institutions regarding the introduction of the Euro — which in some cases may also overcome the problems with the Year 2000 — the Banco de Portugal recommended that specific tests regarding the Year 2000 would be concluded not later than the first quarter of 1999 (at the least at the level of core systems and applications).

In the context of prudential supervision, the following initiatives of the Banco de Portugal shall comprise:

— *The assessment of the Annual reports on internal control systems, to detect imprecisions or serious anomalies requiring immediate action — e.g. asking for additional information or the application of corrective measures.*

— *The organisation of meetings (according to a calendar to be defined) with the "Co-ordinators for the Year 2000" to assess the implementation of the action plans defined by financial institutions (with the formulation of some recommendations regarding scope, phasing and contingency plans).*

— *On-site inspections of the implementation to action plans, decided on a case-to-case basis.*

— *Information exchange and the articulation of efforts with the the Securities Market Commission and the Portuguese Insurance Institute.*

Both the works in progress and the foreseen initiatives — in the framework of prudential supervision — evidence the priority that the Banco de Portugal attributes to the solving of problems related with the Year 2000 — through minimising the occurrence of potential systemic risks with an impact on the financial stability of credit institutions and financial companies.

Indeed, the non-adaptation or non-renovation of information systems and key applications may originate, by the non-compliance to the obligations of a given bank — for instance in the field of interbank payment systems — chain effects bound to create tensions in the financial system as a whole.

On the other hand, even if problems are confined to a single credit institution, costs resulting from litigation with the respective customers, due to the non-compliance to previously defined contractual conditions — as well as the consequent loss of credibility due to the knowledge of these events by the Public — could have a negative impact on the financial stability of the institution.

THE PORTUGUESE FOREIGN EXCHANGE AND DERIVATIVES MARKET ACTIVITY IN 1997

1. INTRODUCTION

This study analyses the results of the surveys carried out by the Banco de Portugal to the foreign exchange and derivatives markets in 1997. These surveys covered resident bank's transactions in the foreign exchange spot market, and in the foreign exchange and interest rate derivatives market in April and October, and amounts outstanding of derivatives held by these institutions at the end of March and September.

The aim of this study is to highlight the main developments in the Portuguese foreign exchange and derivatives markets, regarding both notional amounts outstanding and turnover. As in the previous analysis(1), greater focus was given to the analysis of the derivatives market — where more relevant changes are expected in virtue of its earlier stage of development.

Indeed, according to the survey results, while the foreign exchange spot market has already reached maturity — and hence has not recorded significant changes — the Portuguese derivatives market developed substantially. This development benefited from a favourable economic background from which the convergence progresses recorded by the Portuguese economy vis-à-vis the remaining EU11 economies, together with the increasing anticipation in 1997 of the Portuguese participation in the euro area from its beginning, should be highlighted.

In the period under analysis, the Portuguese financial groups' activity evolved towards a specialisation of business between institutions belonging to the same group. This development allowed for the maintenance of a high level of concentration in the derivatives markets.

The development of the Portuguese market in 1997 took place in an international background characterised by a slowdown in the derivatives markets. According to data from several international sources regarding the over-the-counter (OTC) market, although amounts outstanding continued to increase, turnover was lower than in 1996. This reduction took place specially in the second half of 1997, and was due to the crisis in the Asian markets (transmitted to other emerging markets afterwards) and also to the impact of the convergence process in the context of the EMU (which narrowed significantly some business opportunities). Meanwhile, the exchange-traded derivatives market continued to develop favourably.

The Portuguese market presented distinct trends. Only turnover in the interest rate derivatives market decreased in the second half of 1997; nevertheless, this market recorded a significant growth in turnover in 1997 as a whole. The early stage of development of the Portuguese market, as well as the fact that Portuguese institutions are still little exposed to the Asian markets, shall have contributed to the relative immunity of the Portuguese market to international developments.

2. MAJOR DEVELOPMENTS

2.1 Amounts outstanding

On 30 September 1997, total amounts outstanding in the derivatives market, held by the surveyed banks as a whole, amounted to USD 144,725 mil-

(1) September 1997 *Economic Bulletin*.

Table 1

AMOUNTS OUTSTANDING OF DERIVATIVES PRODUCTS

US dollar million

	1996		1997		Yr.n.yr.%
	Mar	Sep	Mar	Sep	Sep 97
Foreign exchange derivatives	25240	26975	21910	24744	-8.3
Outright forwards	8429	5742	5294	5752	0.2
Foreign exchange swaps	11227	13701	11351	12505	-8.7
Currency swaps	3508	5248	3431	5405	3.0
OTC options	2076	2284	1834	1082	-52.6
Interest rate derivatives	28492	39414	86878	119981	204.4
FRAs	17709	24046	63373	81230	237.8
Swaps	10293	14282	19472	33809	136.7
OTC options	486	477	1008	1663	248.6
Other OTC Instruments	0	0	0	401	-
Exchange-traded options	0	22	7	0	-100.0
Futures	4	587	3018	2878	390.3

lion[(2)], more than multiplying twofold from 30 September 1996[(3)].

The significant growth of total amounts outstanding was almost exclusively due to the behaviour recorded in the segment of interest rate derivatives traded in the over-the-counter market. These amounts multiplied threefold in relation to September 1996. Meanwhile, amounts outstanding of foreign exchange derivatives decreased slightly. Exchange-traded interest rate derivatives, though growing considerably, still account for a small share in total amounts outstanding in the derivatives market.

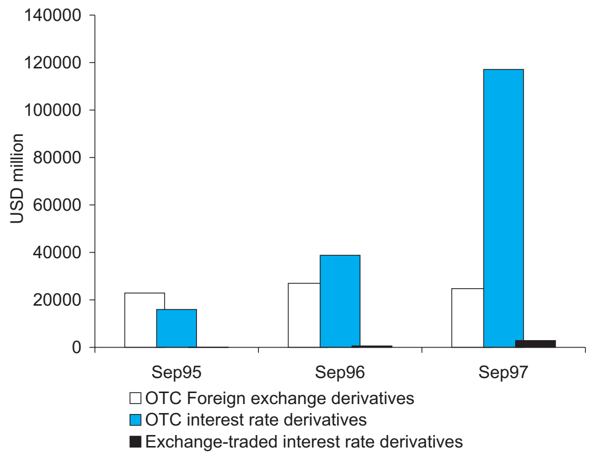
As a result, interest rate derivatives as a share of total notional amounts rose from around 40 per cent in September 1995 to 60 per cent in September 1996 and over 80 per cent in September 1997.

FRAs have recorded an increasing share in the total notional amounts outstanding of derivatives instruments. In September 1997, FRAs accounted for more than 50 per cent of total amounts outstanding (compared with 36 per cent one year before). Outright forwards and foreign exchange swaps — the foreign exchange derivatives market traditional instruments — jointly accounted for only 11 per cent of the total (30 per cent in September 1996).

In the foreign exchange derivatives segment, the structure by instruments remained virtually unchanged. Foreign exchange swaps accounted for about 50 per cent of this segment. It should be noted, however, that currency swaps as a share of

Chart 1

AMOUNTS OUTSTANDING IN THE DERIVATIVES MARKET



(2) Except when mentioned otherwise, figures refer to September 1997, and changes are year-on-year growth rates. The data on amounts outstanding in the over-the-counter market are adjusted for double-counting due to transactions carried out in the domestic interbank market. Likewise, the data on the exchange traded derivatives market were adjusted by approximation, assuming that final customers are, in most operations, resident banks.

(3) In escudos, the total value of amounts outstanding reached about PTE 26,030 billion, representing a 150 per cent growth.

Chart 2

AMOUNTS OUTSTANDING IN THE FOREIGN EXCHANGE DERIVATIVES MARKET

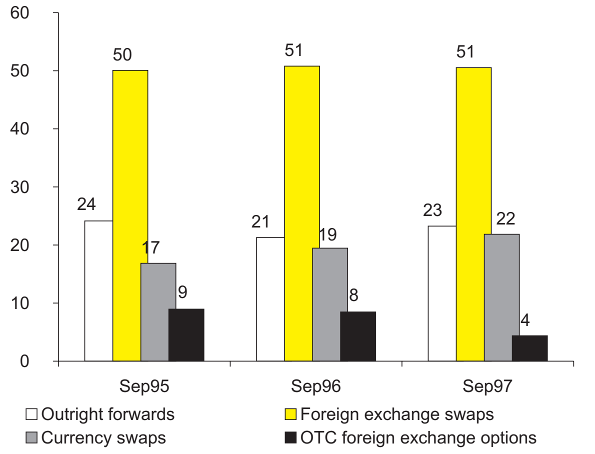
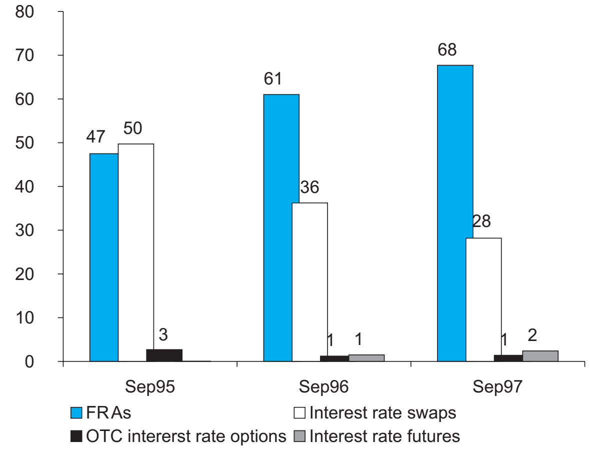


Chart 3

AMOUNTS OUTSTANDING IN THE INTEREST RATE DERIVATIVES MARKET



notional amounts outstanding in this segment increased slightly (to 22 per cent), while OTC options share was reduced (to only 4 per cent).

In the interest rate derivatives segment, FRAs contracts continued to increase as a share of total amounts outstanding (to around 70 per cent of this segment), alongside the reduction in the share of interest rate swaps. Worth noting is that interest rate swaps continue to grow strongly in absolute terms, more than multiplying twofold in relation to September 1996. However, this growth stood below that of FRAs — which, as mentioned, have grown sharply and is the dominant instrument among all derivatives products.

Although interest rate futures grew strongly in relation to 1996, this instrument continued to account for a small share in total amounts outstanding (about 2 per cent). The growth of notional amounts outstanding of this instrument resulted partly from the development of the Portuguese derivatives exchange, although futures traded in exchanges abroad recorded a stronger growth.

Regarding the structure by counterparties, nonesident counterparties increased slightly their relative share in total counterparties in virtually all segments. This development was a consequence of the growth of non-resident banks and other financial companies' share, while the share of resident banks and other financial institutions decreased in the period. This trend was recorded in both foreign exchange derivatives and interest rate derivatives segments. Nevertheless, non-residents' share is higher in the first segment (around 74 per cent in September 1997).

Financial counterparties continue to record a stronger share than non-financial counterparties, although this trend is more evident in the interest rate derivatives segment. Furthermore, financial counterparties increased their shares in the period.

Regarding the structure by currency, it is worth noting that the escudo decreased its share in total amounts outstanding, though maintaining its dominant share.

In the foreign exchange derivatives segment, alongside the reduction in the share of the escudo (to around 80 per cent[(4)], the Deutsche mark's share decreased strongly (to 16 per cent), while the US dollar increased its relative share (to about 70 per cent). The reduction in the relative share of the escudo was chiefly due to the reduction of amounts outstanding of escudo-denominated foreign exchange swaps; in turn, this was the only instrument where the relative share of the US dollar did not increase.

In the interest rate derivatives segment, the relative share of the escudo decreased to levels close

(4) In the foreign exchange market, total amounts outstanding by currency double total portfolio amounts, since each operation involves two currencies — one for sale, and another for purchase. For instance, the relative share of the escudo means that the Portuguese currency was involved in 80 per cent of all operations, either as a purchase currency or as a sale currency.

Table 2

AMOUNTS OUTSTANDING OF FOREIGN EXCHANGE DERIVATIVES

Breakdown by counterparty

As a percentage of total

	1995	1996	1997
	Sep	Sep	Sep
Residents.	37	31	26
Non-residents	63	69	74
Financial	75	77	79
Non-financial	25	23	21

Table 3

AMOUNTS OUTSTANDING OF INTEREST RATE DERIVATIVES

Breakdown by counterparty

As a percentage of total

	1995	1996	1997
	Sep	Sep	Sep
Residents.	46	43	34
Non-residents.	54	57	66
Financial	91	94	95
Exchanges	9	5	2
Non-financial	0	1	3

Table 4

AMOUNTS OUTSTANDING OF FOREIGN EXCHANGE DERIVATIVES

Breakdown by currency [(a)]

As a percentage of total

	1995	1996	1997
	Sep	Sep	Sep
Escudo.	87	84	81
US dollar.	64	60	71
Deutsche mark.	20	28	16
Yen.	15	9	11
Peseta	2	2	4
Italian lira	0	1	2
Other currencies	12	16	15

Note:
(a) See footnote(4).

Table 5

AMOUNTS OUTSTANDING OF INTEREST RATE DERIVATIVES

Breakdown by interest rate

As a percentage of total

	1995	1996	1997
	Sep	Sep	Sep
Escudo.	67	87	69
US dollar.	16	5	5
Deutsche mark.	6	2	7
Peseta.	5	5	11
Italian lira	0	0	6
Other interest rates . . .	6	1	2

to those recorded in September 1995 (about 70 per cent), although amounts outstanding continue to be highly concentrated in escudos. Meanwhile, the relative share of the peseta, the Deutsche mark and the Italian lira in this segment increased, at a pace common to most instruments.

2.2 Turnover

In 1997, the turnover in the foreign exchange and interest rate derivatives market increased significantly, while the turnover[(5)] in the foreign exchange spot market remained stable at USD 1.7 billion. Foreign exchange derivatives grew about 76 per cent in relation to October 1996[(6)], to USD 2.8 billion, while interest rate derivatives more than doubled their turnover, to USD 1.6 billion[(7)].

Exchange-traded derivatives, although growing strongly, continued to account for around 10 per cent of total derivatives market turnover in October 1997, while instruments traded in the OTC market continued to hold the leading share.

(5) Data on transactions are always referred in terms of average daily amounts, adjusted for double-counting due to transactions in the domestic interbank market. Likewise, the data on the exchange market were corrected by approximation, assuming that final customers are resident banks in most operations.

(6) Except when mentioned otherwise, figures refer to transactions carried out in October 1997, and changes are the respective year-on-year rates of growth.

(7) When expressed in escudos, turnover records a stronger growth — amounting to PTE 304 billion in the case of spot foreign exchange (16.5 per cent more than in September 1996), PTE 503 billion in foreign exchange derivatives (104 per cent more) and PTE 292 billion in interest rate derivatives (170 per cent more).

Table 6

AVERAGE DAILY TURNOVER

US dollar million

	1996		1997		Yr.n.yr. %
	Apr	Oct	Apr	Oct	Oct 97
Spot	1465	1690	1957	1699	0.5
Foreign exchange derivatives	1272	1598	1548	2809	75.8
Outright forwards	184	319	223	246	-22.9
Foreign exchange swaps	1066	1240	1304	2550	105.6
Currency swaps	0	1	13	1	0.0
OTC options	22	38	8	12	-68.4
Interest rate derivatives	298	688	1972	1633	137.4
FRAs	260	384	1331	902	134.9
Swaps	31	64	170	244	281.3
OTC options	0	0	0	3	-
Exchange-traded options	2	1	2	0	-100.0
Futures	5	239	469	484	102.5

The growth of foreign exchange derivatives induced a reduction in the relative share of spot operations in total foreign exchange market (from 51 to 38 per cent). Although the spot market recorded no significant changes in structure, it should be noted that the structure of turnover by currencies became closer to that recorded in 1995. Indeed, the escudo lost its relative share in the spot transactions (from 65 to 58 per cent[8]), falling in terms of turnover — alongside the increase in the market shares of the US dollar (from 32 to 39 per cent) and the Deutsche mark (from 67 to 70 per cent), the latter continuing to be the most traded currency.

Unlike in 1996, the growth of foreign exchange derivatives resulted exclusively from the growth of foreign exchange swaps. Turnover of foreign exchange swaps more than doubled in the period. Meanwhile, the turnover of the remaining instru-

(8) In the foreign exchange market, total transactions by currency double total turnover, since each operation involves two currencies — one for sale and one for purchase.

Chart 4

AVERAGE DAILY TURNOVER — FOREIGN EXCHANGE AND DERIVATIVES MARKETS

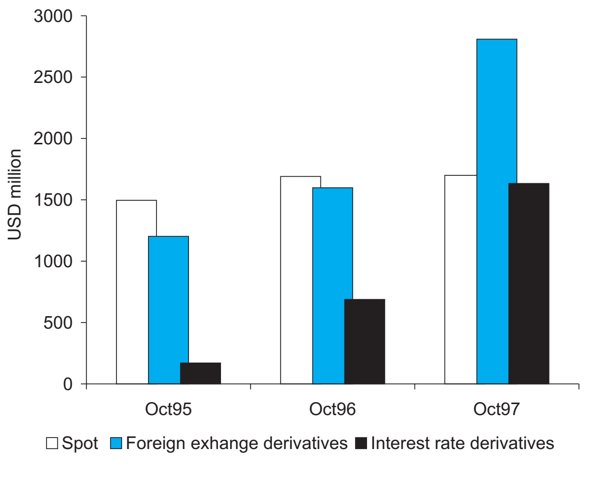


Chart 5

AVERAGE DAILY TURNOVER — DERIVATIVES MARKET

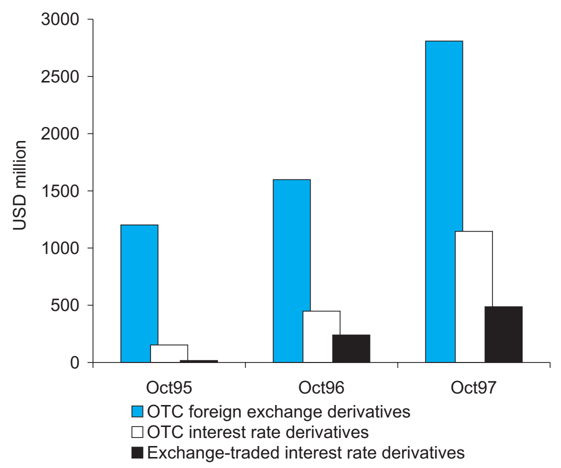


Chart 6

AVERAGE DAILY TURNOVER – FOREIGN EXCHANGE MARKET

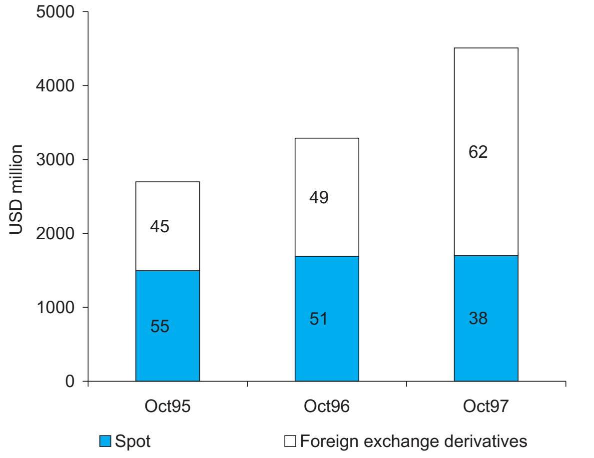
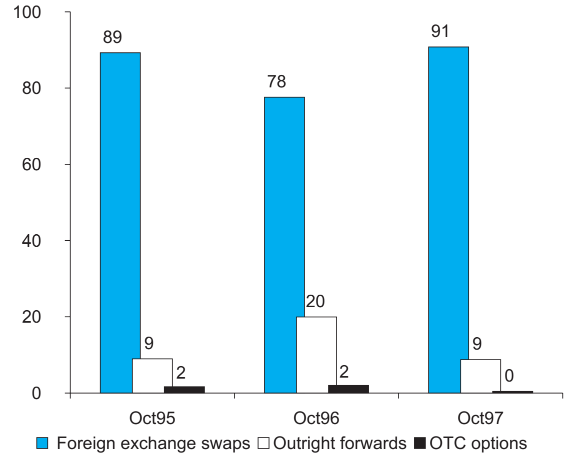


Chart 7

TURNOVER OF FOREIGN EXCHANGE DERIVATIVES

Breakdown by instrument



ments remained stable or decreased — as was the case of outright forwards and options. As a result, the level of concentration in the foreign exchange derivatives segment increased again, with 91 per cent of turnover referring to foreign exchange swaps.

In the interest rate derivatives segment, turnover growth was common to all instruments. Turnover in forward rate agreements (FRAs), swaps and futures more than doubled. Although FRAs recorded the stronger growth, transactions of these contracts fell sharply from April to October 1997 (by 30 per cent), from USD 1,331 million to USD 902 million. This development reflected the reduction to half of the turnover in contracts on escudo interest rates with non-residents. Nevertheless, when compared with October 1996 values, FRAs recorded a striking growth — 135 per cent.

Swaps and futures contracts also grew substantially, which resulted in a virtually stable structure by instruments of the interest rate derivatives market. Indeed, FRAs continued to account for around 55 per cent of the segment turnover, while futures decreased slightly to 30 per cent and swaps rose to 15 per cent. Interest rate options — both those traded in the over-the-counter market and exchange–traded options — continued to account for a residual relative share.

Futures contracts benefited from the consolidation of activity in the Oporto Derivatives Exchange over the course of 1997, specially as regards contracts on short-term rates (maturities up to one year). Total turnover of futures contracts on interest rates over one year remained virtually unchanged, while that of contracts on short-term interest rates more than multiplied threefold.

Analysing the breakdown by counterparty, the relative share of residents fell to almost half, both in the foreign exchange derivatives segment and in the interest rate derivatives market. Financial institutions strengthened their leading share, specially as regards interest rate derivatives, reflecting a share gain in exchange-traded instruments. Meanwhile, transactions with non-financial cus-

Table 7

SPOT FOREIGN EXCHANGE TRANSACTIONS

Breakdown by currency [(a)]

As a percentage of total

	1995	1996	1997
	Oct	Oct	Oct
Escudo	58	65	58
US dollar	35	32	39
Deutsche mark	69	67	70
Yen	12	7	8
Peseta	7	6	7
Other currencies	20	23	17

Note:
(a) See footnote (8).

Chart 8

AVERAGE DAILY TURNOVER — INTEREST RATE DERIVATIVES MARKET

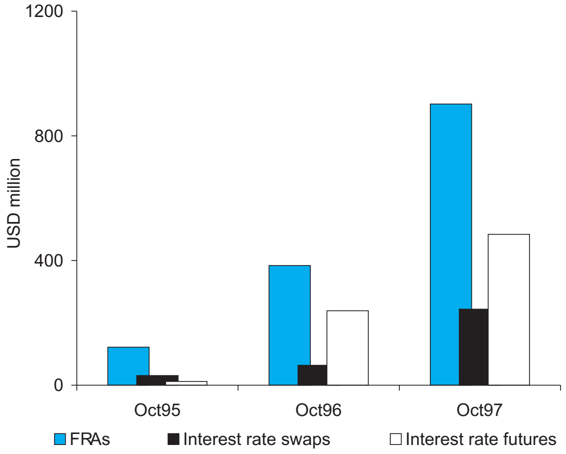


Chart 9

TURNOVER OF INTEREST RATE DERIVATIVES

Breakdown by instrument

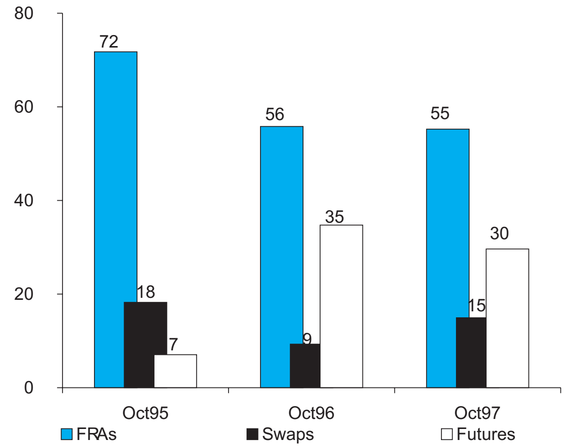


Table 8

TURNOVER OF FOREIGN EXCHANGE DERIVATIVES

Breakdown by counterparty

As a percentage of total

	1995	1996	1997
	Oct	Oct	Oct
Residents	20	21	11
Non- residents......	80	79	89
Financial...........	92	91	93
Non-financial.......	8	9	7

Table 9

TURNOVER OF INTEREST RATE DERIVATIVES

Breakdown by counterparty

As a percentage of total

	1995	1996	1997
	Oct	Oct	Oct
Residents................	52	63	35
Non- residents	48	37	65
Financial	86	63	70
Exchanges	10	35	30
Non-financial	4	2	0

tomers recorded a further reduction in relative terms, having a residual share in the interest rate derivatives segment.

An analysis broken-down by currency reveals relevant changes in 1997. ***As in the spot market, the escudo also lost its relative share in transactions of derivatives products***. However, the lower relative share does not reflect a reduction in turnover involving the escudo, as happened in the foreign exchange spot market.

As a result, the US dollar and the peseta increased their relative share in foreign exchange derivatives (to 90 and 18 per cent, respectively), while the relative share of the peseta and the Italian lira recorded substantial growths in the interest rate derivatives segment (jointly rising from 6 to 31 per cent).

It should be noted that these increases in relative share were not distributed evenly by all interest rate derivatives, since the growth of transactions using the peseta was recorded in the FRAs, while futures on interest rates up to one year accounted for the increase of transactions in Italian lira. The loss of relative share of the escudo was also recorded with distinct intensity by these products — being more evident in the FRAs and in short-term futures.

3. CONCENTRATION IN THE FOREIGN EXCHANGE AND DERIVATIVES MARKET

In the period under analysis, activity of the Portuguese financial groups consolidated, with business becoming increasing specialised between institutions belonging to the same group.

Table 10

TURNOVER OF FOREIGN EXCHANGE DERIVATIVES

Breakdown by currency [(a)]

As a percentage of total

	1995	1996	1997
	Oct	Oct	Oct
Escudo	89	82	75
US dollar	89	82	90
Deutsche mark	7	14	8
Yen	8	7	4
Peseta	1	3	18
Italian lira	0	2	1
Other currencies	6	10	4

Note:
(a) See footnote (8).

Table 11

TURNOVER OF INTEREST RATE DERIVATIVES

Breakdown by interest rates

As a percentage of total

	1995	1996	1997
	Oct	Oct	Oct
Escudo	77	82	54
US dollar	13	2	4
Deutsche mark	4	7	7
Peseta	3	5	13
Italian lira	0	1	18
Other interest rates	3	3	4

As a result not only of this specialisation, but also of the process of merger of these institutions' treasuries, virtually all data referring to activity in the foreign exchange and derivatives markets is reported centrally, by a single institution. The restructuring of the internal organisational model of the banking system yielded an impact on banks' individual market shares, taking the form of sharp increases and decreases. For this reason, it was chosen to disregard any analysis of concentration by banks. Such as analysis would be biased since the share of some banks would not represent the relative share of that specific bank in a given market segment, but instead the share of the group it integrates.

According to the reported data, ***the foreign exchange and derivatives markets continued to exhibit a high level of concentration, about as high as in other business segments carried out by banks (e.g., raising of deposits or credit granting). The joint share of the 6 major financial groups[(9)] exceeded 75 per cent in October 1997***. However, the different market risk segments recorded distinct developments in the period.

Regarding ***spot foreign exchange transactions***, the level of concentration of turnover in the six major financial groups remained fairly stable, though concentration increased as regards turnover of the three major groups.

Turnover concentration in the ***foreign exchange derivatives*** segment remained virtually unchanged. Regarding notional amounts outstanding, the joint market share of the three major financial groups decreased, while that of the six major groups remained unchanged.

Concentration increased in the ***interest rate derivatives*** segment. The growth of concentration was stronger in amounts outstanding, with the joint market share of the six major groups reaching 90 per cent (becoming close to the 93 per cent share in total turnover). This development does not reflect a generalised strengthening of the market share of the major financial groups. Instead, it reflects a significant increase in the relative share of some financial groups which in 1996 were yet not particularly active in this segment.

It should be noted that an analysis of concentration crossing instruments and currencies does not reveal any significant change. The level of concentration remained high, with the six major financial groups carrying out most operations. However, in some market segments and for some currencies, some banks outside the above mentioned financial groups have a significant activity. Given the small size of the Portuguese market — still at an early stage of development — this fact is sometimes reflected in a significant market share

(9) Six financial groups were considered, and these comprise: i) *Banco Comercial Português, Banco Português do Atlântico, Banco de Investimento Imobiliário, Cisf Banco de Investimento, Credibanco-Banco de Crédito Pessoal and Banco Expresso Atlântico*; ii) *Banco Pinto & Sotto Mayor, Banco Totta & Açores, Crédito Predial Português and Banco Chemical*; iii) *Banco Mello, Banco Mello de Investimentos* and *Banco Mello Imobiliário; iv) Banco Espírito Santo, Banco Internacional de Crédito and Banco Essi; v) Caixa Geral de Depósitos* and *Banco Nacional Ultramarino; vi) Banco Português de Investimento, Banco Fonsecas & Burnay, Banco de Fomento e Exterior* and *Banco Borges & Irmão*.

Table 12

MARKET SHARES OF THE 3 AND 6 MAJOR FINANCIAL GROUPS

Turnover

	S3	S6
Spot		
October 1996	54.3	85.1
October 1997	62.8	83.7
Foreign exchange derivatives		
October 1996	68.9	86.1
October 1997	69.0	84.1
Interest rate derivatives		
October 1996	67.5	90.6
October 1997	69.7	93.2

Table 13

MARKET SHARES OF THE 3 AND 6 MAJOR FINANCIAL GROUPS

Amounts outstanding

	S3	S6
Foreign exchange derivatives		
September 1996	61.8	75.1
September 1997	54.0	75.2
Interest rate derivatives		
September 1996	58.7	69.4
September 1997	74.9	89.6

Table 14

CONCENTRATION OF TURNOVER BY CURRENCY IN THE MAJOR FINANCIAL GROUPS

As a percentage of total

	Foreign exchange derivatives		Interest rate derivatives	
	S3	S6	S3	S6
Escudo	64.8	80.4	63.4	91.9
US dollar	73.2	89.3	58.1	63.6
Deutsche mark	42.0	45.5	84.3	96.9
Peseta	97.5	98.3	78.5	97.5
Italian lira	79.7	83.4	98.8	100.0
Total	69.0	84.1	69.7	93.2

Table 15

CONCENTRATION OF AMOUNTS OUTSTANDING BY CURRENCY IN THE MAJOR FINANCIAL GROUPS

As a percentage of total

	Foreign exchange derivatives		Interest rate derivatives	
	S3	S6	S3	S6
Escudo	53.7	73.5	71.2	82.9
US dollar	57.3	78.6	82.6	93.8
Deutsche mark	55.5	66.9	91.4	96.5
Peseta	76.5	78.8	83.0	98.1
Italian lira	75.1	77.6	98.5	98.6
Total	54.0	75.2	74.9	89.6

of these banks — hence becoming evident in the level of concentration indicators here calculated (e.g. the values for the foreign exchange derivatives in Deutsche marks).

Except for these isolated cases, the results of the indicators computed in the analysis by currency point in most cases towards a lower concentration in the operations involving the escudo. Only worth noting is that in the interest rates derivatives segment, and concerning transactions in Deutsche marks, pesetas and Italian liras the share of the six major banks is close to 100 per cent. Activity is even more concentrated in transactions in Italian liras, with virtually 100 per cent of operations being carried out by only three groups.

4. BREAKDOWN BY MATURITIES

When analysing by maturities, operations continued to be highly concentrated in maturities up to one year. Likewise, the term structure of each market segment remained unchanged. Turnover in the **foreign exchange derivatives** segment became more concentrated in maturities up to 7 days (rising to 90 per cent), while in terms of notional amounts outstanding terms to maturity from 1 month to 1 year continued to lead (46 per cent).

In the i**nterest rate derivatives** segment, operations continued to be concentrated in the 1 month to 1 year maturities, although these maturities lost relative share in turnover — compensated by an increase in the relative share of operations up to 7 days and those with maturity from 1 to 5 years.

The breakdown by **instrument** reveals that currency swaps and interest rate swaps continued to be mostly contracted in maturities over 1 year (about 80 per cent). The distribution by maturity is in general unchanged when the analysis is brokedown by counterparty or by currency.

Chart 10
FOREIGN EXCHANGE DERIVATIVES TURNOVER
Breakdown by maturity

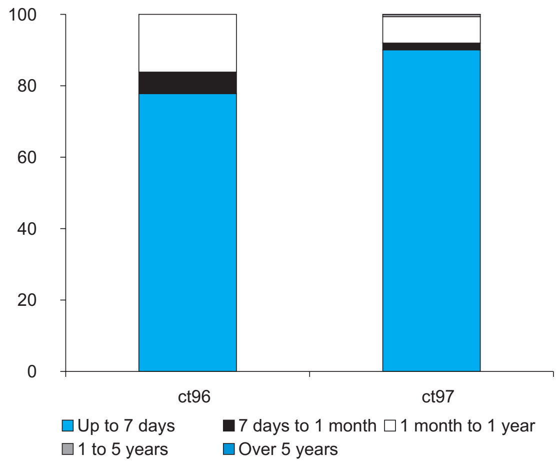
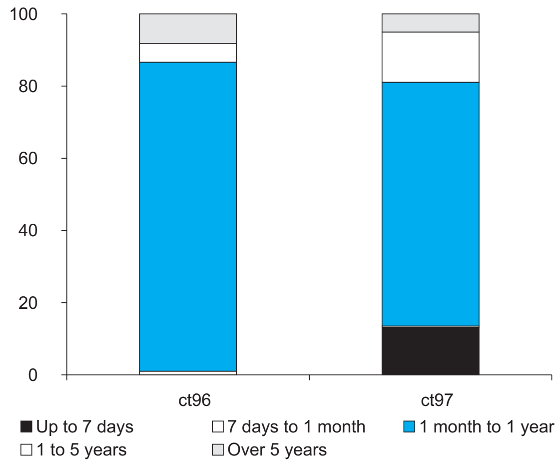


Chart 12
INTEREST RATE DERIVATIVES TURNOVER



5. DISTRIBUTION ACCORDING TO TRANSACTION AMOUNTS

This section analyses the frequency distribution of derivatives[(10)]. The methodology is basically that used in the previous analysis, published in the September 1997 *Economic Bulletin*. Turnover values are also analysed in escudos (and not in US dollars), since the characterisation of operation was considered to be more relevant in the Portuguese currency. In addition to some descriptive measures (namely the mean, median and percentiles), statistic $S^{(11)}$ was also used. This statistic in-

Chart 11
AMOUNTS OUTSTANDING OF FOREIGN EXCHANGE DERIVATIVES
Breakdown by maturity

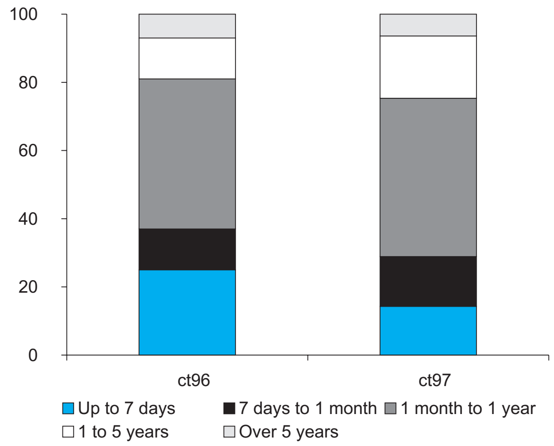
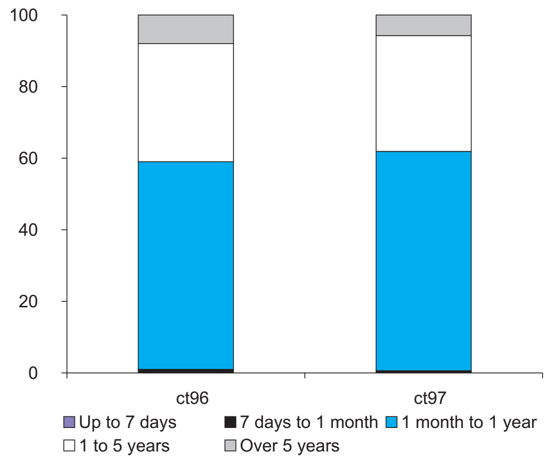


Chart 13
AMOUNTS OUTSTANDING OF INTEREST RATE DERIVATIVES
Breakdown by maturity



dicates the skewness of the distribution, when compared to a normal distribution.

(10) In this analysis, data on total transactions reported by banks were used; the two sides of a transaction between two resident banks are counted as two different operations.

(11) Where,

$$S = \frac{n\sum_{i=1}^{n}(x_i - \bar{x})^3}{(n-1)(n-2)s^3},$$

for high (low) values of S the distribution is positively (negatively) skewed. $S = 0$ in normal distributions.

Chart 14
HISTOGRAM
Foreign exchange derivatives

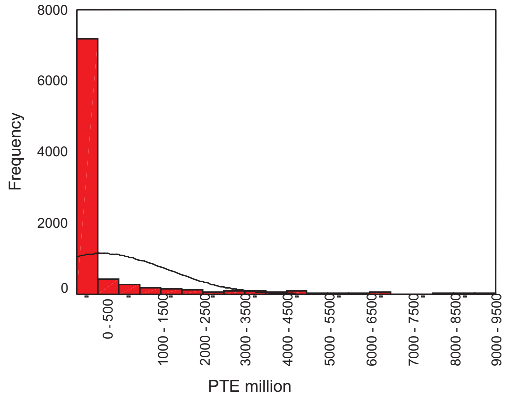
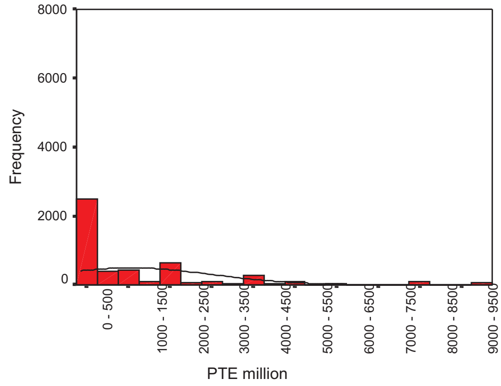


Chart 15
HISTOGRAM
Interest rate derivatives



A first analysis indicates that the distribution of transactions of derivatives continues to be significantly skewed, exhibiting a high concentration of operations in smaller amounts (positive skewness).

In this context, an analysis was drawn excluding operations over PTE 10 billion. The excluded transactions were considered to bring biaseness to the results[(12)]. These operations are highly concentrated in values up to PTE 35 billion as regards foreign exchange derivatives, and PTE 20 billion in the interest rate derivatives segment. The bulk (about 70 per cent) of operations over PTE 10 billion continued to be carried out in the foreign exchange derivatives segment. Most operations in this segment were carried out in escudos and US dollars, while the escudo leads in the interest rate derivatives. Foreign exchange derivatives are mostly contracted with non-resident financial institutions, while interest rate derivatives are virtually shared equally by resident banks, non-resident financial institutions and foreign exchanges. Among operations over PTE 10 billion, about 60 per cent were foreign exchange swaps and 20 per cent were FRAs.

Taking into account only transactions below PTE 10 billion, operations are still highly concentrated in small amounts, in both foreign exchange derivatives and interest rate derivatives. Skewness is stronger in the first segment, with 75 per cent of operations having values below PTE 225 thousand — while 75 per cent of operations in the latter segment are below PTE 2,000 thousand (table 16)[(13)]. It is also worth noting that, while positive skewness increased in the foreign exchange derivatives in relation to October 1996, it decreased in the interest rate derivatives segment.

Broken-down by ***instruments***, outright forwards continued to be much more skewed for small amounts than total foreign exchange derivatives. On the other hand, foreign exchange swaps are less concentrated in smaller amounts than the remaining instruments in the segment. The increase in skewness in relation to October 1996 in the foreign exchange derivatives segment chiefly resulted from the change in the frequency distribution of outright forwards — which recorded a significant increase in skewness.

The reduction in skewness in interest rate derivatives was due to a lower concentration in small amounts of futures, both on interest rates up to and over 1 year.

Regarding ***counterparties,*** as in 1996, concentration in small amounts is more evident in operations contracted with residents — both in the for-

(12) Excluding transactions over PTE 10 billion means excluding 4 per cent of total transactions on both foreign exchange derivatives and interest rate derivatives.

(13) Recall that both distributions present a maximum value of PTE 10 billion.

Table 16

PTE million

	Foreign exchange derivatives		Interest rate derivatives	
	1996	1997	1996	1997
	Oct	Oct	Oct	Oct
Mean	743	608	537	1318
Mode	16	5000	10	2000
P25	16	0.4	20	100
P50	77	16	100	410
P75	500	224	500	2000
P90	2327	2000	2000	4000
S	105.7	135.8	108.2	65.5

Table 17

PTE million

	Foreign exchange derivatives		Interest rate derivatives	
	Residents	Non-residents	Residents	Non-residents
Mean	197	1886	1122	1849
P50	5	900	250	1000
P90	200	5375	4000	5000
S	229.3	31.2	63.2	26.6

eign exchange derivatives and the interest rate derivatives segments, although the difference in skewness is more evident in foreign exchange derivatives. Indeed, in this segment operations contracted with non-residents involve on average much higher amounts (table 17). Consequently, although the number of operations contracted with residents is thrice that contracted with non-residents, resident counterparties have a small relative share in total turnover (10 per cent). Also worth noting is that, in the foreign exchange derivatives segment(14), the frequency distribution is substantially more skewed as regards operations contracted with non-financial counterparties than in transactions with financial counterparties.

Regarding the breakdown by ***currency***, positive skewness is higher in operations contracted in escudos (when compared to those in US dollars, Deutsche marks, pesetas or liras), both in the foreign exchange derivatives and in the interest rate derivatives segments.

(14) This analysis cannot be drawn in the interest rate derivatives segment, since too few operations are contracted with non-financial counterparties. As regards financial counterparties, skewness is identical to that of foreign exchange derivatives.

INFORMATION ON EXPECTATIONS ABOUT THE ESCUDO CONVERGENCE FROM THE VOLATILITY IMPLIED IN CURRENCY OPTIONS*

*Bernardino Adão***
*Nuno Cassola***
*Jorge Barros Luís***

1. INTRODUCTION

On 1 January 1999 a new international currency will be born — the euro — whilst the national currencies of the European Union Member-states participating in the Third Stage of the Economic and Monetary Union (EU-11) will cease to exist. Reflecting the European Union Treaty and other legal dispositions relative to the introduction of the euro, the conversion rates to the euro of the participating currencies will only be known on the last market day, in December 1998. However, as announced on 3 May 1998, the current bilateral central parities of the Exchange Rate Mechanism of the European Monetary System (ERM-EMS) will be used in the calculation of the irrevocable conversion rates to the euro. Admitting that the announcement of the participating countries and the rule of conversion to euro are credible, several implications exist to the behaviour of the interest and exchange rates in the transition to the Economic and Monetary Union (EMU).

Regarding short-term interest rates, interest rates of the EU-11 money markets should fully converge, the latest on the first euro market day — that is, in January 1999. This requirement is expected to be reflected in the convergence of forward interest rates for settlement on 1 January 1999. In turn, the market bilateral exchange rates must converge to their central parities up to 31 December 1998. This requirement must already be resulting in a convergence between the forward exchange rate for settlement on 31 December 1998 and the respective central parity.

The announcement of the conversion rule and the need for bilateral exchange rates to converge to the announced values until 31 December 1998 restrict the paths of the spot bilateral exchange rates of the participating currencies. These market rates are expected to follow a path which becomes increasingly more insensitive to random shocks to the economic fundamentals that determinate them[(1)]. This implies that in the transition to the EMU, the correlation between variations in the EU-11 currency exchange rates vis-à-vis third currencies (say, the US dollar) shall increase.

This article presents empirical evidence on the evolution of market expectations about the Portuguese participation in the EMU, between 26 July 1996 and 30 April 1998, using information contained in the implied volatility used in the pricing of exchange rate options. We wish to test the three implications of perfect credibility:

i) the increasing correlation between the US dollar exchange rate vis-à-vis the Deutsche mark and the US dollar exchange rate vis-à-vis the escudo until the beginning of the EMU ($\rho_{t,T}$). Formally we have:

$$\rho_{t,T} \to 1 \ (T \to 0) \qquad (1)$$

where t is the moment in which expectations are formed and $t+T$ is 1 January 1999.

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

** Economic Research Department.

(1) See Cassola and Santos (1988) for a formal demonstration.

ii) the convergence of forward interest rates for settlement on 1 January 1999, that is:

$$j_{t+T,t+(T+1)} - j^*_{t+T,t+(T+1)} = 0, \qquad (2)$$

where $j_{t+T,t+(T+1)}$ and $j^*_{t+T,t+(T+1)}$ are the overnight forward interest rates of the escudo and the Deutsche mark respectively, for $t + T$ equal to 1 January 1999 (with t denoting the present moment).

iii) the equality between the forward exchange rate for settlement on 31 December 1998 and the central parity. Formally:

$$E_t(s_{t+(T-1)}) = f_{t,t+(T-1)} = s^*, \qquad (3)$$

where $s_{t+(T-1)}$ stands for the logarithm of the forward bilateral exchange rate contracted in t for settlement on $t + (T-1)$ (31 December 1998); $E_t(.)$ is the expectations operator conditioned to the information available at moment t; s^* is the logarithm of the bilateral central parity.

The remainder of this article is structured as follows: section 2 presents the methodology for calculating correlations implicit in the option premia, that will allow us to test implication (*i*); in the third section we show the methods for analysing the credibility of an exchange rate band using option prices, to test implication (*iii*); section 4 describes the data and results; the final section concludes.

2. CALCULATING EXCHANGE RATE CORRELATIONS FROM IMPLICIT VOLATILITIES

Option prices contain relevant information about market expectations of the future path of financial asset pricing and allow the estimation of risk-neutral probability density functions (RNPDF) for the underlying asset price. This issue has been addressed recently in several papers, such as Abken (1995), Bahra (1996), Neuhaus (1995) and Söderlind and Svensson (1997). Additionally, currency options permit to obtain implied exchange rate correlations, as well as to assess the market's perception of the credibility of an exchange rate band.

Assuming no arbitrage opportunities, the exchange rate between currencies X and Y at time t, denoted by $S_{1,t}$, may be written as:

$$S_{1,t} = S_{2,t} \cdot S_{3,t} \qquad (4)$$

where $S_{2,t}$ and $S_{3,t}$ are the exchange rates, respectively, between X and a third currency Z and between Z and Y. Let $s_{i,t} = \ln(S_{i,t})$, with $i = 1, 2, 3$.

$$s_{1,t} = s_{2,t} + s_{3,t} \qquad (5)$$

Denoting the daily exchange rate variation $s_{i,t} - s_{i,t-1}$ by $r_{i,t}$, we have:

$$r_{1,t} = r_{2,t} + r_{3,t} \qquad (6)$$

Let $\sigma_{i,t,T}$ be the standard deviation of daily exchange rate variations over a period of time from t to $t+T$ with $i = 1, 2, 3$, and let $Cov(r_{2,t,T}, r_{3,t,T})$ be the covariance between $r_{2,t}$ and $r_{3,t}$ over the same period. The standard deviation of $r_{1,t}$ from t to $t+T$ is given by:

$$\sigma^2_{1,t,T} = \sigma^2_{2,t,T} + \sigma^2_{3,t,T} + 2 \cdot Cov(r_{2,t,T}, r_{3,t,T}). \qquad (7)$$

As $Cov(r_{2,t,T}, r_{3,t,T}) = \rho_{\tau,T}\sigma_{2,t,T}\sigma_{3,t,T}$, where $\rho_{t,T}$ is the correlation coefficient between $r_{2,t}$ and $r_{3,t}$ solving (7) in order to $\rho_{t,T}$ we get:

$$\rho_{t,T} = \frac{\sigma^2_{1,t,T} - \sigma^2_{2,t,T} - \sigma^2_{3,t,T}}{2\sigma_{2,t,T}\sigma_{3,t,T}} \qquad (8)$$

According to (8), the correlation coefficient between the daily variations of two currencies vis-à-vis a third currency may be obtained from the variance of the daily variations of the exchange rates between the three currencies [(2)].

There are several ways to estimate the correlation coefficient, from the information available at time t. The simplest way is to compute the historical correlation over a window of t-T days. Instead of a single past correlation a moving average of several past correlations can be used as a forecast of future correlation, attaching equal or different weights to each past correlation [(3)].

(2) Notice that it is irrelevant how exchange rates are expressed, since the variance of the growth rate of a variable is equal to the variance of the growth rate of its inverse.

Another way to obtain forecasts of the standard deviation is from the premia of currency put or call options. Assuming that the exchange rate (S) is a log-normal variable yields: [4]

$$\ln S_{t+T} \sim N\left[\ln S_t + \left(\mu - \frac{\sigma^2}{2}\right)T, \sigma\sqrt{T}\right] \qquad (9)$$

where μ is the instantaneous variation of the exchange rate; σ^2 stands for the instantaneous variance of the rate of variation of the exchange rate, being σ usually identified with the volatility. The variances used in calculating $\rho_{t,T}$ in (8) are $\sigma^2 T$.

Knowing the premia of call options ($C(X)$) and put options ($P(X)$), the implied volatility in those premia can be calculated by solving the Garman and Kohlhagen (1983) pricing formulas in order to σ:

$$C(X) = Se^{-j^*T}N(d_1) - Xe^{-jT}N(d_2) \qquad (10)$$

$$P(X) = Xe^{-jT}N(-d_2) - Se^{-j^*T}N(-d_1) \qquad (11)$$

with

$$d_1 = \frac{\ln(S/X) + \left(j - j^* + \sigma^2/2\right)T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T};$$

where S is the spot-exchange rate, X is the strike price, j is the domestic interest rate with term to maturity equal to that of the option; j^* stands for the corresponding international interest rate of the currency for which we define the option's underlying exchange rate; $N(d_i)$ $(i = 1,2)$ is the value of the standardised normal distribution.

As regards over-the-counter (OTC) options, by market convention these are usually traded for a single strike price, corresponding to the forward price (i.e., they are at-the-money options).

Since implied volatilities are forward-looking, the correlations estimated this way are not affected by eventual structural breaks, as would happen with estimates from structural or time-series models. This aspect is particularly relevant in our case, since the EMU implies a change in the pattern of currency correlations.

3. INDICATORS OF CREDIBILITY OF AN EXCHANGE RATE BAND

The credibility of a band of fluctuation has been analysed through several indicators, namely those built from spot interest rate differentials and from spot and forward exchange rates[5]. In addition, information from options premia can also be used for this purpose.

3.1 The risk-neutral probability density function

The simplest analysis is that consisting of deriving the risk-neutral probability density function — namely by quantifying the probability of reaching the band limits. An accessible way to obtain the risk-neutral density function from forward exchange would be to use over-the-counter prices of implied volatilities to calculate the standard deviation of the distribution[6], assuming the log-normality of the exchange rate as in (9), and taking the forward exchange rate as its expected value[7].

In this case equations (10) and (11) can be simplified as follows:

$$C(X) = e^{-jT}\left[FN(d_1) - XN(d_2)\right] \qquad (12)$$

$$P(X) = e^{-jT}\left[XN(-d_2) - FN(-d_1)\right] \qquad (13)$$

with

$$d_1 = \frac{\ln(F/X) + \left(\sigma^2/2\right)T}{\sigma\sqrt{T}};$$

$$d_2 = d_1 - \sigma\sqrt{T}.$$

Using OTC options also has the advantage of not forcing to the correction of the effect of getting closer to the maturity date, since the term to maturity is constant — which simplifies the interpreta-

(3) Equally weighted moving averages have the disadvantage of taking longer to reveal the impact of a shock to the market and to dissipate slowly that impact. To avoid these drawbacks, one of the most commonly used techniques are the exponentially weighted moving averages, that attribute more weight to recent observations in the calculation of standard deviations of covariances.

(4) With imperfectly credible exchange rate bands, the log-normality assumption may not be the most correct one. See Malz (1996).

(5) See Svensson (1991; 1993).

(6) In the OTC market the volatilities (in annual percentages) are quoted instead of the options premia.

(7) According to the covered interest rate parity the forward exchange rate F can be defined as $F = Se^{(j-j^*)T}$.

tion of the risk-neutral PDF. In the case of foreign exchange options, there is still the advantage of OTC options having usually greater liquidity than those traded in the stock market[8].

3.2 An indicator of credibility of the band

The credibility of exchange rate bands can be analysed through a more rigorous method, building indicators based on the constraints on option premia implicit in the perfect credibility assumption (see Malz (1996), Campa and Chang (1996) and Campa, Chang and Reider (1997)).

Consider a fluctuation band with upper and lower boundary denoted by $\overline{S}$ and $\underline{S}$, respectively. First, consider the extreme case of strike prices of a call option at the upper boundary of the band or above it $\left(X \geq \overline{S}\right)$. Under perfect credibility the call option is worthless, since it will never expire in-the-money. Conversely, if the strike price of a put option is at the upper edge of the band or below it $(X \leq \underline{S})$, the put option is also worthless, since the probability of expiring in-the-money is nil.

Therefore, in the case of perfect credibility, considering the parity between the two kinds of options, the call option premium with strike price equal to or lower than $\underline{S}$ is $S_0 e^{-j_t^* T} - X e^{-j_t T}$[9], where S_0 is the current spot exchange rate and j_t^* and j_t are respectively the foreign and domestic interest rates corresponding to the term to maturity of the option[10][11].

For strike prices within the band the maximum value of the call option premia is given by $\left(\overline{S} - X\right)e^{-j_t T}$, only reached when the exchange rate is expected to reach the band ceiling at the expiring date with certainty. This implies that perfect credibility of the band is rejected whenever the current value of the call option premium, with strike price X, exceeds the maximum value that the option premium may take, assuming that the future exchange rate is within the band:

$$C(X) > \left(\overline{S} - X\right)e^{-j_t T} \Rightarrow \text{perfect credibility rejection} \qquad (14)$$

The other constraint on options premia in a credible exchange rate band is that resulting from the convexity relationship between the option premium and the strike price. The argument can be exposed in two steps. First, each unitary increase in the strike price yields a maximum reduction of the value of the call options expiring in-the-money that equals the current value of that unit (when the probability is 1). Second, the higher the strike price, the less probable that the call option expires in-the-money, and hence the smaller the reduction in the call option value for each unitary increase in the strike price. Thus we have:

$$-e^{-j_t T} \leq \partial C(X) / \partial X \leq 0 \ \text{ e } \ \partial^2 C(X) / \partial X^2 \geq 0.$$

Diagram 1 illustrates the constraints on the behaviour of options prices in a perfectly credible exchange rate band. Straight line (1) represents the line of maximum slope that passes through $C(\underline{S})$ (i.e., the call option premium with strike price $\underline{S}$), when the unit rise in the strike price cuts the option premium by the present value of that unit. This slope is the symmetric of the discount factor $\left(-e^{-j_t T}\right)$[12]. Straight line (2) joins the prices of the options with strike prices $\underline{S}$ e $\overline{S}$, being $C\left(\overline{S}\right)$ and $C(\underline{S})$, respectively equal to zero and $S_0 e^{-j_t^* T} - \underline{S}\, e^{-j_t T}$[13].

Since the relationship between the option price and the strike price is strictly convex, the call option price should stand in a convex curve between (*1*) and (*2*), that contains points $\left(\underline{S}, C(\underline{S})\right)$ and for

(8) According to BIS (1996), the OTC market accounts for 97 per cent of the value of the open positions amount outstanding in currency options world-wide.

(9) It can be show that the intrinsic Value of $C(S)$ (the maximum between zero and the option price if immediately stroke) equals:

$$(F - \underline{S})e^{-j_t T} = \left(\frac{S_0 e^{j_t T}}{e^{j_t^* T}} - \underline{S}\right)e^{-j_t T} = S_0 e^{-j_t^* T} - \underline{S} e^{-j_t T}$$

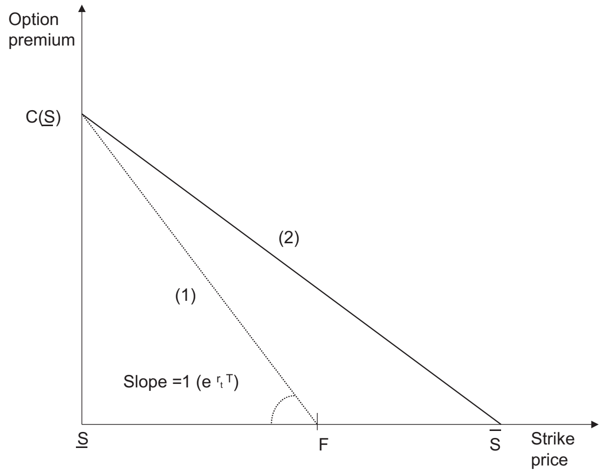
(10) Recall that the parity between the call and the put options establishes that $P = C - (F - X).e^{(-j_t T)}$, where F is the forward exchange rate and $P = 0$ whenever $X \leq \underline{S}$.

(11) Using capitalised interest in continuous time. Campa and Chang (1996) consider discrete capitalisation.

(12) The straight line crosses point F, since its slope equals $\frac{-C(\underline{S})}{x - \underline{S}}$, with x denoting the horizontal intercept. Therefore, equalling that ratio to the value of the slope of line $\left(-e^{-j_t T}\right)$ yields $x = F$.

(13) The value of $C(\underline{S})$ is found by substituting by $\underline{S}$ in the expression for the call option premium with strike price equal to or lower than $\underline{S}$, referred above.

Diagram 1
OPTIONS PREMIA IN A PERFECTLY CREDIBLE BAND
Convexity test



any strike price ranging between $\underline{S}$ and $\overline{S}$. Therefore, the perfect credibility of an exchange rate band can always be rejected provided that for a given point in the call option price function (for $X<\overline{S}$) the absolute value of the slope joining that point to $\overline{S}$ is greater than the slope of line (2). This being the case, given that the call option price function is strictly convex, the price of a call option with strike price greater than $\overline{S}$ is positive, which means that the probability of the exchange rate exceeds the band upper bound is not nil.

The rejection of perfect credibility thus corresponds to checking if the following convexity condition holds:[14]

$$C(X)>\frac{\overline{S}-X}{\overline{S}-\underline{S}}\cdot\left(S_0 e^{-j_t^* T}-\underline{S}e^{-j_t T}\right)\Rightarrow \tag{15}$$

$\Rightarrow$ Perfect credibility rejection.

As mentioned in Campa and Chang (1996), condition (15) is more restrictive than condition (14) anytime the forward rate is within the band[15].

In the case of wide exchange rate bands — as happens currently with the ERM of the EMS — the results should be expected to point in general to the non-rejection of perfect credibility, so the exercise provides no additional relevant information. However, more interesting exercises can be attempted in these cases — e.g. using (15) to calculate the smaller possible bandwidth that would permit the non-rejection of its perfect credibility — i.e., the minimum size of a perfectly credible band (α).

Bearing in mind the perspectives of monetary integration in the EU, this exercise allows to use options prices to identify the band in which a currency could float without obliging to a realignment within the term to maturity of the option. With the beginning of the EMU becoming closer, the currency would then be expected to float in a progressively narrower interval.

Transforming (15) into an identity and using the principle of a band's symmetry around the central parity yields $\underline{S}=S_c/(1+\alpha)$ and $\overline{S}=(1+\alpha)S_c$ (where S_c is the central parity). Substituting $\underline{S}$ and $\overline{S}$ for these expressions, the equation resulting from (15) can be solved in order to α, giving S_c.

4. EMPIRICAL EVIDENCE

The data consisted in volatilities (ask quotes) of OTC at-the-money 3-month forward options, disclosed by the *Banco Português do Atlântico* (BPA)[16], for the exchange rate of German Mark / Escudo (PTE / DEM), German Mark / US Dollar (USD / DEM) and US Dollar / Escudo (PTE / USD) for the period between 26 July 1996 and 30 April 1998[17].

---

(14) The slope, at a given point X of the straight line linking it to $(\overline{S},0)$ equals $\frac{C(X)}{\overline{S}-X}$. To reject perfect credibility of an exchange rate bond, that slope should exceed in absolute value that of line (2) (equal to $\frac{C(\underline{S})}{\overline{S}-\underline{S}}$). That is,

$$C(X)>\frac{\overline{S}-X}{\overline{S}-\underline{S}}\cdot C(\underline{S})\Leftrightarrow C(X)>\frac{\overline{S}-X}{\overline{S}-\underline{S}}.\left(S_0 e^{-j_t^* T}-Se^{-j_t T}\right).$$

(15) Multiplying and dividing the right-hand term of (15) by $e^{j_t T}$ yields:

$$C(X)>\frac{\overline{S}-X}{\overline{S}-\underline{S}}.e^{j_t T}.e^{-j_t T}\left(S_0 e^{-j_t^* T}-\underline{S}e^{-j_t T}\right)\Leftrightarrow$$
$$C(X)>\frac{\overline{S}-X}{\overline{S}-\underline{S}}.e^{-j_t T}.(F-\underline{S})\Leftrightarrow C(X)>\left[\left(\overline{S}-X\right).e^{-j_t T}\right]\left(\frac{F-\underline{S}}{\overline{S}-\underline{S}}\right)$$

The first factor of the right-hand term in this inequality is the right-hand term of inequality (14), so (15) is a more restrictive condition when the second factor is smaller than 1 (i.e., when $\underline{S}\leq F\leq\overline{S}$).

We started by analysing implication (i) $\rho_{t,T} \to 1$ ($T \to 0$), calculating the implicit correlation of the escudo and Deutsche mark exchange rates vis-à-vis the US dollar according to (8) and considering S_1, S_2 and S_3 as the PTE / DEM, USD / DEM and PTE / USD exchange rates, respectively [(18)].

According to chart 1, the correlation between the German Mark and the Portuguese Escudo exchange rates, vis-à-vis the US Dollar, has been increasing since the end of the first quarter of 1997. In the second half of 1997, the implied correlation was consistently above 0.95 and rose significantly during September. The international stock market correction in October 1997 did not affect the implied correlation, which was relatively stable between 0.98 and 0.99.

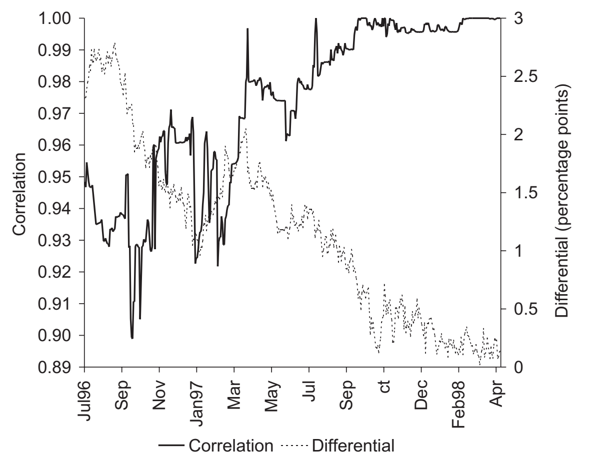
In March 1998, following the announcement of the 1997 fiscal deficits of EU countries, the implied correlation increased to above 0.99. On the eve of the Brussels summit of 1-3 May, the correlation between the exchange rate variations of DEM / USD and USD / PTE was already between 0.99 and 1.

Therefore, the results from implied correlations are consistent with the general assertion that financial market participants anticipated the inclusion of Portugal in the group of the Euro founding members.

The relationship between the behaviour of implied correlations and the expectations on Escudo's participation in the Euro-area seems to be confirmed by the analysis of implication (ii). Indeed, exchange rate correlations between the daily rates of change of the Portuguese Escudo and the German Mark rates vis-à-vis the US dollar and the spread between the Portuguese Escudo and the German Mark forward overnight rate, for settlement in 1 January 1999, show a trend which is consistent with the anticipation of the Portuguese participation (Chart 1).

As regards implication (iii), $E_t\left(s_{t+(t-1)}\right) = f_{t,t+(t-1)} = s^*$, as charts 2 and 3 show, the mean, mode and median of the RNPDF of the PTE / DEM exchange rate derived according to (9) converged to the bilateral central parity (102.505 PTE / DEM); moreover, the probability attributed to the values in the edges of the distribution decreased. The interquartile interval decreased from PTE 2 to PTE 0.9.

Chart 1
IMPLIED CORRELATION BETWEEN THE RATES OF VARIATION OF DEM/USD AND PTE/USD (3-MONTH TERM) AND DIFFERENTIAL BETWEEN PORTUGUESE AND GERMAN FORWARD OVERNIGHT INTEREST RATES (SETTLEMENT IN 1 JANUARY 1999)



The anticipation of the Portuguese participation in the EMU is also evident in the progressive reduction of the minimum width of the perfectly credible band vis-à-vis the Deutsche mark — which corresponds to the solution of (15) solved in order to α. According to chart 4, this variable fell sharply since July 1996, from values over 3 per cent to around 0.5 per cent. This behaviour is consistent with the shift in expectations towards a lower depreciation of the escudo vis-à-vis the Deutsche mark, but also with reduction in market uncertainty about the future values of PTE / DEM.

5. CONCLUSIONS

Currency option prices provide relevant information concerning expectations of economic agents. Comparing to the usual correlation measures conditional to past observations, correlations implied in exchange rate option prices offer the advantage of being forward-looking, and are par-

(16) Through the BPAI page of Reuters.

(17) The OTC volatilities were kindly supplied by *Banco Português do Atlântico*.

(18) Following this notation, perfect correlation between S_2 and S_3 corresponds to a correlation coefficient equal to -1. The results will be presented in absolute values.

Chart 2
PROBABILITY DENSITY FUNCTIONS
3-month PTE / DEM

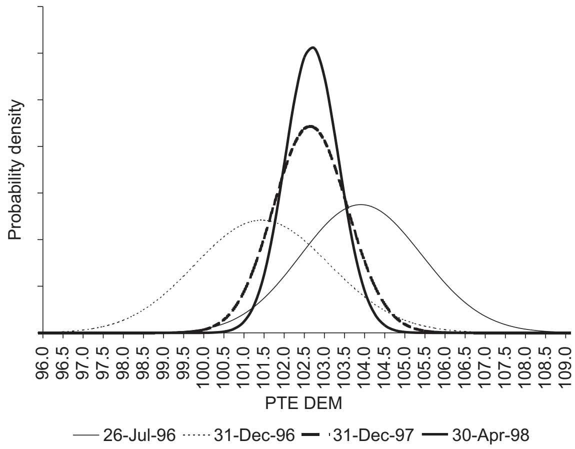
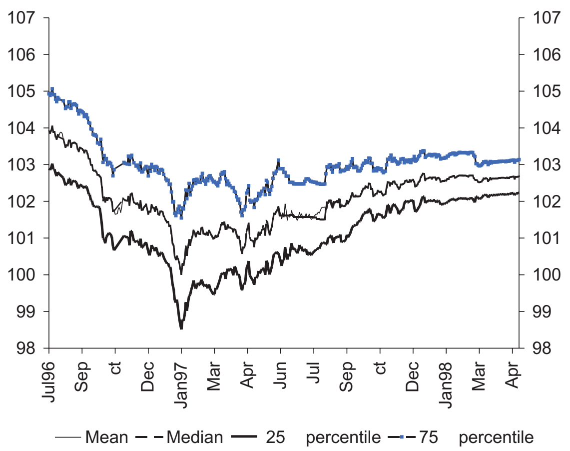


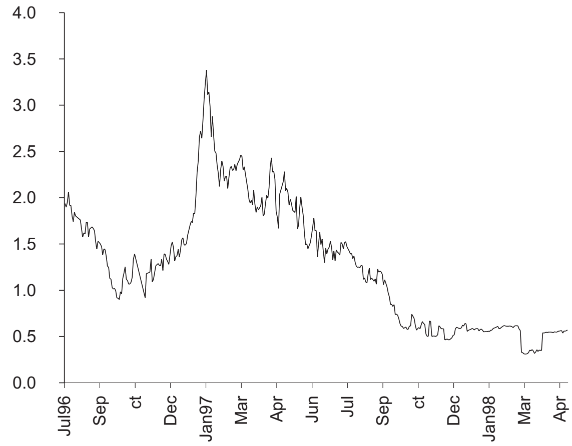
Chart 3
DISTRIBUTION OF THE 3-MONTH PTE/DEM EXCHANGE RATE
Descriptive statistics



ticularly useful in periods in which regime shifts are expected. Considering EMU, implied correlations permit to assess market expectations on the degree of convergence between the participating currencies.

The results we obtained are consistent with the idea that the probability of Escudo's participation in the Euro-area from the beginning increased persistently over the course of 1997, and that the market attributed a high degree of credibility to the bilateral central parity announced at the 1-3 May 1998 European summit.

Chart 4
MINIMUM WIDTH OF A PERFECTLY CREDIBLE BAND
3-month PTE / DEM



On the eve of the summit, market participants were expecting a perfect correlation between the movements of the Deutsche mark and the Portuguese Escudo, vis-à-vis the US Dollar. Furthermore, the central moments of the PTE / DEM exchange rate RNPDF converged to the central parity and the uncertainty regarding the future values of PTE / DEM decreased strongly.

REFERENCES

Abken, Peter A. (1995), "Using Eurodollar Futures and Options: Gauging the Market's View of Interest Rate Movements", Federal Reserve Bank of Atlanta *Economic Review*, March / April: 10-30.

Bahra, Bhupinder (1996), "Implied Risk-Neutral Probability Density Functions from Option Prices: Theory and Application", Bank of England *Economic Bulletin*, August 1996.

BIS (1996), "Central Bank Survey of Foreign Exchange and Derivatives Market Activity 1995".

Campa, José M. and P. H. Kevin Chang (1997), "The Forecasting Ability of Correlations Implied in Foreign Exchange Options", NBER *Working Paper Series*, Working Paper 5974.

Campa, José Manuel and P. H. Kevin Chang (1996), "Arbitrage-based Tests of Target-Zone Credibility: Evidence from ERM Cross-Rate Options", *American Economic Review*, Vol. 86, no. 4, September 1996.

Campa, José Manuel, P. H. Kevin Chang and Robert L. Reider (1997), "ERM Bandwidths for EMU and After: Evidence from Foreign Exchange Options", *Economic Policy*, No. 24, April, pp. 55-89.

Cassola, Nuno and Carlos Santos (1998), "EMU, Exchange Rate Volatility and Bid-Ask Spreads", *Working Paper* 5/98, Banco de Portugal.

Garman, Mark M. and Steven W. Kohlhagen (1983), "Foreign Currency Option Values", *Journal of International Money and Finance*, 2 (December 1983), pp. 231-37.

Malz, Allan M. (1996), "Using Option Prices to Estimate Realignment Probabilities in the European Monetary System: the Case of Sterling-mark", *Journal of International Money and Finance*, Vol. 15, No. 5, pp. 717-748.

Neuhaus, Hans (1995), "The Information Content of Derivatives For Monetary Policy: Implied Volatilities and probabilities", Deutsche Bundesbank *Economic Research Group*, Discussion Paper No. 3/95.

Svensson, Lars E. (1993), "Assessing Target Zone Credibility: Mean Reversion And Devaluation Expectations in the EMS 1973-1992", *European Economic Review*, 37, pp. 763-802.

Svensson, Lars E. (1991), "The Simplest Test of Target Zone Credibility", *International Monetary Fund Staff Papers*, Vol. 38, pp. 655-665.

Söderlind, Paul and Lars E.O. Svensson (1997), "New Techniques to Extract Market Expectations from Financial Instruments", *Journal of Monetary Economics*, 40, pp. 383-429.

QUANTIFYING DATA FROM QUALITATIVE SURVEYS*

The external demand for goods and services

*Rui Esteves***

1. INTRODUCTION

In Portugal, the results of qualitative surveys on economic activity are disclosed on a monthly or quarterly basis. These results are indicators of economic agents' expectations and behaviours, regarding various aspects of the developments in the economy in several activity sectors, and therefore are particularly relevant in short-term economic analysis.

The qualitative surveys on economic activity have many characteristics that make indispensable their utilisation in assessing the economy: their results are disclosed prior to quantitative statistics and, unlike these, the data are not subject to revisions in following releases; these surveys cover some sectors for which quantitative statistics are unavailable, or are infrequently released; they provide the only source of information on economic agents' expectations, which allows to foresee the behaviour of the economy in the short-run.

In these surveys, industrials of companies in the sample indicate whether a given aspect of the company's activity exhibited an increase, a decrease or relative stability in a certain period(1). The results are then presented in the form of shares of each of the three types of answers possible, and hence do not allow for an immediate interpretation of the evolution of a particular aspect for the surveyed sector as a whole. Frequently, the balance of respondents (i.e. , the proportion of "increase" answers, minus the proportion of "decrease" answers) is calculated to condense the information of the surveys. However, since this statistic is an aggregation, it represents a loss of information (the share of "stable" answers is lost), and it builds on a very restrictive assumption: that an "increase" answer is worth as much as a "decrease" answer in relative terms.

The combination of qualitative information from these surveys with quantitative information on a common aspect of economic activity allows to understand the relationship between the proportions of the various answers and the state of economic activity. The methods of quantifying qualitative information meet these objectives. Many methodologies have been suggested in this sense. This article focuses on one technique that, despite being simple, yields widely acknowledged results. This technique builds upon the assumption that the real change in a surveyed variable is a weighted average of the average changes within each of the three types of answer.

The delay in the publication of quantitative statistics attributes great relevance to the quantification methods, as these allow to obtain estimates for the future behaviour of quantitative indicators.

This article analyses the relationship between qualitative and quantitative information, so as to estimate changes in quantitative statistics and to

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

** Economic Research Department.

(1) The possible answers do not follow necessarily this scheme, since they vary according to the question. Answers can be either good / satisfactory / deficient, above normal / normal / below normal, rise / stabilisation / reduction, increase / stable / decrease, etc.
Questions can also regard expectations about a future period.

interpret more correctly the results of qualitative surveys, using a quantification method. To attain this, we use data on the external demand for Portuguese goods and services.

The remainder of this article is structured as follows: section 2 presents the qualitative and quantitative data used in the quantification process and the way these data were obtained and treated. A brief description of the quantification methodology used in this research is presented in section 3. The fourth section presents and comments the main results obtained through the application of this methodology. Section 5 concludes.

2. DATA

The indicators analysed in the article refer to the external demand for Portuguese goods and services on a quarterly basis. The analysis is based upon two kinds of information: qualitative and quantitative data.

Qualitative responses used in this research refer to the external order book, and are drawn from the Monthly Manufacturing Industry Survey (ICIT) of the *Instituto Nacional de Estatística*. Every month the entrepreneur in each company is asked the following question: “Do you consider that, given the season, your order book (or demand) from abroad is presently: above normal / normal / below normal?”[(2)].

The Monthly Manufacturing Industry Survey is available in the current shape since June 1994. Data in the previous shape is available for the period running from January 1987 to March 1997. After analysing the proportions of the three answers in the period of overlap of both survey shapes, the correlation between both was calculated. This proved to be high, so the break adjustment was made by correcting the level of the answers in the previous shape. The break adjustment was made in the month for which the twelve following months recorded the highest correlation coefficient between the results in both surveys. The values in the previous survey had their levels corrected by the average difference between both surveys in the 12-month period scoring maximum correlation.

Although in the question on external demand responses should be given regarding the season, the series of the three types of answers exhibited a seasonal pattern, though not a marked one. Therefore, the qualitative answers were seasonally adjusted. This adjustment was carried out using the TRAMO and SEATS programs, assuming an additive breakdown.

Since the information of the qualitative surveys used in this study is released on a monthly basis, these data were aggregated to quantify quarterly qualitative indicators. Several aggregation procedures were tested to study if the relationship between the responses to the survey and the figures for external demand is a contemporary, led or lagged one. The quarterly qualitative indicators were built as 3-month averages of the proportions of each answer. These averages comprise not only the three months in the quarter, but also the three months beginning one to three months later (or sooner) to the beginning of the quarter — corresponding to one to three-month lagged (or led) variables[(3)].

We chose the year-on-year rates of change of external demand for goods and services in volume terms to relate with the proportions of the answers to the ICIT[(4)]. The estimates for this indicator were built upon geometric means of the year-on-year real rates of change of the imports of seven countries[(5)], weighted by the relative share of each country in Portuguese exports. The values used are based on statistics drawn from Datastream.

This research covers the period running from the first quarter of 1988 and the last quarter of 1996. The period under scrutiny is limited as the ICIT was first published in 1987. Since the first observations of surveys are usually irregular — due to a period of adaptation of the respondents and

(2) Question of the Monthly Manufacturing Industry Survey version started June 1994.

(3) For instance, relating the quantitative variable to the 1-month lagged aggregate answers means that the last variables correspond to the aggregation of data for March to May, June to August, September to November and December to February.

(4) In addition to the year-on-year rates of change of external demand, also the year-on-year rates of change of Portuguese exports of goods and services in volume were used. The results obtained with this reference value were clearly worse, exhibiting a very low correlation with the ICIT answers.

(5) The countries here considered were: Germany, France, Spain, Italy, United Kingdom, United States and Japan.

the surveying institution — data from the first year of the survey were disregarded.

3. METHODOLOGY

This section outlines the methodology used in obtaining quantitative indicators from qualitative responses[6].

The method — hereafter referred to as MPR (method of proportions of responses) assumes that the expected value of the reference quantitative variable equals the sum of the mean of that variable, conditioned to each kind of response, times the probability of each type of response. It therefore is based upon the following identity:

$$E(g_t) = E(g_t|A_t)\,\Pr(A_t) + E(g_t|E_t)\,\Pr(E_t) + E(g_t|D_t)\,\Pr(D_t) \quad (1)$$

where g_t is the reference quantitative variable, A, E and D stand for the possible answers of the respondents (increase, stabilisation and decrease, respectively).

Assuming that the probability of respondents answering each type of response is given by the proportions of the answers to the qualitative surveys, a_t, e_t, and d_t, and that $g_t = E(g_t) + \varepsilon_t$ where ε_t is random residual verifying the usual proprieties (i.e., $E(\varepsilon_t) = 0, E(\varepsilon_t^2) = \sigma_\varepsilon^2$ and $E(\varepsilon_t \varepsilon_k) = 0$ if $t \neq k$) and if θ_{it} stands for the expected values of the reference variable, conditioned to each type of answer, yields the following equation:

$$g_t = \theta_{1,t} a_t + \theta_{2,t} e_t + \theta_{3,t} d_t + \varepsilon_t \quad (2)$$

Many are the hypothesis that can be made on parameters $\theta_{i,t}$ in estimating equation (2). One of these hypothesis is that the conditioned averages are constant in time. This being the case, (2) can be estimated through the ordinary least squares. Other hypothesis are such that the expected values of the reference variable, conditioned to the answer types, are allowed to change over time — e.g., are a function of other variables.

Two hypothesis on the behaviour of parameters $\theta_{i,t}$ were tested in this research. A first approach admits these parameters are constant over the course of the period under scrutiny. The second approach considers that the conditioned averages follow a random walk , that is:

$$g_t = \theta_{1,t} a_t + \theta_{2,t} e_t + \theta_{3,t} d_t + \varepsilon_t \quad (3)$$

$$\theta_{i,t} = \theta_{i,t-1} + \gamma_{i,t}$$

where ε_t and $\gamma_{i,t}$ are gaussian white noises.

Using the Kalman filter to estimate (3) we can obtain estimates for both the conditioned averages $\theta_{i,t}$, and g_t, based on the results of the monthly surveys.

4. RESULTS

The choice of the reference variable to quantify the results of the qualitative surveys is an extremely important step in the application of the above described methods. If good results are to be achieved, the quantitative variable used must refer to the same aspect economic agents are asked about, or should be strongly correlated to it. Hence, in most cases quantification of the survey results cannot be done due to the lack of reference variables, or sometimes due to errors of statistical measurement — specially in the reference quantitative variables, since these are based on complex sampling procedures[7].

In this research, the reference variable chosen to quantify the results of the question on external demand of the ICIT[8] was the time-series of the year-on-year rates of change of external demand for goods and services[9].

As mentioned in section 2, different aggregations of the monthly qualitative information were attempted, including monthly leads and lags in the process. In several models, the best results

(6) Another technique, based upon developments of the methodology initially proposed in Carlson and Parkin (1975), was also used. However, since the latter is more complex and does not give better results, it is not presented here.

(7) The estimates for the quantitative variables usually present greater errors than the qualitative answer proportions, since the former are obtained from more complex sampling and aggregation procedures.

(8) In the previous section, when presenting the methods generically, the three possible response choices considered were “increased”, “remained stable” and “decreased”. In this section we consider the admissible answers comprised in the ICIT: “above normal”, “normal” and “below normal”.

(9) Other variables could have been used. However, the chosen variable seemed the most adequate among the available data.

Chart 1
EXTERNAL DEMAND

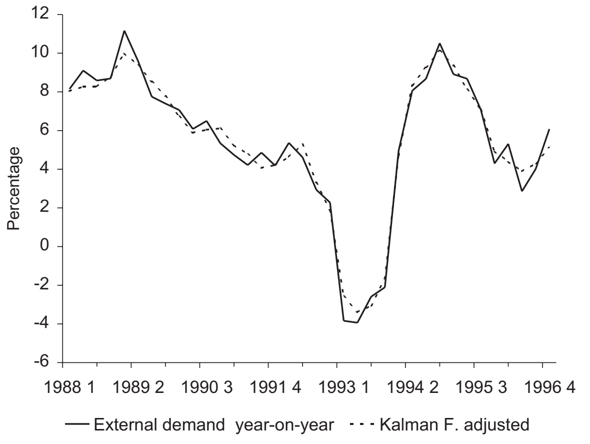
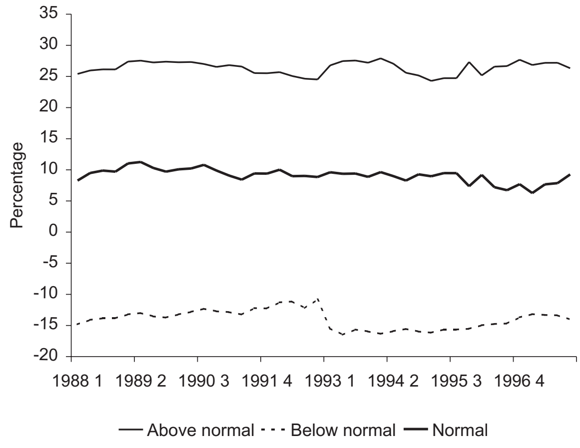


Chart 2
EXTERNAL DEMAND
Estimated average year-on-year rates of change



were obtained using the proportions of aggregate responses with a 1-month lag, which suggests that the external order books are basically met in the month following to their production. All results presented below were obtained by using response proportions aggregated in this fashion.

To estimate the relationship between the year-on-year rate of change of external demand and the proportions of the ICIT answers, we started by admitting that average changes within each type of answer (the θ coefficients in (2)) are constant through time. The results show that a very strong relationship exists between the answers to the “external order book” of the ICIT and external demand directed towards the Portuguese market. The estimated values for the coefficients resulting from this estimation were 24.5 per cent, 10.1 per cent and -15.4 per cent for the proportions of the “above normal”, “normal ”and “below normal” answers, respectively.

The hypothesis of having the reference variable’s average stable over time is at start quite restrictive, since no evidence suggests that such stability exists. The trend exhibited by the residuals of the adjustment may indicate a change in the average rates recorded in each group.

To quantify the qualitative results without imposing the constraint of having constant coefficients over time, these were allowed to follow a random walk. To attain this, (3) was estimated using the Kalman filter.

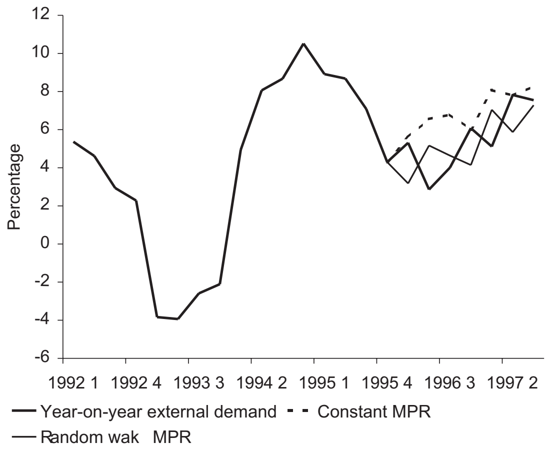
According to the estimation of (3), the average year-on-year rates of change of the “above normal”, “normal” and “below normal” answers in the last quarter of 1996 were 27.7, 7.7 and -13.7 per cent respectively, while the averages for the estimation period as a whole were 26.6, 9.3 and -14 . Chart 1 presents the values adjusted using the Kalman filter, compared with the values for the year-on-year rate of change of external demand. As expected, the adjusted and the effective values are quite similar, since the flexibility granted to the parameters allowed a great adaptation to the behaviour of the reference series.

Chart 2 exhibits the average year-on-year rates of change of each type of answer, estimated according to the Kalman filter. Note that, despite some variation, the estimated rates never diverge significantly from their mean.

Since one of the major advantages of the quantification methods consists of providing first estimates for quantitative variables yet to be disclosed, based on the results of monthly qualitative surveys, we analysed the one-step forecasts resulting from using the MPR with fixed and dynamic parameters, for the period running from the first quarter of 1996 and the third quarter of 1997[(10)].

(10) The year-on-year real rates of change of external demand for 1997 are subject to revisions.

Chart 3
EXTERNAL DEMAND FORECASTS



The MPR with dynamic parameters yielded better forecasts, presenting a 1.75 p.p. square root of the mean quadratic prediction error, while in the fixed-parameter case this statistic was of 2.1 p.p.. As shown in chart 3, the forecasts obtained through the simple MPR are clearly biased, unlike the MPR estimated through the Kalman filter. However, the dynamic MPR always “misses” the sign of the change of the year-on-year rate of change of external demand — i. e., every time an acceleration took place, the predictor anticipated a slowdown, and vice-versa. Nevertheless, we can conclude that the MPR estimated using the Kalman filter provides better predictors of external demand.

The application of quantification methods allows not only to obtain quantitative indicators from responses to qualitative surveys, but also to infer about the behaviour of the respondents in relation to the questions that are asked. When applying the MPR with dynamic parameters to the quantification of external demand, the estimated average rates of change within each group of answers were 27.7 per cent, 7.7 per cent and -13.7 per cent in the last quarter of 1996, for the respondents answering to “above normal”, “normal” and “below normal”, respectively. On average, the respondents indicating “normal” recorded a quite positive change, while the changes of “above normal” answers are greater than those of “below normal” answers, in absolute value. This situation is understandable, since this is a variable which almost always exhibits positive rates of change. In these cases, the respondents tend to indicate the situation is normal when in fact what is being recorded is a growth. However, the average rate of variation of “normal” answers is greater than the year-on-year average rate of change of external demand (5.6 per cent). This means that individuals report a stable behaviour not only due to the “historical” growth of external demand, but also due to a certain pessimism.

These results evidence the main drawbacks of the balance of respondents as an indicator for economic agents’ perception of the behaviour of their activities. The balance of respondents disregard the proportion of “normal” responses that, as we have seen, indicate a growth in external demand. An analysis based upon balances of respondents builds on the assumption that all extreme answers should be weighted equally, which is also untrue since on average the rates associated to “above normal” answers are greater (in absolute value) than those associated to “below normal” answers.

The estimates for the parameters show that equal changes in the proportions of both extreme responses — yielding no impact on the balance — indicate that on average the change respondents face is not null. Considering the estimates of each parameter for the last quarter of 1994 (25.16 per cent, 9.28 per cent and -15.97 per cent), if the proportions of both extreme answers rose 1 per cent (hence reducing “normal” answers by 2 per cent), the year-on-year rate of change of the external demand for goods and services would decrease by about 0.1 p.p.. If in turn 1 per cent of respondents change their answer from “below normal” to “normal”, the year-on-year rate of change of the reference value records a greater revision (0.25 p.p.) than if this same proportion of respondents change their answer from “above normal” to “normal” (-0.16 p.p.)[11].

(11) Changes in the proportions of the responses that leave the balance unchanged do not always imply changes in the estimates for the reference variable. Only when $\theta_2 = (\theta_1 + \theta_3)/2$, or a similar relationship holds do identical changes in the proportion of extreme answers yield null or negligible changes in the reference variable.

5. CONCLUSIONS

This article presents a method of estimation of the change in external demand using qualitative surveys on economic activity. The main conclusions are the following:

— the results of the qualitative surveys on external demand fit well the real year-on-year rate of change of external demand for goods and services;

— the answers on external demand of the ICIT provide an advanced indicator of the year-on-year rate of change of quarterly external demand, since the better results in quantification were achieved when quarterly aggregating the results of the 1-month lagged survey;

— the method based on the direct utilisation of the proportion of answers, with the parameters following a random walk, proved better than the constant parameter method as regards one of the major functions of quantification methods — short-term prediction of the reference quantitative variable. This is an important function, as quantitative variables are usually disclosed with considerable delay from the periods to which they refer;

— the balance of respondents has some drawbacks as an indicator of the behaviour of external demand. Responses indicating a "normal" order book indicate on average an increase. "Over normal" responses represent a change which is in absolute value greater than "below normal" responses. These facts reveal that economic agents are somewhat pessimistic in the appraisal of their external order book.

REFERENCES

Batchelor, R. A. (1982), Expectations Output and Inflation: The European Experience", *European Economic Review*, 17.

Batchelor, R. A. and Orr, A. B. (1987), "Inflation Expectations Revisited", *Economica*, 55.

Carlson, J.A. and Parkin, M. (1975), "Inflation Expectations", *Economica*, 42.

Cunningham, A. (1997), "Quantifying Survey Data", Bank of England *Quarterly Bulletin*, August 1997.

Dasgupta, S. and Lahiri, K. (1992), "A Comparative Study of Alternative Methods of Quantifying Qualitative Survey Responses Using NAPM Data", *Journal of Business & Economic Statistics*, vol 10.

Dasgupta, S. and Lahiri, K. (1993), "On the Use of Dispersion Measures from NAPM Surveys Business Cycle Forecasting", *Journal of Forecasting*, vol 12.

Rahiala, M. and Teräsvirta,T. (1993), "Business Survey Data in Forecasting the Output of Swedish and Finnish Metal and Engineering Industries: A Kalman Filter Approach", *Journal of Forecasting*, vol 12.

Soares, M. C. (1993), "Indicadores Quantitativos a partir de Respostas Qualitativas: Evolução das Exportações em Volume", *Boletim Trimestral.*

January

- ***9 January***

  The liquidity draining rate and the daily facility rate remained unchanged at 4.9 and 6.9 per cent, respectively.
  The repo rate of Banco de Portugal remained at 5.3 per cent.

- ***9 January***

  The liquidity draining rate and the daily facility rate of the Banco de Portugal remained unchanged at 4.9 and 6.9 per cent, respectively.
  The repo rate remained at 5.3 per cent.

- ***19 January***

  The liquidity draining rate and the daily facility rate of the Banco de Portugal were cut by 0.1 percentage point, to 4.8 and 6.8 per cent, respectively.
  The repo rate was lowered by 0.1 percentage point to 5.1 per cent.

- ***31 January (Law no. 5/98, Official Gazette no. 26/98, Series I, A)***

  Introduces changes in the Organic Law of Banco de Portugal with a view to its integration in the European System of Central Banks.

- ***2 February (Circular Letter of the Banco de Portugal no. 3/DOC)***

  Announces that the rate of return on the certificates of deposit, Series B, is fixed at 4.3 per cent, effective from the quarter started on 4 February.

- ***3 February (Law no. 7/98, Official Gazette no. 28/98, Series I, A)***

  Regulates the general framework governing the issue and management of the public debt.

- ***4 February (Notice no. 1741-C/98, Official Gazette no. 29/98, Series II, 2nd Supplement***

  Regulates the legal framework governing uncovered cheques, approved by Decree-Law no. 454/91 of 28 December, following the changes introduced in this decree by Decree-Law no. 316/97 of 19 November.

- ***11 February (Rule no. 17/97-R, Official Gazette no. 35/98, Series III***

  Discloses the figures on the 1997 fiscal year, to be reported to Instituto de Seguros de Portugal (Portuguese Insurance Institute) by insurance companies having their head office in Portugal (joint-stock companies and insurance mutual companies), branches of insurance companies having their head office outside the territory of the European Union, complementary groupings of undertakings and pension fund managing companies. Revokes Rule no. 22/96-R of 19 December.

February

- ***13 February (Regulation no. 1/98 of the Stock Market Commission, Official Gazette no. 37/98, Series II)***

  Sets forth the conditions regarding the registration of financial intermediaries for the carrying out of intermediation activities in transferable securities.

- ***20 February (Circular Letter of the Banco de Portugal no. 5/98/DSBRE)***

  Informs credit institutions and financial companies that the accounting and prudential data to be reported to the Banking Supervision Department of the Banco de Portugal, from 1 January 1999 onwards, shall be denominated in euro, by means of the conversion of original data.

- ***25 February (Notice no. 1/98, Official Gazette no. 47/98, Series I, B)***

  Sets at 5 per cent the discount rate of the Banco de Portugal.

- ***25 February (Circular Letter of the Banco de Portugal no. 8/98/DSBRE)***

  Fixes the intangible assets and the costs that credit institutions and financial companies (where applicable) shall take into account in the calculation of own funds, both on a consolidated and a non-consolidated basis. Revokes Circular Letter no. 77/M/DSB of 14 December 1994.

- ***25 February (Circular Letter of the Banco de Portugal no. 6/DCP***

  Following the decisions taken at Community level on the programme for the changeover to the euro, discloses the decisions adopted by the Board of Directors of the Banco de Portugal regarding the accounting procedures related to the introduction of the euro in the information systems of the Portuguese Banking System.

- ***26 February*** The liquidity draining rate and the daily facility rate of the Banco de Portugal were cut by 0.2 percentage point to 4.6 and 6.6 per cent, respectively. The repo rate was lowered by 0.2 percentage point to 4.9 per cent.

March

- ***18 March*** The liquidity draining rate and the daily facility rate of the Banco de Portugal were cut by 0.2 percentage point to 4.4 and 6.4 per cent, respectively. The repo rate was lowered by 0.2 percentage point to 4.7 per cent.

- ***27 March (Rule no. 2/98-R, Official Gazette no. 73/98, Series III)*** Sets forth a set of rules on the calculation and constitution of the solvency margin and the guarantee fund of firms and insurance companies. Revokes rules no. 27/95-R of 14 December and no. 4/98-R of 20 February.

- ***27 March (Rule no. 3/98-R, Official Gazette no. 73/98, Series III)*** Sets forth a set of rules on the calculation and constitution of the solvency margin and the guarantee fund of the pension fund managing companies. Revokes rules no. 28/95-R of 14 December and no. 5/97 of 20 February, without retaining no. 61 of Rule no. 298/91 of 13 November, previously revoked.

April

- ***3 April (Decree-Law no. 85/98, Official Gazette no. 79/98, Series I, A)*** Approves the designs of the national face of the 1 and 2 euro coins and of the 50, 20, 10, 5, 2 and 1 cent coins.

- ***11 April (Notice no. 2/98, Official Gazette no. 85/98, Series I, B)*** Revokes Notice no. 11/90, published in the Official Gazette no. 207, Series I, of 7 September 1990, which established that institutions subject to the supervision of the Banco de Portugal should observe the ceilings set on the underwriting of securities and on the indirect subscription of shares.

- ***17 April (Decree-Law no. 94-B/98, 2nd Supplement to Official Gazette no. 90/98, Series I, A)*** Regulates the conditions of access to and carrying out of insurance and re-insurance activities in the European Community territory, including those carried out within the international scope of off-shore centres. Revokes Decree-Laws nos. 91/82, of 22 March, 133/86, of 12 June, 107/88, of 31 March and 102/94, of 20 April.

- ***27 April (Circular Letter of the Banco de Portugal no. 14/DOC)*** Fixes at 4 per cent the rate of remuneration of Certificates of Deposit, Series B, applicable in the quarter started on 4 May.

May

- ***5 May*** The liquidity draining rate and the daily facility rate remain unchanged at 4.4 and 6.4 per cent, respectively.
  The weighted average repo rate of the Banco de Portugal remains unchanged at 4.7 per cent.

- ***12 May*** The Banco de Portugal cut the liquidity draining rate and the daily facility rate by 0.2 p.p. to 4.2 and 6.2 per cent, respectively.
  The weighted average repo rate of the Banco de Portugal was also cut by 0.2 p.p. to 4.5 per cent.

- ***15 May (Executive Order no. 476/98, Official Gazette no. 112/98, Series II)*** Under no. 8 of article 411 of the Stock Market Code, as amended by Decree-Law no. 196/95 of 29 July and Decree-Law no. 232/96 of 5 December, authorises the Association of the Oporto Derivatives Stock Exchange to provide integrated registration, clearing and settlement services of loan operations on domestic or foreign transferable securities and money-market instruments, and to play the role of counterpart in the said operations.

- ***16 May (Decree-Law no. 138/98, Official Gazette no. 113/98, Series I, A)***

  Lays down fundamental rules to be complied with in the process of transition to the euro, supplementing the relevant provisions of the Community law.

- ***20 May (Executive Order no. 487/98, Official Gazette no. 116/98, Series II)***

  Amends the wording of no. 3 of Executive Order no. 291/96 of 23 December with the purpose of promoting the widening of the scope of the authorisation granted to the registration services of repurchase agreements concluded with natural persons.

- ***21 May (Decree-Law no. 117/98, Part A, Series III, Third Supplement)***

  Publishes the Annual Report and Accounts of the Banco de Portugal, E.P. for the year 1997.

- ***21 May (Circular Letter of Banco de Portugal no. 19/98/DSBDR)***

  Clarifies the way of calculating and gives information on the disclosure of the "annual effective rate" (Portuguese acronym: TAE), referred to in Decree-Law no. 220/94 of 23 August.

- ***27 May (Regulation no. 5/98 of the Stock Market Commission, Official Gazette no. 122/98, Series II)***

  Pursuant to the provisions of article 14, no. 1, a) of the Stock Market Code and for the purposes laid down in article 5, no. 6 of Decree-Law no. 294/95 of 17 November, fixes the quantitative limits on risk concentration of real estate investment trusts inherent in the signing of lease contracts, whose counterpart is the same entity or associated entities.

June

- ***9 June***

  The liquidity draining rate and the daily facility rate of the Banco de Portugal remain unchanged at 4.2 and 6.2 per cent, respectively.
  The repo rate remains unchanged at 4.5 per cent.

- ***24 June Regulation no. 7/98 of the Stock Market Commission, Official Gazette no. 143/98, Series II***

  Pursuant to the provisions of article 14, no. 1, a) and b) of the Stock Market Code and for the purposes set forth in article 35, no. 2 of Decree-Law no. 276/94 of 2 November, lays down the rules governing the publication of information by transferable securities investment trusts. Revokes Regulation no. 95/2 of 8 May 1995 of the Stock Market Commission.

- ***25 June Decree-Law no. 166/98, Official Gazette no. 144/98, Series I, A***

  Creates the internal control system of the State financial administration (Portuguese acronym: *SCI*).

July

- ***7 July Resolution of the Council of Ministers no. 81/98, Official Gazette no. 154/98, Series I, B***

  Authorises the Public Credit Management Institute to issue, on behalf and as representative of the Republic, short-term domestic loans, denominated in escudos and represented by special short-term debt certificates (Portuguese acronym: *CEDIC*), for the purpose of enabling the financing of the State borrowing requirements through the placement of the cash surpluses held by General Government bodies. Sets at 500 billion escudos the maximum amount of outstanding *CEDIC*.

- ***8 July Decree-Law no. 187/98, Official Gazette no. 155/98, Series I, A***

  Provides for the concerted action between the means of payment of the Treasury and the new interbank clearing system (Portuguese acronym: *SICOI*), taking into consideration the introduction of the euro. Rewords articles nos. 3 and 4 of Decree-Law no. 371/91 of 8 October. This decree-law takes effect from 1 May 1998 onwards.

- ***13 July***

  The liquidity draining rate and the daily facility rate of the Banco de Portugal remain unchanged at 4.2 and 6.2 per cent, respectively.
  The repo rate remains unchanged at 4.5 per cent.

- ***16 July (Decree-Law no. 211/98, Official Gazette no. 162/98, Series I, A)***

  Regulates the activity of Mutual Guarantee Schemes (Portuguese acronym: SGM). This Decree-Law shall take effect on 1 August 1998.

• ***17 July (Regulation no. 8/98 of the Stock Market Commission, Official Gazette no. 163/98, Series II)***	Introduces changes in the wording of article 14 of Regulation no. 97/04 of 20 March, relative to the services of repo operations (repurchase agreements) carried out by the Oporto Derivatives Exchange.
• ***17 July (Regulation no. 9/98 of the Stock Market Commission, Official Gazette no. 163/98, Series II)***	Lays down the rules governing the integrated registration, clearing and settlement services of credit operations in transferable securities and money market instruments carried out by the Oporto Derivatives Exchange, whether or not the latter is a counterparty in the said operations.
• ***22 July (Decree-Law no. 229/98, Official Gazette no. 167/98, Series I, A)***	Creates the Mutual Counter-guarantee Fund, whose purpose is to guarantee the observance of obligations by Mutual Guarantee Schemes the activity of which is regulated by Decree-Law no. 211/98, of 16 July. The entity managing this Fund is the *SPGM - Sociedade de Investmento, SA*.
• ***22 July (Decree-Law no. 230/98, Official Gazette no. 167/98, Series I, A)***	Redefines the activity framework of risk capital and entrepreneurial development companies. Rewords articles nos. 6 to 8, 12 and 13 of Decree-Law no. 433/91, of 7 November.
• ***24 July Decision no. 12765/98, Official Gazette no. 169/98, Series II***	Stipulates a set of guidelines applicable to the actual utilisation of the euro by the public sector during the transitional period.
• ***29 July (Circular Letter of the Banco de Portugal no. 22/DOC)***	Informs that the revisions of the Credit Facilities Manual are suspended and that this Manual shall be discontinued by the end of the present year. As regards credit operations to agriculture, livestock and fishing, the IFADAP shall continue to issue and codify the respective credit lines.

August

• ***3 August (Circular Letter of the Banco de Portugal no. 24/DOC)***	Fixes at 3.8 per cent the rate of remuneration of Certificates of Deposit, Series B, applicable in the quarter started on 4 August 1998.
• ***6 August (Law no. 42/98, Official Gazette no. 180/98, Series I, A)***	Approves the new Local Finance Law (financial system governing municipalities and civil parishes). Revokes Law no. 1/87 of 6 January and article no. 10 of Law no. 23/97, of 2 July. The present law becomes effective on 1 January 1999.
• ***19 August***	The liquidity draining rate and the daily facility rate of the Banco de Portugal remain unchanged at 4.2 and 6.2 per cent, respectively. The repo rate remains unchanged at 4.5 per cent.
• ***20 August (Regulation no. 10/98 of the Stock Market Commission, Official Gazette no. 191/98, Series II)***	Lays down the rules governing repo operations and security lending, carried out on behalf of transferable securities investment trusts by their managing bodies. Revokes Regulation no. 14/97 of 8 October.
• ***20 August (Regulation no. 11/98 of the Stock Market Commission, Official Gazette no. 191/98, Series II)***	Lays down a set of rules governing the quarterly reporting of data on the activity, results and economic and financial situation of all companies with shares listed on the official stock exchange market. This Regulation takes effect on 1 October 1998.
• ***25 August (Regulation no. 12/98 of the Stock Market Commission, Official Gazette no. 195/98, Series II)***	Lays down rules governing the training and empowerment of the agents intervening in spot stock exchange operations.
• ***25 August (Regulation no. 13/98 of the Stock Market Commission, Official Gazette no. 195/98, Series II)***	Introduces changes in the procedures relating to the negotiation of bonds and participating bonds. Amends the wording of articles 6, 11, 18 and 32 as well as of the annexes I to X of Regulation no. 91/10 of 5 September. This Regulation takes effect on 2 November 1998, except for the amendments introduced in article 18 and in annex I, which take effect on 14 September 1998.

September

- ***3 September (Regulation no. 14/98 of the Stock Market Commission, Official Gazette no. 203/98, Series II)***

  Lays down the rules governing the carrying out of OT-10 futures stock exchange operations and three-month futures (Lisbor rate). Rewords no. 1 of Regulation no. 96/5 and no. 1 of Regulation no. 96/11.

- ***17 September (Decree-Law no. 279/98, Official Gazette no. 215/98, Series I, A)***

  Lays down the legal system governing Treasury bills. Revokes Law no. 20/85 of 26 July, except for the provisions relating to the exemption from the gift and inheritance tax set forth in article 6, as well as Decree-Law no. 321-A/85 of 5 August. Until the entry into force of the Instructions of the Public Credit Management Institute, which will define the system governing the registration, settlement and transmission of Treasury bills, the Instructions approved by the Banco de Portugal on the operation of the Treasury bill market remain in force.

- ***17 September (Decree-Law no. 280/98, Official Gazette no. 215/98, Series I, A)***

  Lays down the legal system governing Treasury bonds. Revokes Decree-Law no. 367/87 of 27 November, as worded by Decree-Law no. 11/92 of 4 February and Decree-Law no. 5-A/94 of 11 January, as well as Decree-Law no. 163/90 of 23 May and Executive Order no. 32-A/94 of 11 January. This Decree-Law shall not be applicable to the Resolutions of the Council of Ministers that approve the contracting of loans during the current fiscal year nor shall it affect the conditions of the loans already raised or to be raised during the same period.

- ***18 September***

  The liquidity draining rate and the daily facility rate of the Banco de Portugal remain unchanged at 4.2 and 6.2 per cent, respectively.
  The repo rate remains unchanged at 4.5 per cent.

October

- ***1 October (Executive Order no. 1010/98, Official Gazette no. 227/98, Series II)***

  Under the provisions laid down in paragraph 1 of article 96 of the Legal System of Credit Institutions and Financial Companies, approved by Decree-Law no. 298/92 of 31 December, rewords no. 1 of Executive Order no. 95/94 of 9 February, which fixed the minimum capital stock of credit institutions and financial companies. It also fixes the minimum capital stock of mutual guarantee companies.

- ***12 October***

  The liquidity draining rate and the daily facility rate of the Banco de Portugal were cut by 0.5 percentage points, to 3.7 and 5.7 per cent, respectively.
  The repo rate was also cut by 0.5 percentage points, to 4 per cent.

- ***8 October (Regulation no. 17/98 of the Stock Market Commission, Official Gazette no. 242/98, Series II)***

  Regulates the listing process on the official stock exchange of shares issued by entities which have their registered office outside the national territory, as well the reporting requirements and the control system to which the said shares are subject.

- ***12 October (Circular Letter of the Banco de Portugal no. 29/98/DSBGA)***

  Stipulates that the lender in securities lending operations, for the purposes of the calculation of the own funds for the coverage of credit risks, must weigh the amount of the transferable securities sold by the risk coefficient of the respective issuer; it further stipulates that, for the same purpose, the borrower must weigh the value of the securities pledged as collateral by the risk coefficient of the respective issuer; this Circular Letter also stipulates that the risk coefficient assigned to the Oporto derivatives stock exchange will be 20 per cent.

November

- ***2 November (Circular Letter of the Banco de Portugal no. 327/DOC)***

  Fixes at 3.4 per cent the rate of remuneration of Certificates of Deposit, Series B, applicable in the quarter started on 4 November 1998.

- ***3 November (Resolution of the Council of Ministers no. 128/98; Official Gazette no. 254/98, Series I)*** — Approves the co-operation integrated budget for 1999.

- ***4 November*** — The Banco de Portugal cut the liquidity draining rate and the daily facility rate by 0.2 percentage point to 3.5 and 5.5 per cent, respectively.
  The repo rate was cut by 0.25 percentage point to 3.75 per cent.

- ***6 November (Notice of the Banco de Portugal no. 3/98, Official Gazette no. 257/98, Series I, B)*** — Fixes at 4.25 per cent the discount rate of the Banco de Portugal, amending accordingly no. 1 of Notice no. 3/93 of 20 May.

- ***6 November (Decree-Law no. 343/98, Official Gazette no. 257/98, Series I, A)*** — Adapts several regulations of the national law to the replacement of the escudo with the euro.

- ***9 November (Decree-Law no. 345/98, Official Gazette no. 259/98, Series I, A)*** — Regulates the operation of the Agricultural Credit Guarantee Fund, a public-law juridical person, with administrative and financial autonomy, operating at the premises of the Banco de Portugal. Revokes Decree-Law no. 182/87 of 2 April and Decree-Law no. 322/97 of 26 November.

- ***17 November (Regulation no. 18/98 of the Stock Market Commission, Official Gazette no. 287/98, Series II)*** — Regulation concerning the changeover weekend. Lays down a set of procedures regarding the preparations for the entry into force of the euro in the Stock Markets, namely the closing of the Stock Markets and of the Special Market for Wholesale Transactions on 31 December 1998.

- ***23 November (Circular Letter of the Banco de Portugal no. 32/98 DSBRE)*** — Clarifies some accounting issues regarding the introduction of the euro from 1 January 1999 onwards, for the purpose of implementing the Chart of Accounts of the Banking System.

- ***26 November (Regulation no. 19/98 of the Stock Market Commission, Official Gazette no. 287/98, Series II)*** — Fixes the transaction fees of stock exchange futures contracts. Revokes Regulations nos. 96/05, 96/11, 97/08, 97/12 and 4/98.

- ***27 November (Circular Letter of the Banco de Portugal no. 36/DOC)*** — Discloses the list of the institutions which will be subject, in Portugal, to the minimum reserve system of the European System of Central Banks, from 1 January onwards.

- ***27 November (Executive Order no. 1004-A/98, Official Gazette no. 275/98, Series I B, Supplement)*** — Provides for the redenomination, which takes effect on 1 January 1999, of fixed-rate and variable-rate Treasury bonds, as well as of euro-bonds denominated in Deutsche Marks and French francs. It also provides for the non-redenomination of Treasury bills maturing in 1999.

December

- ***3 December*** — The Banco de Portugal cut the liquidity draining rate and the daily facility rate by 0.75 percentage point to 2.75 and 4.75 per cent, respectively.
  The repo rate was also cut by 0.75 percentage point to 3 per cent.

- ***16 December*** — The liquidity draining rate and the daily facility rate of the Banco de Portugal remain unchanged at 2.75 and 4.75 per cent, respectively.
  The repo rate also remains unchanged at 3 per cent.

- ***19 December (Notice of the Banco de Portugal no. 4/98, Official Gazette no. 292/98, Series II, B)*** — Sets at 3.25 per cent the discount rate of the Banco de Portugal, which shall prevail until 31 December 1998.

- ***22 December (Instruction no. 2-A/98, Official Gazette no. 294/98, Series II, Supplement)*** — Lays down the rules governing the issue of Treasury bonds, namely, the access to and the operation of the respective primary market.

- ***23 December (Regulation no. 23/98 of the Stock Market Commission, Official Gazette no. 295/98, Series II, Supplement)*** Introduces changes in article 11 (recent quotation, maximum and minimum changes in quotations) and article 29 (bid prices range) of Regulation no. 91/10 of 5 September, so as to adapt it to the entry into force of the euro. This Regulation shall enter into force on 1 January 1999.

- ***23 December (Circular Letter of the Banco de Portugal no. 48/DOC)*** Discloses a set of procedures regarding the transition to the new minimum reserve system of the European System of Central Banks (ESCB).

- ***23 December (Circular Letter of the Banco de Portugal no. 49/DOC)*** Supplies information on the end of reserve requirements as of 1 January 1999, and, therefore, waives the presentation of table D1B.

- ***23 December (Circular Letter of the Banco de Portugal no. 50/DOC)*** Supplies information on the end of reserve requirements as of 1 January 1999, and, therefore, waives the presentation of table D1C.

- ***24 December (Regulation no. 21/98 of the Stock Market Commission, Official Gazette no. 296/98, Series II)*** Introduces changes in articles 2 and 3 (governing commissions or other fees charged by financial intermediaries) of Regulation no. 96/7 of 24 April, so as to adapt it to the entry into force of the euro. This Regulation shall enter into force on 4 January 1999.

- ***28 December (Regulation no. 24/98 of the Stock Market Commission, Official Gazette no. 298/98, Series II, Supplement)*** Pursuant to Decree-Law no. 343/98, of 6 November, article no. 21, and according to the provisions set forth in the Stock Market Code, article 14, no. 1 a) and b), article 76, no.3, article 96, article 407, no. 1, article 437, no.4 and article 461, no. 1, this Regulation lays down a set of rules regarding the redenomination of transferable securities integrated in a central securities depository. This Regulation shall enter into force on 1 January 1999.

- ***29 December (Circular Letter of the Banco de Portugal no. 64/98/DCP)*** Explains the procedures to be followed by credit institutions as regards cheques in escudos with date of issue after 31 December 2001, pursuant to the provisions laid down in Council Regulation (EC) no. 974/98, of 3 May.

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.

WORKING PAPERS

PRODUTO POTENCIAL, DESEMPREGO E INFLAÇÃO EM PORTUGAL
Um estudo para o período 1974-1989
— Carlos Robalo Marques

INFLAÇÃO EM PORTUGAL
Um estudo econométrico para o período 1965-1989, com projecções para 1990 e 1991
— Carlos Robalo Marques

THE EFFECTS OF LIQUIDITY CONSTRAINTS ON CONSUMPTION BEHAVIOUR
The Portuguese Experience
— Sílvia Luz

LOW FREQUENCY FILTERING AND REAL BUSINESS CYCLES
— Robert G. King, Sérgio T. Rebelo

GROWTH IN OPEN ECONOMIES
— Sérgio Rebelo

DYNAMIC OPTIMAL TAXATION IN SMALL OPEN ECONOMIES
— Isabel H. Correia

EXTERNAL DEBT AND ECONOMIC GROWTH
— Isabel H. Correia

BUSINESS CYCLES FROM 1850 TO 1950: NEW FACTS ABOUT OLD DATA
— Isabel H. Correia, João L. Neves, Sérgio Rebelo

LABOUR HOARDING AND THE BUSINESS CYCLE
— Craig Burnside, Martin Eichenbaum, Sérgio Rebelo

ANALYSIS OF FOREIGN DIRECT INVESTMENT FLOWS IN PORTUGAL USING PANEL DATA
— Luísa Farinha

INFLATION IN FIXED EXCHANGE RATE REGIMES:
THE RECENT PORTUGUESE EXPERIENCE
— Sérgio Rebelo

TERM STRUCTURE OF INTEREST RATES IN PORTUGAL
— Armindo Escalda

AUCTIONING INCENTIVE CONTRACTS: THE COMMON COST CASE
— Fernando Branco

INDEXED DEBT AND PRODUCTION EFFICIENCY
— António S. Mello, John Parsons

"TESTING " FOR MEAN AND VARIANCE BREAKS WITH DEPENDENT DATA
— José A. F. Machado

COINTEGRATION AND DYNAMIC SPECIFICATION
— Carlos Robalo Marques

FIRM GROWTH DURING INFANCY
— José Mata

THE DISTRIBUTION OF HOUSEHOLD INCOME AND EXPENDITURE IN PORTUGAL: 1980 and 1990
— Miguel Gouveia, José Tavares

THE DESIGN OF MULTIDIMENSIONAL AUCTIONS
— Fernando Branco

MARGINAL INCOME TAX RATES AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES
— Sérgio Rebelo, William Easterly

THE EFFECT OF DEMAND AND TECHNOLOGICAL CONDITIONS ON THE LIFE EXPECTANCY OF NEW FIRMS
— José Mata, Pedro Portugal

TRANSITIONAL DYNAMICS AND ECONOMIC GROWTH IN THE NEOCLASSICAL MODEL
— Robert G. King, Sérgio Rebelo

AN INTEGRATED MODEL OF MULTINATIONAL FLEXIBILITY AND FINANCIAL HEDGING
— António S. Mello, Alexander J. Triantis

CHOOSING AN AGGREGATE FOR MONETARY POLICY: A COINTEGRATION APPROACH
— Carlos Robalo Marques, Margarida Catalão Lopes

INVESTMENT: CREDIT CONSTRAINTS, REGULATED INTEREST RATES AND EXPECTATIONS OF FINANCIAL LIBERALIZATION – THE PORTUGUESE EXPERIENCE
— Koleman Strumpf

SUNK COSTS AND THE DYNAMICS OF ENTRY
— José Mata

POLICY, TECHNOLOGY ADOPTION AND GROWTH
— William Easterly, Robert King, Ross Levine, Sérgio Rebelo

OPTIMAL AUCTIONS OF A DIVISIBLE GOOD
— Fernando Branco

EXCHANGE RATE EXPECTATIONS IN INTERNATIONAL OLIGOLOPY
— Luís Cabral, António S. Mello

A MODEL OF BRANCHING WITH AN APPLICATION TO PORTUGUESE BANKING
— Luís Cabral, W. Robert Majure

HOW DOES NEW FIRM SURVIVAL VARY ACROSS INDUSTRIES AND TIME?
— José Mata, Pedro Portugal

DO NOISE TRADERS “CREATE THEIR OWN SPACE”?
— Ravi Bhushan, David P. Brown, António S. Mello

MARKET POWER MEASUREMENT – AN APPLICATION TO THE PORTUGUESE CREDIT MARKET
— Margarida Catalão Lopes

CURRENCY SUBSTITUTABILITY AS A SOURCE OF INFLATION DISCIPLINE
— Pedro Teles

BUDGET IMPLICATIONS OF MONETARY COORDINATION IN THE EUROPEAN COMMUNITY
— Pedro Teles

THE DETERMINANTS OF FIRM START-UP SIZE
— José Mata

FIRM START-UP SIZE: A CONDITIONAL QUANTILE APPROACH
— José Mata, José A. F. Machado

FISCAL POLICY AND ECONOMIC GROWTH: AN EMPIRICAL INVESTIGATION
— William Easterly, Sérgio Rebelo

BETA ESTIMATION IN THE PORTUGUESE THIN STOCK MARKET
— Armindo Escalda

SHOULD CAPITAL INCOME BE TAXED IN THE STEADY STATE?
— Isabel H. Correia

BUSINESS CYCLES IN A SMALL OPEN ECONOMY
— Isabel H. Correia, João C. Neves, Sérgio Rebelo

OPTIMAL TAXATION AND CAPITAL MOBILITY
— Isabel H. Correia

A COMPOSITE COINCIDENT INDICATOR FOR THE PORTUGUESE ECONOMY
— Francisco Craveiro Dias

PORTUGUESE PRICES BEFORE 1947: INCONSISTENCY BETWEEN THE OBSERVED COST OF LIVING INDEX AND THE GDP PRICE ESTIMATION OF NUNES, MATA AND VALÉRIO (1989)
— Paulo Soares Esteves

EVOLUTION OF PORTUGUESE EXPORT MARKET SHARES (1981-91)
— Cristina Manteu, Ildeberta Abreu

PROCUREMENT FAVORITISM AND TECHNOLOGY ADOPTION
— Fernando Branco

WAGE RIGIDITY AND JOB MISMATCH IN EUROPE: SOME EVIDENCE
— Sílvia Luz, Maximiano Pinheiro

A CORRECTION OF THE CURRENT CONSUMPTION INDICATOR – AN APPLICATION OF THE INTERVENTION ANALYSIS APPROACH
— Renata Mesquita

PORTUGUESE GDP AND ITS DEFLATOR BEFORE 1947: A REVISION OF THE DATA PRODUCED BY NUNES, MATA AND VALÉRIO (1989)
— Carlos Robalo Marques, Paulo Soares Esteves

ECCHANGE RATE RISK IN THE EMS AFTER THE WIDENING OF THE BANDS IN AUGUST 1993
— Joaquim Pires Pina

FINANCIAL CONSTRAINTS AND FIRM POST-ENTRY PERFORMANCE
— Paulo Brito, António S. Mello

STRUCTURAL VAR ESTIMATION WITH EXOGENEITY RESTRICTIONS
— Francisco C. Dias, José A. F. Machado, Maximiano R. Pinheiro

TREASURY BILL AUCTIONS WITH UNINFORMED BIDDERS
— Fernando Branco

AUCTIONS OF SHARES WITH A SECONDARY MARKET AND TENDER OFFERS
— António S. Mello, John E. Parsons

MONEY AS AN INTERMEDIATE GOOD AND THE WELFARE COST OF THE INFLATION TAX
— Isabel Correia, Pedro Teles

THE STABILITY OF PORTUGUESE RISK MEASURES
— Armindo Escalda

THE SURVIVAL OF NEW PLANTS: START-UP CONDITIONS AND POST-ENTRY EVOLUTION
— José Mata, Pedro Portugal, Paulo Guimarães

MULTI-OBJECT AUCTIONS: ON THE USE OF COMBINATIONAL BIDS
— Fernando Branco

AN INDEX OF LEADING INDICATORS FOR THE PORTUGUESE ECONOMY
— Francisco Ferreira Gomes

IS THE FRIEDMAN RULE OPTIMAL WHEN MONEY IS AN INTERMEDIATE GOOD?
— Isabel Correia, Pedro Teles

HOW DO NEW FIRM STARTS VARY ACROSS INDUSTRIES AND OVER TIME?
— José Mata

PROCUREMENT FAVORITISM IN HIGH TECHNOLOGY
— Fernando Branco

MARKETS, ENTREPRENEURS AND THE SIZE OF NEW FIRMS
— José Mata

CONVERGENCE ACROSS EU COUNTRIES: INFLATION AND SAVINGS RATES ON PHYSICAL AND HUMAN CAPITAL
— Paulo Soares Esteves

THE OPTIMAL INFLATION TAX
— Isabel Correia, Pedro Teles

FISCAL RULES OF INCOME TRANSFORMATION
— Isabel H. Correia

ON THE EFFICIENCY AND EQUITY TRADE-OFF
— Isabel H. Correia

DISTRIBUTIONAL EFFECTS OF THE ELIMINATION OF CAPITAL TAXATION
— Isabel H. Correia

LOCAL DYNAMICS FOR SPHERICAL OPTIMAL CONTROL PROBLEMS
— Paulo Brito

A MONEY DEMAND FUNCTION FOR PORTUGAL
— João Sousa

COMPARATIVE EXPORT BEHAVIOUR OF FOREIGN AND DOMESTIC FIRMS IN PORTUGAL
— Sonia Cabral

PUBLIC CAPITAL ACCUMULATION AND PRIVATE SECTOR PERFORMANCE IN THE U.S.
— Alfredo Marvão Pereira, Rafael Flores de Frutos

IMPORTED CAPITAL AND DOMESTIC GROWTH: A COMPARISON BETWEEN EAST ASIA AND LATIN AMERICA
— Ling-ling Huang, Alfredo Marvão Pereira

ON THE EFFECTS OF PUBLIC AND PRIVATE R&D
— Robert B. Archibald, Alfredo Marvão Pereira

EXPORT GROWTH AND DOMESTIC PERFORMANCE
— Alfredo Marvão Pereira, Zhenhui Xu

INFRASTRUCTURES AND PRIVATE SECTOR PERFORMANCE IN SPAIN
— Alfredo Marvão Pereira, Oriol Roca Sagales

PUBLIC INVESTMENT AND PRIVATE SECTOR PERFORMANCE: INTERNATIONAL EVIDENCE
— Alfredo Marvão Pereira, Norman Morin

COMPETION POLICY IN PORTUGAL
— Pedro P. Barros, José Mata

THE IMPACT OF FOREIGN DIRECT INVESTMENT IN THE PORTUGUESE ECONOMY
— Luísa Farinha, José Mata

THE TERM STRUCTURE OF INTEREST RATES: A COMPARISON OF ALTERNATIVE ESTIMATION METHODS WITH AN APPLICATION TO PORTUGAL
— Nuno Cassola, Jorge Barros Luís

SHORT-AND LONG-TERM JOBLESSNESS: A SEMI-PARAMETRIC MODEL WITH TIME -VARYING EFFECTS
— Pedro Portugal, John T. Addison

SOME SPECIFICATION ISSUES IN UNEMPLOYMENT DURATION ANALYSIS
— Pedro Portugal, John T. Addison

SEQUENTIAL AUCTIONS WITH SYNERGIES: AN EXAMPLE
— Fernando Branco

HEDGING WINNER’S CURSE WITH MULTIPLE BIDS: EVIDENCE FROM THE PORTUGUESE TREASURY BILL AUCTION
— Michael B. Gordy

THE BRICKS OF AN EMPIRE 1415-1999: 585 YEARS OF PORTUGUESE EMIGRATION
— Stanley L. Engerman, João César das Neves

LOCAL DYNAMICS FOR PLANAR OPTIMAL CONTROL PROBLEMS: A COMPLETE CHARACTERIZATION
— Paulo Brito

INTERNATIONAL PORTFOLIO CHOICE
— Bernardino Adão, Nuno Ribeiro

UNEMPLOYMENT INSURANCE AND JOBLESSNESS: A DISCRETE DURATION MODEL WITH MULTIPLE DESTINATIONS
— Pedro Portugal, John T. Addison

THE TREASURY BILL MARKET IN PORTUGAL: INSTITUTIONAL ISSUES AND PROFIT MARGINS OF FINANCIAL INSTITUTIONS
— Bernardino Adão, Jorge Barros Luís

ECONOMETRIC MODELLING OF THE SHORT-TERM INTEREST RATE: AN APPLICATION TO PORTUGAL
— Nuno Cassola, João Nicolau, João Sousa

ESTIMATION OF THE NAIRU FOR THE PORTUGUESE ECONOMY
— Carlos Robalo Marques, Susana Botas

EXTRACTION OF INTEREST RATE DIFFERENTIALS IMPLICIT IN OPTIONS:
THE CASE OF SPAIN AND ITALY IN THE EUROPEAN MONETARY UNION
— Bernardino Adão, Jorge Barros Luís

A COMPARATIVE STUDY OF THE PORTUGUESE AND SPANISH LABOUR MARKETS
— Olympia Bover, Pilar Garcia-Perea, Pedro Portugal

EARNING FUNCTIONS IN PORTUGAL 1982-1994: EVIDENCE FROM QUANTILE REGRESSIONS
— José A. F. Machado, José Mata

WHAT HIDES BEHIND AN UNEMPLOYMENT RATE: COMPARING PORTUGUESE AND US UNEMPLOYMENT
— Olivier Blanchard, Pedro Portugal

UNEMPLOYMENT INSURANCE AND JOBLESSNESS IN PORTUGAL
— Pedro Portugal, John T. Addison

EMU, EXCHANGE RATE VOLATILITY AND BID-ASK SPREADS
— Nuno Cassola, Carlos Santos

CONSUMER EXPENDITURE AND COINTEGRATION
— Carlos Robalo Marques, Pedro Duarte Neves

ON THE TIME-VARYING EFFECTS OF UNEMPLOYMENT INSURANCE ON JOBLESSNESS
— John T. Addison, Pedro Portugal

JOB SEARCH METHODS AND OUTCOMES
— John T. Addison, Pedro Portugal