Banco de Portugal

EUROSYSTEM

Economic Bulletin
Autumn | 2005

Available at
www.bportugal.pt
Publications

Banco de Portugal

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Av. Almirante Reis, 71– 6th floor
1150-012 Lisboa

Distributed by
Administrative Services Department
Av. Almirante Reis, 71– 2nd floor
1150-012 Lisboa

Printed by
ELO – Publicidade, Artes Gráficas

Number of copies printed
650 issues

Legal Deposit no. 86638/95
ISSN 0872-9786

Banco de Portugal

Economic Bulletin

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Volume 11 *Number 3*

Economic policy and situation

THE PORTUGUESE ECONOMY IN 2005

1. INTRODUCTION

The analysis of the Portuguese economy in the current year presented in the autumn edition of the Economic Bulletin is surrounded by a high degree of uncertainty. This uncertainty arises in particular from external trade developments in a context of ongoing structural changes associated with globalisation. The introduction of a new methodology for the compilation of international trade statistics introduces a further element of uncertainty into the analysis. Information currently available points to a growth rate in 2005 below that reported in the summer edition of the Economic Bulletin, reflecting a more unfavourable behaviour of investment and exports. The current estimates also suggest a more marked deterioration of the imbalances of the Portuguese economy.

Gross Domestic Product (GDP) is forecast to increase by 0.3 per cent in 2005, after growing 1.3 per cent in 2004. Consumption, both private and public, will likely be the most buoyant item of global demand. Private consumption is estimated to increase by 1.9 per cent, a rise similar to that forecast for real household disposable income. The general government deficit is expected to reach 6.0 per cent of GDP in 2005 and government debt will increase further, exceeding 65 per cent of GDP at the end of the year. Finally, the net external borrowing requirement of the economy, measured by the joint deficit of the current and capital accounts, is projected to exceed 8 per cent of GDP, corresponding to an increase of more than 2 percentage points (p.p.) vis-à-vis the deficit posted in 2004 (Table 1.1).

Table 1.1

MAIN ECONOMIC INDICATORS

Rates of change[(a)]

Per cent

	2004	2005	*Memo:* *EB* Summer 2005 2005
GDP	1.3	0.3	0.5
Private consumption	2.3	1.9	2.0
Public consumption	2.6	1.1	1.1
GFCF	0.2	-2.8	-1.5
Domestic demand	2.1	0.7	0.9
Exports	5.4	0.7	2.7
Global demand	2.8	0.7	1.3
Imports	6.8	1.7	3.3
Current account + Capital account (%GDP)	-5.9	-8.3	-7.0
Harmonized Index of Consumer Prices	2.5	2.2	2.3

Source: Banco de Portugal.

Note:

(a) Banco de Portugal estimates based on INE's National Accounts (basis 2000) for 1995-2003 period.

The slowdown of economic activity in 2005 reflects a lower contribution of domestic demand to GDP growth, largely associated with the decline in investment, since private consumption growth remained sustained. Exports will also show an unfavourable behaviour, reinforcing the market share losses accumulated over the last decade. However, the contribution of net external demand to GDP growth will likely be less negative than in 2004, as imports should also decelerate sharply in line with lower global demand growth.

Growth estimates for 2005 imply a slight acceleration of economic activity in the second half of the year. The latter reflects a recovery of exports, since domestic demand will probably maintain the decelerating trend started in the second half of 2004.

The absence of a sustained recovery in the Portuguese economy in the wake of the 2003 recession contrasts with the developments observed in the previous business cycles, when falls in economic activity were followed by a clear acceleration of GDP. Compared with the recovery that followed the 1993 recession, recent developments reveal stronger private consumption growth and a far more unfavourable behaviour of gross fixed capital formation (GFCF) and exports.

The higher growth of private consumption in the recent period is associated with the drastic reduction in liquidity constraints due to participation in monetary union and to the liberalisation and financial integration of the Portuguese economy, as well as with the very low level of interest rates prevailing in the euro area. In 2005, these factors continued to support household consumption expenditure. Therefore, in spite of the deterioration in the labour market and of the sharp decline in consumer confidence as from June, private consumption is not expected to decelerate significantly.

The high contribution of exports to the recovery of activity in the previous cycle reflected the ability of the exporting sector to respond to the strong acceleration of external demand, in a context where important export-oriented foreign investment projects had been implemented. Recently, in spite of also significant growth of external demand, the deteriorating competitiveness of the economy has hampered the performance of exports. The deterioration of relative labour costs over the last decade, together with an unfavourable structure of Portuguese exports (characterised by a significant weight of low-tech and low-skill goods) have been particularly penalizing in a context of increased participation of low-cost producers in the world market. In addition, some re-direction of foreign direct investment flows, in particular to the new European Union Member States (countries with better human capital resources, lower wage costs and a more favourable geographical location) is also constraining trade with the European Union countries, particularly in more technology-intensive goods.

Similarly to exports, GFCF also contributed to the recovery in the previous economic cycle. In contrast, in the most recent period, and in spite of very favourable financing conditions, investment did not pick up. After the strong declines observed in 2002 and 2003, GFCF stagnated in 2004 and is projected to fall by around 3 per cent in the current year. This trend has been reflected in a decline in the investment rate of the economy. The weak upturn of economic activity associated with losses in competitiveness, as well as a number of uncertainty factors, are negatively affecting investment decisions in the current cycle. Behind this climate of uncertainty are the trend of the oil price and doubts as to how the imbalances in the economy will be corrected.

Private sector indebtedness is projected to deteriorate further in 2005. Namely, household indebtedness as a percentage of disposable income is estimated to increase 6 p.p. vis-à-vis the figure observed in 2004, which was rather high in international terms. The imbalance in Portuguese public accounts also deteriorated further, in spite of the adjustment measures introduced in the summer. Notwithstanding the strong increase in tax revenue, the underlying budgetary position deteriorated in 2005, reflecting in particular significant growth of pension expenditure and staff costs. The situation of public accounts affected the country's rating, which was downgraded by some of the major rating agencies. This, however, did not translate into a significant increase in the risk premium of government debt.

2. MAJOR INTERNATIONAL ECONOMIC DEVELOPMENTS

International developments in 2005 have been marked by the behaviour of oil prices, which continued on an upward trend, reaching new historical highs. Global economic activity and international trade decelerated from the high pace of growth observed in 2004, but continued to expand at a rate above the average for recent decades. The International Monetary Fund (IMF) September forecasts point to a 4.3 per cent growth of the world economy and to an increase in trade of 7 per cent, with no significant differences from the forecasts published in the spring (Table 2.1). Similarly to developments in recent years, financial markets

Table 2.1

WORLD ECONOMY

Rates of change

Per cent

	2003	2004	2005
GDP			
World economy	4.0	5.1	4.3
Advanced economies	1.9	3.3	2.5
US	2.7	4.2	3.5
Euro area[a]	0.7	1.8	1.2
Germany	-0.2	1.1	0.8
France	0.9	2.1	1.5
Italy	0.4	1.0	0.0
Spain	3.0	3.1	3.2
Portugal[b]	-1.2	1.3	0.3
Japan	1.4	2.7	2.0
United Kingdom	2.5	3.2	1.9
Newly industrialized Asian economies[c]	3.1	5.6	4.0
Emerging market and developing economies	6.5	7.3	6.4
Central and Eastern Europe [d]	4.6	6.5	4.3
Developing Asian countries	8.1	8.2	7.8
China	9.5	9.5	9.0
India	7.4	7.3	7.1
ASEAN-4[e]	5.4	5.8	4.9
Latin America	2.2	5.6	4.1
Middle East	6.5	5.5	5.4
Commonwealth of independent states	7.9	8.4	6.0
Africa	4.6	5.3	4.5
Memo:			
Asian emerging market economies[f]	7.5	7.9	7.3
Trade volumes of goods and services	5.4	10.3	7.0
International commodity prices in USD			
Oil	15.8	30.7	43.6
Non-energy commodities	6.9	18.5	8.6
Consumer prices			
Advanced economies	1.8	2.0	2.2
Emerging market and developing economies	6.0	5.8	5.9

Sources: Eurostat, IMF, *INE* and Banco de Portugal.

Notes:

(a) The figures for the euro area and for the four major economies relating to 2003 and 2004 are seasonally and working-day adjusted.

(b) *INE*'s National Accounts for 2003 and Banco de Portugal estimates for 2004 and 2005.

(c) Korea, Kong-Kong, Taiwan and Singapore.

(d) Bulgaria, Romania and the ten countries that joined European Union in May 2004 (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia).

(e) Indonesia, Malaysia, Philippines and Thailand.

(f) Includes developing Asian countries, the newly industrialised Asian economies and Mongolia.

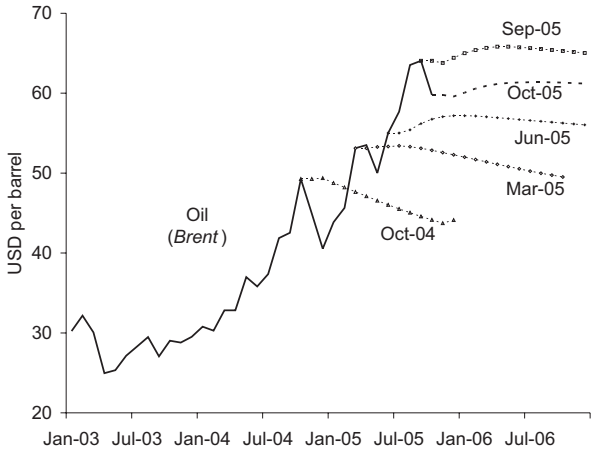
continued to perform favourably and macroeconomic policies remained accommodative in the major economies. In turn, notwithstanding a further deterioration of the US current account, the depreciating trend of the dollar came to a halt, and the US currency strengthened considerably vis-à-vis the euro.

Against this background, the volatility and the high level of oil prices, as well as the widening of global imbalances, remain the major risks to the outlook. Increased protectionist sentiments in some countries, in a context in which globalisation has fostered competition from low-cost producers, is also a risk for world growth, as those sentiments may trigger the reintroduction of trade barriers.

In late October, the *Brent* crude oil price stood at around USD 60 per barrel, which represents an increase of approximately 50 per cent from late 2004 (around 70 per cent in euros). Oil prices in the futures market were also successively revised upwards. Futures contracts indicate that in the next two years oil prices will remain close to, or slightly above, those recorded in the spot market (Chart 2.1). The increase in the oil price continued to reflect continued robust global demand, reduced spare capacity, including refining capacity, and the uncertainty resulting from supply-side disturbances. The prices of non-energy commodities have also been subject to pressures due to the expansion of demand, but their increase has been considerably more moderate that that observed in the energy component.

Oil price developments have contributed to the recent deterioration of global imbalances. The current account surplus in oil-producing countries has been increasing significantly, as a result of the rise in production and of the improvement in terms of trade. In addition, the foreign exchange management in these countries is also contributing to higher current account surpluses. By contrast, most net oil-importing countries have seen their current accounts deteriorate. In the first six months of the year, the accumulated energy deficit of the euro area widened by around 42 per cent when compared with the same period of 2004. In Portugal, the energy deficit recorded a similar increase. Taking into account the prospects pointing to the maintenance of the oil prices at high levels, IMF projections indicate that the current account surplus in oil exporting countries may exceed the surplus forecast for Asian emerging market economies in 2005 (Chart 2.2).

Chart 2.1
OIL PRICES IN THE SPOT AND FUTURES MARKETS



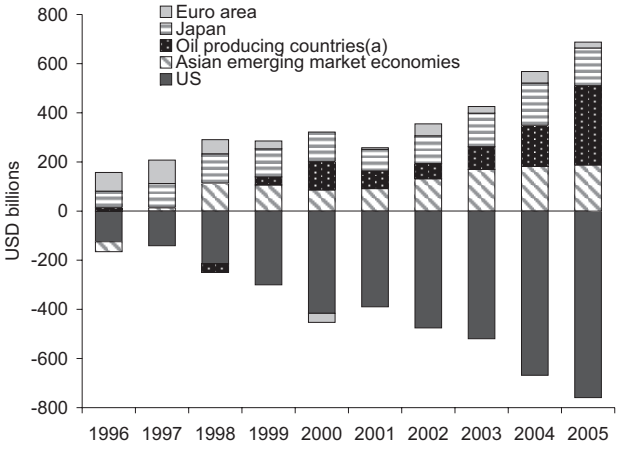
Source: Bloomberg.

The moderation of world economic activity in 2005 was broadly based across geographical areas. The pace of economic growth continues to be differentiated with the United States and China continuing to lead the expansion of world activity.

The United States continues to post the highest growth rate among major advanced economies. In 2005, the expansion in activity continued to rely on buoyant consumption and private investment (Chart 2.3), against the background of further strong growth of productivity, continued improvement in labour market conditions and rising housing prices. IMF forecasts point to 3.5 per cent GDP growth in 2005.

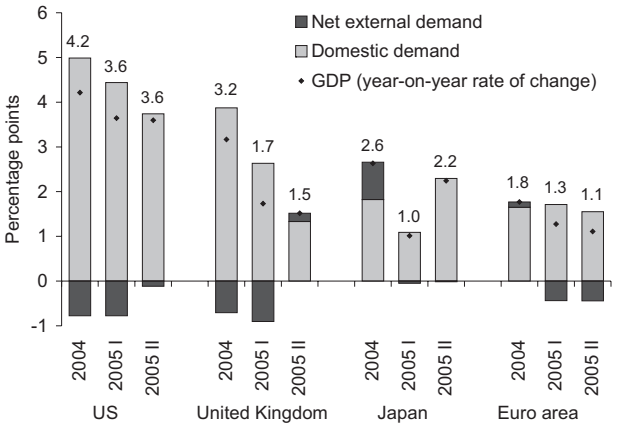
In China, the pace of economic expansion remains close to 9 per cent, supported by the high growth of exports and investment. Among Asian emerging market economies, growth continued to be robust also in India. However, inter-regional differences have become more pronounced. In the remaining countries, and in particular in the new Asian industrialised economies, economic activity decelerated in the first months of the year, partly reflecting a weaker information technology sector, which was reflected in lower export growth. Finally, in Japan, economic activity recovered from the trend observed in 2004. The latest information suggests that Japanese growth in 2005 may exceed the 2.0 per cent projected by the IMF in September.

Chart 2.2
GLOBAL IMBALANCES
Current Account Balance



Source: IMF.
Note:
(a) Middle East and Commonwealth of Independent States.

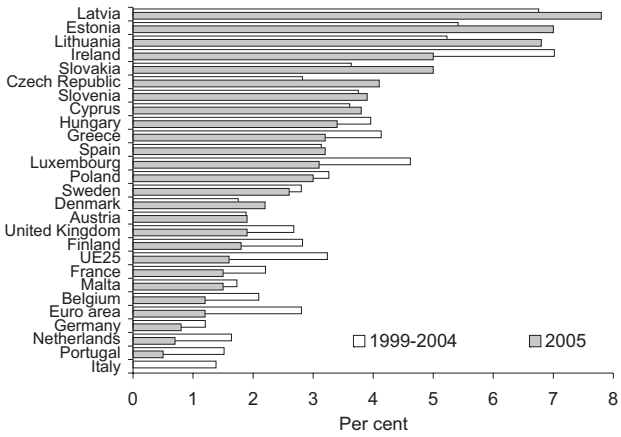
Chart 2.3
CONTRIBUTIONS TO THE YEAR-ON-YEAR RATE OF CHANGE OF GDP



Sources: Eurostat and Thomson Financial Datastream.

The euro area continues to show the lowest growth among major advanced economies. The expansion of economic activity has been weak, chiefly reflecting the sluggishness of domestic demand, in a context of no signs of improvement in the labour market situation and in consumer and business confidence. In the second half of the year, GDP is projected to strengthen gradually, although in the year as a whole it may stand only slightly above 1 per cent.

Chart 2.4
GROSS DOMESTIC PRODUCT IN EUROPEAN UNION COUNTRIES
Real rate of change



Source: European Commission and IMF.

Developments in economic activity have been differentiated among euro area countries. The pace of growth of the Portuguese economy continues to be among the lowest. As regards the major trading partners of Portugal within the area, in Spain and, to a lesser extent, in France, the expansion of economic activity remains above the euro area average, continuing to rely on domestic demand growth. In contrast, in Germany, GDP growth continues to be clearly below that recorded in the other euro area countries, reflecting the persisting relatively weak behaviour of domestic demand (Chart 2.4).

In the United Kingdom, the major trading partner of Portugal among the remaining European Union countries, GDP growth will likely stand short of 2 per cent in 2005, posting a significant decline from the previous year. In the first half of the year, domestic demand moderated significantly, chiefly reflecting the slowdown in private consumption and investment. In turn, in the new Member States, the pace of growth remained high, continuing to largely exceed that observed in the euro area.

In spite of moderate economic growth in most of the main countries of destination of Portuguese exports, imports of goods from these countries continue to grow at a strong pace. However, similarly to developments in 2004, a growing share of imports from Portugal's trading partners stems

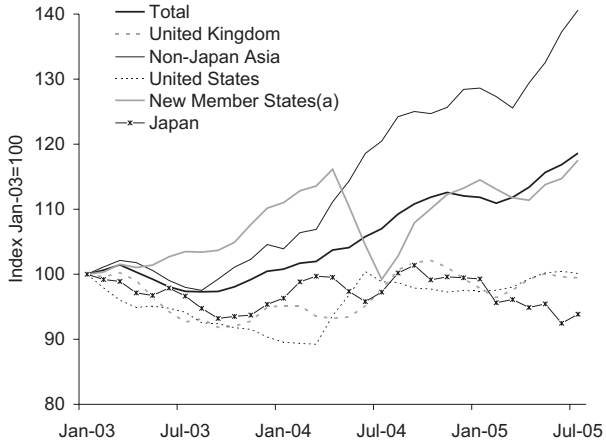
from Asian economies and, to a lesser extent, from new European Union Member States (Chart 2.5). The shift of foreign direct investment flows to the new EU Member States observed in the last decade, in a context in which these countries reveal better education levels of the population, more favourable wage costs and a privileged geographical location in central Europe, has negatively affected Portuguese market shares, particularly in more technology-intensive goods. In turn, the increased competition from low-cost producers translated into losses in share in low-skill and low-tech goods, which continue to have a high weight in the structure of Portuguese exports. By way of example, it is worth mentioning textiles and clothing, which represent approximately 15 per cent of exports of the Portuguese economy, twice the weight for the euro area. In the first five months of 2005, European Union imports from China, relating to products that were liberalised as a result of the Multi-Fibre Arrangement signed on 1 January, increased more than 80 per cent from the same period of 2004, thus raising the market share of China in that period and for such products from 11 to 22 per cent.

The growing participation of Asian economies and new EU Member Sates in international trade, in a context of high growth of economic activity in those countries, has created exporting opportunities for euro area countries. This trade creation effect is evidenced by the increase in exports from the euro area to those countries in the recent period, which has translated into an increase in the weight of extra-euro area exports.

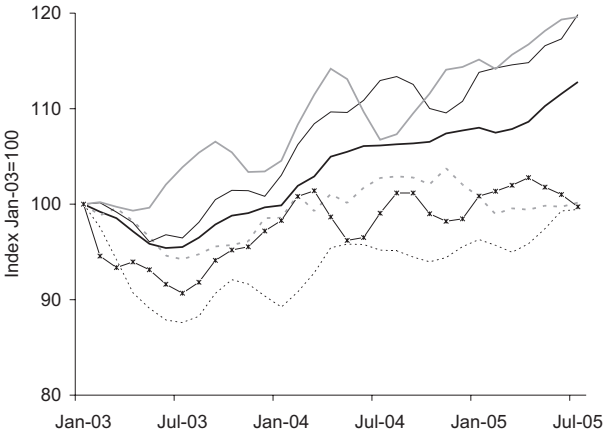
Inflation in major advanced economies is likely to stand only slightly above 2 per cent in 2005. The decrease in the import prices of different types of consumer goods, associated with the growing participation of low-cost producers in the world market, has partially offset the impact of the oil price increase on inflation. Moreover, wage increases have been moderate in most countries, in a context of spare capacity and anchored inflation expectations. Therefore, underlying inflation has been kept on track in most advanced economies, and has even declined in some countries. In the euro area, annual Harmonised Index of Consumer Prices (HICP) inflation went up from around 2 per cent in the first half of the year to 2.6 per cent in September; in contrast, the annual rate of change of the HICP excluding unprocessed food and energy declined, standing at 1.5 per cent in September (see "Box 1 *Pass-through of oil price increases to inflation in the euro area*").

The conduct of monetary policy has been differentiated, reflecting developments in the cyclical positions of the different economies. In the United States, the Federal Reserve has gradually reduced the monetary stimulus, in response to the increasing inflationary pressures due to high energy

Chart 2.5
EURO AREA
Extra-euro area nominal imports by country of origin



Extra-euro area nominal exports by country of destination



Source: Eurostat.
Note:
(a) On the date of accession of the new Member States to the European Union, there is a break in the series due to changes in the compilation of international trade data.

prices and cost increases, in the context of the continued strong pace of expansion of economic activity. In the meeting on 1 November, the US federal funds target was set at 4 per cent, resulting in an accumulated increase of 3 percentage points (p.p.) since June 2004. In the United Kingdom, the slower pace of growth in the first half of the year and the decreasing demand pressures on capacity led the Bank of England Monetary Policy Committee to cut the repo rate by 0.25 p.p. to 4.5 per cent in the meeting on 4 August. In the euro area, the Governing Council of the European Central Bank (ECB) maintained the minimum bid rate on the main refinancing operations unchanged at 2 per cent (Chart 2.6).

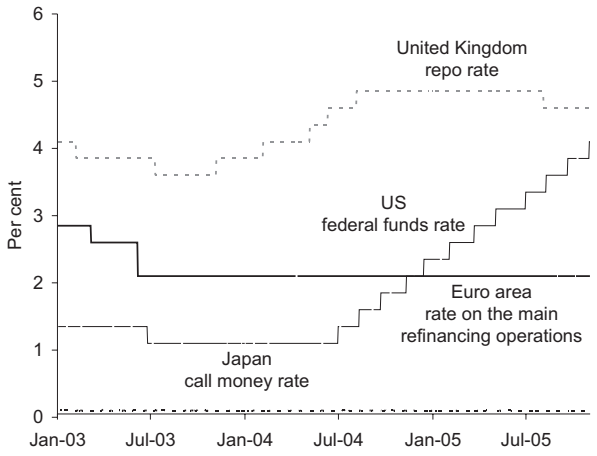
Conditions in international financial markets have remained broadly favourable to the expansion of economic activity (Table 2.2).

Long-term interest rates remained at historical lows and declined further in the euro area reaching 3.5 per cent in October. Long-term rates remained at low levels reflecting, on the one hand, the fact that inflation expectations remain contained and, on the other hand, the strong demand for government bonds. This high demand is partly fuelled by the purchase of US Treasury bills by a number of Asian central banks and, more recently, by oil-exporting countries, related to the management of exchange-rate policies in these countries. In addition, the increasing investments in long-term securities by insurance companies and pension funds in Europe and in the United States (associated with regulatory changes requiring a better correspondence between the present value of their assets and liabilities) has also contributed to increased demand in the bond market.

Yield differentials between private sector and government bonds remained contained and sovereign debt differentials in emerging market economies vis-à-vis US debt securities narrowed further. This reflects, on the one hand, investors' search for yield, in a context of low nominal and real interest rates in major advanced economies and ample global liquidity, and, on the other hand, the improvement in corporations' financial position and in the economic fundamentals of emerging market economies in recent years.

Major stock markets recorded valuations throughout the year reflecting expectations of high profits, while uncertainty indicators remained at

Chart 2.6
KEY INTEREST RATES



Sources: ECB and Bloomberg.

low levels. In the euro area stock market, valuations were common to most sectors of activity, although more significant in the energy sector. In the United States, valuations were mostly concentrated in the energy and technological sectors. However, reference should be made to the broadly-based fall in stock exchanges in October, associated with concerns about the impact of high oil prices on corporations' profits, as well as with an upward revision of interest rate expectations in the euro area and in the United States.

In the foreign exchange markets the trend appreciation of the euro observed in recent years was reversed. In the first ten months of the year, the European currency depreciated by approximately 6 per cent in nominal effective terms. In spite of the widening of the current account deficit in the United States, the weakening of the euro was particularly expressive vis-à-vis the US dollar, in line with developments in relative growth prospects. The euro was also affected by political uncertainty related to the rejection of the Treaty establishing a Constitution for Europe in France and in the Netherlands and to the results of the election in Germany.

Changes introduced in China's foreign exchange regime are also worth mentioning. In July, the Chinese authorities formally abandoned the peg to the dollar and introduced a managed-floating regime. The renminbi was revalued by 2.1 per cent vis-à-vis the US dollar and the authorities announced that the exchange rate management would thenceforth

Table 2.2

INTERNATIONAL FINANCIAL MARKETS

	Averages			End of period		
	2003	2004	2005[a]	2003	2004	2005[a]
Stock market indices (change in percentage)						
S&P 500	-3	17	6	26	9	-3
Nasdaq	7	21	4	50	9	-5
Nikkei 225	-8	20	6	24	8	17
FTSE 100	-12	12	13	14	8	8
Dow Jones Euro Stoxx	-18	18	15	18	10	11
10-year interest rates – public debt (per cent)						
United States	4.0	4.3	4.2	4.2	4.2	4.6
Japan	1.0	1.5	1.4	1.4	1.4	1.5
United Kingdom	4.5	4.9	4.4	4.8	4.5	4.4
Euro area	4.2	4.1	3.4	4.3	3.7	3.5
Spreads between private and government bond yields at 7 to 10 years (basis points)						
United States						
AA	20	13	22	14	20	24
BBB	129	73	73	80	58	83
Euro area						
AA	40	33	28	31	33	27
BBB	133	84	95	92	72	108
Debt spreads of emerging markets						
EMBI+	562	437	331	418	356	263
Nominal effective exchange rates (changes in percentage)						
US dollar	-6.0	-4.6	-2.7	-8.9	-4.6	3.3
JPY	-0.1	1.9	-2.1	2.2	-0.8	-6.6
Sterling pound	-4.8	4.1	-1.0	-3.4	1.4	1.4
Euro	12.0	4.0	-0.4	12.2	2.1	-5.7
Memo:						
EUR/USD exchange rate[b]	19.6	10.0	1.1	20.4	7.8	-10.9

Sources: ECB, BIS, Bloomberg, JPMorgan and Federal Reserve Board.
Notes:
(a) Figures up to 27 October.
(b) A positive change corresponds to an appreciation of the euro.

be based on a currency basket. As a result of this announcement, Malaysia introduced a similar change in its exchange-rate regime.

3. MACROECONOMIC POLICIES

3.1. The monetary policy of the ECB and monetary and financial conditions of the Portuguese economy

The monetary policy of the ECB

As mentioned in the previous section, euro area key interest rates were kept unchanged in the first ten months of 2005. The bid rate on the main refinancing operations was kept at 2 per cent, the level established in June 2003 (Table 3.1). Despite

Table 3.1.

INTEREST RATES OF THE EUROPEAN CENTRAL BANK

Per cent

Date of the decision		Main refinancing operations[a]	Marginal lending facility	Deposit facility
2000	5 October	4.75	5.75	3.75
2001	10 May	4.50	5.50	3.50
	30 August	4.25	5.25	3.25
	17 September	3.75	4.75	2.75
	8 November	3.25	4.25	2.25
2002	5 December	2.75	3.75	1.75
2003	6 March	2.50	3.50	1.50
	5 June	2.00	3.00	1.00

Source: ECB.
Note:
(a) Minimum bid rate in variable rate tenders.

the deterioration of inflation prospects in the course of the year, chiefly associated with the behaviour of the oil price, there is no significant evidence of accumulating domestic inflationary pressures. In fact, wage increases have been moderate and inflation expectations remain at levels consistent with price stability. Under these circumstances, maintaining key interest rates at low levels provides support to economic recovery in the euro area.

The low level of nominal and real interest rates across the entire maturity spectrum continued to contribute to the expansion of the M3 monetary aggregate, in particular of its most liquid components. Likewise, demand for credit in the euro area continued to strengthen, both in loans to non-financial corporations - whose year-on-year rate of change increased from 5.4 per cent at the end of 2004 to 7.0 per cent in September 2005 -, and in loans to households, especially housing loans, whose growth rate remained above 10 per cent.

Intensified upside risks for inflation projections and the situation of ample liquidity prevailing in the euro area have called for particular vigilance by the Governing Council of the ECB, with a view to ensuring that inflation expectations remain firmly anchored. In this respect, in the last two months market expectations of ECB interest rates were revised upwards.

Monetary and financial conditions of the Portuguese economy

As interest rates remained at historical lows, the Portuguese economy continued to benefit from favourable financing conditions. Estimates using a monetary conditions index for Portugal[1] suggest that interest rate developments in recent years had an accumulated positive impact on GDP growth in 2005, an effect partly offset by the trend of the effective exchange-rate index for Portugal. Monetary conditions have also made a significant contribution to the decline in inflation, due to the effect of the accumulated appreciation of the exchange rate relevant for the Portuguese economy (Chart 3.1).

In 2005, average interest rates on outstanding amounts of bank loans to the non-financial private sector remained close to the levels recorded in the second half of the previous year. Nonetheless, the interest rate on outstanding amounts of loans for house purchase continued to decline slightly, standing at 3.7 per cent in September (Table 3.2). This has chiefly reflected an additional narrowing of the interest rate margin in this credit segment, to values around 1.5 percentage points[2].

(1) For more detailed information on this index, see Esteves, Paulo Soares (2003), "Monetary conditions index for Portugal", Banco de Portugal, *Economic Bulletin*, June.
(2) Banking margins in the loans for house purchase segment are calculated as the difference between the interest rate on outstanding amounts and the six-month moving average of six-month Euribor.

Table 3.2

MONETARY AND FINANCIAL CONDITIONS OF THE PORTUGUESE ECONOMY

Average values in the period

	2003	2004	2004				2005			
			I	II	III	IV	I	II	III	Oct.
Interest rate (in percentage)										
3-month Euribor	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2
Ten-year fixed rate Treasury bond yield	4.2	4.1	4.1	4.4	4.2	3.8	3.6	3.3	3.3	3.4
Interest rate on outstanding amounts of bank loans										
Non-financial corporations	4.6	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3	
Households for house purchase	4.3	3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7	
Households for consumption and other purposes	7.9	7.8	7.9	7.8	7.7	7.7	7.7	7.7	7.6	
Stock Exchange										
PSI Geral Index (percentage change from the previous corresponding period)	-7.0	27.5	13.0	4.0	-1.2	4.8	5.5	-1.1	1.6	1.7
Exchange rate										
EUR/USD exchange rate	1.13	1.24	1.25	1.20	1.22	1.30	1.31	1.26	1.22	1.20
Percentage change from the previous corresponding period [(a)]	19.7	9.9	5.1	-3.6	1.4	6.2	1.0	-4.0	-3.1	-2.0
Nominal effective exchange rate index [(b)]	100.3	100.9	101.2	100.6	100.7	101.3	101.3	100.8	100.6	
Percentage change from the previous corresponding period	2.6	0.6	0.4	-0.5	0.1	0.6	0.0	-0.5	-0.2	
Memo:										
HICP – annual rate of change	3.3	2.5	2.2	2.8	2.5	2.5	2.1	1.5	2.4	

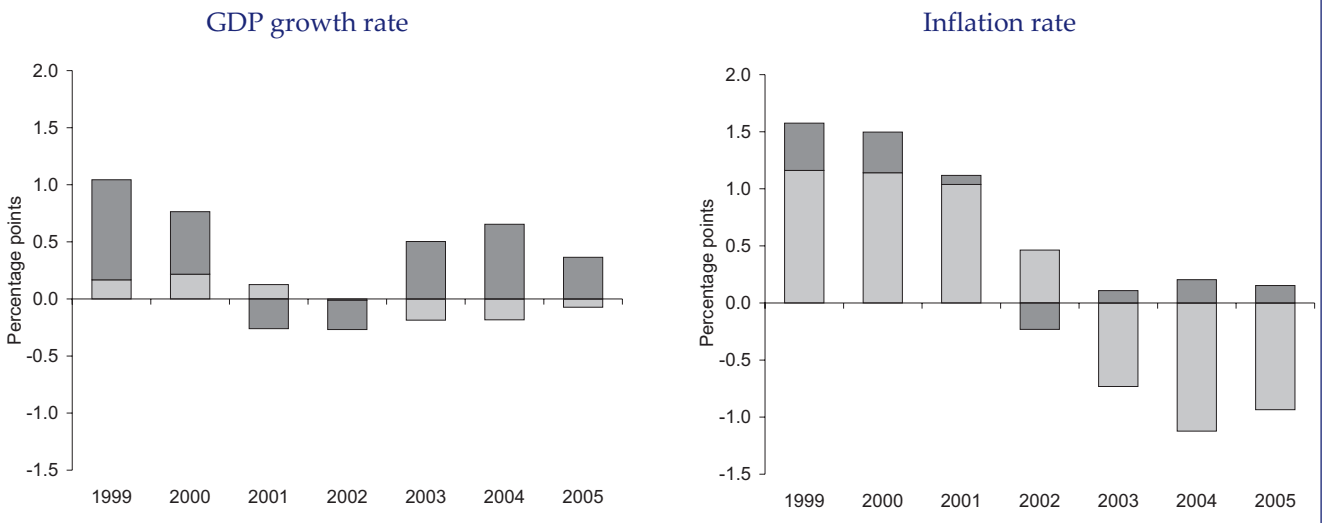
Sources: Euronext Lisboa, *INE* and Banco de Portugal.

Notes:

(a) A positive change corresponds to an appreciation of the euro vis-à-vis the dollar.

(b) A positive change corresponds to an appreciation of the index. Calculations made vis-à-vis a group of 22 trade partners. For a detailed description of the methodology, see Gouveia, A.C. and C. Coimbra (2004), "New effective exchange rate index for the Portuguese economy", Banco de Portugal, *Economic Bulletin*, December 2004.

Chart 3.1
CONTRIBUTION OF MONETARY CONDITIONS



Source: Banco de Portugal.

The capital market maintained a valuation trend in 2005, similarly to developments in other euro area countries.

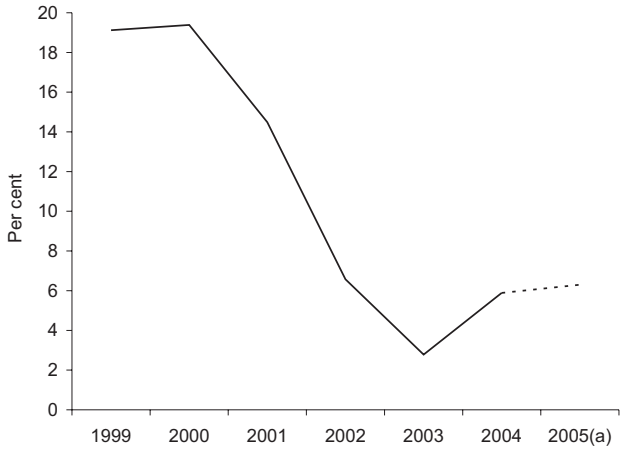
Long-term Portuguese government bond yields continued to decline, reaching 3.4 per cent in October. Against this background, the Portuguese Government, after having favoured the short-term segment in the 2003-2004, strengthened the long-term component in the first half of 2005. The differential between Portuguese and German government debt yields widened slightly in the second quarter, but remained at low levels. This widening, which occurred in the context of the French and Dutch referenda on the Treaty establishing a Constitution for Europe, also affected other euro area countries with important fiscal imbalances, such as Greece and Italy. The downgrading of the rating of the Portuguese Republic by Standards & Poor's and the change in outlook of Fitch rating assigned to Portugal (from stable to negative), both at the end of June, did not affect significantly the financing costs of long-term Portuguese government debt.

In the stock market, the PSI Geral index increased by approximately 7 per cent from the end of 2004 to October 2005, while volatility remained at low levels. The valuation of the Portuguese stock market was lower than in 2004 and well below that recorded by the Dow Jones Euro Stoxx index. In sectoral terms, the major contribution for the evolution of the PSI Geral came from financial services, whose index went up by approximately 15 per cent in the period in question.

In 2005, the rate of change of non-financial corporations' debt remained close to the value recorded in 2004. Therefore, the indebtedness ratio in this sector increased further as a percentage of GDP (Chart 3.2)[3]. In parallel, net issuance of shares by non-financial corporations (either listed or unlisted) posted negative values, chiefly as a result of the winding-up of a large corporation early in the year. In addition, non-financial corporations have sought to extend the maturity of their debt, benefiting from the historically low levels of long-term interest rates. In effect, banking loans were restructured, short maturities were replaced by long maturities and net bond issuance was significant.

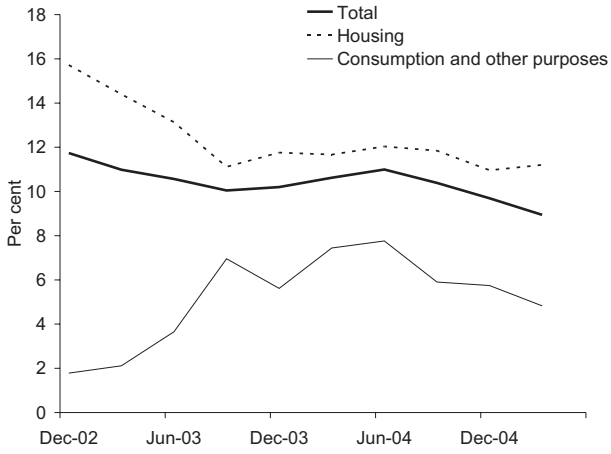
(3) This debt concept includes loans granted by resident and non-resident financial institutions; loans/additional capital granted by non-resident corporations of the same economic group (excluding those granted to non-financial corporations having their head-office in Madeira off-shore); commercial paper; bonds and trade credits received. In 2004, this aggregate accounted for approximately 96 per cent of GDP. It should be noted that this value differs from the value previously disclosed in other publications, due to the GDP series revision carried out by INE in the context of the new National Account basis.

Chart 3.2
NON-FINANCIAL CORPORATIONS INDEBTEDNESS
Year-on-year rate of change



Source: Banco de Portugal.
Note:
(a) Estimate for the whole year, based on non-consolidated Financial National Accounts for the first half of the year (annualised half-yearly rate).

Chart 3.3
CREDIT TO HOUSEHOLDS BY RESIDENT FINANCIAL INSTITUTIONS
Year-on-year rate of change



Source: Banco de Portugal.

Household indebtedness continued to grow at a significant pace. The rate of change of loans granted by resident financial institutions[4] stood at 8.6 per cent at the end of the first half of 2005, compared with 9.7 per cent in December 2004 (Chart 3.3). The housing loans segment remained buoyant, reflecting the very low levels of interest rates and competitive pressures among banking institutions. According to respondents to the Bank Lending Survey[5], in line with a slight decrease in the interest rate margin, loan maturities continued to be extended and some institutions have occasionally lowered their non-interest rate charges. In turn, loans for consumption and other purposes slowed down, showing more moderate growth rates than housing loans. Reflecting these developments, household indebtedness as a percentage of disposable income is expected to increase by around 6 p.p. from the value observed in 2004, which was rather high in international terms[6].

3.2. Fiscal policy[7]

Fiscal policy is projected to follow an expansionary stance in 2005. As a result, the significant structural imbalance of the Portuguese government accounts will worsen further, in spite of the correction measures implemented as of June. Indeed, according to Banco de Portugal estimates, the change in the primary balance adjusted for the cycle and for temporary measures may stand at -0.5 per cent of GDP. This deterioration of the underlying fiscal position is due to the significant increase in pension-related expenditure (of both the social security system of the private sector and the civil servants' pension system), to the increase in

(4) The resident financial institutions aggregate includes other resident monetary financial institutions, a sector usually mentioned in the publication Monthly Economic Indicators, as well as other resident financial intermediaries and financial auxiliaries, institutions for which only quarterly data is available. The calculation of the rate of change of credit to the non-financial private sector was adjusted for securitisations carried out by non-resident special purpose vehicles and for reclassifications, price revaluations and exchange rate variations.

(5) Detailed results for the different surveys are available on the Banco de Portugal's website (www.bportugal.pt).

(6) In 2004, the household indebtedness ratio stood close to 112 per cent of disposable income. This value was also affected by the above mentioned revision of the GDP series.

(7) The present analysis only covers 2004 and 2005 due to a break in the series related to the changes introduced in the National Accounts basis. INE disclosed the Accounts on a 2000 basis for the period up to 2003. For subsequent years, the accounts for the general government sector are compiled by the Ministry of Finance and include only partly the methodological changes introduced in the new basis. Nominal GDP figures used in the ratios correspond to Banco de Portugal estimates.

the civil servants' wage bill and to the declining dividends received by the government. These factors have more than offset the very favourable trend of tax revenue.

According to the Draft State Budget for 2006, the general government deficit, on a national accounts basis, is forecast to reach 6.0 per cent of GDP in 2005. This value coincides with that reported in the excessive deficit procedure notification of August 2005[8]. The government debt-to-GDP ratio is projected to continue the upward trend started in 2001, to stand at 65.9 per cent at the end of 2005 (Table 3.3). The re-evaluation of the fiscal outlook in spring, in the wake of the release of the Report of the "Comissão para a Análise da Situação Orçamental" (Commission for the Analysis of the Fiscal Position), and the political decision not to resort to any significant temporary measures led to a new update of the Stability and Growth Programme in June. Following the presentation of this document, an excessive deficit procedure was launched against Portugal, leading to a decision of the ECOFIN Council in September and a recomendation on the correction of the deficit to a value below 3 per cent of GDP by 2008 (see "Box 2 *Portuguese fiscal policy in the context of the Stability and Growth Pact*").

General government current revenue is projected to increase by 3.2 per cent in 2005. Taxes on income and wealth and taxes on production and imports are expected to post growth rates of 1.6 and 8.7 per cent respectively (6.0 per cent as a whole). This expansion of tax revenue is higher than expected given developments of the basis for major taxes. The favourable performance chiefly reflects an improvement in the effectiveness of tax administration and, to a lesser extent, the net effect of measures taken in 2005, as well as the lagged effects of measures included in the State Budget for 2004. These factors made it possible that, in spite of a much more unfavourable than projected macroeconomic scenario, tax revenue will grow above the rate projected in the State Budget for 2005.

In terms of taxes on income and wealth, the personal income tax and the corporate income tax show a rather different behaviour. In the case of the personal income tax, tax revenue is estimated to grow in line with the tax base, since the negative effect of the tax cut introduced in the State Budget for 2005 should be offset by the improvement in tax administration procedures. In the case of the corporate income tax, revenue is estimated to fall, given that most of the impact of the tax cut from 30 to 25 per cent included in the State Budget for 2004 was only felt in 2005. Other factors, however, have contributed to a less negative trend in this tax revenue, such as the favourable behaviour of the taxable amount (partially due to new taxpayers in the system) and the increase in enforceable collection.

The revenue from taxes on production and imports will be particularly influenced by the strong growth of VAT revenue, which is chiefly explained by the significant improvement in tax administration effectiveness and by the increase in the VAT standard rate from 19 to 21 per cent in July. Worthy of mention is also the effect on revenue of the rise in the tax on oil products approved in mid-year, as well as the increase in a special component of the tax on tobacco included in the State Budget for 2005.

Social contributions are projected to grow by 2.1 per cent in 2005. However, adjusted for the effect of farmer-related social contributions paid by the government to Social Security in 2004, that rate of change is likely to reach 3.3 per cent. In addition to more effective collection procedures, the revenue from social contributions benefits from the increase in the base wage used to determine the minimum contributions of independent workers as of July 2005.

Finally, still in terms of current revenue, it is worth noting that other current revenue decreased significantly, reflecting in particular the behaviour of dividends paid to the government by State-owned corporations.

General government current primary expenditure is estimated to increase by 6.1 per cent, largely as a result of developments in transfers to households, which maintain the sharp upward trend observed in recent years and continue to raise their weight in GDP. In particular, expenditure with pensions of the private sector social security system and of the civil servants' pension scheme is projected to increase by 8.3 and 8.8 per

(8) The deficit-to-GDP ratio, however, is slightly lower than envisaged in the 2005 Supplementary State Budget (6.2 per cent), but the difference is due to the effect of the revision of the GDP series, in the context of the new National Accounts basis.

Table 3.3

GENERAL GOVERNMENT ACCOUNTS

	Revenue and expenditure structure	As a percentage of GDP[a]				Growth rates (excl. temporary measures)
		Including temporary measures		Excluding temporary measures		
	2004	2004	2005	2004	2005	2005
Total revenue	100.0	43.5	41.6	41.3	41.6	3.2
Current revenue	91.7	39.8	40.1	39.8	40.1	3.2
Taxes on income and wealth	20.2	8.8	8.7	8.8	8.7	1.6
Taxes on production and imports	33.2	14.4	15.3	14.4	15.3	8.7
Social contributions	28.6	12.4	12.4	12.4	12.4	1.9
Actual	26.3	11.4	11.4	11.4	11.4	2.1
Private sector social security system	17.5	7.6	7.5	7.6	7.5	1.6
Civil servants pension system	8.8	3.8	3.8	3.8	3.8	3.0
Imputed	2.4	1.0	1.0	1.0	1.0	-0.1
Other current revenue	9.7	4.2	3.7	4.2	3.7	-8.7
Capital revenue	8.3	3.6	1.5	1.5	1.5	4.7
Total expenditure	100.0	46.4	47.6	46.4	47.6	5.1
Current expenditure	90.5	42.0	43.6	42.0	43.6	6.2
Current transfers	45.2	21.0	22.1	21.0	22.1	7.9
Social payments	36.8	17.1	17.9	17.1	17.9	7.1
in cash	30.7	14.3	14.9	14.3	14.9	7.3
in kind	6.2	2.9	3.0	2.9	3.0	6.2
Subsidies	3.3	1.5	1.7	1.5	1.7	11.0
Other current transfers	5.1	2.4	2.6	2.4	2.6	11.3
Interest	5.8	2.7	2.9	2.7	2.9	7.8
Compensation of employees	31.1	14.5	14.7	14.5	14.7	3.8
excluding government transfers to *CGA*	26.4	12.3	12.4	12.3	12.4	3.7
Intermediate consumption	8.3	3.9	4.0	3.9	4.0	5.1
Capital expenditure	9.5	4.4	4.1	4.4	4.1	-5.5
Gross fixed capital formation	6.7	3.1	2.9	3.1	2.9	-4.7
Other capital expenditure	2.8	1.3	1.2	1.3	1.2	-7.5
Overall balance		-3.0	-6.0	-5.2	-6.0	
Memo:						
Primary current expenditure		39.3	40.7	39.3	40.7	6.1
Primary balance		-0.3	-3.2	-2.4	-3.2	
Cyclically adjusted primary balance[b]		0.3	-2.4	-1.9	-2.4	
Public debt		59.3	65.9			
Deficit-debt adjustments		0.9	2.0			

Sources: *INE*, *Ministério das Finanças* and Banco de Portugal.

Notas:

(a) Nominal GDP used for ratios in 2004 and 2005 was estimated by Banco de Portugal.

(b) For a description of the methodologies used, see Neves, Pedro Duarte and Luís Morais Sarmento (2001), "The use of cyclically adjusted balances at Banco de Portugal", Banco de Portugal, *Economic Bulletin*, September.

cent respectively. Staff costs, in turn, excluding the government transfers to Caixa Geral de Aposentações (the civil servants' pension system), are projected to grow by 3.7 per cent. This value results chiefly from the civil servants' wage update (2.3 per cent), from automatic promotions and from the additional effect of the unfreezing of wages of teachers, other than University teachers. The impact of these factors on expenditure was partially offset by a composition effect resulting from the difference between the average wage of retired employees and the average wage of new employees hired by the general government. The number of civil servants is expected to be maintained nearly constant.

Capital revenue, in turn, is projected to grow by 4.7 per cent (excluding temporary revenue in 2004). This appears to be difficult to achieve, when

taking into account the inflows from the European Union received up to September, which point to a very significant decline from the previous year. Capital expenditure is expected to fall by 5.5 per cent, reflecting the decline in capital transfers and in investment spending.

Government debt continues to grow for the fifth consecutive year, and is estimated to reach 65.9 per cent of GDP at the end of 2005 (6.6 p.p. of GDP above the level recorded in the previous year). The most significant factors behind this result, in addition to a primary deficit of 3.2 per cent of GDP, are the positive differential between the interest rate implied in government debt and output growth (with a contribution of 1.4 p.p. of GDP) and deficit-debt adjustments (which, according to the State Budget for 2006, may reach 2.0 p.p. of GDP). The very high value of the deficit-debt adjustments is explained both by the net acquisition of financial assets and the net incurrence of liabilities in 2005 and by the increase in borrowing requirements for the settlement of expenditure included in the Supplementary Budget for 2004. The government debt dynamics accounts for the high growth rate of interest expenditure in 2005 (7.8 per cent) and for the corresponding reversal of the downward trend of this component, which had been losing weight in GDP since 1992.

4. EXPENDITURE

The Banco de Portugal estimates a 0.3 per cent growth of the Portuguese economy in 2005, which represents a deceleration of economic activity from the previous year (Table 4.1). GDP will thus continue to evolve less favourably than in the euro area for the fourth consecutive year. In contrast, and similarly to developments in 2004, private consumption is projected to grow more strongly than in the euro area (Chart 4.1).

The slowdown in Portuguese economic activity in 2005 reflects a lower contribution of domestic demand to GDP growth, largely associated with the behaviour of investment. Indeed, private consumption is not projected to decelerate significantly from the previous year. The contribution of net external demand will likely be less negative than in 2004, in spite of the sharp deceleration of exports, since a strong deceleration of imports is also expected, in line with the lower growth of global demand. The estimated export growth implies significant market share losses, reinforcing the cumulative decline recorded since the mid-1990s.

The absence of a sustained recovery of the economy in the wake of the 2003 recession contrasts with developments in the previous cycles, when the slowdown in economic activity was fol-

Table 4.1

GDP AND MAIN EXPENDITURE COMPONENTS[a]

Real rate of change

Per cent

	2001	2002	2003	2004	2005
GDP	2.0	0.5	-1.2	1.3	0.3
Private consumption	1.1	1.2	-0.4	2.3	1.9
Public consumption	3.5	1.7	-0.1	2.6	1.1
Investment	1.8	-4.3	-9.6	1.0	-2.8
GFCF	1.3	-5.0	-10.1	0.2	-2.8
Changes in inventories[b]	0.2	0.1	0.0	0.2	0.0
Domestic demand	1.7	-0.1	-2.5	2.1	0.7
Exports	2.1	1.5	4.4	5.4	0.7
Imports	1.3	-0.5	-0.7	6.8	1.7
Contribution of domestic demand to GDP[b]	1.9	-0.1	-2.7	2.2	0.7
Contribution of net external demand to GDP[b]	0.1	0.6	1.5	-0.9	-0.4

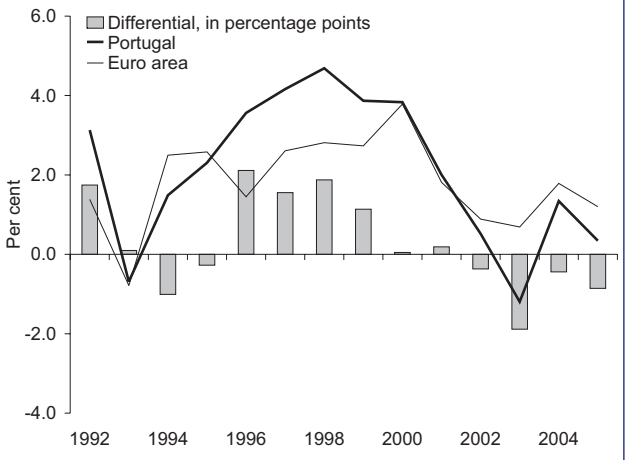
Sources: *INE* and Banco de Portugal.

Notes:

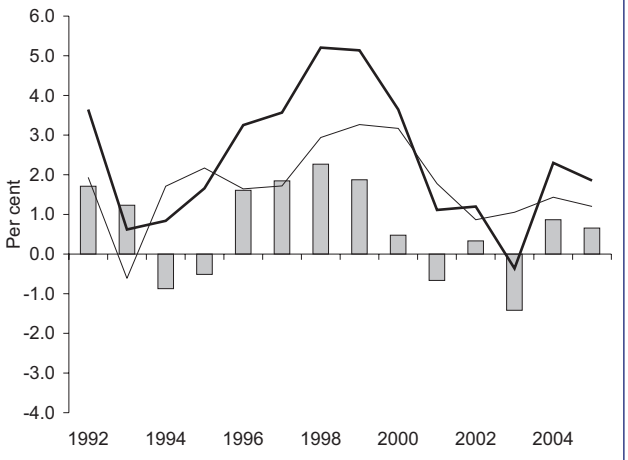
(a) Banco de Portugal estimates based on *INE* National Accounts for the years from 1995 to 2003 (basis 2000).

(b) Contribution to the GDP rate of change in percentage points.

Chart 4.1
GROSS DOMESTIC PRODUCT
Real rate of change

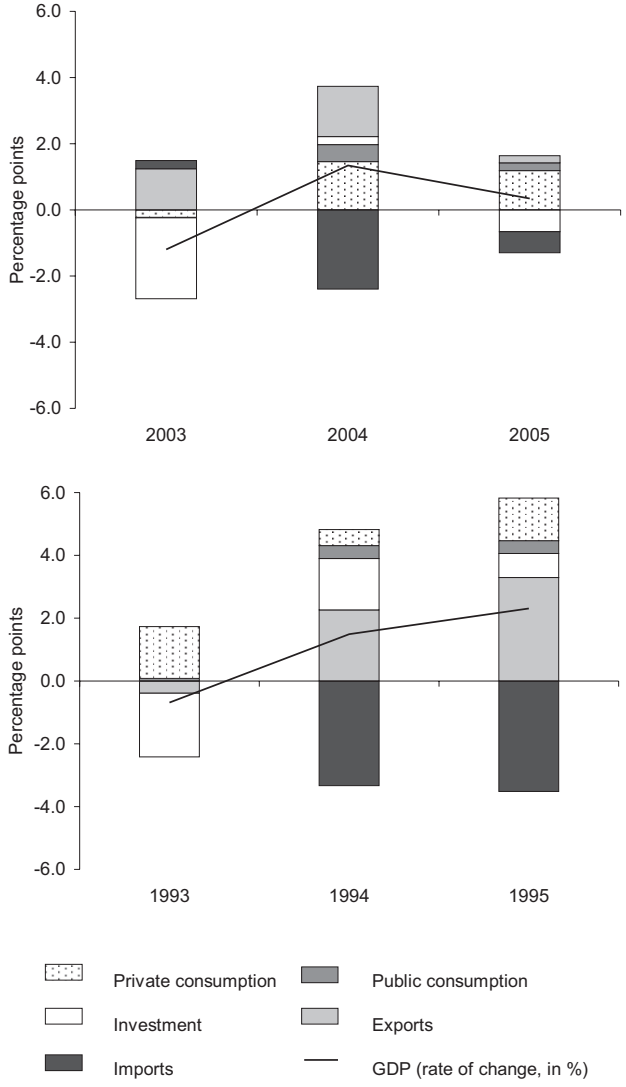


PRIVATE CONSUMPTION
Real rate of change



Sources: Eurostat, IMF, *INE* and Banco de Portugal.

Chart 4.2
CONTRIBUTIONS TO GDP GROWTH



Sources: *INE* and Banco de Portugal.

lowed by a clear acceleration of GDP. The comparison with the recovery after the 1993 recession reveals that the recent period is characterised by stronger growth of private consumption and by a more unfavourable behaviour of exports and investment (Chart 4.2).

Higher growth of private consumption is associated with the significant easing of liquidity constraints due to participation in monetary union and to the liberalisation and financial integration of the Portuguese economy, as well as to the low level of interest rates prevailing in the euro area. In addition, transfers to households, which are usually associated with a higher marginal propensity to consume, have largely contributed to the growth of disposable income, reflecting the growing weight of social contributions paid by the general government. Income generated from the use of productive factors has thus been loosing weight in the composition of disposable income.

In turn, in spite of a significant growth of the external demand for the Portuguese economy in both periods, the deterioration of competitiveness in recent years, in a context of increasing international competition, has limited the contribution of exports to GDP growth. The reduced attractiveness of the Portuguese economy as country of destination for foreign investment has also affected

the behaviour of exports. Indeed, the significant contribution of exports to the recovery of economic activity in the previous cycle was associated with important foreign direct investment projects geared towards exports.

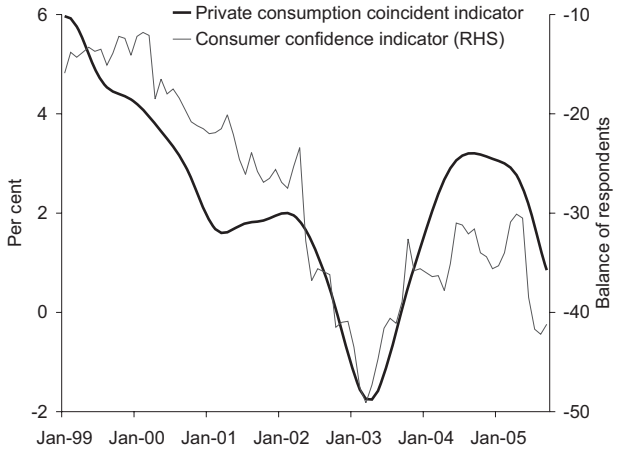
Similarly to exports, GFCF has also contributed significantly to the recovery in the previous cycle. In contrast, in the most recent period, and in spite of very favourable financing conditions, investment did not pick up. The weak upturn of economic activity associated with losses in competitiveness, as well as a number of uncertainty factors, are negatively affecting investment decisions in the current economic cycle. Behind this climate of uncertainty are the trend of the oil price and doubts on how the imbalances of the economy will be corrected.

The present estimate for GDP growth corresponds to a slight downward revision from the estimate reported in the summer edition of the Economic Bulletin. Current projections point to a weaker contribution of domestic demand to GDP growth, associated with the behaviour of GFCF, and a similar contribution of net external demand, as a result of downward revisions in the growth of both exports and imports. The revision of the estimate for export growth reflects the materialisation of some risks then indicated, namely the risk of more unfavourable developments in this variable, in the context of losses in competitiveness and increased competition associated with globalisation. The lower growth of imports vis-à-vis the earlier forecast is in line with global demand developments.

Projections point to private consumption real growth of 1.9 per cent in 2005, which represents a slight deceleration from the previous year. The projected growth of private consumption is close to the change estimated for disposable income. Therefore, after the significant fall recorded in 2004, the savings rate is expected to stabilise in 2005. It is worth noting, however, that higher growth of disposable income in the present year is chiefly the result of the developments in civil servants' wages.

The maintenance of interest rates at low levels and the extension of bank loan maturities continued to support household consumption expenditure. Private consumption growth remained sustained, particularly when taking into account the

Chart 4.3
PRIVATE CONSUMPTION COINCIDENT INDICATOR AND CONSUMER CONFIDENCE INDICATOR



Sources: European Commission and Banco de Portugal.

stagnation of economic activity and the sharp fall in consumer confidence as from June (Chart 4.3).

Private consumption is likely to show an irregular intra-annual profile associated with the behaviour of expenditure in durable goods. In fact, whereas the growth of non-durable goods consumption seems to have remained broadly unchanged throughout the year, durable goods consumption increased significantly in the first half of the year, and is expected to fall in the second half of the year. This profile seems to be partly determined by an anticipation of purchase decisions associated with the increase in the VAT standard rate, implemented in July. Indeed, expenditure in durable goods in June affected figures for the first half of the year, and growth in that period was above that observed in 2004. This is particularly evident in the behaviour of car sales, which grew by 33.7 per cent in June, reaching a rate of change of 8.6 per cent in the first half of 2005. This trend was reversed in the third quarter, with a fall of 3.7 per cent. Underlying the estimate for the trend of consumption of durable goods in the second half of the year is a partial unwinding of the effect of the anticipation of purchase decisions. The magnitude of this effect is naturally surrounded by some uncertainty. Even excluding the effect of the increase in the standard VAT rate, the intra-annual profile of expenditure in durable goods consumption would likely show a deceleration during the

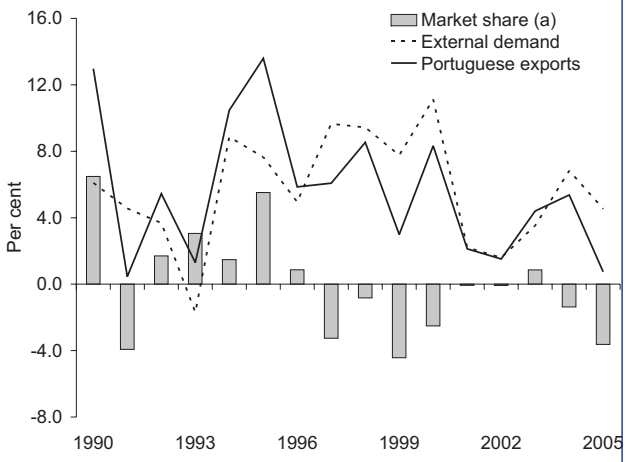
year. This trend is consistent with the profile of the new coincident indicator of private consumption[9].

Banco de Portugal estimates a 1.1 per cent real change in government consumption in 2005. Underlying this estimate is a deceleration of expenditure in goods and services, associated with the behaviour of expenditure in intermediate consumption. As regards staff costs, and as was the case in 2004, the present estimate considers the hypothesis of a near stagnation in the number of civil servants.

Although financing conditions continue to be very favourable, GFCF is forecast to decline by 2.8 per cent, after the stagnation observed in the previous year, and the strong decreases in 2002 and 2003. This development is broadly based across sectors, in particular the public and corporate sectors. The unfavourable behaviour of GFCF is also common to most components by type of goods. The fall in GFCF may reflect the postponement of investment projects, in a context of unfavourable developments of confidence and losses in competitiveness in the economy. In particular, investment decisions could be affected by the uncertainty associated with the trend of the oil price; with the manner in which the budget consolidation process will evolve; and with doubts regarding the implementation of the structural reforms needed to strengthen the competitiveness of the economy.

Exports are projected to decelerate strongly, both in goods and services, leading to more marked losses in market share in 2005 than in the previous year (Chart 4.4). The cumulative growth of relative labour costs points to a sharp deterioration of the competitiveness of national exports in recent years. In addition, the structure of Portuguese exports, characterised by a significant weight of low-skill and low-tech goods, has also negatively affected the export market share, as those products are subject to increased competition by low-cost producers. According to the information available, in the first half of the year, Portuguese exports of this type of products, including textiles, clothing and footwear, continued to decline significantly. That information also points to

Chart 4.4
EXPORTS OF GOODS AND SERVICES
Real rate of change



Sources: *INE* and Banco de Portugal.
Note:
(a) Difference between real growth of total exports of goods and services (excluding outgoing aircraft material after repair) and real growth of external demand. An increase means a gain in market share of Portuguese exports.

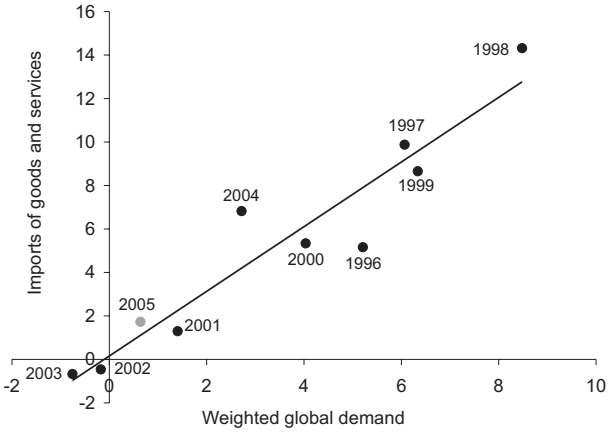
an unfavourable behaviour of Portuguese exports in transport material and machinery, sectors which have ceased to receive strong inflows of foreign investment.

In 2005, imports of goods and services seem to have slowed down rather markedly, largely due to the behaviour of global demand. (Chart 4.5). The deceleration of Portuguese imports in the first half of 2005 appears to be broadly-based across goods.

The estimate for annual GDP growth presented in this Economic Bulletin implies a slight acceleration of economic activity in the second half of the year. This estimate, however, bears a large degree of uncertainty. Indeed, domestic demand is expected to decelerate further, reflecting the developments of private consumption and investment. Against this background, the recovery of economic activity estimated for the second half of the year reflects an improvement of the contribution of net external demand to GDP growth. The latter reflects a moderate acceleration of exports, associated with the marked slowdown observed in the same period of the previous year, as well as a further reduction in the growth of imports, consistent with the behaviour projected for global demand. However, external trade projections are subject to

(9) Rua, A. (2005) "A new coincident indicator for private consumption in Portugal", Banco de Portugal, *Economic Bulletin*, Autumn.

Chart 4.5
IMPORTS OF GOODS AND SERVICES AND WEIGHTED GLOBAL DEMAND
Real rate of change, per cent



Sources: *INE* and Banco de Portugal.

a particularly high degree of uncertainty, given the structural changes associated with globalisation and the introduction in the current year of a new methodology for the compilation of international trade statistics[(10)].

5. EMPLOYMENT AND WAGES

In line with previous forecasts, during the first half of 2005 and in comparison with the corresponding period of 2004, the Portuguese labour market was characterised by a slight reduction in employment, accompanied by a deterioration of both the unemployment rate and long-term unemployment. Regarding wage dynamics, the private and public sectors are likely to exhibit diverging trends in the year as a whole, symmetrical to those observed in 2004.

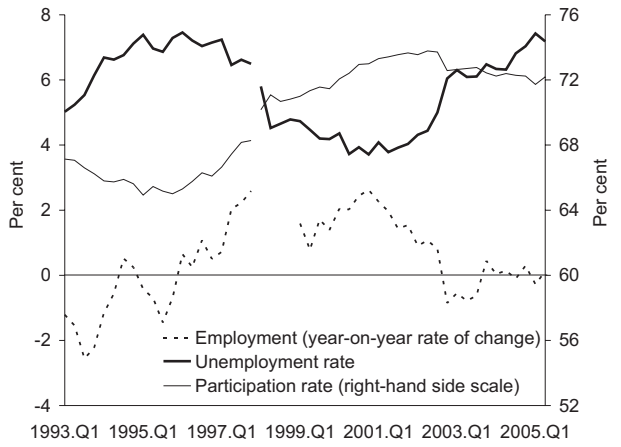
The comparison between the current and the previous downturn of the Portuguese economy may be a useful element to understand recent events and to project future labour market developments. Given its counter-cyclical nature, the unemployment rate registered sizeable and similar increases in both recessive phases. These increases were accompanied by a deterioration of long-term unemployment, which stands at a clearly higher level in the current business cycle. Underlying the behaviour of the unemployment rate, which does not seem to differ substantially in the two periods under analysis, were distinct developments in employment and demographic factors and, to a lesser extent, in the participation rate. In the previous downturn, the rise in the unemployment rate seems to be chiefly explained by a net reduction of employment. In the recent period, both employment and the participation rate have remained relatively stable. Thus, the increase in the labour force has been accompanied by an increase in the number of the unemployed. The rise in the labour force reflects, inter alia, the increasing female labour market participation and the demographic dynamics (Chart 5.1).

Data from the Employment Survey of the National Statistical Institute (INE) reveal that total employment decreased slightly in year-on-year terms in the first half of the year (0.1 per cent). In the breakdown by type of employment, developments do not differ substantially from the pattern observed in 2004. The net contribution of employees to job creation remained positive, albeit at a lower rate, reflecting an increase in permanent contracts. In turn, self-employment continued to decline, with a strong fall of 7.5 per cent in the self-employed as employers. Likewise, by sectors of activity, there were no broad changes from 2004, with sustained net job creation in the services sector and a contraction in the remaining sectors of activity (Tables 5.1 and 5.2).

Chart 5.2 depicts developments in employment in the services and manufacturing sectors. The strengthening of the weight of the tertiary sector in total employment is a trend common to developed economies. Therefore, it is likely that the Portuguese economy will continue to register net employment creation in this sector. Competitive difficulties of some Portuguese industrial segments enhance the role that the services sector may play in this context. However, it should be noted that the services sector encompasses quite different realities and, in particular, that employment in the public sector has a strong weight in Portugal. The process of change of the productive structure and the need to rationalise general government services, which are fundamental to increase productivity, raise adaptability challenges to the workforce, conditioning the pace of recovery in the labour market.

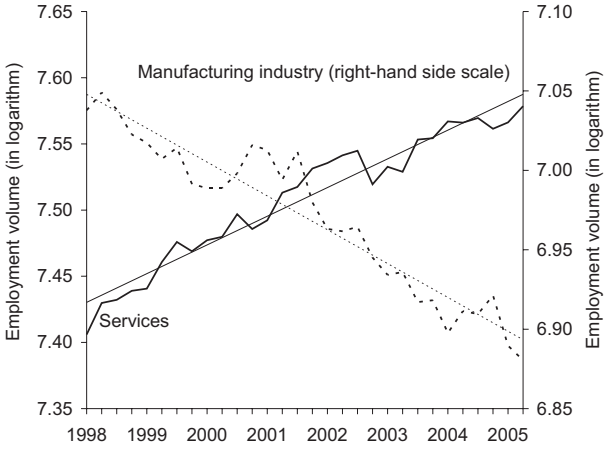
(10) For a description of the new methodology, see www.ine.pt.

Chart 5.1
EMPLOYMENT, UNEMPLOYMENT RATE AND PARTICIPATION RATE



Source: *INE*.
Note: The break in the series in 1998 was due to a methodological change in the INE *Employment Survey*.

Chart 5.2
EMPLOYMENT IN MANUFACTURING AND SERVICES



Source: *INE*.

The unemployment rate increased in the first half of 2005, standing on average at 7.4 per cent. Compared to the same period of 2004, the number of unemployed rose by 16.6 per cent. The number of unemployed exceeded for the first time 400,000. Out of these, more than half have been unemployed for more than one year, resulting in yet a further increase in long-term unemployment, a pattern observed since the beginning of 2003. According to the Employment Survey, the percentage of unemployed people receiving the unemployment benefit stood at 37 per cent during the first half of 2005, maintaining the trend growth observed since the cyclical downturn. The increase in long-term unemployment and in the coverage rate seems to be partly explained by the legislative changes introduced since 1999, which increased the generosity of the unemployment benefit system.

Diagram 5.1 displays unemployment inflows and outflows based on the information that is common to two successive quarterly samples of

Table 5.1
TOTAL EMPLOYMENT BY EMPLOYMENT STATUS AND TYPE OF CONTRACT
Year-on-year rates of change

Per cent

	2003		2004		2005
	1st semester	2nd semester	1st semester	2nd semester	1st semester
Total	-0.6	-0.1	0.1	0.1	-0.1
Employees	-0.4	-0.2	1.2	1.3	0.6
Permanent contract	0.6	1.1	2.1	2.3	1.6
Other contracts	-4.0	-5.1	-2.1	-2.6	-3.4
Other types of employment	-1.3	0.2	-2.9	-3.0	-1.8
Self-employed – individual	0.1	-0.5	-5.3	-3.6	-0.6
Self-employed – employer	-1.1	6.6	4.6	-2.3	-7.5
Unpaid family workers	-15.3	-13.8	-8.2	-2.7	1.7
Other	-2.7	-1.9	8.4	9.2	22.4

Source: *INE*.

Table 5.2

TOTAL EMPLOYMENT BY SECTOR

Year-on-year rates of change

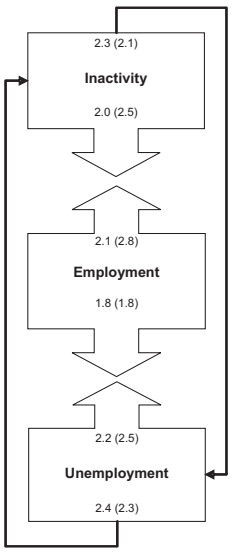
Per cent

	2003		2004		2005
	1st semester	2nd semester	1nd semester	2nd semester	1st semester
Total	-0.6	-0.1	0.1	0.1	-0.1
Agriculture and fishing	1.9	-0.3	-4.6	-2.8	-2.5
Industry	-3.1	-4.2	-3.3	-0.7	-2.2
Construction	-2.3	-8.9	-6.8	-5.3	-1.9
Services and general government	0.1	3.5	4.0	2.1	1.6

Source: *INE*.

Diagram 5.1

HALF-YEARLY FLOWS IN THE LABOUR MARKET AS A PERCENTAGE OF THE LABOUR FORCE[(a)]



Sources: *INE* and Banco de Portugal.

Note:

(a) Considering the common components in the samples in quarter *t* and quarter *t-1*, and using the population weights of quarter t. Average figures for the first half of 2005 and 2004. Figures for 2004 are in parenthesis.

the Employment Survey. Compared with the corresponding period of 2004, unemployment inflows increased from 3.9 to 4.1 per cent of the labour force. Similarly, unemployment outflows in the first half of 2005 (4.6 per cent), were lower than in the first half of 2004 (4.8 per cent). It should also be noted that outflows from unemployment into employment decreased by 0.3 p.p. of the labour force in 2004, while flows into inactivity increased by 0.1 p.p.

Banco de Portugal estimates a 2.8 per cent rise in private sector wages per worker in 2005, resulting in an increase of approximately 0.6 per cent in real terms (0.7 per cent in 2004). As regards the total economy, wage increases per worker are estimated at 2.9 per cent in 2005, corresponding to an acceleration of 0.5 p.p. in nominal terms compared to 2004. This behaviour is associated with developments in civil servants' wages in 2005, after a quasi-freeze in 2004.

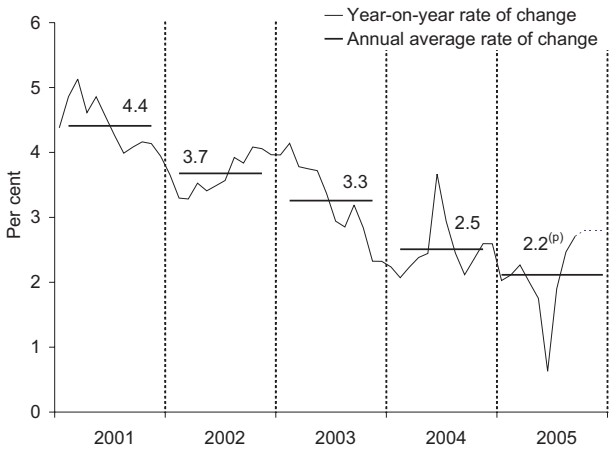
Estimates of unit labour costs point to an increase of 2.5 per cent in the total economy and 2.3 per cent in the private sector. This represents a deterioration compared to 2004, which is related to the smaller growth of the apparent labour productivity (1.5 and 0.5 per cent in 2004 and 2005 respectively). The growth differential of unit labour costs in the total economy with the euro area remained positive and is likely to widen in 2005.

6. PRICES

In 2005 the annual average inflation rate, as measured by the HICP, is projected to decline by 0.3 p.p., to 2.2 per cent (Chart 6.1). Taking as a reference the ECB staff macroeconomic projections for euro area inflation, the inflation differential between Portugal and the euro area will be close-to-zero in 2005.

Chart 6.1

HARMONISED INDEX OF CONSUMER PRICES



Sources: *INE* and Banco de Portugal estimates.
Note: (p) Projection.

The latest data available point to the materialisation of the two main risks of the inflation projection identified in the summer edition of the Economic Bulletin, namely, a lower than projected impact of the rise in the standard VAT rate on inflation (the impact initially estimated was 0.3 p.p.) and more adverse developments in oil prices. In addition, changes in both import prices excluding fuel and unprocessed food prices have been lower than projected. The combined effect of these factors explains the slight downward revision of the inflation projection (-0.1 p.p).

The deceleration of prices in 2005 is largely due to the unwinding of the effects associated with the holding in Portugal of the European Football Championship in June 2004, in particular at the level of services prices, as well as to the performance of import prices excluding fuel, which according to the most recent information recorded close-to-zero growth in the first half-year. In fact, similarly to other economies, the impact of the rise in oil prices on consumer prices has been partly offset by the fall in import prices of several types of goods, associated with the increasing participation of low-cost producers in the world market. In addition, according to Banco de Portugal estimates, the growth rate of wages in the private sector is likely to decline from 3.2 per cent in 2004 to 2.8 per cent in 2005, which is also contributing to contain pressures on prices, in particular in the

Table 6.1

HICP – MAIN CATEGORIES AND AGGREGATES

Average and year-on-year rates of change

Per cent

	Weights	Annual average rate of change			Year-on-year monthly rates of change				
		2002	2003	2004	2005 Sep.	2004 Dec.	2005 Mar.	2005 Jun.	2005 Sep.
Total	100.0	3.7	3.3	2.5	2.1	2.6	2.3	0.6	2.7
Total excluding unprocessed food and energy	80.6	4.5	3.3	2.6	1.7	2.3	1.9	0.2	1.9
Aggregates									
Goods	61.9	2.4	2.4	1.6	1.7	2.0	1.8	1.1	2.8
Food	21.5	1.9	2.6	1.4	-0.1	0.6	0.2	-0.5	0.3
Unprocessed	10.9	0.2	2.1	0.0	-0.8	-0.5	-0.1	-1.1	0.0
Processed	10.7	3.8	3.1	2.8	0.6	1.7	0.5	0.1	0.7
Industrial	40.3	2.7	2.4	1.8	2.7	2.8	2.6	2.0	4.1
Non-energy	31.8	3.1	1.8	0.8	0.9	1.1	1.1	0.5	1.2
Energy	8.5	1.2	4.9	5.4	9.8	9.6	8.4	7.6	14.7
Services	38.1	5.9	4.6	3.9	2.7	3.5	3.0	0.0	2.7
Memo:									
CPI	-	3.6	3.3	2.4	2.2	2.5	2.2	1.6	2.8

Sources: *INE* and Banco de Portugal.

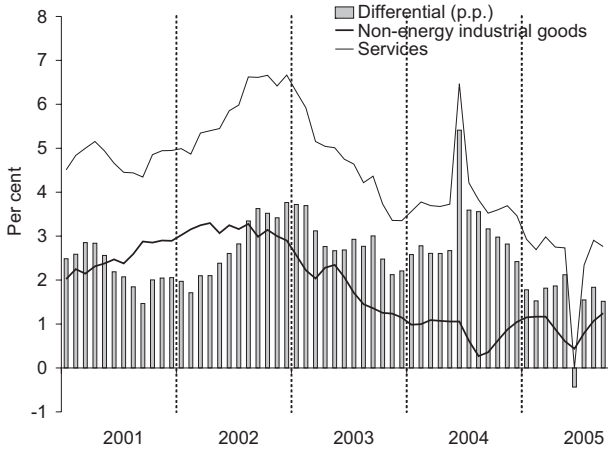
services sector. However, inflation projections for 2005 point to an acceleration in prices in the second half of the year, chiefly reflecting the rise of the standard VAT rate from 19 to 21 per cent in July, as well as more adverse developments in oil prices in recent months.

The effect of the unwinding of the strong hotel price rises in June 2004 was less marked in the Consumer Price Index (CPI), due to differences in the weighting structure used to aggregate elementary price indices[11]. Thus, contrary to 2004, the annual average inflation rate, as measured by the CPI, is likely to be slightly higher than the one projected for the HICP (approximately 0.1 p.p.). The difference between the two indices was particularly marked in June, when the year-on-year rate of change in the HICP reached a trough of 0.6 per cent, i.e. one percentage point lower than the comparable CPI rate.

Until July, the year-on-year rate of change in the HICP generally stood close to 2.0 per cent, reflecting a decline of around 0.5 p.p. from the levels in end-2004. The smaller price rise over this period was due to the non-energy component of the HICP, with a particularly marked deceleration in food prices, which recorded negative or close-to-zero year-on-year rates of change. In August and September inflation increased, standing at 2.7 per cent in the latter month. The higher price rises in these two months are associated with the change in the standard VAT rate in July, which significantly affected the prices of non-energy industrial goods, as well as with the acceleration of oil prices in international markets, which fuelled a strong rise in the prices of energy industrial goods (Table 6.1).

Turning to the most volatile components of the HICP, and contrasting with 2004, the reduction in unprocessed food prices did not fully offset the strong rise in energy prices, which accelerated almost continuously over this period, in line with oil price developments in international markets. Thus, the average growth of the HICP excluding these two components was lower than that of the overall index (1.9 and 2.7 per cent, respectively, in September).

Chart 6.2
IHCP - NON-ENERGY INDUSTRIAL GOODS AND SERVICES



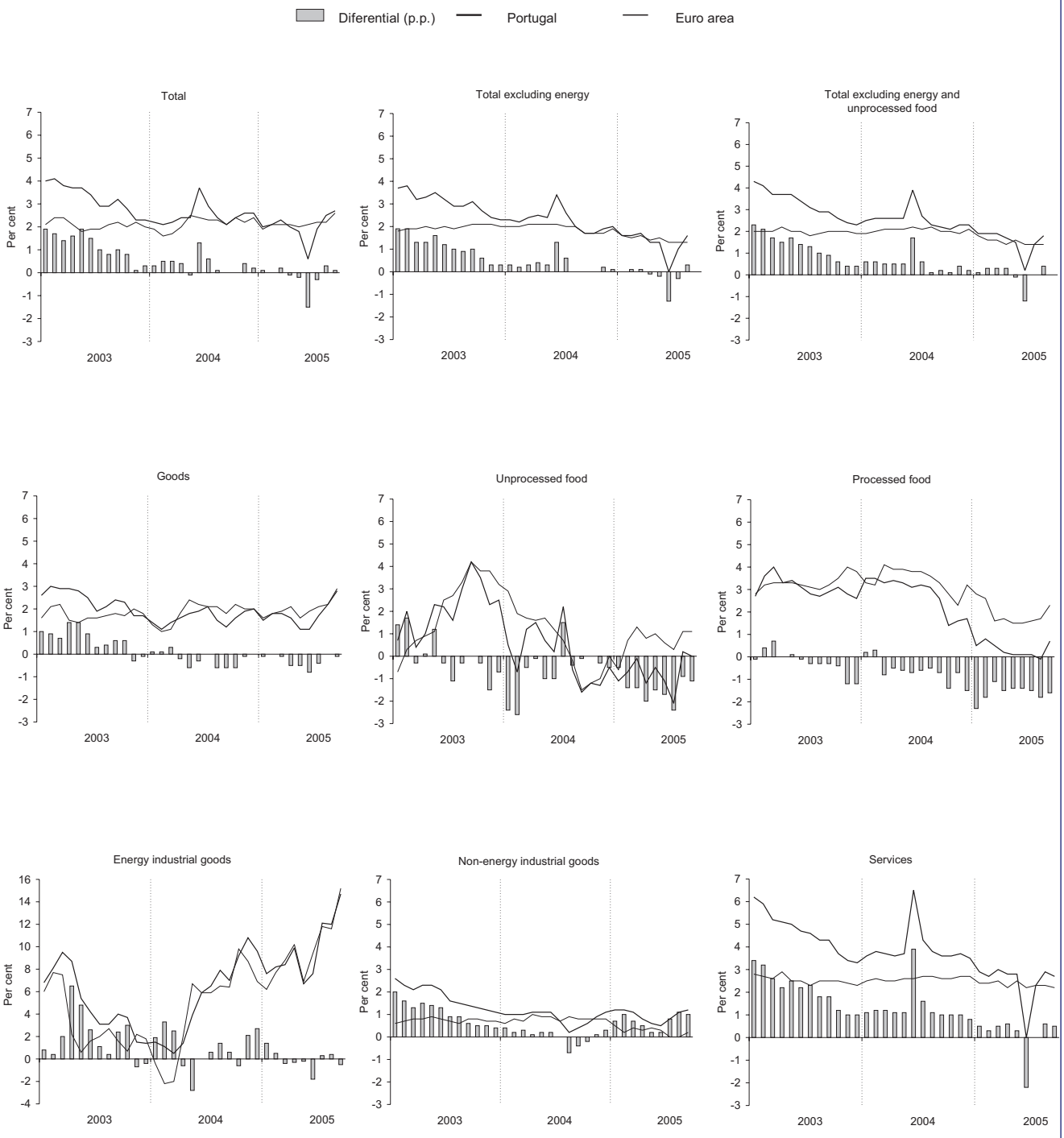
Source: *INE*.

The price rises of non-energy industrial goods were limited and similar to those recorded at end-2004, continuing to benefit from the performance of import prices referred to above. In turn, services prices, despite maintaining higher year-on-year rates of change, decelerated significantly. Thus, the differential between year-on-year price increases in these two aggregates stood at 1.5 p.p. in September, corresponding to a 0.9 p.p. fall from end-2004 (Chart 6.2).

The inflation differential vis-à-vis the euro area has been negative or close-to-zero since the beginning of the year. Developments in the inflation differential were influenced by the behaviour of food and services prices. On average, between December 2004 and September 2005, the inflation differential widened from 0.9 to -1.5 p.p. as regards food, and narrowed from 1.3 to 0.3 p.p. as regards services (Chart 6.3).

(11) In general, the CPI and the HICP exhibit identical behaviours as they are derived from the same monthly data. Possible divergences may be due to differences at the level of the weighting structure used for the aggregation of elementary price indices. While the HICP weightings have as a reference the expenditure structure of consumers in the Portuguese territory, thus including consumption by tourists, the CPI only considers the expenditure structure of resident consumers. This implies that services, in particular hotel services, have a higher weighting in the HICP.

Chart 6.3
HARMONISED INDEX OF CONSUMER PRICES
Year-on-year rates of change and differentials



Source: Eurostat.

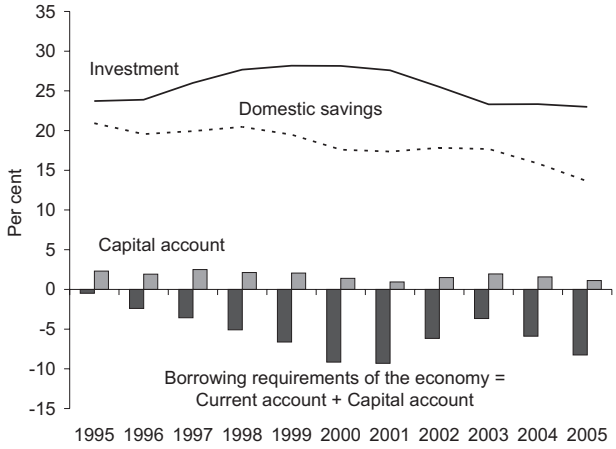
7. BALANCE OF PAYMENTS

7.1. Borrowing requirements in 2005

The net external borrowing requirement of the Portuguese economy, as measured by the current and capital accounts deficit, is likely to reach 8.3 per cent of GDP in 2005, corresponding to an increase of 2.4 p.p. from the previous year (Table 7.1). Thus, the external imbalance of the Portuguese economy, whose adjustment was interrupted in 2004, deteriorated further. The increase in the net external borrowing requirement continues to be chiefly due to a reduction in domestic savings. Indeed, investment as a percentage of GDP will likely be slightly lower than in 2004 (Chart 7.1). This behaviour results from the contribution of both the private and public sectors and reflects an easy access to financing in the absence of foreign exchange risk and in a context of historically low interest rates in international financial markets.

The widening of the external deficit in 2005 will likely reflect a deterioration in all the main components of the current and capital accounts. Therefore, even excluding fuel, the deficit would probably increase. The widening of the deficit currently estimated is significantly higher than foreseen in the summer edition of the Economic Bulletin. This development is common to most components, the exception being the goods and services account,

Chart 7.1
INVESTMENT, SAVINGS AND BORROWING REQUIREMENTS
As a percentage of GDP



Sources: *INE* and Banco de Portugal.

Table 7.1
CURRENT ACCOUNT AND CAPITAL ACCOUNT
As a percentage of GDP

	Annual figures			1st half-year[a]		
	2003	2004	2005[b]	2003	2004	2005
Current account	-5.6	-7.5		-6.5	-7.3	-10.0
Goods	-9.2	-10.6		-8.7	-9.9	-11.1
Services	2.6	3.0		1.8	2.5	2.1
of which:						
Travel and tourism	2.7	2.9		2.1	2.4	2.0
Income	-1.1	-1.8		-1.3	-1.9	-2.6
Current transfers	2.1	2.0		1.7	2.0	1.6
of which:						
Emigrants'/immigrants' remittances	1.5	1.4		1.3	1.3	1.1
Capital account	2.0	1.6		1.7	1.3	0.8
Memo:						
Current account + capital account	-3.7	-5.9	-8.3	-4.8	-6.0	-9.1

Sources: *INE* and Banco de Portugal.
Notes:
(a) For the calculation of the ratios of the several components of the balance of payments as a percentage of GDP in the first half-years, half-yearly estimates of nominal GDP calculated by Banco de Portugal were used.
(b) Banco de Portugal estimate.

whose deficit should be close to the earlier projection. In particular, balance of payments data suggest that capital transfers from the European Union in 2005 will clearly fall short of the official forecast, which is consistent with the unfavourable performance of investment.

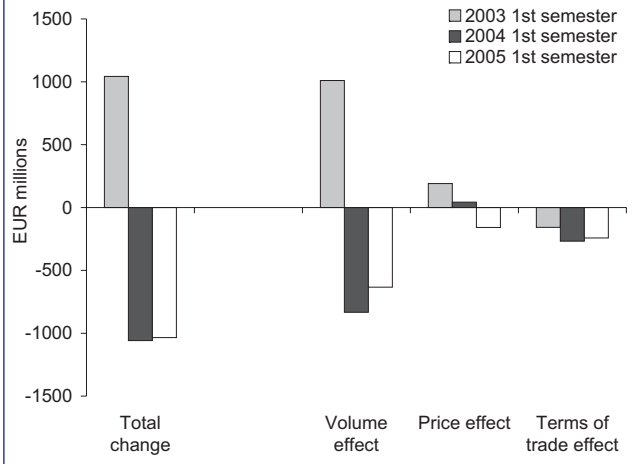
7.2. The balance of payments in the first half of 2005

In the first half of the year, the current and capital accounts deficit increased to 9.1 per cent of GDP. The widening of the Portuguese external deficit reflected a deterioration in all major items.

The trade balance posted a deficit equivalent to 11.1 per cent of GDP. The lower growth of exports vis-à-vis imports (0.2 and 2.5 per cent, respectively) accounted for an adverse volume effect. The loss in terms of trade associated with the increase in imported fuel prices also had a negative impact on the trade balance (Chart 7.2). In fact, according to Banco de Portugal estimates based on data supplied by INE, the year-on-year rates of change in the prices of goods exports and imports stood at 1.6 and 2.9 per cent respectively, translating into a loss in terms of trade of 1.3 p.p. in the first half of 2005. However, excluding fuel, there was a terms of trade gain of 1.2 p.p. (changes in export and import prices were of 1.3 and 0.1 per cent respectively), which would lead to a stabilisation of the trade deficit excluding fuel in the first half of the year. Nevertheless, even excluding the energy component, the current and capital accounts deficit deteriorated, as a result of unfavourable developments in the remaining components.

Contrasting with the past five years, the services account surplus decreased as a percentage of GDP. Tourism revenue in nominal terms dropped by 2.5 per cent, partly related to the strong growth recorded in the corresponding period of 2004 due to the holding in Portugal of the European Football Championship. In turn, imports of tourism services recorded again a strong acceleration (of 12.5 per cent). The income deficit widened in the first half of the year, reflecting a deterioration of income from deposits and debt securities, in line with the increase in the liabilities of the resident sectors. The surplus of private current transfers declined further, due to the behaviour of its main item, i.e. emigrants/immigrants remittances. Likewise, there was deterioration in the surplus of current public transfers and, more importantly in the capital account surplus. Indeed, there was a decline in public capital transfers from the European Union and in particular a reduction of nearly 40 per cent in receipts associated with the European Regional Development Fund.

Chart 7.2
CHANGE IN THE GOODS ACCOUNT[(a)]
As a percentage of GDP



Sources: *INE* and Banco de Portugal.
Note:
(a) A positive (negative) change means an increase (decrease) in the goods balance. For a description of the methodology used in the breakdown of the change in the goods balance, see Banco de Portugal *Annual Report* 2003, page 169.

The deterioration in the current and capital accounts deficit gave rise to higher net inflows from abroad. Thus, the financial account, which reflects the instruments used to process the external financing of the resident institutional sectors, recorded net inflows equivalent to 10.0 per cent of GDP in the first half of 2005 (6.3 per cent of GDP over the same period in 2004) (Table 7.2).

The significant acquisition of Portuguese public debt securities by non-residents was the most remarkable financial account development in the first half of 2005. Indeed, net inflows into the general government virtually doubled compared with the corresponding period a year earlier. This reflects the increase in general government borrowing requirements resulting from the 2005 fiscal deficit, as well as from the issuance of a considerable amount of public debt in early 2005 for the

Table 7.2

FINANCIAL ACCOUNT

As a percentage of GDP

	Jan-Dec 2004	January-June 2004			January-June 2005		
	Net change	Change liabilities	Change assets	Net change	Change liabilities	Change assets	Net change
Current plus capital account	-5.9			-6.0			-9.1
Financial account[(a)]	6.7	27.5 (16.0)	-21.1 (-9.6)	6.3	19.1 (14.4)	-9.1 (-4.3)	10.0
Direct investment	-2.9	5.0	-5.2	-0.2	1.9	-1.5	0.3
Excluding Madeira and Santa Maria (Azores) off shores	*-0.7*	*1.9*	*-1.6*	*0.4*	*1.6*	*-1.5*	*0.1*
Portfolio investment	0.9	2.6	-6.9	-4.4	7.0	-7.5	-0.5
Financial derivatives	0.0	-2.2	2.2	0.0	-2.5	2.2	-0.4
Other investment	7.7	22.1 (10.6)	-12.6 (-1.1)	9.6	12.7 (8.0)	-2.1 (2.6)	10.6
Reserve assets	1.1	-	1.4	1.4	-	-0.1	-0.1
By resident institutional sector:							
Monetary authorities[(a)]	5.4 (2.1)	12.3 (0.8)	0.6	12.9 (1.4)	7.9 (3.2)	-0.2	7.7 (3.0)
Portfolio investment	0.7	-	-0.3	-0.3	-	0.3	0.3
Financial derivatives	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other investment	3.6 (0.3)	12.3 (0.8)	-0.5	11.9 (0.4)	7.9 (3.2)	-0.3	7.5 (2.8)
Reserve assets	1.1	-	1.4	1.4	-	-0.1	-0.1
General government	4.2	3.3	-0.3	3.0	5.9	0.0	5.8
Direct investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Excluding Madeira and Santa Maria (Azores) off shores	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Portfolio investment	3.8	4.0	-0.4	3.6	7.1	0.1	7.2
Financial derivatives	0.0	-0.3	0.1	-0.2	-0.4	0.2	-0.3
Other investment	0.4	-0.5	0.0	-0.5	-0.8	-0.3	-1.1
Other monetary financial institutions[(a)]	-4.2 (-0.9)	6.5	-7.5 (4.0)	-1.0 (10.5)	1.1	0.0 (4.7)	1.1 (5.8)
Direct investment	-1.6	0.0	-0.1	-0.1	0.0	-0.2	-0.2
Excluding Madeira and Santa Maria (Azores) off shores	*-1.6*	*0.0*	*-0.1*	*-0.1*	*0.2*	*-0.2*	*0.0*
Portfolio investment	-4.0	-0.9	-0.9	-1.8	-2.7	-0.8	-3.5
Financial derivatives	0.0	-1.3	1.4	0.1	-1.4	1.3	-0.1
Other investment	1.4 (4.7)	8.7	-7.9 (3.6)	0.9 (12.4)	5.3	-0.4 (4.3)	4.9 (9.6)
Non-monetary financial institutions	2.6	-0.4	-3.5	-3.9	1.9	-5.9	-4.0
Direct investment	1.5	0.0	0.0	0.0	0.2	-0.5	-0.3
Excluding Madeira and Santa Maria (Azores) off shores	*1.5*	*0.1*	*0.0*	*0.2*	*0.2*	*-0.5*	*-0.3*
Portfolio investment	0.9	-0.2	-4.0	-4.2	2.1	-5.8	-3.7
Financial derivatives	0.0	-0.6	0.5	0.0	-0.6	0.5	0.0
Other investment	0.2	0.3	0.0	0.3	0.2	-0.2	0.0
Non-financial corporations and households	-1.3	5.7	-10.4	-4.7	2.3	-2.9	-0.6
Direct investment	-2.8	5.0	-5.0	0.0	1.6	-0.9	0.8
Excluding Madeira and Santa Maria (Azores) off shores	*-0.6*	*1.7*	*-1.4*	*0.3*	*1.2*	*-0.9*	*0.4*
Portfolio investment	-0.6	-0.4	-1.3	-1.7	0.6	-1.3	-0.7
Financial derivatives	0.0	-0.1	0.1	0.1	-0.1	0.2	0.0
Other investment	2.1	1.2	-4.2	-3.0	0.2	-0.9	-0.7
Errors and omissions	-0.8			-0.4			-0.9

Sources: *INE* and Banco de Portugal.

Notes: A (+) sign means an increase in external liabilities or a decrease in external assets, i.e. a financial inflow. A (-) sign means a decrease in external liabilities or an increase in external assets, i.e. a financial outflow.

(a) Values in brackets for other investment of the monetary authorities and other monetary financial institutions are adjusted for temporary end-of-year operations among the two sectors reversed in the first days of the following year.

payment of expenditure related to 2004 and previous years, authorised in the 2004 Supplementary State Budget. Unlike in the first half of 2004, net investment of non-residents in long-term public debt securities (fixed-rate Treasury bonds) was higher than investment in short-term securities. In fact, the Portuguese government, after having favoured the issuance of Treasury bills in 2003 and 2004, strengthened the long-term component in the first half of 2005. These developments were due to the possibility of issuing long-term debt at historically low rates, which reflect the very favourable conditions in international financial markets.

Banks continued to play a key role in the intermediation of the external financing to the non-financial private sector in Portugal[12]. This intermediation has been chiefly reflected in other investment flows, which include, *inter alia*, loans/deposits of branches and subsidiaries of Portuguese banking groups established abroad. The amounts of these loans/deposits result largely from the issuance of debt securities by those subsidiaries and branches. Gross issuance of securities by subsidiaries and branches of Portuguese banks was again significant in the first half of 2005, confirming the preference already observed in 2004 for longer-term financing. This trend seems to have been favoured by the historically low levels of interest rates on long-term loans, which have allowed Portuguese banks to reduce substantially their refinancing costs and risk.

Securitisation operations by banks continued to have an impact on financial account flows. These operations enable the financing of banks against the issuance of securities of the non-monetary institutions sector. Considering that these securities are typically underwritten by non-residents, they give rise to portfolio liability flows in the non-monetary financial institutions sector. These operations represented nearly 2 per cent of GDP in the first half of 2005, i.e. higher than in the corresponding period of 2004. Turning to portfolio investment, it should also be noted that non-monetary financial institutions, in particular insurance companies and pension funds, continued to make significant investments in securities issued by non-residents, taking advantage of portfolio diversification opportunities that arise from participation in the euro area.

In turn, flows relating to deposits abroad by non-financial corporations and households in the first half of 2005 were far lower than in the corresponding period of 2004.

In the analysis of foreign direct investment it is important to take into account that frequent and sizeable foreign direct investment operations are carried out through the Madeira and Santa Maria free trade zones, which are not related to the domestic activity. Excluding the companies having their head office in these free trade zones, both Portuguese direct investment abroad and foreign direct investment in Portugal recorded positive figures in the first half of 2005, corresponding in net terms to a close-to-zero balance.

8. CONCLUSION

In 2005 imbalances in the Portuguese economy continued to widen and economic growth remained among the lowest in the European Union. The per capita income gap vis-à-vis the European Union has increased since 2000, reflecting the low trend growth of the productivity of the Portuguese economy.

The adoption of the euro and the strengthening of globalisation increased significantly the consumption and investment opportunities of the Portuguese economy, but at the same time rendered the environment in which agents operate more demanding.

With participation in monetary union, the Portuguese economy benefits from a regime of lower and less volatile interest rates, in a context of low inflation; it also has access to external financing without incurring in currency risk. In turn, the increased competition associated with globalisation has benefited consumers through a reduction in the prices of several consumer goods and a rise in choice possibilities. As far as firms are concerned, the new environment implies the need to contain costs and reconvert production, so as to obtain efficiency gains; in parallel, there are also new investment and business opportunities associated with the increased size of the market. For a small

(12) Considering the figures adjusted for the effects of temporary end-of-year operations between other monetary financial institutions and monetary authorities. For further details, see Banco de Portugal, *Annual Report* 2004, section 7.1, page 103.

open economy like Portugal, the increasing economic integration at world level implies an overall improvement in welfare, but requires a change in the pattern of comparative advantage, with significant transition costs at the sectoral level.

While full advantage has been taken of the new consumption opportunities, the performance of investment and exports has been disappointing. Over the past few years, this situation has given rise to a significant gap between the growth of expenditure and output, financed through external indebtedness, without a simultaneous strengthening of the productive capacity of the economy. These developments cannot be indefinitely maintained given that, notwithstanding the reduction in liquidity constraints, the inter-temporal budget constraints of both the private and public sectors remain relevant. The inevitable correction of the trend in indebtedness may take the form of lower consumption growth, higher potential growth of the economy or, most likely, a combination of both.

In this context, in order to enhance potential growth, it is crucial that the authorities ensure a favourable environment to sustained productivity increases. In particular, incentives must be compatible with the promotion of investment in human and physical capital, as well as with the creation and efficient use of new technologies and productive processes. In parallel, the rationalisation of the general government services in the context of fiscal consolidation may also make an important contribution to productivity growth. In this respect, an institutional framework promoting the transfer of capital and labour to the most dynamic sectors and firms would speed up the adjustment process, fostering gains from the global integration process.

The cut-off date for data included in this article was 3 November 2005.

Box 1: PASS-THROUGH OF OIL PRICE INCREASES TO INFLATION IN THE EURO AREA

The price of Brent crude oil was about USD 60 per barrel at the end of October 2005, doubling both in US dollars and in euros, in comparison with the figures recorded in the first quarter of 2004. Over the same period, inflation in the euro area, as measured by the year-on-year change in the HICP, increased from around 2 per cent to 2.6 per cent in September 2005 (Chart 1).

The pass-through of oil price increases to consumer prices may be broken down into direct and indirect (first and second-round) effects. Direct effects are associated with the weight of energy goods in the price index and are virtually immediate. In turn, first-round indirect effects result from changes in the prices of other goods and services via their energy component (for instance, transports), taking some time to pass on to all stages of the production chain. Finally, second-round effects are related to possible increases in inflation expectations, which, in turn, are reflected in wage behaviour.

With respect to the direct effects, Chart 2 reveals a strong increase of the contribution of energy industrial goods to the year-on-year change in the HICP since mid-2004. Indeed, this contribution, which had hovered around zero between mid-2003 and mid-2004, has increased markedly since then, reaching 1.4 p.p. in September 2005. The price rise of energy goods is also having a non-negligible impact on producer prices. However, the downward trend in producer prices excluding energy goods suggests that so far no indirect effects have been observed (Chart 3).

Against this background, the rise in inflation, as measured by the HICP, has been relatively subdued, namely when compared with the rise recorded in the oil shock that took place between 1999 and 2001. This suggests that other factors may be contributing to offset the impact of the oil price rise on consumer prices. Among these, the behaviour of non-energy import prices and of wages seems to be particularly relevant.

The breakdown of the unit price index of euro area imports reveals that import prices excluding fuel have remained broadly unchanged in the recent period (Chart 4). The behaviour of import prices seems to be largely associated with the fall in the international price of several types of consumer goods, including food. This price reduction results from a rise in international competition, in a context in which low-cost producers are increasing their share in world trade[(1)]. Developments in the euro exchange rate have also contributed to the absence of pressure on import prices. In fact, while in 1999-2001 the euro depreciated significantly, in the last two years the euro exchange rate has remained relatively stable.

In turn, wage increases have been moderate in most euro area countries presenting no evidence of second-round effects. The increased international competition mentioned above, as well as the maintenance of a negative output gap and anchored inflation expectations are likely to be contributing to moderate wage developments. Indeed, and contrasting with the period from 1999 to 2001, activity growth in the euro area has been subdued, thus contributing to contain pressure on prices and wages (Chart 5). In addition, long-term inflation expectations have remained anchored at levels consistent with price stability (Chart 6).

The downward trend of core inflation, as measured by the year-on-year change in the HICP excluding unprocessed food and energy, suggests that the stability of long-term inflation expectations, the current cyclical position and labour market conditions have been major factors limiting second-round effects (Chart 2). However, it should be noted that in the 1999-2001 oil shock, the rise in oil prices seems to have passed on to core inflation only one year and a half to two years after the start of the oil price rise.

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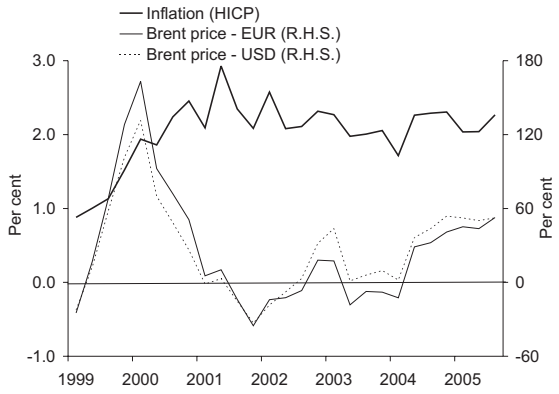
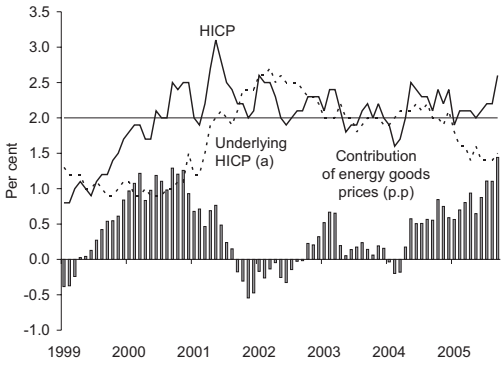
(1) The share of world output exchanged at the international level, measured as the ratio of world imports and exports to GDP increased by approximately 9 p.p. between 1999 and 2004, to around 54 per cent. In turn, the share of China in euro area imports, excluding intra-euro area trade, increased from 4.7 per cent in 1999 to 8.6 per cent in 2004.

Chart 1
OIL PRICE AND INFLATION IN THE EURO AREA
Year-on-year rate of change



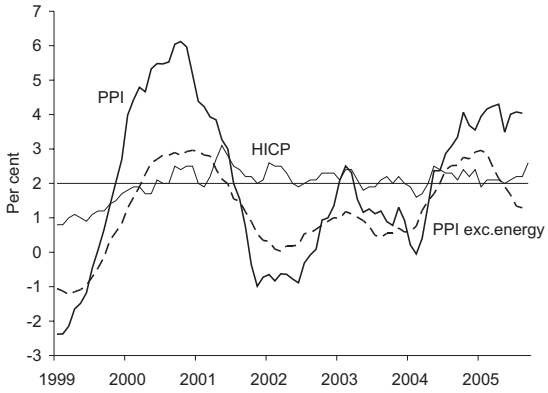
Sources: Eurostat and Thomson Financial Datastream.

Chart 2
HICP IN THE EURO AREA
Year-on-year rate of change



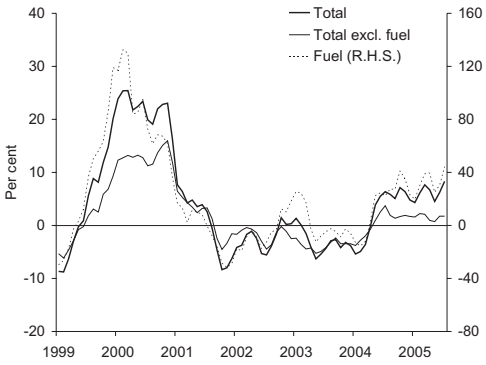
Source: Eurostat.
Note:
(a) Excluding unprocessed food and energy.

Chart 3
EURO AREA PRICE INDICES
Year-on-year rate of change



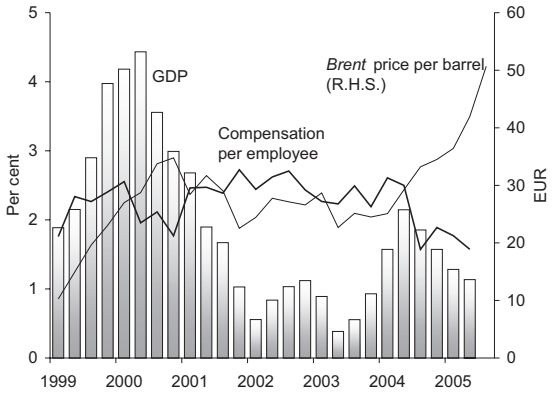
Source: Eurostat.

Chart 4
UNIT PRICE INDEX OF EXTRA-EURO AREA EXPORTS
Year-on-year rate of change



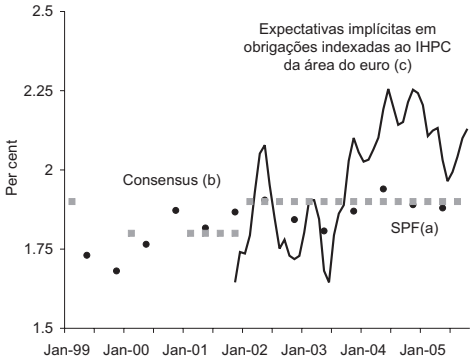
Sources: *Comext* and Eurostat.

Chart 5
EURO AREA - ACTIVITY AND WAGES
Year-on-year rate of change



Sources: ECB, Eurostat and Thomson Financial Datastream.

Chart 6
INFLATION EXPECTATIONS FOR THE EURO AREA



Sources: ECB, Bloomberg and Consensus Economics.
Notes:
(a) Survey of Professional Forecasters; expected inflation five-years-ahead.
(b) Expected inflation ten-years-ahead.
(c) Expected inflation rate up to bond maturity (2012).

Box 2: PORTUGUESE FISCAL POLICY IN THE CONTEXT OF THE STABILITY AND GROWTH PACT

Following the reassessment of the fiscal prospects in the spring 2005, Portugal submitted last June to the European Commission an update of the Stability and Growth Programme for the period 2005-2009. This document set the general government deficit in 2005 at 6.2 per cent of GDP[(1)]. This figure is estimated to fall progressively to 1.6 per cent of GDP in 2009. Given the path of the deficit and the expected growth of economic activity, the public debt-to-GDP ratio is expected to increase until 2007, narrowing afterwards to a projected 64.5 per cent at the end of 2009 (Table 1). Chart 1 displays the direct effects of the fiscal consolidation measures included in the Stability and Growth Programme to meet the above-mentioned targets.

Table 1

FISCAL TARGETS OF THE STABILITY AND GROWTH PROGRAMME

As a percentage of GDP

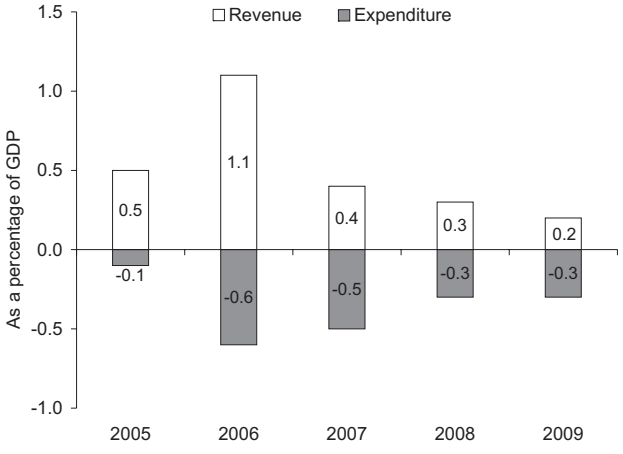
	2005	2006	2007	2008	2009
Overall balance	-6.2	-4.8	-3.9	-2.8	-1.6
Public debt	66.5	67.5	67.8	66.8	64.5
Balance adjusted for the cycle and temporary measures	-5.5	-4.0	-3.3	-2.6	-1.8
Memo:					
Real GDP growth (rate of change)	0.8	1.4	2.2	2.6	3.0

Source: *Ministério das Finanças*.

Chart 1

STABILITY AND GROWTH PROGRAMME

Direct effects of fiscal consolidation measures[(a)]



Source: *Ministério das Finanças*.
Note:
(a) Direct effects, year on year, of the discretionary measures included in the Stability and Growth Programme (Table 3.2).

Following the update of the Stability and Growth Programme, which revealed prospects of a deficit far above 3 per cent of GDP, the excessive deficit procedure was launched against Portugal. The process was completed in September with the adoption by the Council of a decision acknowledging the existence of an excessive deficit in Portugal and of a recommendation on the measures to be taken with a view to its correction.

The recommendations of the Council set a period of six months during which Portugal will specify the measures required to ensure the fulfilment of the targets set in the Stability and Growth Programme, so as to guarantee the elimination of the excessive deficit until 2008 at the latest. The two-year lengthening of the period for the correction of the fiscal imbalances was based on three types of considerations. First, the cyclical position and weak economic growth. Second, the magnitude of the adjustment required. Third, the fact that Portuguese authorities point to a fiscal consolidation strategy that will not resort to significant temporary measures. In this context, the Council rec-

(1) *In this box, the figures for nominal GDP used in the ratios correspond to the estimates of the Ministry of Finance included in the Stability and Growth Programme, prepared on the 1995 National Accounts basis.*

ommended a reduction of at least 1.5 p.p. of GDP in the deficit adjusted for the cycle and temporary measures in 2006, followed by declines of at least 0.75 p.p. of GDP in each of the two following years. In addition, the Council recommended the rapid implementation of the reforms aimed at containing and reducing public expenditure in the next years and, if deemed necessary, the adoption of additional measures for the correction of the excessive deficit until 2008. The Portuguese authorities were required to ensure a downward trend of the debt ratio, bringing it down rapidly to the reference value of 60 per cent of GDP. Finally, with a view to meeting the medium-term fiscal target, the Council also suggested a reduction of the deficit adjusted for the cycle and temporary measures of at least 0.5 p.p. of GDP each year, after the correction of the excessive deficit. These recommendations are consistent with the adjustment foreseen in the Stability and Growth Programme.

The structural measures envisaging the sustained reduction of the fiscal deficit already implemented in 2005 or included in the draft law on the State Budget for 2006 involve both the revenue and expenditure sides. On the revenue side, reference should be made to the increase in the standard VAT rate from 19 to 21 per cent, to the increase in the tax on oil products and in the tobacco tax, to the gradual alignment of the tax rules on pension income with the ones on employed workers' wages and to the rise in the wage reference used to determine the minimum contributions to social security by the self-employed. In addition, recent developments towards an improvement in the tax administration procedures should continue over the Stability and Growth Programme horizon. On the expenditure side, the "Estatuto de Aposentação dos Funcionários Públicos" (civil servants retirement statute) will be reviewed in order to speed up its convergence towards the rules of the private social security system, changes will be introduced in health subsystems' rules in several careers of civil servants and the reimbursement of medicine expenditures will be reduced. In addition to these measures, the Stability and Growth Programme envisages several others, which according to the Draft State Budget Report for 2006, will be prepared in the course of 2006.

NOTICE

The article on the evolution of the banking system in the first half-year, usually published in the Autumn Economic Bulletin of Banco de Portugal, will not be published this year.

The implementation of IAS/IFRS led to the coexistence, in 2005, of different accounting frameworks on consolidated accounts, namely the (former) Charter of Accounts for the Banking System (Notice no.4/96 and no.71/96), the new Adjusted Accounting Standards (AAS - Notice no.1/2005) and the new International Accounting Standards (IAS).

The difficulties arising from the creation of consistent and robust comparable analysis using heterogeneous accounting systems (namely in what concerns the classification of financial instruments and the valuation techniques) hinder, at the present stage, the analysis and the evaluation of the evolution of balance sheet items and of profit and loss accounts, most notably in what refers to year-on-year comparisons.

As a consequence, it was decided, based on technical considerations, that, exceptionally, the article usually published referring to developments in the banking system in the first half-year will not be published in 2005.

It should be stressed, however, that the preparation - and publication - of the next Financial Stability Report is not at stake, given that all financial groups and institutions should report their financial statements using IAS or AAS for the period referring to 31 December 2005, complemented with year-on-year comparisons, what should allow for (with all due adjustments) the availability of sufficiently comparable analysis concerning developments in the banking system.

MAIN DEVELOPMENTS IN THE PORTUGUESE FOREIGN EXCHANGE AND DERIVATIVES MARKET IN 2005

1. INTRODUCTION

In 2005 the Banco de Portugal continued to conduct the Annual Survey of foreign exchange and derivatives market activity collecting, as usual, data on turnover and notional amounts outstanding[(1)]. With regard to transactions, data collected covered foreign exchange market instruments and interest rate derivatives for a single currency[(2)]. Data on amounts outstanding covered a wider range of market risk categories including, equity, commodity, credit and "other" derivatives, in addition to foreign exchange and interest rate instruments.

Similarly to the methodology used in the previous surveys, the universe of reporting institutions includes all banking institutions resident in Portugal. However, some of these institutions did not report any data given that, at the time of the survey, they had no activity in any of the covered market risk categories. Therefore, a total of 44 banks[(3)] participated in the 2005 survey, i.e. the same number of banks that participated in the two previous surveys.

This text highlights the main changes in the size and structure of the foreign exchange and derivatives markets in Portugal, analysing the turnover and amounts outstanding in over-the-counter (OTC) (section 2) and organised markets (section 3). The last section (section 4) describes developments in the degree of concentration in the several market risk categories covered by the survey.

The most significant developments between 2004 and 2005 were the following:

- continuing expansion of the foreign exchange market activity and, even more markedly, of the derivatives market, both in terms of transactions and amounts outstanding;
- convergence between the pace of growth of turnover of the traditional foreign exchange market and the interest rate derivatives market;
- strengthening of the share of interest rate derivatives in the portfolios of institutions;
- significant development of the credit derivatives segment;
- continuation of the growth trend of the interest rate swaps segment, which became the most traded instrument in the OTC market;
- increase in transactions with resident non-financial customers in the foreign exchange market, although non-resident financial institutions continued to be clearly predominant in all segments;
- continuing predominance of the euro, albeit with some loss of share, in most segments; this decrease was more marked in the traditional foreign exchange segment, in parallel with an increase in the share of the US dollar and a group of other European currencies (namely, the Turkish lira);
- continuing preponderance of electronic trading systems in foreign exchange transactions, with a significant increase in transactions conducted through single-bank platforms for customers;
- continuation of the clear predominance of interest rate derivatives in organised markets, despite some decrease in transactions of these

(1) Information on turnover covers all transactions carried out in April 2005, while information on amounts outstanding covers the nominal or notional amounts of all operations carried out but not yet settled at the end of March 2005.

(2) Derivatives involving exposure to interest rate risk in more than one currency are classified as foreign exchange derivatives.

(3) Banks are considered on an individual basis, not taking into account whether they belong or not to financial groups.

types of instruments and the continuation of the strong growth trend of equity derivatives;
- continuing high degree of concentration in the various market segments, both in terms of turnover and amounts outstanding.

2. OTC MARKET

2.1. Turnover[4]

Between April 2004 and April 2005, activity in the OTC market continued to expand at a moderate pace. The aggregate average daily turnover of transactions in the traditional foreign exchange market and of foreign exchange and interest rate derivatives increased by around 17 per cent, to USD 3,356 million, recording a growth rate close to that seen in the previous year. When adjusted for exchange rate fluctuations, turnover growth was lower, standing at 10 per cent (Table 1*).

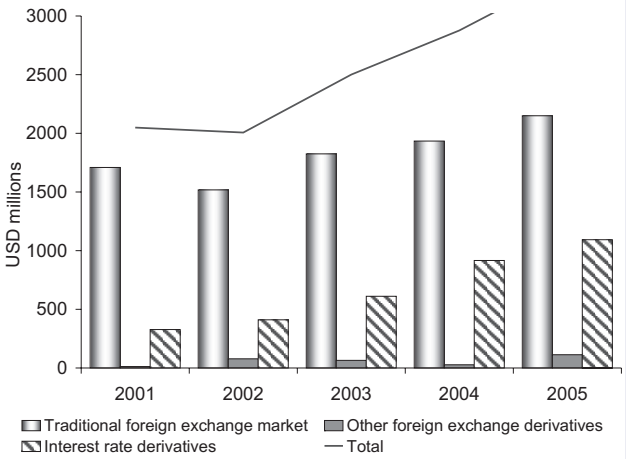
Conversely to previous years, the paces of growth of turnover in the foreign exchange and interest rate markets are now more similar, in a context of acceleration in the foreign exchange market and deceleration in the interest rate market.

There was an expansion of all market risk categories covered by the transactions part of the survey (Chart 1), which however was not broadly based across all instruments. In the traditional foreign exchange market, the increase in turnover extended to all instruments[5], while in the other foreign exchange derivatives[6] segment this increase was only recorded by a residual category of non-standardised contracts, and in terms of interest rate derivatives, it was only recorded by swaps.

Traditional foreign exchange market

The average daily turnover in April 2005 stood at USD 2,150 million, increasing by 11 per cent from April 2004. At constant exchange rates, turnover growth stood at 6 per cent. Therefore, traditional foreign exchange market activity resumed a moderate pace of growth following the deceleration observed in the previous year (Table 1).

Chart 1
OTC MARKET
Average daily turnover



Turnover increased in all types of transactions, but more significantly in outright forwards (83 per cent). After a reduction of their weight in the past few years, the share of outright forwards in total transactions rose by 2 p.p., to 6 per cent, thus recovering the share held in 2001 (Table 2). However, given that outright forwards continued to have a negligible share, their contribution to the growth of the overall turnover of the foreign exchange market was minor. The predominant position of spot operations consolidated around 54 per cent of the total, while the share of foreign exchange swaps declined to 40 per cent (Chart 2).

The breakdown of the foreign exchange market total turnover ***by type of counterparty*** showed an increase in the relative share of non-financial counterparties, from 10 to 14 per cent, reflecting a significant rise in transactions with resident non-financial customers (Table 2). On the other hand, the loss of share of financial counterparties was only recorded by euro area companies. In fact, financial institutions of non-euro area countries continued to be the main counterparty in transactions in the foreign exchange market, accounting for 53 per cent of total turnover, i.e. a similar share to that recorded in the previous survey. However, the development pattern described above was not broadly based across all instruments. The higher

(4) Data on transactions always refer to US dollars, in terms of average daily turnover, adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.
(*) All tables mentioned in this section are presented in the annex.
(5) The traditional foreign exchange market includes spot transactions, outright forwards and foreign exchange swaps.
(6) Non-traditional foreign exchange derivatives include currency swaps and foreign exchange options.

Chart 2
TRADITIONAL FOREIGN EXCHANGE MARKET
Breakdown by instrument

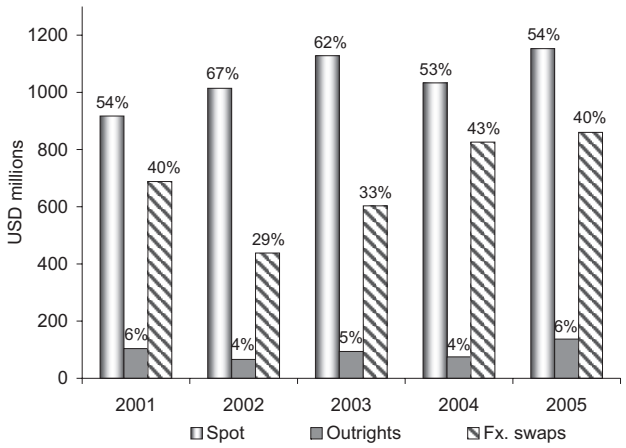
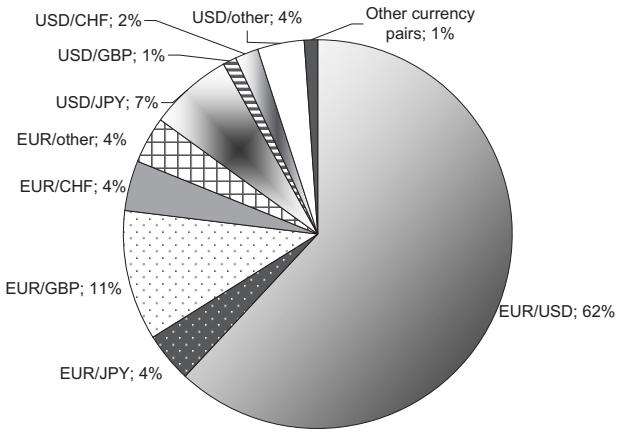


Chart 3
TRADITIONAL FOREIGN EXCHANGE MARKET
Breakdown by currency pairs



preference for non-financial counterparties was noticeable in spot operations, being even more marked in outright forwards, where transactions with resident non-financial customers increased from 42 to 55 per cent. By contrast, foreign exchange swaps showed a reverse trend, as transactions with financial institutions accounted for 99 per cent of the total turnover in this segment (96 per cent in April 2004).

With regard to the ***breakdown by currency*** of the traditional foreign exchange market turnover, the most relevant changes were the following: a rise in the share of the US dollar (76 per cent) and "other European currencies" (5 per cent), in parallel with a decrease in the market shares of the euro (85 per cent), pound sterling (13 per cent) and Japanese yen (11 per cent) (Table 2).

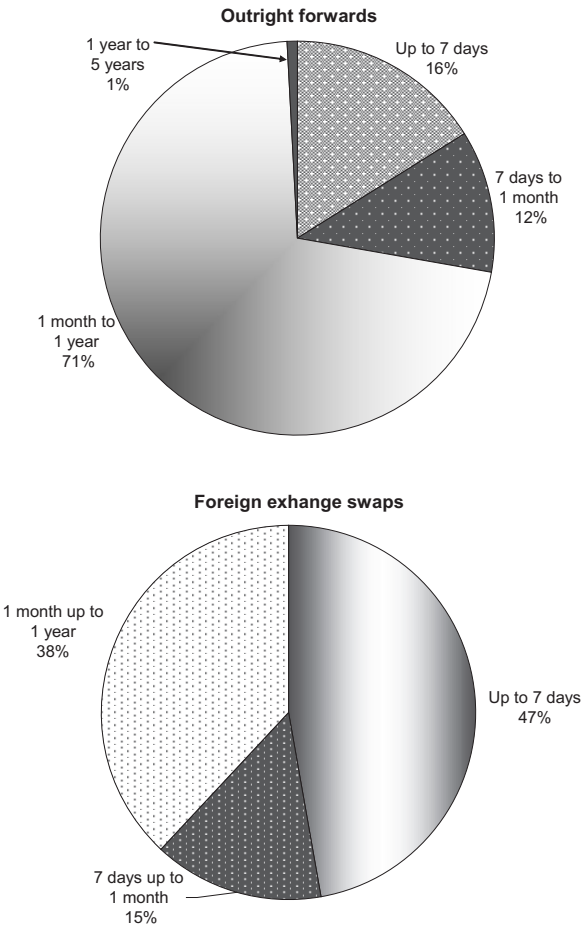
The loss of share of the euro, which, however, continued to be the most actively traded currency, reflected declines in the shares of transactions involving the euro/pound sterling and euro/yen currency pairs, particularly in the foreign exchange swaps segment. The higher involvement of the US dollar was mainly due to the increase in turnover of the US dollar/yen and US dollar/Swiss franc currency pairs and between the US dollar and several other currencies, namely the Turkish lira, but also the Brazilian real, Canadian dollar and South African rand, in the foreign exchange swaps segment. The increased importance of this type of operations is likely to be related to carry trades involving low interest rate currencies, like the yen and Swiss franc, for investment in assets denominated in high yielding currencies. The use of the US dollar as a vehicle currency in such transactions seems to have contributed to strengthen the increase in the relative share of the US dollar. The decline in the share of the pound sterling in total turnover covered transactions in the euro/pound sterling and US dollar/pound sterling currency pairs. It should also be noted that the increase recorded by "Other European currencies" was almost exclusively due to the higher turnover involving the Turkish lira.

The ***structure by maturity*** remained virtually unchanged, as almost 100 per cent of transactions were traded with maturities of up to 1 year (Table 2). It should be noted that in the outright forwards segment the share of contracts with maturities from 1 month up to 1 year increased (from 43 to 71 per cent), while in the foreign exchange swaps segment there was a greater preference for maturities of up to 7 days (whose share increased from 38 to 47 per cent), which may be related to the higher incidence of the above mentioned carry trades in very short maturities (Chart 4).

With regard to the ***system through which operations are conducted***, electronic dealing systems continued to be predominant. Due to the higher share of transactions with financial counterparties, the most used systems are those

(7) In the foreign exchange market, the breakdown by currency totals 200 per cent of total turnover, since the two legs of each transaction are recorded separately.

Chart 4
TRADITIONAL FOREIGN EXCHANGE MARKET
Breakdown by maturity



aimed at dealers, namely the direct dealing systems. Albeit maintaining a significant share in foreign exchange market transactions, electronic broking systems continued to be limited, being used by a small number of banks and restricted to operations with non-resident financial institutions. There was also a considerable increase in transactions conducted through single-bank systems for customers, which seems to reflect a greater use of Internet services.

Other foreign exchange derivatives instruments

Following the strong contraction recorded between 2003 and 2004, the aggregate turnover of currency swaps and foreign exchange options more than quadrupled, standing at USD 113 million (Table 1). However, transactions in these instruments continued to be restricted to a very small number of institutions, which corresponds to the temporary use of market niches. In this context, this segment has been very volatile over time. As a reflection, in April 2005 there was an extraordinary increase in turnover of foreign exchange options, following a marked reduction between April 2003 and April 2004. The increase in this type of operations implied a greater diversity of currency pairs, and was no longer restricted to the euro/US dollar currency pair, as in 2004. Stress should be laid on the rise in foreign exchange options involving the euro/Turkish lira and US dollar/Brazilian real currency pairs.

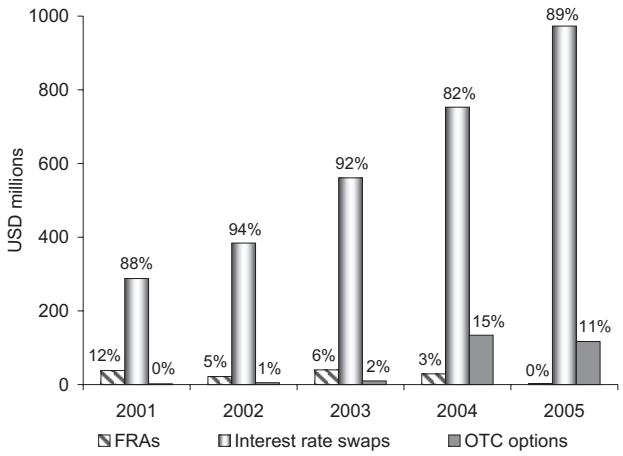
Single-currency interest rate derivatives

In April 2005 the average daily turnover of interest rate derivatives increased by 19 per cent, to USD 1,093 million, showing a strong deceleration compared with a growth of around 50 per cent in the previous year (Table 1). At constant exchange rates, the turnover rose by only 11 per cent. Therefore, following the high growth rates recorded between 2001 and 2004, the pace of expansion of the interest rate derivatives eased to levels closer to those which have characterised developments in the traditional foreign exchange market in recent years.

Developments in turnover differed across the several types of interest rate derivatives. Forward Rate Agreements (FRAs) virtually ceased to be traded, and their share is now negligible (Table 3). Turnover in interest rate swaps increased by 29 per cent, decelerating from 34 per cent in April 2004, while that of options contracted by 13 per cent. As a result, the share of swaps rose to 89 per cent, strengthening its position as the most used instrument, while the share of options declined to 11 per cent (Chart 5).

In the interest rate derivatives market, and conversely to the traditional foreign exchange market, the importance of financial ***counterparties*** increased, reaching 98 per cent (Table 3). However, similarly to the foreign exchange market, in the interest rate derivatives market there was also a rise in the percentage of transactions involving financial institutions of non-euro area countries (+13 p.p., to 38 per cent). The weight of transactions involving euro area financial institutions remained stable, continuing to account for 50 per cent of to-

Chart 5
OTC INTEREST RATE DERIVATIVES
Average daily turnover



tal turnover. It should be noted that the gain in the share of transactions with financial counterparties outside the euro area was recorded both in interest rate swaps and in options, accounting for a share of 40 and 18 per cent of total transactions, respectively.

The ***structure by currency*** continued to be relatively stable, given that euro interest rate derivatives maintained a largely predominant position, accounting for 91 per cent of total turnover (Table 3). As in the previous year, other interest rate contracts were restricted to US dollar and pound sterling interest rates, accounting for 4 and 5 per cent of total transactions, respectively. The increase in transactions in pound sterling made it possible for this currency to replace the US dollar in the second position. It should be noted that, while in swap contracts the concentration in interest rates strengthened (to 99 per cent of total), in options the share of these contracts declined (to 26 per cent) in favour of those on pound sterling interest rates (49 per cent). The highest level of pound sterling interest rates is likely to have fostered the conduct of option contracts in this currency.

The ***breakdown by maturity*** did not show relevant changes, while interest rate derivatives contracts continued to be more traded in maturities from 7 days up to 1 year.

With regard to the ***system through which operations are conducted***, the traditional preference for conducting transactions using non-electronic systems strengthened in the case of interest rate swaps, mainly due to a greater recourse to conventional brokers. It should be noted that the use of multi-bank electronic platforms in transactions with customers was virtually abandoned, which may have resulted from the decline in the share of this type of counterparty in total turnover of interest rate swaps. However, options showed a distinct pattern, starting to be traded mainly via electronic dealing systems, while previously they only used non-electronic systems. This change is likely to be related to the fact that counterparties in these operations are now preferably financial institutions to the detriment of non-financial customers.

2.2. Amounts outstanding

The results of the survey conducted in 2005 reveal the continuing growth trend of notional amounts, which has been observed since 2002. When denominated in US dollars, notional amounts outstanding of OTC derivatives[8] increased by 20 per cent[9] from 2004. When adjusted for foreign exchange fluctuations, the growth stands only at 14 per cent, reflecting the depreciation of the US dollar between March 2004 and March 2005 (Table 4).

The expansion of the amounts outstanding results from the continued growth trend, both in interest rate derivatives and other derivatives (namely credit derivatives). Conversely, notional amounts of foreign exchange derivatives decreased for the first time since 2001.

Therefore, there was a reduction in the relative share of foreign exchange derivatives, counterbalanced by the strengthening of the predominant position of interest rate derivatives. Despite the expansion recorded, the relative share of equity and equity indices derivatives, as well as credit derivatives, continued to be negligible (Chart 6).

(8) Amounts outstanding are adjusted for the double counting resulting from transactions carried out in the domestic interbank market.

(9) With regard to amounts outstanding, unless stated otherwise, amounts and percentages refer to 31 March 2005 and inter-temporal comparisons to the period from the end of March 2004 to the end of March 2005.

Chart 6
AMOUNTS OUTSTANDING OF OTC DERIVATIVES

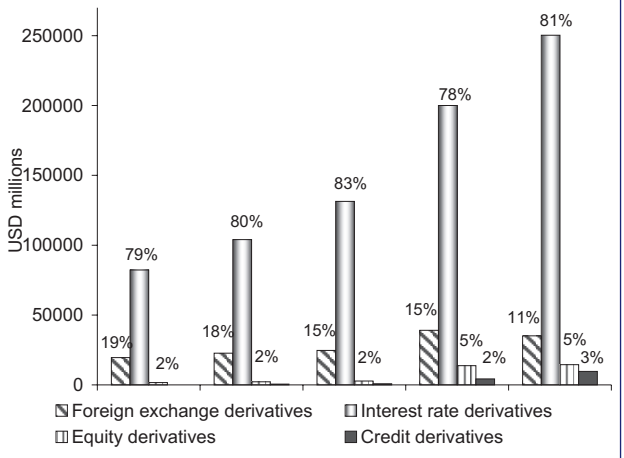
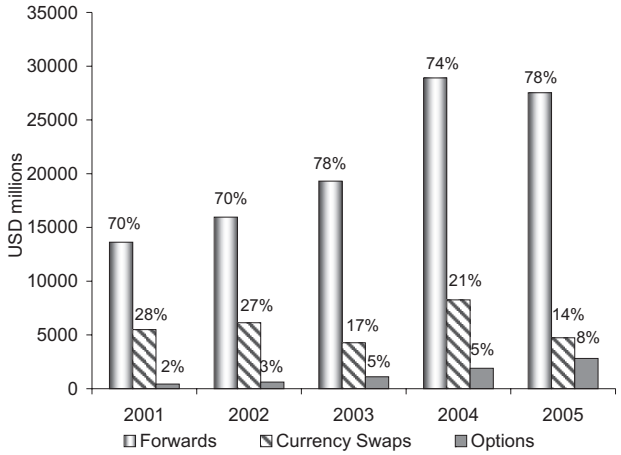


Chart 7
AMOUNTS OUTSTANDING OF OTC FOREIGN EXCHANGE DERIVATIVES
Breakdown by instrument



OTC foreign exchange derivatives

The decline in the amounts outstanding of foreign exchange derivatives (-10.2 per cent) resulted from a considerable fall in currency swaps, together with a slight contraction in forwards (which include outright forwards and foreign exchange swaps). The strong increase in foreign exchange options, whose amounts outstanding virtually doubled compared to 2004, was not sufficient to offset the reduction in other instruments. Albeit having declined in terms of amounts outstanding, the clear predominance of forwards in terms of foreign exchange derivatives was strengthened, while the relative share of options is now significantly closer to the share of currency swaps. It should be noted that a very considerable share of the currency swaps segment is held by a small number of institutions, and that, similarly to transactions, amounts outstanding of this instrument have exhibited significant volatility (Chart 7).

Turning to the ***structure by counterparty***, two main changes can be seen compared to 2004: a decline in the amounts outstanding of operations contracted with non-resident counterparties and a contraction in notional amounts with financial institutions, together with a reduction in the relative share of these two types of counterparties. These developments interrupted the upward trend recorded by both types of counterparties since 1999 (when there were considerable structural changes resulting from the introduction of the euro). The pattern described mainly results from the strong fall recorded by non-resident financial institutions, this having been strengthened by the growth of the resident non-financial customers (Table 5). It should be noted that the contraction of amounts outstanding held by non-resident financial institutions was recorded in terms of both foreign exchange swaps and currency swaps. The relative importance of non-resident counterparties located in the euro area recorded a slight reduction, which was, however, proportional to the contraction recorded by non-resident counterparties in general.

In terms of the ***breakdown by currency***, the euro and the US dollar continued to be the main currencies in foreign exchange derivatives portfolios (with a continued clear predominance of the European currency, which accounted for 91 per cent[10] of amounts outstanding). Special mention should be made of the significant loss of share of the yen, with the pound sterling now holding the third position. Also, while in these four currencies there was a decline in amounts outstanding, a significant growth was observed (both in absolute values and in terms of its relative share) in currencies such as the Brazilian real, Swiss franc, Swedish krona, Turkish lira and Danish krone[11]. The analysis of the breakdown by currency pairs

(10) The breakdown by currency totals 200 per cent.

shows the maintenance of a marked concentration in the EUR/USD currency pair (accounting for 62 per cent[12]) in parallel with a slight decline in the other two main currency pairs: EUR/GBP (12 per cent) and EUR/JPY (8 per cent) (Table 5).

The ***structure by maturity*** of foreign exchange derivatives is relatively heterogeneous in terms of instruments. The predominance of the maturity from 1 month up to 1 year is observed in the amounts outstanding of forwards and options (being a relatively constant feature of these instruments), while in currency swaps, maturities from 1 year up to 5 years are the most frequent (reflecting the fact that these instruments are usually used for coverage purposes).

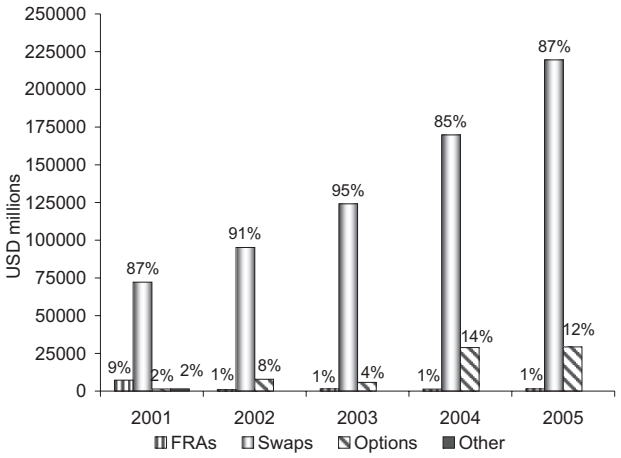
OTC interest rate derivatives

In 2005 the growth trend of notional amounts outstanding of interest rate derivatives continued. The 25 per cent growth resulted from an increase in all types of interest rate derivatives, but more significantly in terms of interest rate swaps (Table 6). Therefore, swaps strengthened their predominant position, counterbalanced by a decline in the share of options. FRAs and other interest rate derivatives maintained a residual share (Chart 8).

The ***breakdown by counterparty*** into financial institutions and non-financial customers was considerably stable, and the clear predominance of the former continued. Turning to the breakdown into resident and non-resident counterparties, and similarly to the foreign exchange segment, the relative share of resident counterparties strengthened. However, in absolute terms, non-resident non-financial customers were the only counterparty that recorded a contraction in notional amounts (which already held a residual share). It should be noted that the reduction in the relative importance of non-resident counterparties was exclusively due to developments in interest rate swaps operations.

Turning to the ***breakdown by currency***, there were no major changes from 2004. The euro interest rate is used in most operations, accounting for

Chart 8
AMOUNTS OUTSTANDING OF OTC INTEREST RATE DERIVATES
Breakdown by instrument



94 per cent of amounts outstanding. Conversely to foreign exchange derivatives, in the interest rate segment, amounts in pound sterling declined.

In terms of the ***breakdown by maturity***, no significant changes have been recorded, given that a relative homogeneity among the various instruments was maintained and that there was a strong concentration in maturities of over 1 month, particularly in those from 1 year up to 5 years.

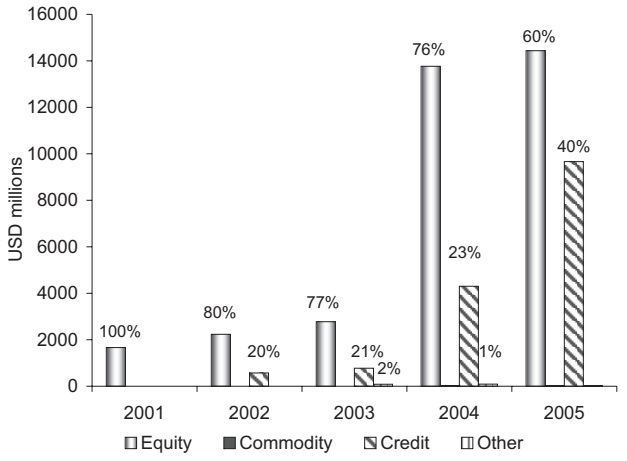
Other OTC derivatives

In 2005 equity and equity indices derivatives continued to expand, albeit at a significantly slower pace than in 2004. At the same time, credit derivatives continued to grow strongly, having more than doubled compared to the previous year (Table 7). In this context, the relative share of both types of instruments has converged significantly. Activity in commodity derivatives continued to be virtually non-existent (Chart 9).

As to ***equity derivatives***, developments in this segment have translated into a significant increase in the number of participating institutions. Amounts outstanding in this segment continued to be divided between options and swaps, but the first type of instruments is now holding the main position. Regarding counterparties, financial institutions maintain a clear predominance, with resident financial counterparties outside the euro area reaching the dominant position. With regard to

(11) The increase in amounts outstanding in Swedish krona, Danish krone and Turkish lira is the reason behind the higher share of other European currencies.
(12) The breakdown by currency pairs totals 100 per cent.

Chart 9
AMOUNTS OUTSTANDING OF OTHER OTC DERIVATES



the nationality of the issuer of the underlying asset, the concentration on euro area equity and equity indices strengthened again, accounting currently for 99 per cent.

In line with developments at international level, ***credit derivatives*** developed significantly, translating into both a considerable increase in amounts outstanding and a rise in the number of institutions holding credit derivatives in their portfolios. However, in terms of instruments, all operations continued to be in credit swaps. With regard to the breakdown by counterparty, the predominance of non-resident entities strengthened, with non-resident financial institutions holding around 95 per cent of portfolio amounts outstanding in credit derivatives (these, in turn, are almost equally divided into euro area and non-euro area counterparties). It should be noted that this structure is typical of a segment that is still at an early stage of development, with non-resident counterparties holding a clear advantage, given the experience acquired with this type of operations. Therefore, a shift towards a more even distribution between residents and non-residents is foreseen in the future.

3. ORGANISED MARKET

The annual survey of Banco de Portugal collects for the organised market - like for the over-the-counter market - more extensive information on amounts outstanding than on transactions. Outstanding notional amounts are required for four market risk categories - foreign exchange, interest rate, equity and commodity - while information on turnover is only collected for the former two. In each market risk category, the survey covers data on the two types of instruments traded in organised markets - futures and options.

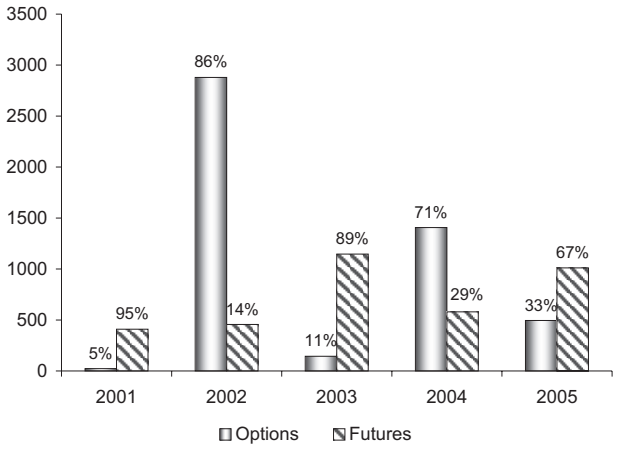
The results of the 2005 survey regarding both turnover and amounts outstanding, reveal that interest rate derivatives continue to be by far the most traded instruments (accounting for 96 per cent of transactions and 95 per cent of amounts outstanding). Regarding transactions the predominance of interest rate instruments persisted although the average daily turnover receded by 24 per cent from April 2004, standing at USD 1,506 million. With respect to amounts outstanding, the total notional amounts in this type of instrument increased by 14 per cent, to USD 37,117 million (Table 8).

Interest rate derivatives transactions in organised market continued to reveal an unstable structure due to the reduced number of banks operating in this segment. In fact, in April 2005 the futures turnover increased by 74 per cent, compared with a contraction of nearly 50 per cent in 2004. On the other hand, the turnover of options, which had recorded a remarkable increase in April 2004, narrowed by 65 per cent. As a consequence, the relative share of futures and options has changed significantly, with frequent shifts in the respective predominance in the interest rate derivatives market (Chart 10).

In terms of amounts outstanding, there was a bigger stability regarding the breakdown by instruments, with futures maintaining a slight predominance (representing around 55 per cent of portfolios) over options.

Turning to the futures and with regard to contractual maturities, large swings have been seen in the preference for short-term and long-term interest rate contracts. In April 2005, interest rate contracts up to 1 year represented 51 per cent of total traded futures, compared with 23 per cent in April 2004. In terms of amounts outstanding, there was also a strong increase in the share of interest rate instruments with maturities of up to 1 year, which currently represent 57 per cent (up from 15 per cent in 2004).

Chart 10
INTEREST RATE DERIVATES
Average daily turnover



Despite these fluctuations, the structure by counterparties and currencies of turnover and amounts outstanding in the two types of futures contracts remained broadly unchanged compared to 2004. On the one hand, the preference for euro area exchanges persisted, save for futures amounts outstanding on interest rates up to 1 year, whose contracts on US dollar interest rates and even on euro interest rates were mainly carried out in non-euro area organised markets. On the other hand, contracts involving euro interest rates continued to predominate.

With regard to options, derivatives exchanges of non-euro area countries continued to be the main counterparties, both in terms of turnover and amounts outstanding. However, developments in the breakdown by currency were mixed as regards both turnover and amounts outstanding. In transactions, despite a reduction in overall turnover, US dollar interest rate options increased, becoming the underlying asset with the higher weight. By contrast, as regards amounts outstanding, the share of euro interest rate options strengthened. It should be noted that, despite this predominance of the euro, the large majority of open contracts in banks' portfolios was carried out in exchanges of non-euro area countries.

Turning to ***exchange rate derivatives***, there was an expansion in both exchange rate options and futures, but turnover is still rather reduced, with a negligible share in the total organised market turnover. Likewise, despite the significant expansion of amounts outstanding, their share continues to be residual, and it should be noted that the increase in the amounts held in portfolio was almost exclusively recorded in options (which result from operations of a restricted number of institutions).

Amounts outstanding of ***equity and equity indices*** showed again a strong growth, chiefly reflecting the increase in notional amounts in futures, but also in options. The near entirety of operations was carried out in euro area derivatives exchanges and the issuers of the underlying assets were euro area entities.

4. DEGREE OF CONCENTRATION OF THE TURNOVER AND AMOUNTS OUTSTANDING IN FOREIGN EXCHANGE AND DERIVATIVES MARKETS

The degree of concentration in the different market segments[13] continued to be quite significant, with the combined market shares of the three and six more active financial institutions[14] in each market segment, both in terms of turnover and amounts outstanding, exceeding 50 and 80 per cent respectively. The number of institutions participating in the several markets analysed has also remained relatively stable in the last few years.

With respect to transactions, in aggregate terms, the degree of concentration in the Portuguese market decreased slightly, as illustrated by the Lorenz curve, which represents the percentage of the total turnover of a certain percentage of financial institutions. In fact, the convexity of the Lorenz curve for 2005 is smaller than for 2004, indicating that in the current year, transactions are less concentrated in a smaller percentage of banks than in 2004 (Chart 11).

The most significant developments in the degree of concentration of transactions by type of instrument were the following:

(13) The calculation of market shares was based on all operations reported, relating both to the over-the-counter market and the exchange traded market.

(14) In terms of the financial institutions intervening in the Portuguese market, two different situations should be considered: i) banks belonging to Portuguese financial groups; and ii) banks operating individually in the Portuguese market. Given the combined strategy generally adopted by each financial group, the analysis of market shares took into account the combined share of the institutions belonging to the same group and not their individual share.

Chart 11
TURNOVER
Lorenz curve

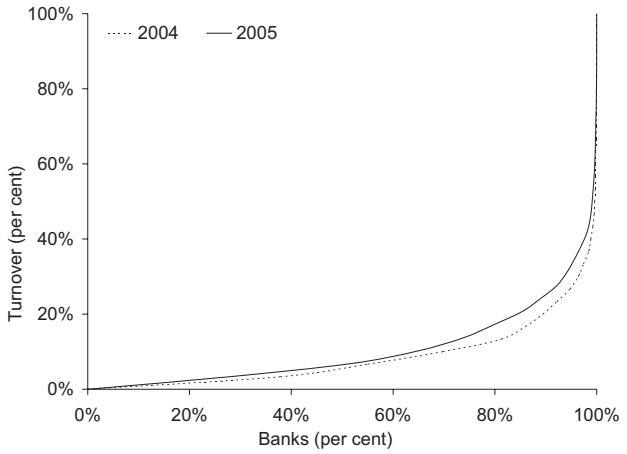
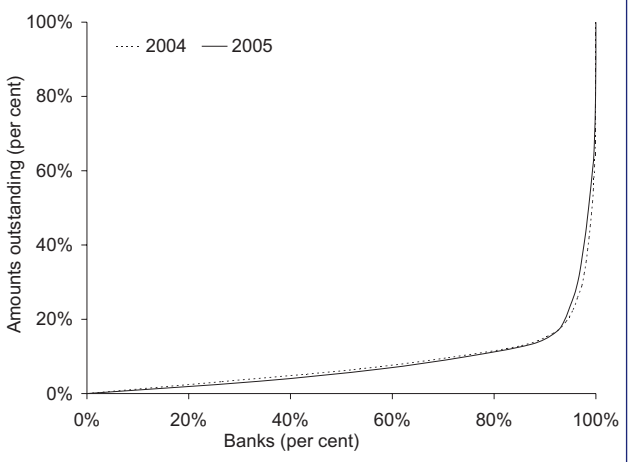


Chart 12
AMOUNTS OUTSTANDING
Lorenz curve



- in the spot segment, an increase in the degree of concentration, particularly due to the strengthening of the individual share of the three main institutions operating in this market segment, which as a whole reached 72.3 per cent, compared with 64 per cent in 2004;
- in the foreign exchange derivatives segment, a decrease in the degree of concentration (which was already the lowest of the segments analysed), which was due to a reduction in the share of the two main institutions operating in this segment;
- in the interest rate derivatives segment, a decrease in the degree of concentration with a marked reduction in the share of the main financial institution operating in this market. However, it should be noted that there was a reduction in the number of institutions operating in the interest rate derivatives segment from 14 to 12.

Regarding amounts outstanding, the degree of overall concentration did not show a significant change, with an overlapping of the Lorenz curves in 2004 and 2005 (Chart 12). It should be noted that, compared with transactions, amounts outstanding continued to show a higher degree of concentration, with the three main financial institutions holding a market share of around 75 per cent; as regards transactions, the market share of the three main institutions stands close to 65 per cent.

The most significant developments in the degree of concentration of amounts outstanding by type of instrument were the following:

- in foreign exchange derivatives, a strong decrease in the degree of concentration, given the reduction in the share of the main institution operating in this segment, with the combined share of the three main financial institutions operating in this market segment declining from 66.3 to 56.4 per cent;
- in interest rate derivatives, an increase in the degree of concentration, due to the strengthening of the market share of the main financial institution operating in this market segment;
- in equity derivatives, an increase in the degree of concentration (already very high), with the market share of the three main financial institutions operating in this market segment increasing from 92.1 to 95.4 per cent. This scenario was seen notwithstanding a strengthening in the number of participating institutions, which increased from 11 to 13;
- in credit derivatives, a decrease in the degree of concentration, in a context of strong increase of the importance of this segment. Indeed, formerly the three main financial institutions operating in this market held a market share of 99.8 per cent, which decreased to 94.6 per cent. In parallel, the number of institutions participating in this segment increased form 5 to 8.

DEFINITIONS OF THE SURVEY

Types of instruments

Traditional foreign exchange market

***Spot transaction**: transaction involving the outright exchange of two currencies at a rate agreed on the date of the contract with value date within two business days. It does not include transactions with value date within two business days linked to a swap.*
***Outright forward**: transaction involving the exchange of two currencies at a rate agreed on the date of the contract, with value date at some time in the future after the spot date, i.e. more than two business days after the date of the contract. It includes forward for differences contracts. It does not include currency forward transactions linked to a swap.*
***Foreign exchange swap**: transaction involving simultaneously the actual exchange of two currencies (principal amount) on a specific date, at a rate agreed at the time of conclusion of the contract (short leg), and a reverse exchange of the same two currencies at a date further in the future and at a rate (generally different from the rate applied to the short leg) agreed at the time of the contract (the long leg). It includes both spot/forward and forward/forward swaps, as well as very short-term swaps in which the two legs of the swap are lower than the spot date.*

Foreign exchange derivatives

***Currency swap**: contract which commits two counterparties to exchange streams of interest payments in different currencies, for an agreed period of time and to exchange principal amounts at a pre-agreed exchange rate at maturity. It includes cross-currency interest rate swaps - in which at least one of the streams of interest payments is at a floating rate (including cross-currency basis swaps in which the exchange is at floating rate vs. floating rate, referring to different basis).*
***Currency option**: contract that gives the right to buy or sell a currency with another currency, at a specified exchange rate, during or within a future date. It includes warrant, currency swaptions and exotic foreign exchange options, such as average rate options and barrier options. Exchange-traded foreign exchange options contracts must comply with a specific standardisation.*
***Foreign exchange future**: exchange-traded contract, that gives the right to buy or sell a currency (against another currency), at an agreed time in the future and at a predetermined price.*

Interest rate derivatives

***Forward rate agreement (FRA)**: interest rate forward contract, in which the rate to be paid or received, on a specific amount (principal), for a set period of time, beginning at some time in the future, is determined at contract.*
***Interest rate swap**: agreement to exchange periodic payments, related to interest rates on a single currency. It includes fixed for floating swaps, floating for floating based on different indices and swaps whose notional principal is amortised according to a fixed schedule independent of interest rates.*
***Interest rate options**: contract that gives the right to pay or receive a specific interest rate on a predetermined principal for a set period of time. It includes interest rate caps, floors, collars, corridors, swaptions and warrants. Exchange-traded interest rate options contracts must comply with a specific standardisation.*
***Interest rate futures**: exchange-traded contract that gives the right to buy or sell a specific financial instrument (deposit or public debt security), at an agreed time in the future and at a predetermined price.*

Equity and stock index derivatives

***Equity forward**: contract to buy or sell an equity or equity basket at a set price at a future date, both agreed at the time of conclusion of the contract.*
***Equity swap**: contract involving the exchange of one equity or equity index return for another, or the exchange of an equity or equity index return for a floating or fixed interest rate.*

***Equity option**: contract that gives the right to deliver or receive a specific equity or equity basket at an agreed price and at a set time in the future predetermined at the time of conclusion of the contract. It includes equity warrants. Exchange-traded equity option contracts must comply with a specific standardisation.*
***Equity future**: exchange-traded contract that gives the right to buy or sell a specific equity or equity index, at an agreed price at a set time in the future.*

Commodity derivatives

***Commodity forward**: contract to buy or sell a commodity or commodity index at a set price at a future date, both agreed at the time of conclusion of the contract.*
***Commodity swap**: contract with one or both payments linked to the performance of a commodity price or a commodity index. It involves the exchange of the return on one commodity or commodity index for another, or the exchange of a commodity or commodity index for a floating or fixed interest rate.*
***Commodity option**: contract that gives the right to deliver or receive a specific commodity or commodity index at an agreed price and at a set date in the future predetermined at the time of conclusion of the contract.*
***Commodity future**: exchange-traded contract that gives the right to buy or sell a commodity or commodity index, at a future date and at a previously agreed price.*

Credit derivatives

***Credit spread forward**: agreement to pay or receive at some time in the future a cash payment, which depends on the difference between a spread (i.e. the difference in yields between two financial assets), agreed at contract initiation and that prevailing at settlement.*
***Credit swap**: contract which commits two counterparties to exchange a periodic fee in exchange for a payment contingent on a default event or any other agreed change in the credit quality of a reference asset for an agreed period of time (credit event/default swaps). It includes total return swaps (contracts which commit two counterparties to exchange the total economic performance of a financial asset in exchange for a floating rate payout based on a reference index).*
***Credit spread option**: contract that gives the right to receive a cash payment if a spread (i.e. the difference in yields between two financial assets) widens beyond an agreed strike level during a specific period.*

Types of electronic trading platform

The breakdown by trading system identifies the turnover through electronic and non-electronic trading systems. Electronic systems comprise specific systems for trading between dealers and with non-financial customers.

Electronic systems for dealers

***Electronic broking systems**: these systems match buying and selling operations automatically. They have a similar function to a conventional broker, but without the need for human intervention (such as EBS and Reuters Dealing - Matching). Users of the system enter their foreign-currency requirements anonymously into the system, which matches a counterparty automatically. These systems are primarily used for spot dealing by large banks and financial institutions.*
***Electronic dealing systems**: systems such as Reuters dealing direct and Bloomberg provide one-to-one trading applications for participants in the interbank market.*

Electronic systems for customers

***Multi-bank dealing systems**: these systems are shared by individual institutions or by consortia and provide relevant market information to an e-trading portal set up for end-users.*
***Single-bank proprietary platforms**: some banks have designed single-bank proprietary systems, which allow their customers to trade directly with them via a custom-built Internet platform.*

Non-electronic systems

***Non-electronic broker**: the so-called voice broker or conventional broker.*
***Other**: includes any other means, namely the use of the conventional telephone system.*

ANNEX

Table 1

OTC MARKET

Average daily turnover[(a)]

USD millions and as a percentage of the total

	Total	Traditional foreign exchange market		Other foreign exchange derivatives		Interest rate derivatives	
		Amount	%	Amount	%	Amount	%
2001	2049	1709	83.4	12	0.6	328	16.0
2002	2007	1518	75.6	78	3.9	411	20.5
2003	2501	1825	73.0	65	2.6	611	24.4
2004	2877	1934	67.3	27	0.9	916	31.8
2005	3356	2150	64.0	113	3.4	1093	32.6
Change (%):							
2003/2004	15.0	6.0		-58.5		49.9	
2004/2005	16.6	11.2		318.5		19.3	
Memo: % changes at constant foreign exchange rates							
2003/2004	6.8	-0.3		-61.3		35.1	
2004/2005	9.9	6.3		224.0		11.2	

Note:
(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

Table 2

TRADITIONAL FOREIGN EXCHANGE MARKET TURNOVER[a]

Breakdown by type of instrument, counterparty, currency and maturity

Average daily turnover, in USD millions and as a percentage of the total

	2001		2002		2003		2004		2005	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
By instrument										
Total	**1709**	**100.0**	**1518**	**100.0**	**1825**	**100.0**	**1934**	**100.0**	**2150**	**100.0**
Spot	917	53.6	1014	66.8	1128	61.8	1033	53.4	1153	53.6
Outright forwards	104	6.1	66	4.3	94	5.2	75	3.9	137	6.4
Foreign exchange swaps	688	40.3	438	28.9	603	33.0	826	42.7	860	40.0
By counterparty										
Total	**1709**	**100.0**	**1518**	**100.0**	**1825**	**100.0**	**1934**	**100.0**	**2150**	**100.1**
Financial institutions	1310	76.7	1059	69.7	1572	86.1	1745	90.2	1857	86.4
Resident	79	4.6	67	4.4	92	5.0	119	6.2	87	4.0
Non-resident	1231	72.1	992	65.3	1480	81.1	1626	84.0	1770	82.4
of which euro area	365	21.3	322	21.2	564	30.9	637	32.9	620	28.8
Non-financial customers	399	23.3	459	30.3	253	13.9	189	9.8	293	13.6
Resident	281	16.4	317	20.9	221	12.1	156	8.1	288	13.4
Non-resident	118	6.9	142	9.4	32	1.8	33	1.7	5	0.2
of which euro area	46	2.7	59	3.9	16	0.9	31	1.6	3	0.2
Total	**1709**	**100.0**	**1518**	**100.0**	**1825**	**100.0**	**1934**	**100.0**	**2150**	**100.0**
Residents	360	21.0	384	25.3	313	17.1	275	14.3	375	17.4
Non-residents	1349	79.0	1134	74.7	1512	82.9	1659	85.7	1775	82.6
of which euro area	411	24.0	381	25.1	580	31.8	668	34.5	623	29.0
By currency[b]										
Total	**3418**	**200.0**	**3036**	**200.0**	**3650**	**200.0**	**3868**	**200.0**	**4300**	**200.0**
EUR	1461	85.6	1287	84.4	1421	77.9	1737	89.7	1827	85.0
USD	1262	73.9	1139	74.8	1442	79.0	1378	71.3	1642	76.4
JPY	215	12.6	203	13.5	285	15.6	264	13.7	239	11.1
GBP	220	12.9	162	10.4	220	12.1	329	17.0	274	12.7
CHF	124	7.3	99	6.5	168	9.2	82	4.2	134	6.2
Other European currencies	113	6.4	106	8.0	48	2.6	15	0.8	100	4.7
Other currencies	23	1.3	40	2.4	66	3.6	63	3.3	84	3.9
By maturity										
Total	**1709**	**100.0**	**1518**	**100.0**	**1825**	**100.0**	**1934**	**100.0**	**2150**	**100.0**
[Up to 7 days]	1569	91.8	1339	88.2	1155	63.3	1381	71.5	1586	73.7
]7 days - 1 month]	71	4.2	75	4.9	497	27.2	200	10.3	142	6.6
]1 month - 1 year]	69	4.0	104	6.9	87	4.8	349	18.0	421	19.6
]1 year - 5 years]	0	0.0	0	0.0	86	4.7	4	0.2	1	0.1
> 5 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Notes:

(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

(b) In the foreign exchange market, the breakdown by currency totals 200% of total turnover since the two legs of each transaction are recorded separately.

Table 3

OTC INTEREST RATE DERIVATIVES TURNOVER

Breakdown by instrument, counterparty, currency and maturity

Average daily turnover, in USD millions and as a percentage of total

	2001		2002		2003		2004		2005	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
By instrument										
Total	**328**	**100.0**	**411**	**100.0**	**611**	**100.0**	**916**	**100.0**	**1093**	**100.0**
Forward rate agreements	38	11.6	22	5.4	40	6.5	29	3.2	3	0.3
Swaps	288	87.8	384	93.4	561	91.9	753	82.2	973	89.0
Options	2	0.6	5	1.2	10	1.6	134	14.6	117	10.7
By counterparty										
Total	**328**	**100.0**	**411**	**100.0**	**611**	**100.0**	**916**	**100.0**	**1093**	**100.0**
Financial institutions	317	96.6	376	91.5	501	82.0	793	86.6	1071	98.0
Resident	27	8.2	11	2.7	24	3.9	103	11.2	113	10.3
Non-resident	290	88.4	365	88.8	477	78.1	690	75.4	958	87.7
of which euro area	99	30.2	205	49.9	235	38.4	455	49.7	546	50.0
Non-financial customers	11	3.4	35	8.5	110	18.0	123	13.4	22	2.0
Resident	11	3.4	11	2.7	87	14.2	123	13.4	22	2.0
Non-resident	0	0.0	24	5.8	23	3.8	0	0.0	0	0.0
of which euro area	0	0.0	23	5.6	0	0.0	0	0.0	0	0.0
Total	**328**	**100.0**	**411**	**100.0**	**611**	**100.0**	**916**	**100.0**	**1093**	**100.0**
Resident	38	11.6	22	5.4	111	18.1	226	24.6	135	12.3
Non-resident	290	88.4	389	94.6	500	81.9	690	75.4	958	87.7
of which euro area	99	30.2	228	55.5	235	38.4	455	49.7	546	50.0
By currency										
Total	**328**	**100.0**	**411**	**100.0**	**611**	**100.0**	**916**	**100.0**	**1093**	**100.0**
EUR	300	91.5	367	89.3	577	94.5	855	93.3	993	90.9
USD	28	8.5	19	4.6	32	5.2	43	4.7	43	3.9
JPY	0	0.0	0	0.0	2	0.3	0	0.0	0	0.0
GBP	0	0.0	4	1.0	0	0.0	17	1.9	57	5.2
Other currencies	0	0.0	21	5.1	0	0.0	1	0.1	0	0.0
By maturities										
Total	**328**	**100.0**	**411**	**100.0**	**611**	**100.0**	**916**	**100.0**	**1093**	**100.0**
[Up to 7 days]	133	40.5	95	23.1	256	42.0	0	0.0	65	5.9
]7 days - 1 month]	45	13.7	20	4.9	65	10.6	185	20.2	240	22.0
]1 month - 1 year]	77	23.5	119	28.9	97	15.9	408	44.6	582	53.2
]1 year - 5 years]	17	5.2	67	16.3	142	23.2	244	26.6	143	13.1
> 5 years	56	17.1	110	26.8	51	8.3	79	8.6	63	5.8

Note:

(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

Table 4

NOTIONAL AMOUNTS OUTSTANDING OF OTC DERIVATIVES[(a)]

USD millions and as a percentage of the total

	Total	Foreign exchange derivatives		Interest rate derivatives		Other derivatives	
		Amount	%	Amount	%	Amount	%
2001	103507	19561	18.9	82283	79.5	1662	1.6
2002	129544	22710	17.5	104027	80.3	2808	2.2
2003	159697	24687	15.5	131376	82.2	3634	2.3
2004	257291	39073	15.2	200027	77.7	18190	7.1
2005	309517	35088	11.3	250296	80.9	24132	7.8
Change (%):							
2003/2004	61.1	58.3		52.3		400.6	
2004/2005	20.3	-10.2		25.1		32.7	
Memo:							
% changes at constant foreign exchange rates							
2003/2004	45.1	46.7		36.6		328.1	
2004/2005	14.1	-12.7		18.4		25.4	

Note:
(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

Table 5

NOTIONAL AMOUNTS OUTSTANDING OF OTC FOREIGN EXCHANGE DERIVATIVES[(a)]

Breakdown by instrument, counterparty, currency and maturity

USD millions and as a percentage of the total

	2001		2002		2003		2004		2005	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
By instrument										
Total	**19561**	**100.0**	**22710**	**100.0**	**24687**	**100.0**	**39073**	**100.0**	**35088**	**100.0**
Forwards	13629	69.7	15961	70.3	19308	78.2	28903	73.9	27529	78.5
Currency Swaps	5496	28.1	6136	27.0	4272	17.3	8266	21.2	4741	13.5
Options	436	2.2	613	2.7	1107	4.5	1904	4.9	2791	8.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	27	0.0
By counterparty										
Total	**19561**	**100.0**	**22710**	**100.0**	**24687**	**100.0**	**39073**	**100.0**	**35088**	**100.0**
Financial institutions	13248	67.7	16856	74.3	20569	83.3	33531	85.8	28459	81.1
Resident	811	4.1	651	2.9	390	1.6	887	2.3	1232	3.5
Non-resident	12437	63.6	16205	71.4	20179	81.7	32644	83.5	27227	77.6
of which euro area	3255	16.6	4117	18.1	5696	23.1	11813	30.2	9466	27.0
Non-financial customers	6313	32.3	5854	25.7	4118	16.7	5542	14.2	6629	18.9
Resident	4251	21.8	3348	14.7	3867	15.7	5428	13.9	6589	18.8
Non-resident	2062	10.5	2506	11.0	251	1.0	114	0.3	40	0.1
of which euro area	532	2.7	615	2.7	9	0.0	12	0.0	4	0.0
Total	**19561**	**100.0**	**22710**	**100.0**	**24687**	**100.0**	**39073**	**100.0**	**35088**	**100.0**
Resident	5062	25.9	3999	17.6	4257	17.3	6315	16.2	7821	22.3
Non-resident	14499	74.1	18711	82.4	20430	82.7	32758	83.8	27267	77.7
of which euro area	3787	19.3	4732	20.8	5705	23.1	11825	30.2	9470	27.0
By currency[(b)]										
Total	**39122**	**200.0**	**45420**	**200.0**	**49374**	**200.0**	**78146**	**200.0**	**70176**	**200.0**
EUR	18191	92.9	19206	84.6	21628	87.7	36369	93.1	32036	91.2
USD	13650	69.8	16599	73.2	16503	66.8	26397	67.6	24669	70.3
JPY	3346	17.1	3758	16.5	4157	16.8	6306	16.1	3834	10.9
GBP	3316	17.0	2868	12.6	3837	15.5	5774	14.8	4697	13.4
CHF	191	1.0	305	1.3	590	2.4	567	1.5	865	2.5
BRL	0	0.0	1867	8.2	1227	5.0	486	1.2	1148	3.3
Other European currencies	89	0.5	287	1.3	586	2.4	979	2.5	1997	5.7
Other currencies	339	1.7	530	2.3	846	3.4	1268	3.2	930	2.7
By maturities										
Total	**19561**	**100.0**	**22710**	**100.0**	**24687**	**100.0**	**39073**	**100.0**	**35088**	**100.0**
[Up to 7 days]	1836	9.4	1480	6.5	877	3.6	2834	7.3	3507	10.0
]7 days - 1 month]	2086	10.7	3165	13.9	4164	16.9	6408	16.4	9472	27.0
]1 month - 1 year]	9118	46.6	10718	47.3	13622	55.1	21768	55.6	14963	42.6
]1 year - 5 years]	4878	24.9	4999	22.0	3224	13.1	4360	11.2	3892	11.1
> 5 anos	1643	8.4	2348	10.3	2800	11.3	3703	9.5	3254	9.3

Notes:

(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

(b) In the foreign exchange market, the breakdown by currency totals 200% of total turnover since the two legs of each transaction are recorded separately.

Table 6

NOTIONAL AMOUNTS OUTSTANDING OF OTC INTEREST RATE DERIVATIVES[(a)]

Breakdown by instrument, counterparty, currency and maturity

USD millions and as a percentage of the total

	2001		2002		2003		2004		2005	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
By instrument										
Total	**82283**	**100.0**	**104027**	**100.0**	**131376**	**100.0**	**200027**	**100.0**	**250296**	**100.0**
Forward rate agreements	7254	8.8	933	0.9	1438	1.1	1296	0.6	1460	0.6
Swaps	72173	87.7	95230	91.5	124156	94.5	169851	85.0	219530	87.7
Opions	1367	1.7	7864	7.6	5780	4.4	28880	14.4	29278	11.7
Other	1489	1.8	0	0.0	2	0.0	0	0.0	28	0.0
By counterparty										
Total	**82283**	**100.0**	**104027**	**100.0**	**131376**	**100.0**	**200027**	**100.0**	**250296**	**100.0**
Financial institutions	76202	92.6	96179	92.5	117999	89.8	178714	89.3	225723	90.2
Resident	7280	8.8	7876	7.6	13901	10.6	30067	15.0	49905	19.9
Non-resident	68922	83.8	88303	84.9	104098	79.2	148647	74.3	175818	70.3
of which euro area	17849	21.7	32901	31.6	34599	26.3	77353	38.7	83399	33.3
Non-financial customers	6081	7.4	7848	7.5	13377	10.2	21313	10.7	24573	9.8
Resident	3515	4.3	5832	5.6	10397	7.9	18454	9.3	23289	9.3
Non-resident	2566	3.1	2016	1.9	2980	2.3	2859	1.4	1284	0.5
of which euro area	10	0.0	770	0.7	38	0.0	528	0.3	377	0.2
Total	**82283**	**100.0**	**104027**	**100.0**	**131376**	**100.0**	**200027**	**100.0**	**250296**	**100.0**
Resident	10795	13.1	13708	13.2	24298	18.5	48521	24.3	73194	29.2
Non-resident	71488	86.9	90319	86.8	107078	81.5	151506	75.7	177102	70.8
of which euro area	17859	21.7	33671	32.3	34637	26.3	77881	38.9	83776	33.5
By currency										
Total	**82283**	**100.0**	**104027**	**100.0**	**131376**	**100.0**	**200027**	**100.0**	**250296**	**100.0**
EUR	64794	78.7	85593	82.3	115484	87.9	183656	91.8	234727	93.8
USD	10195	12.4	11880	11.4	12467	9.5	11322	5.7	10773	4.3
JPY	328	0.4	295	0.3	69	0.1	865	0.4	1210	0.5
GBP	4135	5.0	3114	3.0	1459	1.1	3081	1.5	2363	0.9
Other European currencies	2047	2.5	1810	1.7	925	0.7	1034	0.5	959	0.4
Other currencies	784	1.0	1335	1.3	972	0.7	69	0.0	264	0.1
By maturities										
Total	**82283**	**100.0**	**104027**	**100.0**	**131376**	**100.0**	**200027**	**100.0**	**250296**	**100.0**
[Up to 7 days]	630	0.8	448	0.4	1705	1.3	2954	1.5	5633	2.3
]7 days - 1 month]	1063	1.3	3222	3.1	3556	2.7	8152	4.1	10689	4.3
]1 month - 1 year]	22723	27.6	29387	28.2	42602	32.4	52344	26.2	62047	24.8
]1 year - 5 years]	36659	44.5	48814	47.0	49353	37.6	86578	43.2	112429	44.8
> 5 years	21208	25.8	22156	21.3	34160	26.0	49999	25.0	59498	23.8

Note:

(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

Table 7

NOTIONAL AMOUNTS OUTSTANDING OF OTHER OTC DERIVATIVES[(a)]

Breakdown by counterparty

USD millions and as a percentage of the total

	2001		2002		2003		2004		2005	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Total	**1662**	**100.0**	**2808**	**100.0**	**3634**	**100.0**	**18190**	**100.0**	**24132**	**100.0**
Equity linked derivatives	1662	100.0	2236	79.6	2776	76.5	13768	75.9	14436	59.8
Commodity derivatives	0	0.0	0	0.0	1	0.0	29	0.2	19	0.1
Credit derivatives	0	0.0	572	20.4	773	21.2	4301	23.4	9664	40.0
Other	0	0.0	0	0.0	84	2.3	92	0.5	13	0.1
Equity linked derivatives										
Total	**1662**	**100.0**	**2236**	**100.0**	**2776**	**100.0**	**13768**	**100.0**	**14436**	**100.0**
Financial institutions	1078	64.9	2080	93.0	2586	93.2	11085	80.5	12001	83.1
Resident	55	3.3	92	4.1	170	6.1	3174	23.1	4304	29.8
Non-resident	1023	61.6	1988	88.9	2416	87.1	7911	57.4	7697	53.3
of which euro area	272	16.4	993	44.4	1618	58.3	4308	31.3	3723	25.8
Non-financial customers	584	35.1	156	7.0	190	6.8	2683	19.5	2435	16.9
Resident	54	3.2	41	1.8	187	6.7	2028	14.7	1419	9.9
Non-resident	530	31.9	115	5.2	3	0.1	655	4.8	1016	7.0
of which euro area	0	0.0	0	0.0	3	0.1	329	2.4	215	1.5
Total	**1662**	**100.0**	**2236**	**100.0**	**2776**	**100.0**	**13768**	**100.0**	**14436**	**100.0**
Resident	109	6.5	133	5.9	357	12.8	5202	37.8	5723	39.7
Non-resident	1553	93.5	2103	94.1	2419	87.2	8566	62.2	8713	60.3
of which euro area	272	16.4	993	44.4	1621	58.4	4637	33.7	3938	27.3
Credit derivatives										
Total	**0**	**0.0**	**572**	**100.0**	**773**	**100.0**	**4301**	**100.0**	**9664**	**100.0**
Financial institutions	0	0.0	572	100.0	773	100.0	4300	100.0	9422	97.5
Residents	0	0.0	263	45.9	382	49.4	520	12.1	255	2.6
Non-residents	0	0.0	309	54.1	391	50.6	3780	87.9	9167	94.9
of which euro area	0	0.0	292	51.1	380	49.2	1986	46.2	4699	48.6
Non-financial customers	0	0.0	0	0.0	0	0.0	1	0.0	242	2.5
Resident	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
Non-resident	0	0.0	0	0.0	0	0.0	0	0.0	242	2.5
of which euro area	0	0.0	0	0.0	0	0.0	0	0.0	19	0.2
Total	0	0.0	572	100.0	773	100.0	4301	100.0	9664	100.0
Resident	0	0.0	263	45.9	382	49.4	521	12.1	255	2.6
Non-resident	0	0.0	309	54.1	391	50.6	3780	87.9	9409	97.4
of which euro area	0	0.0	292	51.1	380	49.2	1986	46.2	4718	48.8

Note:

(a) Figures adjusted for the double counting resulting from the transactions carried out in the domestic interbank market.

Table 8

EXCHANGE TRADED DERIVATIVES

USD millions and as a percentage of the total

	Total	Foreign exchange derivatives		Interest rate derivatives		Equity linked derivatives	
		Amount	%	Amount	%	Amount	%
Average daily turnover							
2001	435	2	0.5	433	99.5		
2002	3338	3	0.1	3335	99.9		
2003	1291	1	0.1	1290	99.9		
2004	1989	3	0.2	1986	99.8		
2005	1563	57	3.6	1506	96.4		
Change (%):							
2003/2004	54.1	200.0		54.0			
2004/2005	-21.4	1800.0		-24.2			
Notional amounts outstanding[(a)]							
2001	23171	19	0.1	21938	94.7	1214	5.2
2002	43387	7	0.0	43181	99.5	199	0.5
2003	48122	52	0.1	47938	99.6	132	0.3
2004	33223	13	0.0	32673	98.4	537	1.6
2005	38957	509	1.3	37117	95.3	1331	3.4
Change (%):							
2003/2004	-31.0	-75.0		-31.8		306.4	
2004/2005	17.3	3815.4		13.6		148.1	

Note:

(a) Figures adjusted (by proxy) for the double counting resulting from the transactions carried out in the Portuguese exchange, assuming that, in most transactions, final customers are resident banks.

Articles

A NEW COINCIDENT INDICATOR FOR THE PORTUGUESE PRIVATE CONSUMPTION*

*António Rua***

1. INTRODUCTION

As it is well known, private consumption plays a major role in overall economic activity(1). Therefore, it is fundamental to follow closely private consumption evolution on a regular basis. Among the set of available indicators, the figures that receive, in general, the highest attention are the ones from Quarterly National Accounts. However, several problems arise, namely, measurement errors, availability only on a quarterly basis and the first estimate, which is usually subject to revisions, is released with a lag of about 70 days in the case of Portugal. To overcome some of these shortcomings, one has to resort to other available data on private consumption. The aim of this article is to provide a composite coincident indicator that summarizes the most relevant information on Portuguese private consumption and allows a timely analysis of its underlying trend.

Following Rua (2004), one resorts to the methodology proposed by Azevedo, Koopman and Rua (2003) to develop a composite coincident indicator. The resulting indicator for private consumption is compared with the one developed by Gomes (1995). Furthermore, the real-time reliability of the proposed coincident indicator is assessed.

The article is organised as follows. In section 2, an outline of the model underlying the construction of the composite indicator is provided. The data used as input is discussed in section 3 and the resulting coincident indicator for private consumption is presented in section 4. In section 5, a real-time evaluation of the suggested composite indicator is undertaken. Finally, section 6 concludes.

2. THE MODEL(2)

The basic assumption of the model underlying the pursued composite indicator is that each series i, possibly after log transformation, is assumed as the sum of three components, trend (μ_{it}), cycle (ψ_{it}) and irregular (ε_{it}), that is,

$$y_{it} = \mu_{it} + \psi_{it} + \varepsilon_{it}, \quad i = 1, \ldots, N \text{ and } t = 1, \ldots, T.$$

In particular, the trend-cycle modelling adopted is the one proposed by Harvey and Trimbur (2003), which allows obtaining a smooth cycle likewise a band-pass filter. Additionally, if one considers that the business cycle consists of expansions and recessions occurring in several economic variables then a common cyclical component to all series can be imposed. Hence, the model can be specified as

$$y_{it} = \mu_{it} + \delta_i \psi_t + \varepsilon_{it}, \quad i = 1, \ldots, N \text{ and } t = 1, \ldots, T$$

where the parameter δ_i measures the contribution of the common cycle ψ_t in each series. However, one can generalise the model in order to take into account that some variables may be leading while

* The views expressed are those of the author and do not necessarily coincide with those of Banco de Portugal.
The author thanks Nuno Alves, Francisco Dias, Paulo Esteves, Ana Cristina Leal and José Ferreira Machado for comments and suggestions.

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(1) In Portugal, it represents more than 60 percent of GDP.

(2) This section follows closely Rua (2004). For more details on the model see Azevedo, Koopman and Rua (2003).

others may be lagging. This can be met by shifting the common cycle for each series according to their lead/lag. Allowing for shifts, the model can be written as

$$y_{it} = \mu_{it} + \delta_i \psi_{t+\xi_i} + \varepsilon_{it}, \quad i = 1, \ldots, N \text{ and } t = 1, \ldots, T$$

where ξ_i is the shift for series *i*. Since each series cycle can only be shifted with respect to another cycle, one of the series has to be subject to parameter constraints, namely $\delta_j = 1$ and $\xi_j = 0$. Thus, the cycle is common to all series but scaled differently and shifted ξ_i time periods in comparison to series *j*, which is the reference series for the identification of the cycle. The model can be casted in the state-space form and estimated by maximum likelihood.

3. DATA

First of all, one has to select the variables to be included in the composite coincident indicator. In the spirit of Rua (2004), it seems obvious to use real private consumption as the reference series for the identification of the cyclical component. In the model, this resumes to impose a unit common cycle loading and a zero phase shift for real private consumption series.

The remaining series considered for possible inclusion in the coincident indicator are those available on a high frequency basis, promptly released and with a reasonable time span. After a preliminary analysis of the information content of each series regarding private consumption cyclical developments[3], one ended up with 8 series. Besides real private consumption, the other series are[4]: real retail trade turnover index, sales of light passenger vehicles, retail sales volume (trade survey), tourism nights spent by residents in Portugal, real industrial turnover index of consumer goods in the domestic market, households' financial situation and general economic situation (consumers' survey).

The economic reasoning underlying such selection can be justified as follows. On the one hand, real retail trade turnover index and light passenger vehicles sales provide quantitative data on goods consumption evolution. These data can be complemented with qualitative one, namely, retail sales volume assessment. On the other hand, the number of tourism nights spent in Portugal by residents intends to capture, to some extent, developments on services consumption. Concerning the supply side, real industrial turnover index of consumer goods in the domestic market is considered. Moreover, since income and wealth are key determinants of consumption behaviour, households' assessment of their current financial situation is also included. Finally, in order to take into account the macroeconomic situation, consumers' opinion on the general economic situation is also considered. The corresponding series are presented in Chart 1.

4. THE COINCIDENT INDICATOR

Once the variables are selected, the model can be estimated by maximum likelihood for the period 1977-2004[5]. The resulting common cyclical component is plotted in Chart 2 and the corresponding estimated shifts are presented in Table 1. Note that since real private consumption is used as the reference series it does not present, by definition, a phase shift. Regarding the remaining quantitative data, only real industrial turnover index is leading while real retail trade turnover index is lagging slightly more than one quarter. Concerning survey data, all series present a lead.

A growth indicator can be obtained by trend restoring the common cyclical component and then computing the corresponding growth rate. In particular, resorting to the estimated real private consumption trend and calculating the year-on-year growth rate, results in the growth indicator plotted in Chart 3[6]. The suggested coincident indicator tracks rather well the underlying trend of private consumption developments. Note that the coincident indicator is not aimed to pin point private consumption growth. In fact, the purpose of such

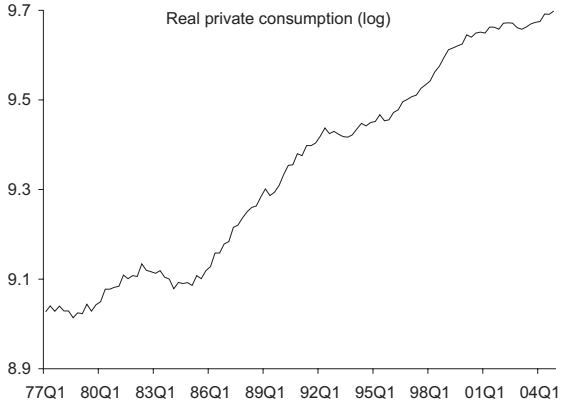
(3) For over four hundred series, each series cyclical component was compared with real private consumption cycle in terms of comovement through the cross-correlogram.

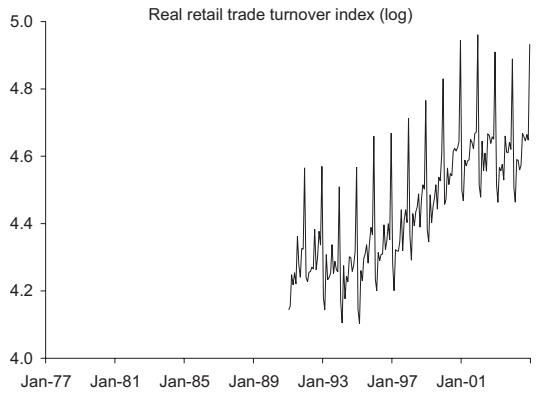
(4) See Annex for a detailed description of data.

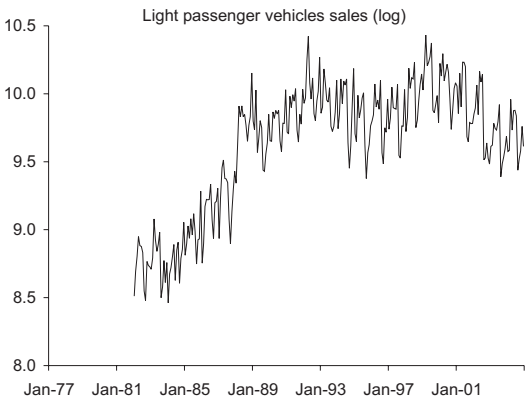
(5) Both mixed data frequency and missing values can be handled in the state-space framework (see, for example, Harvey (1989)).

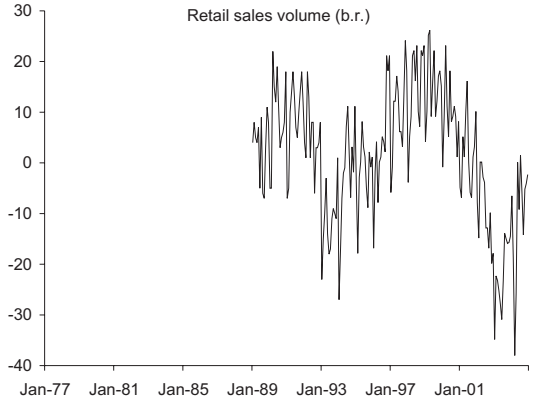
(6) In this figure, as in others below, due to the monthly nature of the time axis, a constant value is assumed within the quarter for the year-on-year growth rate of real private consumption.

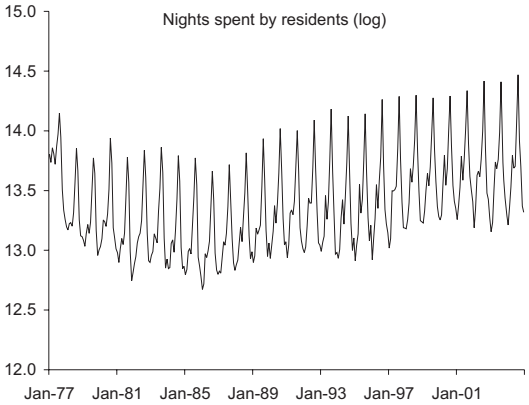
Chart 1
THE INPUT SERIES

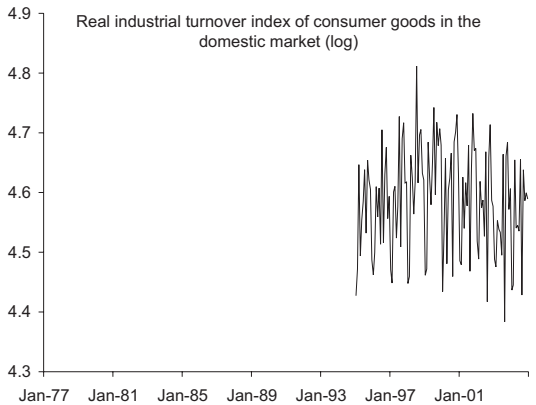












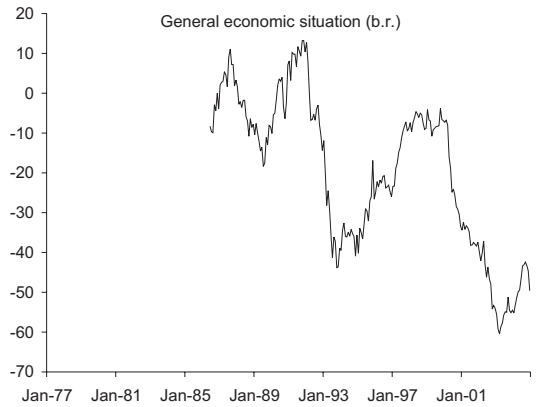


Chart 2
THE COMMON CYCLICAL COMPONENT

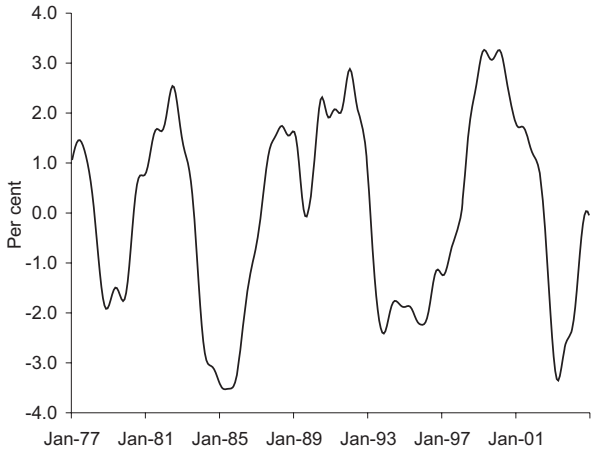


Chart 3
THE COINCIDENT INDICATOR FOR PRIVATE CONSUMPTION

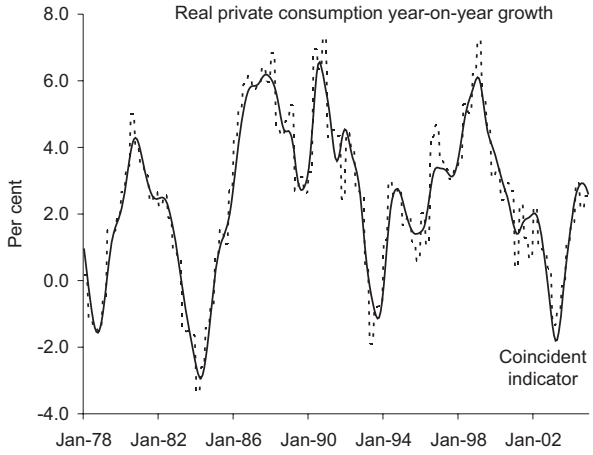


Table 1

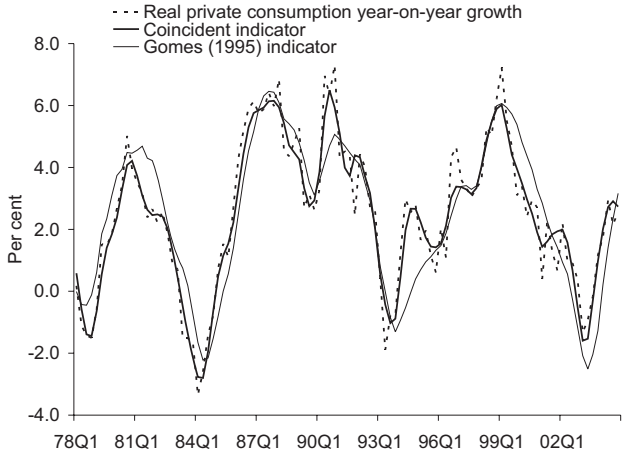
PHASE SHIFTS

In months

	Phase shifts
Real private consumption	0.0
Real retail trade turnover index	-3.8
Light passenger vehicles sales	-0.4
Retail sales volume	4.2
Nights spent by residents	-1.5
Real industrial turnover index of consumer goods in the domestic market	6.0
Households' financial situation	7.8
General economic situation	10.9

Note: A positive figure denotes a lead whereas a negative one denotes a lag relative to the common cycle.

Chart 4
THE COINCIDENT INDICATOR AND THE ONE PROPOSED BY GOMES (1995)



indicators is not to follow erratic movements, as they are not relevant for macroeconomic analysis (see, for example, Stock and Watson (1988)).

Following Dias (1993), Gomes (1995) developed a coincident indicator for private consumption. The quarterly indicator proposed by Gomes (1995), which is currently released by Banco de Portugal[7], relies on Stock and Watson (1988, 1993) methodology. It includes only 3 series, namely: retail trade activity (trade survey), retail sales volume (trade survey) and overall demand in manufacturing industry of consumer goods (manufacturing industry survey). Note that all the series used in Gomes (1995) indicator stem from surveys whereas in the suggested coincident indicator only 3 of the 8 series are of a qualitative nature. Therefore, besides being more broadly based the herein proposed indicator allows for a diversification of the nature of the data used as input.

Both indicators are presented in Chart 4 along with real private consumption year-on-year growth. One can see that, despite the similar pattern, the now suggested coincident indicator seems to follow more closely the underlying trend of private consumption developments. In fact, it appears that Gomes (1995) indicator is slightly lagging[8]. However, one should keep in mind that the proposed indicator includes real private consump-

(7) See *Monthly Economic Indicators*.

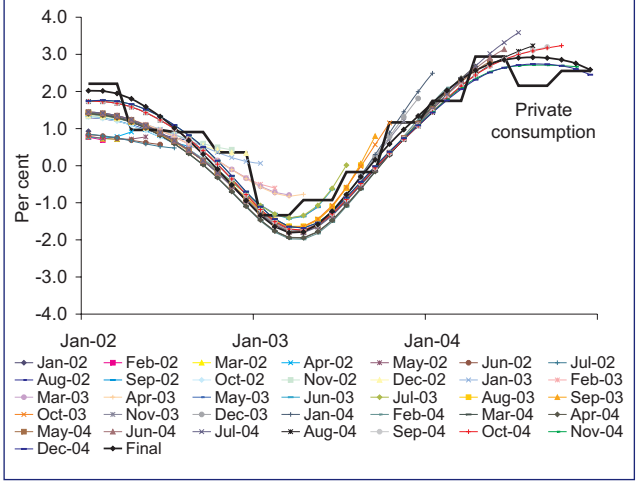
tion series while Gomes (1995) indicator does not. Additionally, the suggested coincident indicator is available on a monthly frequency whereas Gomes (1995) indicator is quarterly.

5. A REAL–TIME EVALUATION

Since data are, in general, revised and more data becomes available as time goes by, the coincident indicator is naturally subject to revisions over time. Therefore, it is also important to assess the real-time reliability of the coincident indicator. Likewise Rua (2004), an out-of-sample exercise is performed. First the model is estimated using the available data up to December 2001(9) and then, taking into account data release calendar and using real-time estimates(10), the coincident indicator is calculated each month until the end of 2004(11). This exercise provides real-time estimates of the monthly coincident indicator for the last 3 years (see Chart 5)(12). One can see that the most recent monthly figures of the coincident indicator are subject to revisions, in particular, near turning points. However, the revisions affect mainly the level and not the signal regarding private consumption accelerating/decelerating trend.

Since Gomes (1995) indicator is available only on a quarterly frequency, real-time quarterly estimates of the coincident indicator are also presented to ease the comparison of the real-time reliability of both indicators (see Chart 6). One can see that Gomes (1995) coincident indicator is also subject to revisions, which are more pronounced in the neighbourhood of a turning point.

Chart 5
MONTHLY ESTIMATES OF THE COINCIDENT INDICATOR



Additionally, since the most recent estimate receives a lot of attention, it is also important to assess the information content of first estimates. Naturally, the quality of an estimate is a function of the amount of data available in its calculation. In particular, the coincident indicator estimates that could be obtained at the middle of the following month were considered. First estimates of private consumption year-on-year growth as well as of Gomes (1995) coincident indicator are also plotted (Chart 7). In Table 2, some statistics are reported for comparison of the growth rate as well as of the acceleration/deceleration of both coincident indicators against private consumption. In particular, the contemporaneous correlation between first estimates of the composite indicators and real private consumption is presented, the sign concordance which measures the proportion of times sharing the same sign and the Root Mean Squared Error (RMSE) to assess the magnitude of the differences. Caution should be taken in the analysis of the results, as the sample period is not long and more importantly the coincident indicator does not aim to pin point private consumption growth. Nevertheless, the results obtained seem promising as the suggested coincident indicator is never outperformed by Gomes (1995) indicator.

(8) Resorting to the cross-correlogram, one can conclude that the maximum cross-correlation between Gomes (1995) indicator and real private consumption year-on-year growth is attained at lag one, that is, Gomes (1995) indicator is lagging one quarter.

(9) The resulting estimates for the parameters of interest are similar to the ones obtained with the entire sample.

(10) Since survey data and vehicles sales are not subject to revisions, real-time estimates are not considered for these variables. Moreover, due to a methodological change, real-time estimates for nights spent by residents are only considered since the beginning of 2003.

(11) Each month, the coincident indicator is computed resorting to the available data at the middle of the following month. Besides real private consumption, which is released with a lag of 70 days, this estimate is also obtained without real retail trade turnover index, which is released at the end of the following month, real industrial turnover index and nights spent by residents, which are available only at the beginning of the second following month.

(12) In this figure, as in others below, the final estimate refers to the estimate obtained with the whole sample.

Chart 6A
QUARTERLY ESTIMATES OF THE COINCIDENT INDICATOR

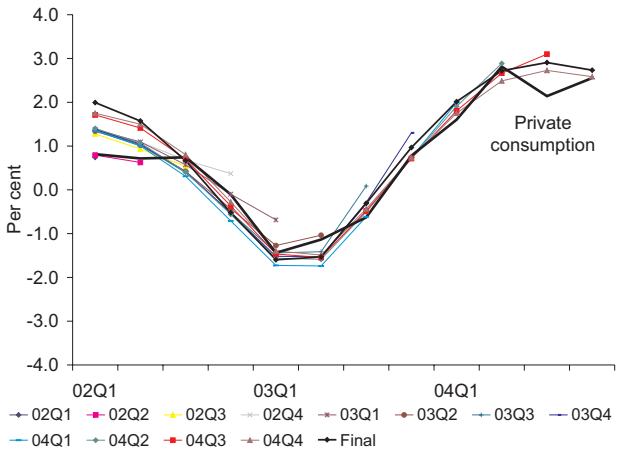


Chart 6B
ESTIMATES OF GOMES (1995) INDICATOR

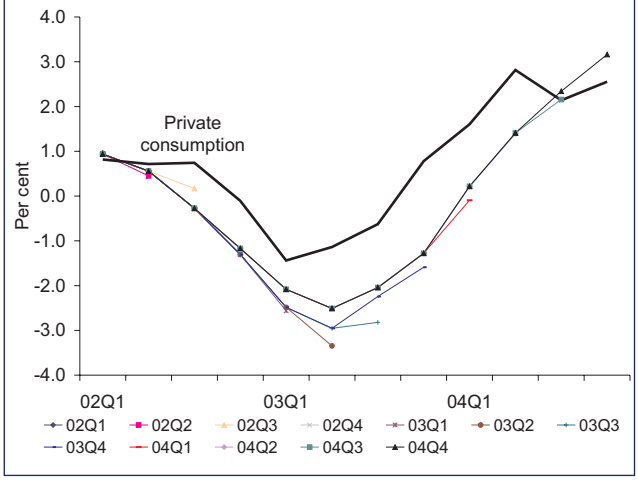


Chart 7
FIRST ESTIMATES OF THE COINCIDENT INDICATOR, PRIVATE CONSUMPTION AND GOMES (1995) INDICATOR

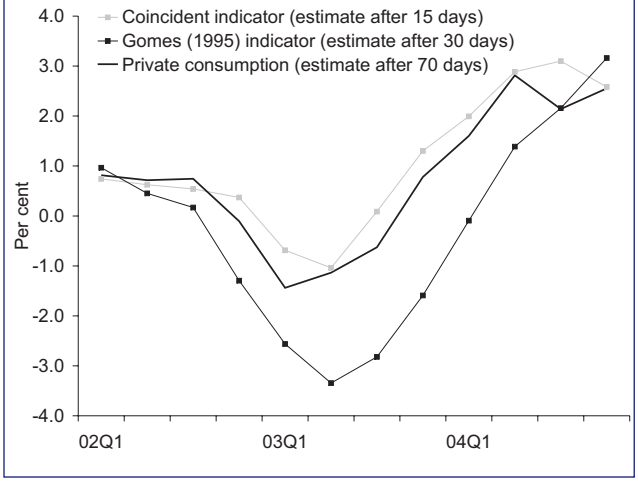


Table 2
CORRELATION, SIGN CONCORDANCE AND RMSE OF FIRST ESTIMATES

	Coincident indicator	Gomes (1995) indicator
Growth rate		
Correlation	0.96	0.90
Sign concordance	0.83	0.83
RMSE	0.48	1.41
Acceleration/Deceleration		
Correlation	0.69	0.63
Sign concordance	0.67	0.67
RMSE	0.67	0.74

6. CONCLUSIONS

Resorting to the methodology proposed by Azevedo, Koopman and Rua (2003), a new coincident indicator for the Portuguese private consumption is developed. The resulting indicator makes use of both quantitative and qualitative data, constituting a synthetic measure of current private consumption evolution. Notwithstanding all the erratic behaviour of the input series, the coincident indicator turns out to be smooth which eases the short-term analysis of private consumption developments. In contrast with Gomes (1995) coincident indicator, the one herein suggested is available on a monthly basis. Besides the high frequency assessment, the proposed indicator also allows for a timelier one. Although early estimates are subject to revisions, it is shown that these estimates are quite informative.

REFERENCES

Azevedo, J., Koopman, S. and Rua, A. (2003), "Tracking growth and the business cycle: a stochastic common cycle model for the euro area", Banco de Portugal *Working Paper* no 16/03.

Dias, F. (1993), "A composite coincident indicator for the Portuguese economy", Banco de Portugal *Working Paper* no 18/93.

Gomes, F. (1995), "A coincident indicator and a leading indicator for private consumption", *Economic Bulletin* September 1995, 73-80, Banco de Portugal.

Harvey, A. (1989), "Forecasting, structural time series models and the Kalman filter", Cambridge University Press.

Harvey, A. and Trimbur, T. (2003), "General model-based filters for extracting cycles and trends in economic time series", *The Review of Economics and Statistics*, 85, 244-255.

Rua, A. (2004), "A new coincident indicator for the Portuguese economy", *Economic Bulletin* June 2004, 21-28, Banco de Portugal.

Stock, J. and Watson, M. (1988), "A probability model of the coincident economic indicators", NBER *Working Paper* no 2772.

Stock, J. and Watson, M. (1993), "A procedure for predicting recessions with leading indicators: econometric issues and recent experience" in *Business Cycles, Indicators and Forecasting*, Stock, J. and Watson, M. (eds.), The University of Chicago Press.

ANNEX

Quarterly real private consumption (seasonally adjusted) is provided by *INE* (National Statistics Office), in accordance with the European System of Accounts (ESA) 1995, since 1995. From 1995 backwards the series was growth chained using ESA 1979 quarterly figures. Retail trade turnover index (not seasonally adjusted) is available from *INE*, in real terms, since January 2000. Prior to that date, *INE* only provides the index in nominal terms. Once adjusted for price developments (Banco de Portugal estimates), one can use it to obtain a longer time span series for real retail trade turnover index. The number of new light passenger vehicles, including 4x4, sold is released by ACAP (Portuguese Automobile Trade Association) and it is not seasonally adjusted. Since the series including 4x4 is only available from January 1993 onwards, it was growth chained backwards using a series excluding 4x4 vehicles. The retail sales volume variable stems from the monthly trade survey released by *INE*. The figures refer to the balance of respondents (b.r.) regarding current volume sales in retail trade and are not seasonally adjusted. The series only start in June 1994. However, using the previous *INE* series, which is based on a different survey sample, it was possible to obtain a series since January 1989. The values prior to June 1994 were adjusted by a constant value, which resulted from the average difference between both series for the common period. The number of tourism nights spent by residents in Portugal is released by *INE* and is not seasonally adjusted. Due to a methodological change at the beginning of 2003, the current series is only available since January 2001. Therefore, it was growth chained backwards resorting to the previously published figures. Real industrial turnover index of consumer goods in the domestic market was obtained by adjusting its nominal counterpart for price developments using industrial producer price index of consumer goods. Nominal industrial turnover index of consumer goods in the domestic market is released by *INE* (not seasonally adjusted) but due to a basis change, the most recent series was growth chained with the previous one. The same applies for industrial producer price index of consumer goods. Regarding households' financial situation and general economic situation, both stem from the monthly consumers' survey released by the European Commission. Both series are seasonally adjusted and the first one refers to the balance of respondents regarding household current financial situation against 12 months ago while the second one regards consumers' assessment about the general economic situation over the last 12 months.

WAGE DETERMINATION IN GENERAL GOVERNMENT IN PORTUGAL*

*Mário Centeno***
*Manuel Coutinho Pereira***

1. INTRODUCTION

The use of economic theory to study the internal work of organizations has raised increased interest among economists, as shown by the papers of Baker *et al*. (1994) and Lazear (1999). The main issues analysed by this literature concern the study of internal labour markets, incentives, wages, promotions, hiring procedures, workers' evaluation and internal/external mobility.

This article aims at characterizing wage determination in general government in Portugal and the main factors behind it, using data from the 2nd General Public Administration Census (2º *Recenseamento Geral da Administração Pública*), which took place in December of 1999(1). It complements, to a certain extent, the study of the wage gap between private and public sectors by Portugal and Centeno (2001). Here a more comprehensive database is used and a detailed analysis of the wage formation process in general government is carried out, against the background of the abovementioned literature.

The general government census includes information not only on the characteristics of workers, common to most labour force databases, but also job specific information, in particular concerning seniority in the job, occupational category, and scope of government to which the worker belongs. This information makes it possible, beyond analyzing the wage return associated with individual characteristics (age, gender and education, for example), to study the impact on wages of match-specific variables measuring the progression of workers within general government.

The article deals with two main issues. The first is the analysis of the wage returns to human capital endowment (in particular, education and seniority). A special attention is also devoted to the gender wage gap. The second aspect concerns the characterization of public administration as an "internal labour market", featuring careers with well-defined entry points and a rigid "bottom-top" progression. The paper investigates these issues together with the wage incentives given to workers throughout their career. The empirical evidence is mainly based on an examination of the impact of the occupational category on wages, on an analysis of the progression pattern, estimated as the average return by year of seniority, and on wage dispersion over time in various occupational categories.

It is worth noting that a full examination of the working and incentives in general government as an internal labour market requires a comparison with a reference group, typically given by the private sector. However, such comparison is not made in this article.

The article is organized as follows. Section 2 presents a brief description of the database, focusing on the variable hourly wage. Section 3 is on the

* The views expressed are those of the authors and do not necessarily coincide with those of Banco de Portugal.

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(1) The database put together using census data was provided to the Banco de Portugal by the *Direcção-Geral da Administração Pública*. The first survey of this kind took place in October of 1996.

econometric methodology. Sections 4 and 5 examine the results, highlighting the return to education and seniority and the gender wage gap. Section 6 analyses the progression pattern and rigidity in the progression for several occupational categories. Section 7 presents the conclusions.

2. DATABASE

The database comprises 677,715 civil servants(2), covering all public administration bodies except for military personnel and the regional government employees of *Região Autónoma dos Açores*. The database contains many variables normally used to study careers inside an organization.

The key variable in this study is the wage earned by each employee. This variable is measured by the hourly wage, calculated from the information on the monthly wage and the hours worked per week. The information regarding individual characteristics includes gender, age and education. The main variables concerning the position of the worker inside public administration are seniority in the job, the scope of government (central, local and regional, and, in the case of central government, information about the ministry), the occupational category and the legal nature of the work relationship(3). Appendix 1 presents some descriptive statistics that summarize the distribution of hourly wages and seniority in the job (Tables 1 and 2). The remaining tables in Appendix 1 present the distribution of employees according to other variables: education, type of contract, scope of government/ministry and occupational category (Tables 3 to 7).

The distribution of hourly wages is the starting point of this paper, and is therefore analysed in detail. Chart 1A shows an estimate of the probability density function of hourly wages in general government and in the private sector (information from the *Quadros de Pessoal* 1999 is used for the private sector(4)). The comparison between densities already points to important differences regarding location and dispersion of wages and their segmentation. Both distributions are left-skewed, that is, wages concentrate in the lower tail of the distribution. However, this characteristic is much more marked in the private sector, where a larger proportion of employees have wages close to the minimum wage(5). Consequently, the median wage in the private sector is well below the median wage in general government. On the other hand, the wage distribution in public administration is clearly multi-modal and much less smooth than in the private sector. Such characteristics reflect the marked wage segmentation that exists in the public sector, where the rigid conditions of entry and progression in careers lead to the concentration of employees at certain remuneration levels and to homogeneous progression across the wage distribution.

Charts 1B and 1C present the probability density functions for the wages of male and female workers and graduate/non-graduate workers, but only for public sector employees.

The wage distribution for graduate workers is much more symmetric than for non-graduates. In both cases the distributions are clearly multi-modal. On the other hand, given that the proportion of non-graduate workers is higher among men, the distribution of wages for the latter is also much more asymmetric. Thus, while average salaries for men and women are relatively close, median salaries are quite apart, with the male median salary considerably lower.

This first analysis reveals some features of wages in the public sector that will be investigated in the rest of the paper:

- A strong impact of education on wage differentiation;
- A clear segmentation of the wage distribution (multi-modality).

(2) The concept of "civil servant" is wider in Portugal than in other countries and includes, for instance, public doctors, nurses, teachers and local government employees.

(3) The database contains other variables that were not used in this paper, such as, geographical information about the service and entity to which the worker belongs and about the location of the workplace.

(4) The *Quadros de Pessoal* result from an annual survey carried out by the Ministry of Employment and Social Security collecting information on all private sector employees.

(5) The minimum wage does not apply to general government, but the lowest wage levels in place are close to it.

Chart 1A
PROBABILITY DENSITY FUNCTIONS FOR HOURLY WAGES IN THE GENERAL GOVERNMENT AND IN THE PRIVATE SECTOR[(a)(b)]

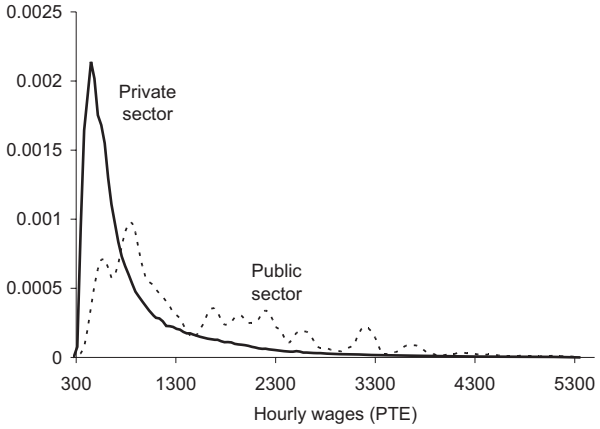


Chart 1B
PROBABILITY DENSITY FUNCTIONS FOR HOURLY WAGES IN THE GENERAL GOVERNMENT BY GENDER[(a)]

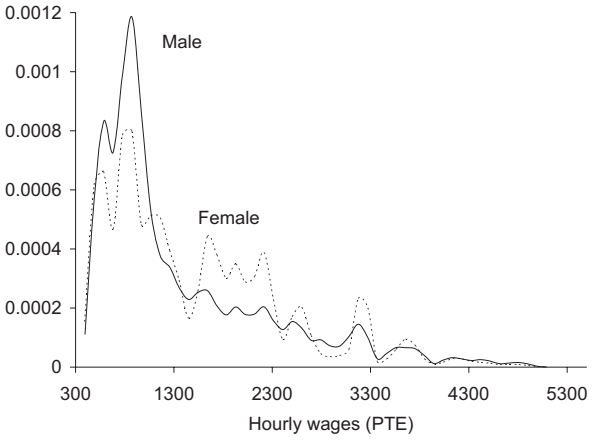
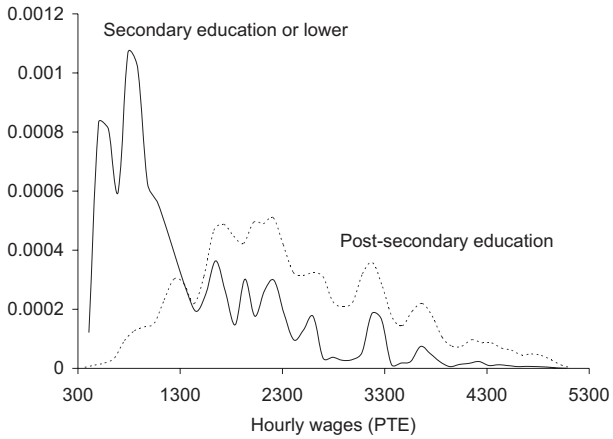


Chart 1C
PROBABILITY DENSITY FUNCTIONS FOR HOURLY WAGES IN THE GENERAL GOVERNMENT BY EDUCATION LEVEL[(a)]



Notes:
(a) Probability density functions estimated by the kernel method with the Epanechnikov kernel function.
(b) Data for the general government from the 2nd General Census, 1999, and for the private sector from the *Quadros de Pessoal*, 1999, *Ministério do Trabalho e da Segurança Social*.

3. METHODOLOGY

Wage determination analysis is usually carried out by estimating wage regression equations, where the hourly wage appears as a dependent variable, and different proxies for the stock of human capital as explanatory variables. The latter can be divided into general human capital, measured through the education level (in this paper four groups were considered: less than lower secondary education, lower secondary education, upper secondary education and post secondary education) and experience, and specific human capital, measured through seniority in the organization.

The effect of experience can be separated from the effect of seniority depending on the quality of the information for the first variable and on the incidence of long-term jobs. The database includes information about seniority in public administration but not about experience in the labour market (although a proxy for this variable can be obtained using age). However, in general government, given the high incidence on long-term jobs, both variables should have similar informational content. In fact, the proportion of workers with more than 20 years of seniority among those older than 45 is about 69 per cent. Since seniority proved to have more explanatory power, this variable was used in the wage regression equations. A non-linear term (seniority squared) was included in the model in order to capture the possibility of an increase in the wage with seniority at a non-constant rate. The model includes also variables to differentiate the gender and the type of contract (that is, permanent staff or other type of contract[(6)]). The

wage regression equation estimated was:

$$(1)\quad \ln y_i = \beta_0 + \beta_1 E9_i + \beta_2 E12_i + \beta_3 ELic_i + \beta_4 A_i + \\ + \beta_5 A_i^2 + \beta_6 M_i + \beta_7 V_i + u_i,$$

where $\ln y_i$ is the log of the hourly wage for individual *i*; $E9_i$, $E12_i$, $ELic_i$ are dummy variables for the education levels: lower secondary, upper secondary, post-secondary; A_i is seniority (in years); A_i^2 is seniority squared; M_i is a dummy variable for male; V_i is an dummy variable for non-permanent staff.

As already mentioned, the census also has information on variables concerning the position of the employees within public administration, like the scope of government/ministry and occupational category. However, the interpretation of the explanatory power of these variables has to be made with caution taking into account that its impact cannot be isolated from the impact of variables relating to individual characteristics. This aspect is particularly evident as far as the relationship between schooling and occupational category is concerned. In fact, access to most categories requires a certain education level. Thus the inclusion of variables concerning the position of the employee within public administration makes sense in order to determine their additional impact, as well as a possible change in the wage returns initially estimated in equation (1) (in particular, regarding education). Two additional specifications were estimated, one including dummy variables, for the scope of government/ministry and a second one with dummies for the occupational category.

The different specifications were estimated in the first place using the ordinary least squares method. This yields the mean impact on the hourly wage of worker *i* conditioned to a given value for the worker endowment in each of the characteristics controlled for in the equation. This method does not allow us to determine the impact of the explanatory variables over the wage distribution. That kind of information is given by an alternative estimation method: the quantile regression, which estimates the impact of each explanatory variable at different quantiles of the distribution of the dependent variable – $Q_\theta(y|X)$[7]:

$$Q_\theta(y|X) = X\beta(\theta), \theta \in (0,1)$$

If we let the quantile for which the equation is estimated to vary, it is possible to obtain a complete characterization of the distribution of *y* conditional on the values assumed by the explanatory variables, and to assess their impact at any point of the distribution of *y*. This aspect is particularly important for an analysis of wage distributions. For example, when the male/female wage gap is being assessed, it is common to find a sizeable gap only at higher quantiles, and not at intermediate and lower quantiles of the wage distribution (the so-called glass ceiling effect). In this context, quantile regression has evident merits in comparison to least squares regression.

4. EDUCATION, SENIORITY AND OCCUPATIONAL CATEGORY

The results of the estimation of equation (1) using the two methods are presented in Charts 2 and 3 for the education and seniority variables, respectively. The detailed econometric results are shown in Appendix 2. It is worth noting that the estimated coefficients are, almost without exception, statistically significant (see Appendix 2, Table 1 for the estimated coeficients).

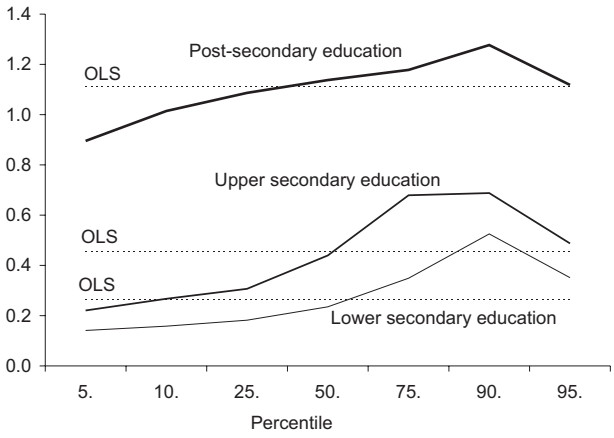
The dependent variable (hourly wage) was specified in logs, and therefore the coefficient estimates can be interpreted as the differential effect (in percentage) relative to the omitted category for the education variables in Chart 2 (the reference category being "less than secondary education") and an additional year of seniority in Chart 3[8]. For instance, workers with completed lower secondary education earn about 24 per cent more than workers without that education level, at the median of the hourly wage; and workers with 15 years of seniority receive around 25 per cent more than those with 5 years, also at the median.

(6) Mainly *contratos a termo certo e contratos administrativos de provimento*, which are both fixed-term contracts.

(7) See, for instance, Buchinsky (1998) about this estimation method. Applications in the context of the wage gap between the public and private sectors can be found, for example, in Poterba and Rueben (1994) and Melly (2003).

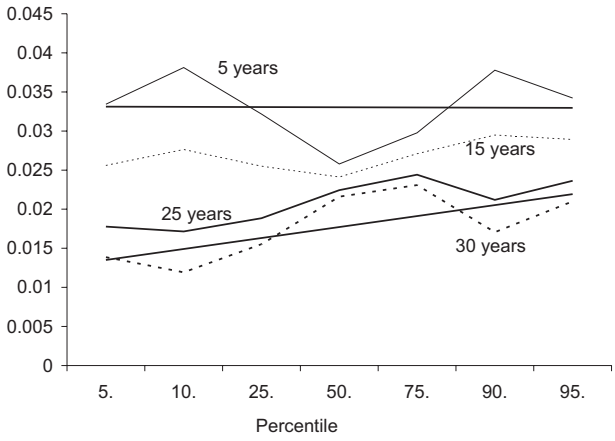
(8) The exact impact is obtained as $e^b - 1$, where b is the coefficient estimate. However, for "small" values of *b*, $e^b - 1$ is approximately equal to *b*.

Chart 2
IMPACT OF SCHOOLING ON WAGES



Note: Coefficients for the education variables in equation (1), OLS and quantile regression methods.

Chart 3
MARGINAL IMPACT OF SENIORITY ON WAGES



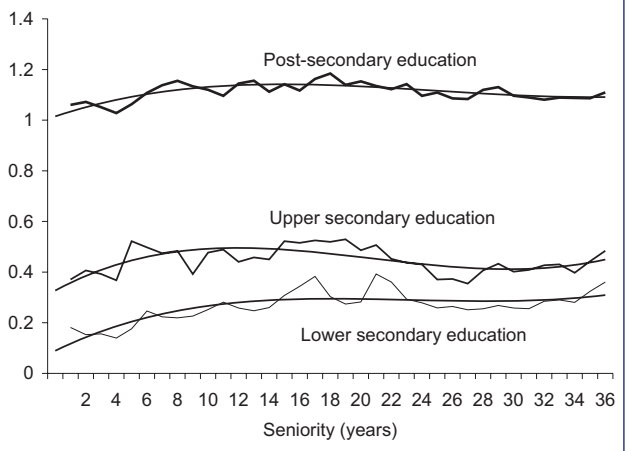
Note: Coefficients for seniority variables in equation (1), quantile regression method. Marginal impact computed as $\hat{\beta}_4 + 2\hat{\beta}_5 A_i$.

Previous papers established that the wage returns to education in Portugal, in particular as far as university education is concerned, are very high (see, for example, Portugal and Centeno (2001) and Portugal (2004)). Our results indicate that a civil servant with post-secondary education benefits from a wage premium of 75 to 100 per cent in comparison to his/her counterparts with lower secondary education. The charts show that the wage returns to schooling increase monotonically along the wage curve (approximately until the 90th percentile), with the premium at the lower [upper] percentiles being much smaller [higher] than the least squares estimate. The aforementioned papers established that wage earnings stemming from education in public administration are higher than those estimated for workers employed in the private sector.

Returns to seniority are one indicator for the existence of an internal labor market inside organizations and a measure for the reward to specific human capital. A significant seniority premium can be economically justified as the payment of efficiency wages, but in a sector with strong employment protection the justification can be the existence of rents which are not economically justified. The seniority coefficients indicate a positive linear component of around 3.5 per cent, while the quadratic component is negative, implying decreasing salary returns to seniority. Chart 3 presents the impact corresponding to an additional year of seniority, as the employees move forward in their career, for the various percentiles of the wage distribution. The impact, at each percentile, is decreasing in seniority, reflecting the decreasing marginal effect of this variable. Note, however, that while for lower seniority levels the marginal impact remains more or less constant throughout the wage distribution, for higher levels of seniority the marginal impact is clearly smaller in the left tail (reflecting a more negative non-linear term). This result captures a stronger effect of wage ceilings for workers with high seniority among the worse paid occupational categories.

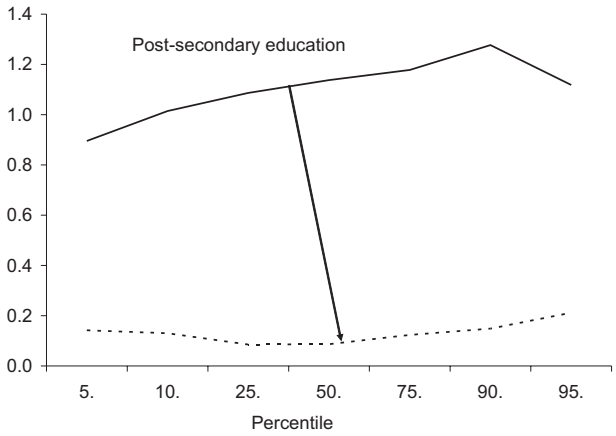
An examination of the change in education premium with seniority is an issue typically dealt with in studies such as this. Indeed one may expect that the importance of education, as a measure of general human capital, weakens as workers accumulate specific human capital. In order to investigate this issue, a specification corresponding to equation (1) was estimated, for each level of seniority. The results are shown in Chart 4. While the role of education becomes slightly less important after about 1/3 of the professional life, the coefficient remains high and significant. This result suggests a failure to reward the acquisition of specific human capital by workers and of the learning process that is usually thought to occur inside organizations. Educational attainment remains a consistently important wage-determining factor through the whole professional life.

Chart 4
IMPACT OF SCHOOLING ON WAGES AS SENIORITY INCREASES



Note: Coefficients of schooling variables in a model corresponding to equation (1), by years of seniority.

Chart 5
CHANGE IN THE IMPACT OF SCHOOLING ON WAGES IN A MODEL INCLUDING THE OCCUPATIONAL CATEGORY



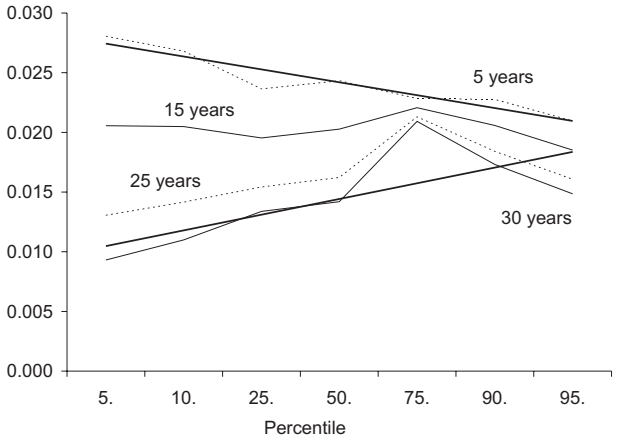
Note: Coeficient for the post-secondary school variable in equation (1) and in the equation including the occupational category (dotted), quantile regression method.

Finally, it is worth mentioning the result for the indicator of the type of contract. This variable captures workers with a non-permanent contract. The coefficient is negative at the bottom of the wage distribution and positive at the top (see Appendix 2, Table 1). This result captures, for the lower paid workers, the impact of weaker work relationships in the form of fixed-term contracts which translate into a wage penalty. For workers in the upper part of distribution, it reflects the wage premium benefitting those employees occupying managerial positions and/or in governmental offices who are not permanent workers and receive a higher wage. The coefficient for the male gender variable is positive and increases along the wage curve, indicating the existence of a gender wage gap, in particular at the top of the distribution of salaries.

As mentioned above, the estimation of two additional specifications containing variables on the employees' position within general government was carried out as a second step. Those specifications include, besides the variables in specification (1), dummy variables differentiating the scope of government/ministry and occupational category. The results of these two regressions are shown in Appendix 2, Table 2 and 3. The most important outcome is the strong negative impact of occupational category on the returns to education. In Chart 5 we show the results for the case of post-secondary education, but the same phenomenon can be observed for the other education levels (see Appendix 2, Table 3). This result indicates that the importance of the education endowment translates mainly into a requirement to reach a certain occupational category. It also shows that the significance of education as a wage-determining factor throughout the career comes down to employees' staying in the same occupational category over their professional life. Here there is again evidence of strong wage segmentation and of the existence of procedures consistent with those of an internal labour market in general government. It is worth noting that similar studies for the private sector (see Lima and Pereira (2003) for the Portuguese case) indicate a much smaller impact of occupational category on the coefficients measuring the reward to education even when internal labour markets cannot be ruled out for private firms.

As far as the coefficients for the dummy variables on the scope of government/ministry are concerned, their magnitude is small, except to the extent that they reflect the prevalence of certain occupational categories within a given ministry. This conclusion was confirmed by means of an additional regression polling all dummy variables (that is, those relating to the scope of govern-

Chart 6
CHANGE IN THE MARGINAL IMPACT OF SENIORITY ON WAGES IN A MODEL INCLUDING THE OCCUPATIONAL CATEGORY



Note: Coefficient for seniority variables in the equation including the occupational category, quantile regression method. Marginal impact computed as $\hat{\beta}_4 + 2\hat{\beta}_5 A_i$.

ment/ministry and to occupational category). The non-existence of significant wage differentiation among ministries is an indication of the lack of competition for hiring the best workers and, therefore, of incentives for internal mobility within general government.

The impact of taking into account occupational categories on the returns to seniority is shown in Chart 6. The inclusion of this variable allows us to control for the difference among the wage levels of the various occupational categories. At the bottom of the wage distribution the differences in the returns to seniority are now more pronounced than in Chart 3, with a clearer reduction of the returns to seniority for worse-paid workers at the end of their careers. At the top of the wage distribution the difference is smaller, with a more clear impact of wage ceilings for most categories.

The behaviour of the wage returns for senior workers provides an additional insight. The premium for one extra year of seniority at the end of professional life is significantly bigger between the median and the last decile of the wage distribution, compared to lower wage levels. This result, obtained after controlling for education and occupational category, points to a high wage growth for employees at the top of the wage distribution, those that had relatively more successful careers in public administration. However, such an effect vanishes in the last decile, reflecting the impact of wage ceilings.

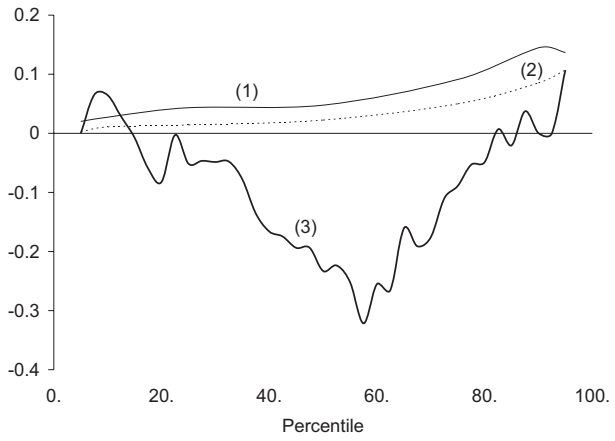
5. GENDER WAGE PREMIUM

The existence of a gender wage gap is one of the issues typically dealt with when the behaviour of wages inside organizations is being studied. This phenomenon is common to countries with different institutional regimes, but is less frequent in the public sector almost everywhere. This section examines the wage gap between men and women in Portuguese general government. Chart 7 shows the coefficient estimates for males controlling for the individual characteristics and seniority, and additionally for occupational category, as well as the raw wage difference between the two groups, at the various percentiles.

Women earn higher wages than men outside the tails of the wage distribution, the raw wage gap being negative approximately between the percentiles 15 and 85. This results fits in with the fact that the average salary for female workers is higher than that for male workers (see Appendix 1). However, adding individual characteristics as controls, the gap becomes positive over the wage distribution and its magnitude becomes larger at the upper percentiles. Therefore, the higher salaries earned by women are not enough to compensate for their larger human capital endowment, in particular in terms of schooling (see Appendix 1). Controlling also for the occupational category, the gap remains positive but lower, which means that part of the observed inequality is due to the prevalence of men in those occupational categories with higher returns to education.

The wage difference between the two groups can be decomposed into two components: one associated with the rate of return to each characteristic (that is, the price of that characteristic in the labour market), and another that reflects the endowment composition. This procedure, initially proposed by Oaxaca (1973), consists in estimating separately for each group the wage return associated with the different characteristics. The Oaxaca decomposition compares the specific wage returns at the sample average of the regressors. Machado and Mata (2005) carried out an extension of this

Chart 7
GENDER WAGE GAP



Note: (1) and (2) are the coefficients estimated for the male dummy variable, respectively, in equation (1) and in the equation including the occupational category, quantile regression method. (3) is the difference in the distribution of the log hourly wage between men and women, for the various quantiles.

approach that makes such a comparison possible at any point in the wage distribution.

Table 1 presents the Machado-Mata decomposition for the difference between salaries of men and women. The figures confirm that women have a larger human capital endowment, which significantly contributes to the raw wage gap. However, if the price of the various characteristics was the same for both groups, the difference in the education endowment would lead to an even larger gap. The inequality in the rates of return is particularly strong at the top of the wage distribution, approximately from the 80th percentile onwards. These results are a clear indication of the existence of a glass ceiling in female wage progression.

6. WAGE PROGRESSION AND DISPERSION IN SOME OCCUPATIONAL CATEGORIES

A key issue in the analysis of wage progression inside organizations is how they provide incentives to workers over the employment spell. This question plays a particularly important role in a sector where productivity is difficult to measure, such as public administration, and where wage incentives relating to progression over time are among the most important available. This section compares the progression pattern for a number of occupational categories in general government. This pattern should be understood as an observed return and not as an expected return as a function of seniority. Indeed, the current situation of workers might have been influenced by progression rules which may not be in place any more. The seniority coefficients discussed in the previous sections indicate that the returns to seniority increase at a diminishing rate. However, this aggregate analysis "hides" differentiated behaviour within general government occupational categories.

The analysis includes eight occupational categories representative of careers typically spent at low, intermediate and high wage cohorts. The occupational categories chosen also feature great homogeneity, measured by educational attainment of employees inside each category, and when this was not the case, we only considered workers with the most frequent education degree in that category. The average wage for each seniority year was estimated. The results are presented as the relative

Table 1

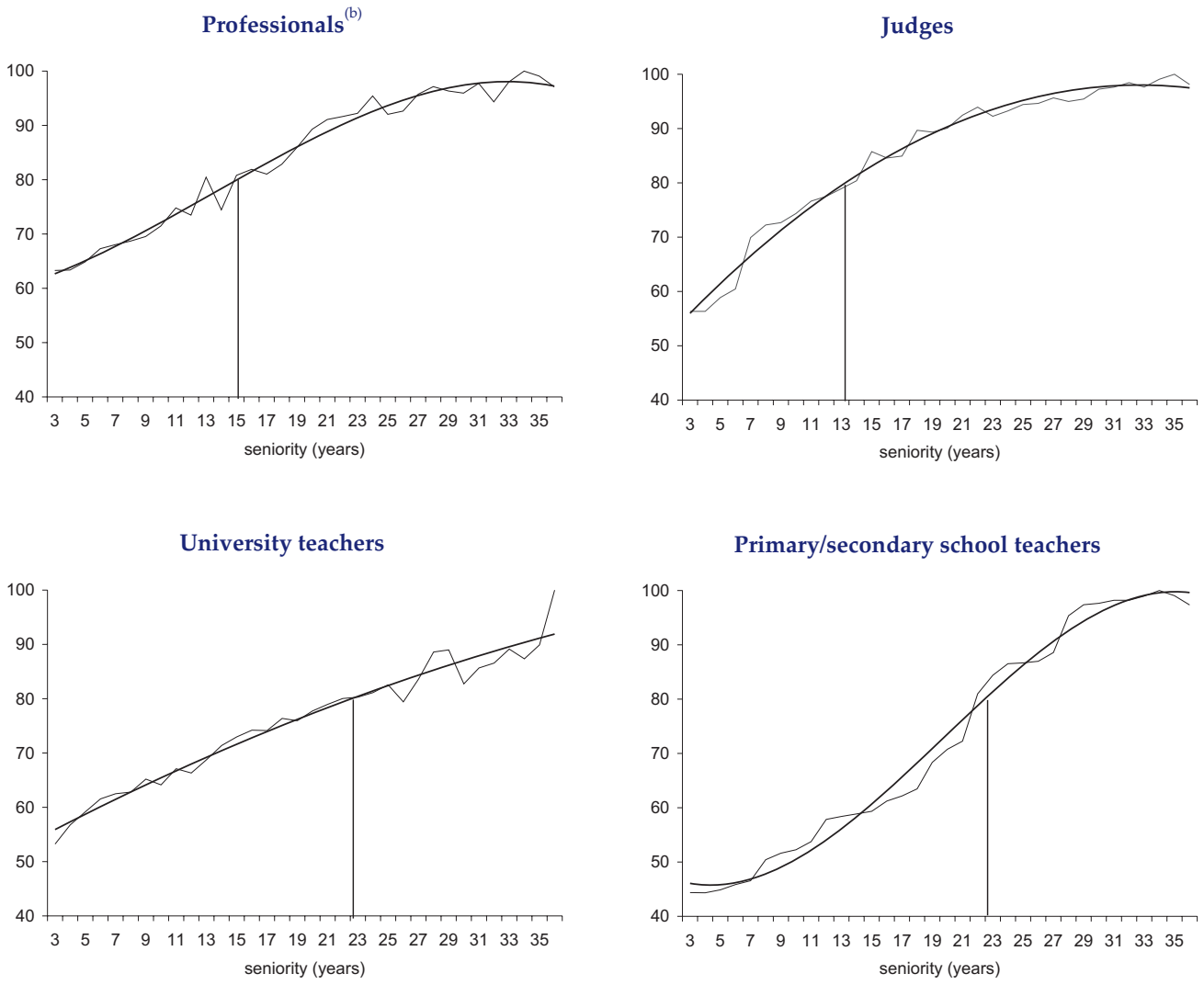
MACHADO-MATA DECOMPOSITION OF THE DIFFERENCE IN WAGES BY GENDER

Quantile	10.	20.	30.	40.	50.	60.	70.	80.	90.	Oaxaca (OLS)
Difference in individual characteristics	-0.12	-0.18	-0.19	-0.24	-0.32	-0.31	-0.19	-0.13	-0.10	-0.17
Difference in the remuneration of individual chararacteristics	0.06	0.05	0.04	0.03	0.01	0.02	0.03	0.08	0.12	0.07

Note: Difference in the individual characteristics obtained as $Q_w(\hat{y}^{cf}) - Q_w(\hat{y}^f)$ and difference in the remuneration of the individual characteristics as $Q_w(\hat{y}^m) - Q_w(\hat{y}^{cf})$, where $Q_w(.)$ is the w decile of the distribution of the log hourly wage estimated from equation (1) for men and for women, that is $\left[\hat{y}^m = X^m\hat{\beta}^m(\theta)\right]$ and $\left[\hat{y}^f = X^f\hat{\beta}^f(\theta)\right]$ and of the counterfactual distribution that would prevail if the male endowment were remunerated at the price of the female endowment $\left[\hat{y}^{cf} = X^m\hat{\beta}^f(\theta)\right]$. Calculated using a random sample of 25000 men and 25000 women, using the variant presented in Albrecht, et al. (2003).

Chart 8 (to be continued)

WAGE PROGRESSION WITH SENIORITY IN THE GENERAL GOVERNMENT[(a)]

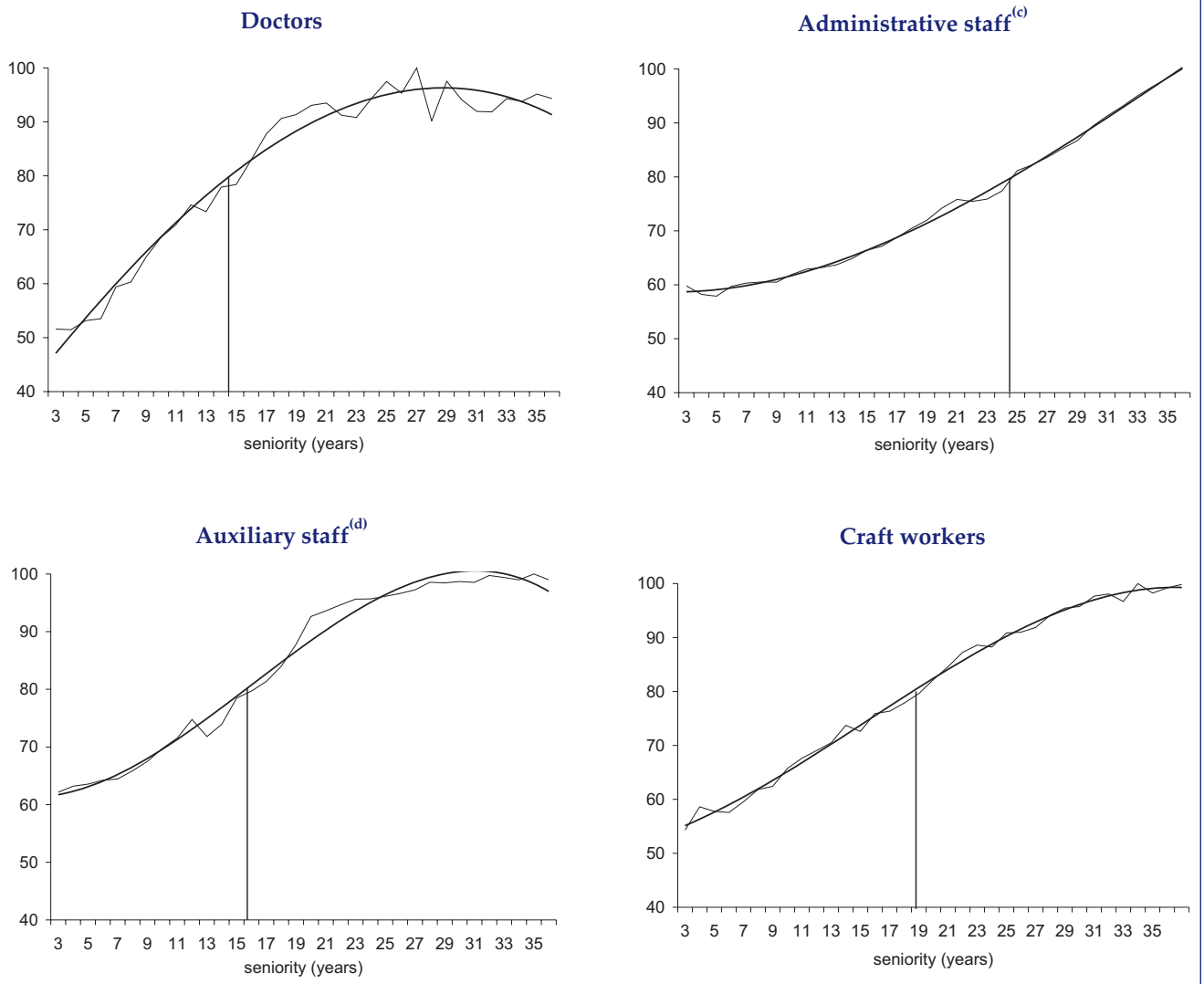


salary at each seniority level, compared to the salary prevailing at the end of the career (Chart 8). In addition, a polynomial curve was fitted in order to show the main tendency.

The progression pattern is quite different across occupational categories, even for those which require similar educational attainment. For instance, the progression for doctors and judges has a marked logarithmic pattern, with high wage increments in the initial years which afterwards tend to diminish quickly. On the contrary, primary and secondary school teachers have significant wage earnings at advanced stages in their career. This type of progression seems more common in occupational categories where employees do not have post-secondary education. A common outcome for all categories is the early attainment of a high wage level in relative terms. This is explained by quick initial progression and/or a relatively high entry point. Among categories with higher entry salaries, compared to salaries at the end of working life, are those where workers have less education (administrative and auxiliary staff). Other professionals are an exception, since they have more room for progression than other categories with the same educational requirements.

From this point of view, wage progression in some occupational categories reveals a problem of incentives at the final stages of professional life. This is the case for judges (80% of final salary after 13 years of career), doctors (after 14 years) and other professionals (after 15 years, but starting

Chart 8 (continued)
WAGE PROGRESSION WITH SENIORITY IN THE GENERAL GOVERNMENT[(a)]



Notes:
(a) Average salary by years of seniority for some occupational categories, as a percentage of the end salary.
(b) With post-secondary education.
(c) With lower secondary education.
(d) With less than lower secondary education.

from higher initial salaries). For judges and doctors, the wage increments at the end of working life are negligible. For example, for judges there are wage increments of 35 percentage points (p.p.) in the first half of professional lives and of only 10 p.p. in the remaining 18 years of their careers. These figures indicate a potential problem in terms of keeping up incentives at advanced stages in the career, which is even more serious as productivity growth tends to decrease at this career stage. This pattern does not encourage the extension of working life, and has negative consequences for the minimization of productivity losses, in particular in a sector featuring high employment protection.

In addition to the wage evolution pattern over time, it is also interesting to examine evidence about wage dispersion throughout a career in public administration. Such dispersion is particularly important as it might reveal to what extent managers are capable of rewarding the relative merit of their co-workers. If progression over time in a given category depended only on seniority (nil dispersion), the average salary determined above would coincide approximately with the observed

Table 2

WAGE CONCENTRATION IN THE GENERAL GOVERNMENT

Professionals (post-secondary educ.)	0.59
Judges	0.88
University teachers	0.51
Primary/secondary school teachers	0.85
Auxiliary staff (less than lower secondary educ.)	0.81
Administrative staff (lower secondary educ.)	0.73
Craft workers	0.78
Doctors	0.63

Note: Correlation coefficient between the average wage and the observed wage, by year of seniority.

salary, for each level of seniority. That is, the correlation coefficient would be close to 1. The bigger this coefficient is, the higher the importance of wage concentration generated by progression criteria depending only on seniority. Table 2 presents the results for the occupational categories studied above.

Wage concentration is high for almost all occupational categories. University teachers have the lowest value. This may reflect the fact that progression in their case is conditioned by the acquisition of academic degrees, the conclusion of which is subject to strong variability. The correlation coefficient for other professionals has also a relatively smaller value, possibly due to a certain degree of heterogeneity in this category and to the fact that it is common to several ministries, and this originates less uniform progression rules. Judges and primary and secondary teachers show on the contrary a very high wage concentration, which stems from the homogeneity of functions and concentration of workers in the same ministry, giving rise to very uniform progression mechanisms. This incapacity to introduce wage differentiation translates into a disincentive for the performance of workers, indicating a deficient personnel policy.

7. CONCLUSIONS

The objective of this paper is to analyse the determination of wages in public administration in Portugal, using data form the 2nd General Government Census, which took place in December 1999. The econometric analysis of the information available in the database was carried out mainly through wage regression equations.

The results can be summarized as follows:

- The wage structure in general government is strongly segmented in comparison to the private sector, reflecting more rigid conditions as far as entry and progression in the various occupational categories are concerned.
- There are high returns to education, in particular at the top of the hourly wage distribution. The impact of schooling on wages is, however, severely reduced when the occupational category is added as control. This result has no equivalent in the private sector and may also be seen as an indicator of segmentation around the occupational categories in public administration. In contrast, controlling for the scope of government/ministry does not imply a significant change in the reward associated with the characteristics of workers. This outcome reveals rigidity in the internal allocation of resources, and lack of incentives to mobility inside general government.
- Women benefit from wage returns to human capital endowment which are below those earned by men. This phenomenon is clearer in the upper cohorts of the hourly wage distribution.
- There is a non-linear relationship between salary and seniority: the associated reward exhibits decreasing returns. This phenomenon is partially explained by the tendency, in those occupational categories where workers are more qualified, for wage increases to be concentrated at early stages in the career. In general government a relatively high wage level is attained in the initial years, in comparison to the expected salary at the end of the worker's career (more than half of wage progression is made in one third of professional life). Education plays a consistently important role as regards wage determination even at later stages in the employment spell, and this fact is linked to permanency in a given occupational category. This suggests some failure to reward the acquisition of specific human capital by the employee.

- Wage dispersion with seniority increase is limited. Only in those occupational categories with a certain degree of functional heterogeneity, where workers are spread across a number of ministries, or where further advancement in the career requires additional qualifications, does there seem to exist some dispersion. Otherwise, progression seems rather uniform, pointing to an incentive problem.

These results complement those drawn by other papers on the Portuguese labour market, in particular for the public sector. Some of the questions raised, concerning the reasons why wages in the public sector are above those in the private sector, have been analysed in this paper from a general government perspective. The characterization indicates several efficiency problems concerning the functioning of general government as an internal labour market. Besides rigidity in wage structure and lack of incentives for internal mobility, also external mobility is discouraged by the quick attainment of high remuneration levels. It should also be taken into account that the civil servants' social security system has been more favourable than its private sector counterpart, which also contributes to jeopardising external mobility. Added to this is the much stronger employment protection in the public sector. The implementation of a personnel management policy in an environment with these type of characteristics has evident limitations.

BIBLIOGRAPHY

Albrecht J., Björklund A., Vroman S., 2003, "Is there a glass ceiling in Sweden?", *Journal of Labor Economics*, 21(1).

Baker G., Gibbs M., Holmstrom B., 1994, "The internal economics of the firm: evidence from personnel data", *The Quarterly Journal of Economics*, 109(4).

Buchinsky M., 1998, "Recent advances in quantile regression models: a practical guideline for empirical research", *Journal of Human Resources*, 33(1).

Lazear E., 1999, "Personnel economics: past lessons and future directions", *Journal of Labor Economics*, 17(2).

Lima F., Pereira P. T., 2003, "Careers and wages within large firms: evidence from a matched employer-employee data set", *International Journal of Manpower*, 24(7).

Machado J., Mata J., 2005, "Counterfactual decomposition of changes in wage distributions using quantile regression", *Journal of Applied Econometrics*, 20(4).

Melly B., 2003, "Public-private sector wage differentials in Germany: evidence from quantile regression", *mimeo*, Swiss Institute for International Economics and Applied Economic Research.

Oaxaca R., 1973, "Male-female differentials in urban labor markets", *International Economic Review*, 14.

Portugal P., 2004, "Mitos e factos sobre o mercado de trabalho português: a trágica fortuna dos licenciados", *Boletim Económico* de Março, Banco de Portugal.

Portugal P., Centeno M., 2001,"Os salários da função pública", *Boletim Económico* de Setembro, Banco de Portugal.

Poterba J., Rueben K., 1994, "The distribution of public sector wage premia: new evidence using quantile regression methods", *Working Paper* n. 4734, NBER.

APPENDIX 1
2nd General Public Administration Census - some descriptive statistics[a]

Table 1

HOURLY WAGES (PTE)

	Men	Women	Non-graduate	Graduate	Total
Average	1476.2	1550.4	974.2	2353.4	1519.4
Sd	1126.4	969.6	498.5	1095.5	1038.6
Median	999.3	1261.5	855.0	2155.8	1139.3
P25	773.5	814.3	633.3	1627.8	793.5
P75	1940.8	2121.5	1119.3	2970.0	2015.0

Table 2

SENIORITY (YEARS)

	Men	Women	Total
Average	15.3	15.0	15.1
Sd	9.9	10.0	10.0
Median	15.0	14.0	15.0
P25	6.0	6.0	6.0
P75	23.0	24.0	24.0

Table 3

DISTRIBUTION OF WORKERS BY GENDER AND EDUCATION (PERCENTAGE)

	Men	Women	Total
Below lower secondary education	38.2	22.8	29.1
Lower secondary education	14.2	11.9	12.8
Upper secondary education	15.1	17.4	16.5
Post-secondary education	32.5	47.9	41.5

(a) Military personnel and regional government of *Região Autónoma dos Açores* not included

Table 4

DISTRIBUTION OF WORKERS BY THE LEGAL NATURE OF THE WORK RELATIONSHIP (PERCENTAGE)

Legal nature	
Definitive appointment	80.3
Administrative fixed-term contract	8.6
Fixed-term contract	4.2
Provisional appointment	2.4
Individual contract	1.9
Other	2.7

Table 5

DISTRIBUTION OF WORKERS BY SCOPE OF GOVERNMENT (PERCENTAGE)

Government scope	
Sovereign bodies, ministerial staff and central government	80.1
Local government	17.1
Regional government	2.9

Table 6

DISTRIBUTION OF CENTRAL GOVERNMENT WORKERS BY MINISTRY (PERCENTAGE)

Ministry	
Education	46.1
Health	21.8
Internal affairs	9.7
Employment and social security	5.2
Justice	4.7
Finance	3.4
Agriculture	2.8
Social infrastructure	1.3
Economy	1.1
Foreign affairs	0.8
Environment	0.7
Culture	0.7
Planning	0.6
Council to cabinet	0.4
Defence	0.3
Science and technology	0.3
Reform of public administration	0.2

Table 7

DISTRIBUTION OF WORKERS BY OCCUPATIONAL CATEGORY (PERCENTAGE)

Profissional category	
Primary and secondary school teachers	24.8
Auxiliary staff	20.0
Administrative staff	11.3
Security forces	7.9
Craft workers	5.8
Nurses	5.0
Technicians	3.7
Other professionals	3.5
Doctors	3.5
Other technicians	2.3
University teachers	2.1
Managers	1.5
Primary and kindergarten teachers	1.3
Administrative court staff	1.3
Polytechnical school teachers	1.0
Medical support staff	1.0
Other court staff	0.7
Prision guards	0.6
IT staff	0.5
Judges	0.4
Firemen	0.3
Research staff	0.2
Other health professionals	0.2
Criminal investigators	0.2
Diplomats	0.1
Criminal investigation support staff	0.1
Registrars and notaries	0.1
Other	0.6

APPENDIX 2
Econometric results

Table 1

ESTIMATION OF EQUATION (1) BY THE ORDINARY LEAST SQUARES AND QUANTILE REGRESSION

	5.	10.	25.	50.	75.	90.	95.	OLS
Seniority	0.037	0.043	0.036	0.027	0.031	0.042	0.037	0.036
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
$Seniority^2$	-0.039	-0.052	-0.033	-0.008	-0.013	-0.041	-0.026	-0.031
	0.001	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	*0.001*	*0.000*
LSeducation	0.141	0.158	0.182	0.235	0.349	0.525	0.351	0.263
	0.002	*0.001*	*0.000*	*0.000*	*0.000*	*0.003*	*0.003*	*0.001*
USeducation	0.220	0.267	0.307	0.440	0.679	0.688	0.488	0.457
	0.002	*0.001*	*0.000*	*0.000*	*0.000*	*0.003*	*0.003*	*0.001*
PSeducation	0.895	1.015	1.087	1.138	1.178	1.277	1.118	1.112
	0.001	*0.001*	*0.000*	*0.000*	*0.000*	*0.002*	*0.002*	*0.001*
NP	-0.039	-0.105	-0.050	0.020	0.120	0.122	0.109	0.029
	0.002	*0.001*	*0.000*	*0.000*	*0.001*	*0.003*	*0.0032*	*0.002*
Gender M	0.020	0.027	0.043	0.048	0.091	0.145	0.137	0.068
	0.001	*0.001*	*0.000*	*0.000*	*0.000*	*0.002*	*0.002*	*0.001*
Constant	5.884	5.882	6.025	6.158	6.182	6.275	6.629	6.131
	0.002	*0.001*	*0.000*	*0.000*	*0.001*	*0.003*	*0.003*	*0.001*

Notes:
- Regression carried out using 546,468 observations. Standard deviation in italics.
- Seniority in years; $Seniority^2$ defined as (Seniority*Seniority)/100.
- Variables LSeducation, USeducation e PSeducation are equal to 1 when workers have, respectively, lower secondary, upper secondary and post-secondary education.
- NP is equal to 1 for work relationships different from appointment.
- Gender M equal to 1 for male workers.

Table 2

ESTIMATION OF EQUATION (1) WITH DUMMY VARIABLES FOR THE SCOPE OF GOVERNMENT/MINISTRY BY THE ORDINARY LEAST SQUARES AND QUANTILE REGRESSION

	10.	50.	90.	OLS
Seniority	0.042	0.028	0.030	0.035
	0.000	*0.000*	*0.00*	*0.000*
$Seniority^2$	-0.048	-0.014	-0.012	-0.029
	0.001	*0.000*	*0.000*	*0.000*
LSeducation	0.158	0.227	0.294	0.237
	0.002	*0.000*	*0.000*	*0.001*
USeducation	0.262	0.387	0.440	0.395
	0.002	*0.000*	*0.000*	*0.001*
PSeducation	1.020	1.147	1.185	1.087
	0.002	*0.000*	*0.000*	*0.001*
NP	-0.117	0.013	0.283	0.034
	0.002	*0.000*	*0.000*	*0.001*
Gender M	0.035	0.045	0.103	0.078
	0.001	*0.000*	*0.000*	*0.001*

Notes:
- Regression carried out using 545,230 observations. Standard deviation in italics.
- See notes to Table 1 for the definition of variables.
- For confidentiality reasons, coefficients for the scope of government/ministry variables not shown.

Table 3

ESTIMATION OF EQUATION (1) WITH DUMMY VARIABLES FOR THE OCCUPATIONAL CATEGORY BY THE ORDINARY LEAST SQUARES AND QUANTILE REGRESSION

	5.	10.	25.	50.	75.	90.	95.	OLS
Seniority	0.032	0.030	0.026	0.026	0.023	0.024	0.022	0.026
	0.000	*0.000*	*0.00*	*0.000*	*0.000*	*0.000*	*0.000*	*0.026*
Seniority^2	-0.037	-0.032	-0.021	-0.020	-0.004	-0.011	-0.012	-0.020
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*-0.020*
LSeducation	0.043	0.042	0.045	0.046	0.048	0.058	0.100	0.055
	0.001	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.055*
USeducation	0.061	0.064	0.060	0.066	0.077	0.058	0.096	0.074
	0.001	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.074*
PSeducation	0.142	0.130	0.085	0.087	0.124	0.149	0.212	0.147
	0.001	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.147*
NP	-0.313	-0.325	-0.149	-0.074	-0.039	-0.028	-0.031	-0.124
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*-0.124*
Gender M	0.003	0.011	0.014	0.022	0.049	0.081	0.106	0.024
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.024*

Notes:
- Regression carried out using 545,211 observations. Standard deviation in italics.
- See notes to Table 1 for the definition of variables
- For confidentiality reasons, coefficients for the occupational category variables not shown.

HOUSEHOLD WEALTH IN PORTUGAL: 1980-2004*

*Fátima Cardoso***
*Vanda Geraldes da Cunha***

1. INTRODUCTION

Analysis of the composition and developments of household wealth is often regarded in economic literature as important for coming to a better understanding of a number of macro-economic aggregates and, more generally, the performance of an economy. The study of wealth effects is particularly relevant in several areas. Among them are how changes in wealth affect decisions on consumption *vis-à-vis* savings or the influence of household wealth on investment (specifically in housing, as part of that wealth is often used as collateral to set against acquiring a loan). Moreover, the behaviour of household wealth and of its composition influences financial markets, thus affecting developments in the financial system.

This article aims to analyse the composition and evolution of the household wealth of residents in Portugal, from 1980 to 2004 and includes, for the more recent period, some international comparisons. The analysis is based on the estimates of wealth for that period published recently in Cardoso, F. and Cunha, V. (2005). Wealth components covered are financial wealth (financial assets and liabilities) and the housing component of non-financial wealth, which, according to some surveys(1), accounts for a very significant share of household non-financial wealth(2). These estimates will therefore cover a large percentage of total household wealth.

The article is organised as follows: section 2 presents the main concepts and a short description of the methodology adopted in the construction of the estimates for the housing stock and financial wealth(3); in section 3 the results for housing, financial assets and liabilities are analysed in terms of developments over the twenty-five years under review, including a comparison with figures for other countries. Section 4 presents the main conclusions.

2. CONCEPTS AND METHODOLOGY

2.1. Concepts

In order to achieve higher consistency with the other aggregates of national accounts and for international comparison purposes, the wealth series were estimated following the concepts and methodology defined by the European System of National and Regional Accounts (ESA 95)(4). According to ESA 95, for each institutional sector the balance sheet records the value of all its assets and li-

* The views expressed are those of the authors and do not necessarily coincide with those of Banco de Portugal. The authors would like to thank Ana Cristina Leal and José Ferreira Machado for their helpful comments and suggestions. The usual disclaimer applies.

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(1) Household wealth and indebtedness survey, 1994 and 2000, INE.

(2) Also in other countries, housing is usually the most significant component of non-financial wealth, according to OECD (2001).

(3) The methodology adopted in the construction of this series on household wealth is described in detail in Cardoso, F. and Cunha, V. (2005).

(4) Regulation (EC) No 2223/96 of the Council, of 25 June 1996.

abilities, and the balance (i.e. the difference between assets and liabilities) corresponds to **net worth (of**ten called **net wealth**). Assets entered in balance sheets are economic assets defined by Eurostat (ESA 95) as follows: "**economic assets** are entities functioning as a store of value over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits may be derived by their owners by holding them or using them over a period of time."

Assets comprise financial and non-financial assets (produced and non-produced) and liabilities correspond, by definition, to financial liabilities. **Net financial wealth** is the difference between financial assets and liabilities.

It should be noted that, within the scope of ESA 95, balance sheet entries do not include:

a) human capital;
b) natural assets that are not economic assets (e.g. air, river water);
c) durable goods for consumption;
d) contingent assets which are not financial assets[5] (e.g. guarantees of payment by third parties and lines of credit, such as credit ceilings associated with credit cards).

The concept of the institutional sector "households" should also be clarified. ESA 95 defines this sector as all resident households[6], which mainly covers individuals or groups of individuals as consumers, and also sole proprietorships and partnerships without independent legal status, either as market producers or producers for own final use (S.14). However, in the context of financial accounts, accounts for this sector are presented together with those for the sector "non-profit institutions serving households" (NPISHs) (S.15). The NPISHs sector consists of private non-profit institutions that are separate legal entities, which serve households and which are other non-market producers[7]. In Portugal therefore, as in the rest of Europe, financial accounts are calculated jointly for sectors S.14 and S.15. This article follows the same procedure, and thus wealth estimates presented refer to households and NPISHs, an aggregate that is usually known as "private individuals".

2.2. Methodology

The housing component[8] of wealth was calculated using the perpetual inventory method. This method is used in most OECD countries that have estimates for capital stocks, given that in general there are no annual sources of information allowing a direct estimation. The perpetual inventory method consists in the cumulative sum of Gross Fixed Capital Formation (GFCF) of the capital good concerned (in this case, GFCF in housing) at constant prices of a given year. Thus, a (gross) stock of housing is obtained in terms of volume for each period. Considering that all dwellings purchased at a given moment remain active up to the end of their expected service life (T), and are deducted as a whole from the capital stock at the end of that period[9], gross capital stock at each year t is simply calculated as the sum of investments in the T periods ending in t.

The net capital stock, which deduces the consumption of fixed capital, is the relevant concept for calculating wealth and was calculated by the linear depreciation method, assuming a service life of 65 years. The linear depreciation method is one of the methods most frequently used in OECD countries for this type of estimates (see OECD (2001)). It consists in assuming that assets (at constant prices) depreciate at a constant amount during their service life. The depreciation corresponds to a fixed proportion of the initial value of the asset, 1/T, where T is the average service life of the asset.

The calculation of the housing stock as described above required long series (starting in 1915), in terms of value and volume, of GFCF in housing. The series were constructed using the GFCF figures from the INE[10] National Accounts

(5) Contingent assets are only recognised in the system as financial assets if they are under contractual arrangements with market value, as is the case of certain financial derivatives.
(6) According to SNA 93, a household is a small group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.
(7) For example, trade unions, professional, learned or religious societies, consumers' associations, political parties, social, recreational and sports clubs.
(8) Includes the value of land underlying dwellings.
(9) This hypothesis is equivalent to considering that the survival function of these assets is rectangular, i.e. the survival probability is 1 during period t and period t+T-1, dropping to zero from t+T onwards.
(10) Portugal's National Statistical Institute.

according to ESA 95, along with Banco de Portugal estimates. The National Accounts series at current prices resulted from the sum of GFCF in household housing, included in GFCF in construction, with GFCF in services associated with house purchase (margins of real estate companies, property registers and taxes on real estate transactions). Given that the GFCF component in housing is only available in INE National Accounts at current prices, these figures were deflated using the GFCF housing deflator implied in Banco de Portugal macroeconomic estimates. The series thus calculated, at current prices and at 1995 constant prices (and extended into 2004 with Banco de Portugal estimates for GFCF in housing in terms of volume and value), were retropolated using change rates in terms of GFCF value and volume in housing published in the Banco de Portugal "Long time series"[11] for 1953-1995. For the period prior to 1953, use was made of rates of change in terms of GFCF value and volume in construction published in the Banco de Portugal "Historical series"[12].

The financial component of household wealth (assets and liabilities) was also estimated on the basis of ESA 95 methodology. As mentioned above, the concept "private individuals" includes households[13] and non-profit institutions serving households. The main source of information for the period 1995-2003 is the set of financial accounts calculated by the Banco de Portugal. However, for certain components, there are some differences between the current estimates and the financial accounts. In fact, in order to assure homogenous procedures throughout the entire time series, it was not always possible to use the financial accounts methodology for the period 1980-1994, given the lack of primary data. Preliminary estimates were made for 2004, taking into account the information available at the date of compilation of series used in this article[14].

Chart 1
DEVELOPMENTS IN WEALTH
(As a percentage of disposable income)

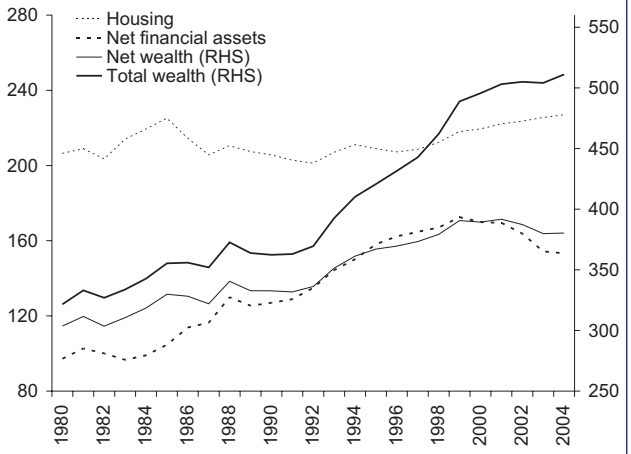
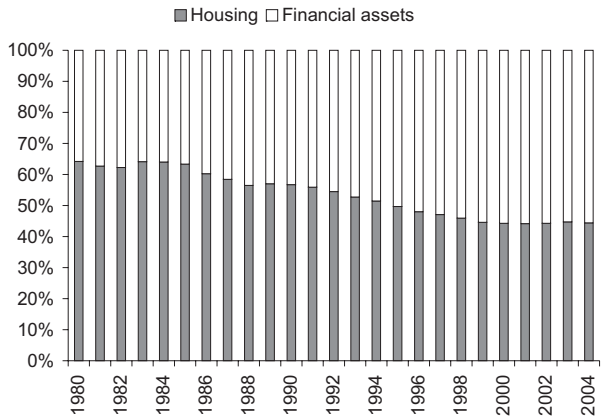


Chart 2
COMPOSITION OF WEALTH
(As a percentage of total assets)



3. DEVELOPMENTS IN HOUSEHOLD WEALTH

3.1. Overall results

Over the past twenty-five years, household wealth as a percentage of disposable income presented an upward trend, notably during the 1990s. In parallel, over the period under review there was an increase in the proportion of household financial wealth to total wealth, alongside a fall in the relative weight of the housing component (Charts 1 and 2).

Growth in household wealth was counteracted by a very significant increase in indebtedness, mainly relating to long-term loans for house acquisition. Nevertheless, wealth net of indebted-

(11) Banco de Portugal (1997a).
(12) Banco de Portugal (1997b).
(13) Including emigrants, whose investments are comparable with investments by residents in the Banco de Portugal statistics.
(14) Series published in Cardoso, F. and Cunha, V. (2005).

ness also evolved positively in the period considered, albeit less than assets, maintaining the rising profile until the end of the 1990s. More recently (as from 2000) household indebtedness decelerated (although it increased further as a percentage of disposable income), as well as assets held by households (mainly financial assets), and the weight of net wealth in disposable income of households stabilised somewhat (Chart 1).

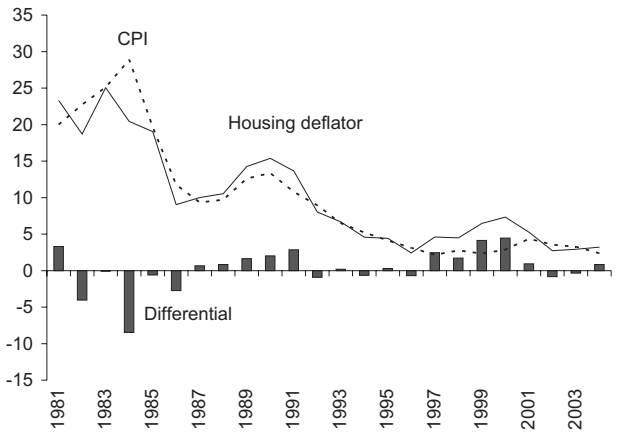
3.2. Housing

The housing stock as a percentage of disposable income increased in the period under review, but not uniformly. Particularly, over the 1990s (mostly over the second half) dynamics in housing market led to an upward trend in housing stock value (as a percentage of disposable income) and stabilised somewhat from 2000 onwards (Chart 1).

In the second half of the 1990s, the increase in the relative value of the housing stock as a percentage of disposable income took place alongside an increase in relative house prices. This, combined with the decline in interest rates, may have encouraged housing investment (Charts 3 and 4). The increase in relative house prices in the 1990s reflected the strong growth in housing demand(15). The latter was stimulated by easier bank credit for house acquisition, associated with both the significant fall in interest rates and higher competition in the banking sector. Indeed, the ratio of mortgage loans for house purchase to housing wealth value shows a significant increase in the 1990s. While this ratio ranged from 4 to 8 per cent from 1980 to 1992, it grew strongly as from 1993, standing at around 39 per cent in 2004 (Chart 5). Thus, non-mortgage housing wealth (as a percentage of disposable income) declined significantly as from the second half of the 1990s, In this context, the number of owner occupied houses grew, as evidenced by the *INE* population and housing census data. In 2001, 76 per cent of the dwellings were occupied by their owners, against 65 per cent in 1991.

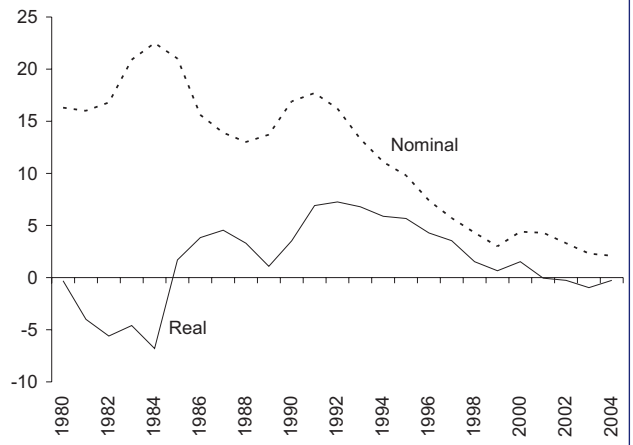
(15) It should be noted that strong growth in demand in the second half of the 1990s did not led to price increases as it did in other countries. Although these price increases were considerable, they occurred alongside a significant increase in housing supply.

Chart 3
HOUSING PRICES VERSUS CPI



Sources: *INE* and Banco de Portugal.

Chart 4
SHORT-TERM INTEREST RATES



Sources: European Commission and *INE*.

Unlike housing value as a percentage of disposable income (which also reflects developments in relative prices), housing stock per capita at constant prices followed an upward trend over the period under review. In fact, the growth rate in volume of housing stock stood permanently above population growth (Chart 6). This trend reflects two main factors. First, over the past decades the average size of households has dropped: according to the INE census data, the average number of persons per household fell from 3.4 in 1981 to 3.1 in 1991 and to 2.8 in 2001, and the number of one person households grew notably from 1991 to 2001, currently accounting for 17 per cent of total households (14 per cent in 1991 and 13 per cent in

Chart 5
LOANS FOR HOUSE PURCHASE
(As a percentage of housing wealth)

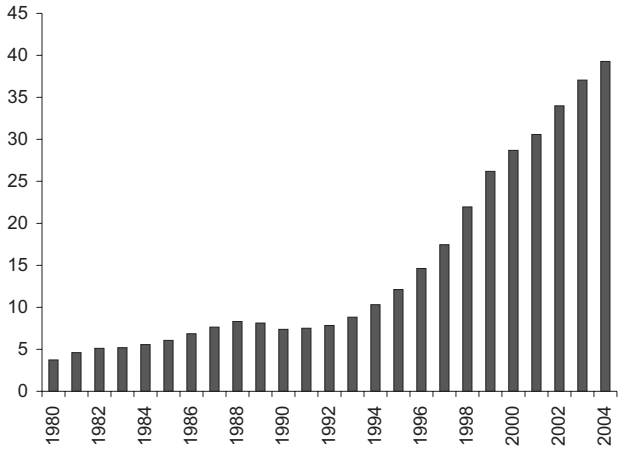
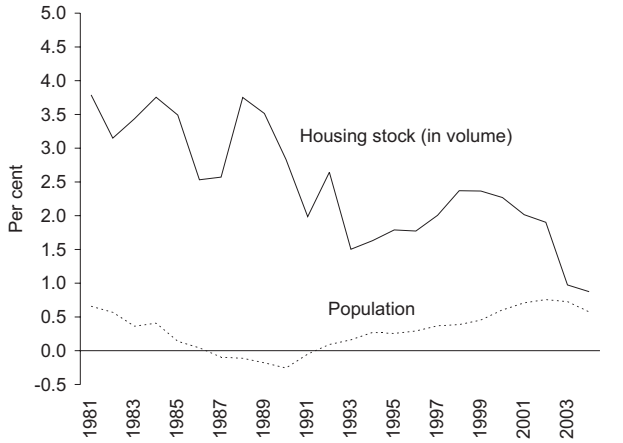


Chart 6
HOUSING IN VOLUME AND POPULATION
(Rates of change)



1981). Second, the expansion of the housing stock also reflects the increase in the number of houses per household (1.4 houses per household in 2001, 1.3 in 1991 and 1.2 in 1981) associated with the growing importance of seasonally occupied houses (which in 2001 corresponded to 18 per cent of total houses compared with 16 per cent in 1991).

3.3. Financial wealth

Financial wealth relative to disposable income followed a clear upward trend both in assets and in assets net of liabilities. This trend, much more marked than in the housing component, became more pronounced as from the early 1990s, which seems to be associated with the strengthening of the financial system that followed the abolition of credit limits (1990/91) and the liberalisation of capital movements at the end of 1992. However, as liabilities grew in importance, the trend in net financial wealth is less steep than that in assets, albeit maintaining the rising profile until the end of the 1990s. More recently, financial assets as a percentage of disposable income stayed on an upward track, but decelerated more than liabilities did and net financial wealth therefore fell as a percentage of disposable income (Chart 7).

Household financial investments comprise mainly deposits[16]. These have been growing in importance in terms of disposable income, although their relative weight has been declining in terms of portfolio composition. In fact, over the period under analysis, a decline in the degree of bank intermediation was observed: in the first half of the 1980s, investments in deposits accounted for around 80 per cent of total financial wealth, but then fell steadily until 2004. Even so, they account for more than 40 per cent of the financial investment (Chart 8).

The evolution of portfolio composition reflected the developments in financial system and its regulatory framework. The liberalisation process started in 1983 with the opening of the banking and insurance sectors to private initiative. European integration was achieved in 1986 and reinforced this process with the subsequent strengthening of the financial system through the emergence of new institutions and financial products. Regulatory changes, involving the liberalisation of interest rates and the abolition of credit limits, as well as the liberalisation of capital flows in the early 1990s and the privatisation process also contributed to the strengthening of capital markets and thereby to the increased diversification of households' financial portfolios.

As a result, the weight of the shares and other equity in households' financial portfolios increased significantly, from around 15 per cent in the first half of the 1980s to more than 30 per cent in 2000, being the second component in terms of weight in the structure of households' financial assets. This value had been declining in the previous

(16) This category comprises bank deposits and savings certificates, which, according to ESA95, are equivalent to deposits.

Chart 7
FINANCIAL ASSETS
(As a percentage of disposable income)

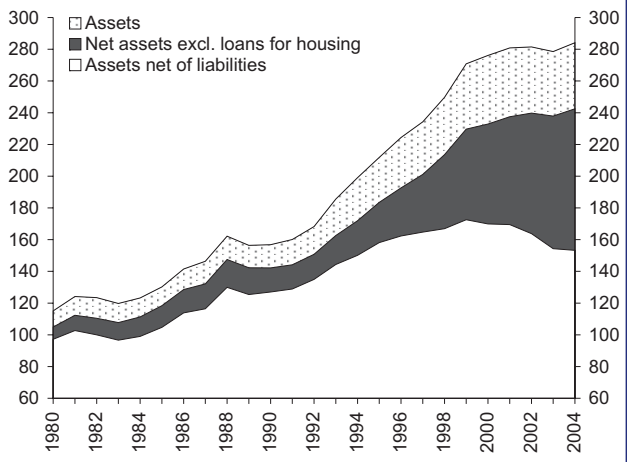
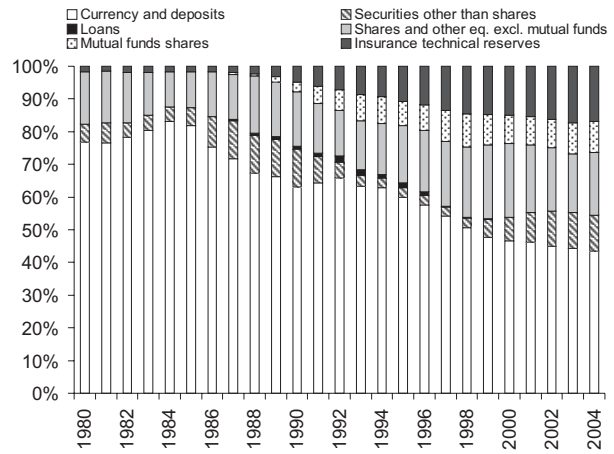


Chart 8
COMPOSITION OF PORTFOLIO
(As a percentage of financial assets)



few years, but in 2004 it recovered slightly (Chart 8). These developments occur both at the level of shares and other equity in corporate capital and in mutual funds shares. The latter emerged in Portugal in 1986 and have been mostly acquired by households, as an alternative to investments in bank deposits. The privatisation process initiated at the end of the 1980s, and with greater incidence in the second half of the 1990s, mainly relating to the banking and insurance sectors, contributed significantly to the increased importance of shares in household portfolios. These operations, associated with investment incentives to small subscribers (notably discounts on the acquisition of shares and the provision of bonus shares) and tax benefits, led to a rise in household participation in the stock market.

In its turn, net equity of households in insurance technical reserves has followed a continued upward trend since the early 1990s both in terms of disposable income and of weight in the structure of assets. This was the component that increased more significantly over the period in analysis and in the mid-1990s it reached third position in financial investments of households (after deposits and shares) and has been there since then. This trend reflects developments in life insurance and pension funds as private systems complementary to social security schemes. Investments in life insurance and pension funds have also benefited from more favourable tax regimes than more traditional investments, favouring demand for these less liquid products.

Direct investments in securities, mostly in government debt, grew over the 1980s, but they seem to have been replaced by mutual funds shares and insurance technical reserves in the 1990s, a trend that was only reversed in the last years of the period under review (Chart 8).

The share of direct equity issued by non-residents continued to be negligible in the equity portfolio, despite following an upward trend, more marked after Portugal's accession to the euro area. This has also been the case for total direct financial investments abroad (which represent 7 per cent of total). In terms of indirect investments, i.e. via institutional investors (mutual funds, life insurance and pension funds), the share is much higher: the percentage of securities issued by non residents in the portfolio of these investors is estimated to have increased from less than 10 per cent in 1995 to over 60 per cent in 2004.

These developments in household wealth naturally reflect household financial investment choices but they are also influenced by other factors, such as price fluctuations in assets. Charts 9A and 9B show how changes in wealth from 1995 to 2004 resulted from net acquisitions of assets or from other factors. The net acquisitions have been mainly directed to deposits, followed by investments in insurance (specifically life insurance) and pension funds, and, in third place, by acquisitions of securities (other than shares, mutual funds shares and other equity), denoting the preference by households for low-risk assets.

Chart 9A
FINANCIAL INVESTMENTS IN THE PERIOD 1995-2004

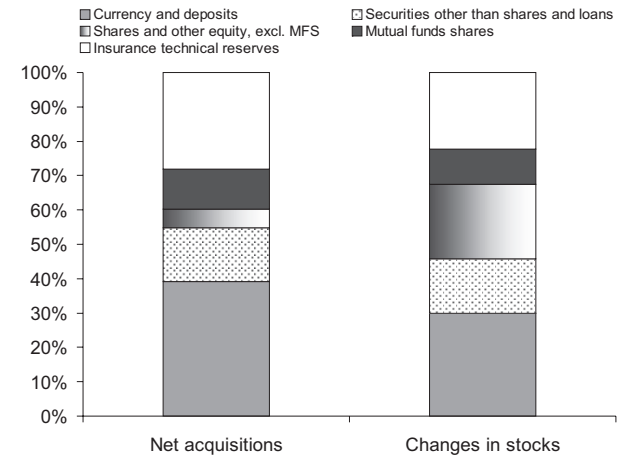
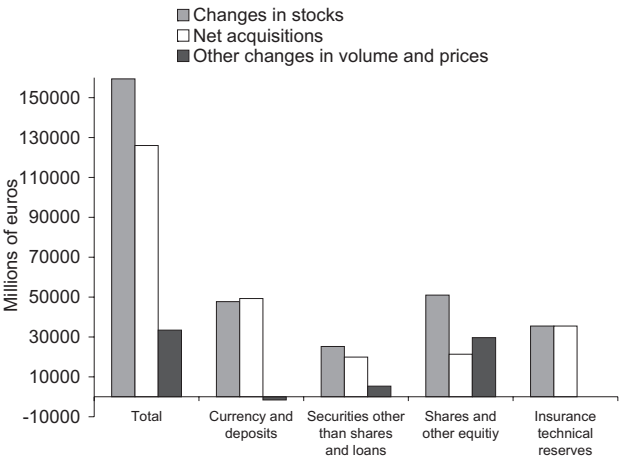


Chart 9B
FINANCIAL INVESTMENTS IN THE PERIOD 1995-2004



Thus, the rise in the stock of household wealth in shares and other equity since 1995 is due to increases in shares prices (which account for around 60 per cent of the change in stock) rather than to net acquisitions. These price effects were stronger until early 2000 but, in the 10 years to the end of 2004, the PSI index had increased by around 140 per cent. In fact, holding gains in shares were the most significant price effects in financial wealth, while net acquisitions of these assets continued to account for a small percentage of household investments. Securities other than shares also recorded some nominal holding gains, albeit relatively small (close to 20 per cent of total change in stock from 1994 to 2004)[17].

Overall, in the period under review, the strengthening of the financial system, the downward path of interest rates and capital gains offered by shares and other equity, as well as developments in social security schemes have conditioned household choices for their financial asset portfolio composition. It became more diversified and less liquid, but still quite "conservative" when compared with other European countries (see section 3.4).

Household indebtedness, in its turn, rose significantly in terms of disposable income, although total wealth net of liabilities maintained an upward path (Chart 1). In terms of breakdown by type of credit, long-term loans are the most relevant item, mainly for house acquisition, which recorded the most significant growth. Short-term loans, including trade credits, are negligible in terms of households' disposable income over the period under review. In the 1990s, indebtedness evolved in a context of declining interest rates, which encouraged consumption and investment expenditure, mainly in housing, with a corresponding increase in demand for credit. The effect of declining interest rates occurred both in real terms, by reducing the opportunity cost of expenditure, and in nominal terms, by easing households' liquidity constraints. By the end of the 1990s, strong competition in the banking sector increased the availability, diversification and sophistication of financial products, notably in the housing credit segment, stimulating recourse to this type of credit. A recent study[18] based on micro data shows that developments in the second half of the 1990s resulted from a marked increase in the accessibility of households to the credit market rather than from higher indebtedness and the respective effort rate at the level of individual households. Younger individuals were the main contributors behind the increase in indebtedness in aggregate terms. However, as they have lower levels

(17) It should be noted that income under the form of interest is classified as transaction rather than as a holding gain. According to ESA95, interest is recorded in the income account on an accrual basis. In financial transactions, accrued interest not paid is recorded as transaction together with the financial asset that gave rise to it (as a reinvestment). Therefore, the changes in stocks of deposits and securities, excluding exchange rate fluctuations, correspond mostly to financial transactions.

(18) Farinha, L. (2004).

of formal education, they are more vulnerable in situations of higher unemployment and therefore in their ability to fulfil debt commitments. The fact that each economic agent faces an intertemporal budget constraint that does not allow it to sustain an indebtedness trend indefinitely has also contributed to the slowdown in demand for credit.

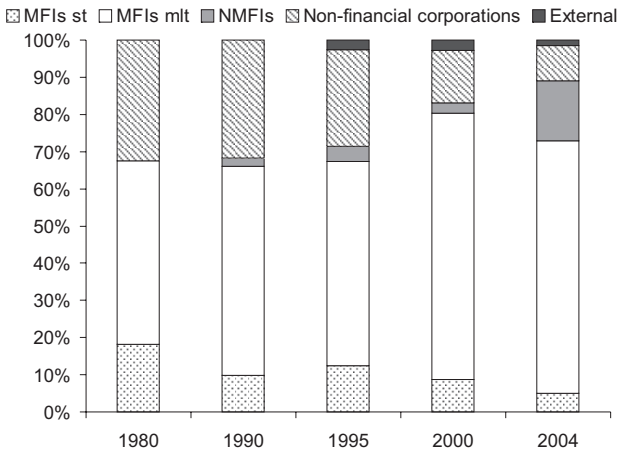
Households preferably choose to borrow from the resident banking system (around 80 per cent of total financing) (Chart 10). Non-monetary financial institutions appeared in the mid 1980s, but their importance is negligible. It has increased somewhat in the past few years mainly due to the transfer of bank loans to entities specialised in credit securitisation rather than by direct borrowing of households from these institutions. Non residents, in turn, accounted for only 3 per cent of total financing by direct credit. Trade credits have been declining in terms of relative importance, with the widespread recourse to consumer credit and credit for other purposes offered by financial institutions (banks and non banks) under more favourable conditions than those offered by commercial firms. By the end of 2004, they accounted for around 10 per cent of households' total indebtedness.

It is also worth mentioning that these aggregated indicators do not allow an evaluation of the financial wealth of households at a micro level, and one should expect an asymmetric distribution in households' wealth. In fact, according to a recent study[19], wealth distribution, in particular the financial segment is quite concentrated. For instance, the study reveals that, in the sample used, a mere 10 per cent of households in 2000 held almost 74 per cent of financial assets. However, net wealth is positive for most households, as a significant part of their liabilities take the form of loans for house purchase, which have the corresponding asset as guarantee.

3.4. International comparisons

This section briefly compares estimates for Portugal with data for other countries. The comparison is based on data only from 1995 onwards, a period for which there is financial wealth data on a comparable basis. Housing data are even scarcer

Chart 10
FINANCING SOURCES
(As a percentage of total liabilities)



and less harmonised and, for this reason, the analysis of this component was made for a smaller group of countries.

Table 1 shows some differences both in the structure of net wealth (weight of housing, financial assets and liabilities) and in its value as a percentage of disposable income. However, with regard to developments from 1995 onwards, there are some movements similar to those observed in other countries. Overall, from 1995 to 2000 there was an increase in household wealth as a percentage of disposable income, in both the housing and the financial component. This increase was more marked in financial wealth, resulting in the housing component losing importance as a proportion of total assets. From 2000 to 2003, the financial assets component declined in most countries considered (in some cases, such as the United Kingdom, even its nominal value decreased) reflecting the devaluation effect of shares in this period, while in some countries the value of dwellings continued to appreciate considerably. This effect was also observed in Portugal, albeit to a lesser extent, partly due to a slight slowdown in the housing market over the period. With regard to the weight of housing in total assets, in the group of European countries considered, Portugal is the country with the lowest share in 2003 (in 1995 and 2000 the United Kingdom was lower than Portugal). In Spain, the housing component has a very significant weight in total assets (above 70 per cent in 2002), reflecting a high percentage of house own-

(19) Farinha, L. and Noorali, S. (2005).

Table 1

INTERNATIONAL COMPARISONS - HOUSEHOLD WEALTH

As a percentage of total assets

	Housing			Financial assets			Liabilities[a]		
	1995	2000	2003	1995	2000	2003	1995	2000	2003
Portugal	49.7	44.3	44.7	50.3	55.7	55.3	12.8	21.4	24.6
Germany	55.4	51.8	50.6	44.6	48.2	49.4	19.2	20.1	19.7
Spain	65.2	63.4	72.0	34.8	36.6	28.0	10.8	12.4	11.9
France[b]	49.0	45.2	52.3	51.0	54.8	47.7	13.5	12.0	12.1
Italy	64.9	53.6	60.8	35.1	46.4	39.2	4.3	5.6	5.7
United Kingdom	36.6	39.0	49.0	63.4	61.0	51.0	17.9	14.7	18.0
Europe (6)	53.7	48.6	55.5	46.3	51.4	44.5	13.8	13.6	14.0
USA	27.1	25.4	30.9	72.9	74.6	69.1	17.5	16.7	19.8
Japan	41.6	37.2	33.7	58.4	62.8	66.3	18.9	17.8	17.7

As a percentage of disposable income

	Housing			Financial assets			Liabilities[a]		
	1995	2000	2003	1995	2000	2003	1995	2000	2003
Portugal	209	219	226	212	276	279	54	106	124
Belgium	-	-	-	362	468	398	63	69	67
Denmark	-	-	-	279	356	308	175	225	214
Germany	271	276	268	218	256	262	94	107	104
Spain	371	437	635	198	252	247	61	86	105
France[b]	234	270	318	243	328	290	64	72	74
Italy	437	385	477	237	333	308	29	40	44
The Netherlands	-	-	-	411	560	465	108	175	201
Austria	-	-	-	181	203	210	52	72	75
Finland	-	-	-	100	185	177	65	60	70
Sweden	-	-	-	211	295	262	95	101	117
United Kingdom	218	301	381	378	471	397	107	113	140
Europe (6)	291	314	378	251	332	303	75	88	95
Europe (12)	-	-	-	238	308	289	72	87	91
USA	146	157	184	391	460	411	94	103	118
Japan[c]	262	240	216	367	407	424	119	115	113

Sources: Eurostat, National central banks and European statistical institutes, Observatoire de L'Épargne Européenne, Federal Reserve Bank, Cabinet Office (Government of Japan) and Banco de Portugal.

Notes:

(a) The concept of liabilities considered here is more general than the one usually commented by Banco de Portugal (which considers only the interest bearing liabilities), the main difference being the inclusion of trade credits. Considering the strict concept, the ratios for Portugal are 38, 91 e 110 per cent of the disposable income in 1995, 2000 and 2003, respectively.

(b) The value of housing for France, in 2003, was estimated assuming the ratio of that value, as a percentage of disposable income, equal to the one observed in 2002 (last available figure).

(c) In the case of Japan, housing includes 3/4 of the value indicated in non-financial accounts as land underlying buildings and other constructions of households, as in OECD (2003).

ers (main and secondary houses). On the other hand, the 2000 to 2003 increase in the weight of the housing component in this country (as in the United Kingdom) reflects stronger growth in house prices in this period. In contrast, the weight of housing in the United States and Japan (both as a percentage of disposable income and total assets) is considerably below that observed in the European countries under review.

With regard to liabilities, although the respective values increased in several countries from 1995 to 2003, this trend was much more pronounced in Portugal, which recorded the highest share of liabilities in total assets in 2003, in the group of eight countries for which housing estimates were obtained. Considering a wider group of countries, the indebtedness level in Portugal as a percentage of disposable income is only below Denmark, the Netherlands and the United Kingdom (Table 1).

In 2003, in terms of financial wealth composition, comparing the values in Portugal with the

Table 2

INTERNATIONAL COMPARISONS - STRUCTURE OF FINANCIAL ASSETS [a]

As a percentage of total financial assets

Table 2A

COMPOSITION AT THE END OF 2003

	Currency and deposits	Securities other than shares	Shares and other equity	o.w.:mutual funds shares	Insurance technical reserves	o.w.: life ins. and pension funds
Portugal	44	11	27	9	17	16
Belgium	32	19	29	16	19	17
Denmark	28	8	17	9	46	44
Germany	36	12	22	12	30	28
Spain	42	3	39	13	16	15
France	31	2	36	10	31	28
Italy	27	22	35	17	15	13
The Netherlands	25	4	11	4	60	58
Austria	56	8	16	10	21	14
Finland	35	1	41	5	23	20
Sweden	20	3	40	12	37	37
United Kingdom	27	1	16	5	56	54
Euro area (9)	33	11	29	11	27	25
European Union (12)	31	8	26	9	34	32
USA	16	6	48	10	30	30
Japan	56	6	11	2	27	27

Table 2B

COMPOSITION AT THE END OF 1995

	Currency and deposits	Securities other than shares	Shares and other equity	o.w.:mutual funds shares	Insurance technical reserves	o.w.: life ins. and pension funds
Portugal	60	3	25	7	11	9
Belgium	30	31	29	9	10	8
Denmark	27	15	23	7	34	32
Germany	42	13	19	7	26	24
Spain	53	4	31	11	10	9
France	37	5	35	12	21	19
Italy	43	28	20	4	10	9
The Netherlands	23	3	20	5	53	52
Austria	62	15	6	4	16	12
Finland	73	6	5	1	15	10
Sweden	29	9	30	7	31	31
United Kingdom	25	2	20	4	53	51
Euro area (9)	41	13	24	8	22	20
European Union (12)	37	11	23	7	29	27
USA	16	9	46	5	29	29
Japan	52	8	14	2	26	26

Note:

(a) Luxembourg, Greece and Ireland are not considered in this table, since financial accounts according to ESA 95 are not available for these countries.

euro area average, investments in securities, shares and other equity are identical, but the currency and deposits component is significantly above the average, while net equities in insurance technical reserves continue to have a smaller weight (Table 2A and 2B). In terms of European Union countries, the results of the comparison are similar, with the exception of a larger difference concerning investments in the insurance sector. Indeed, the latter increased its relative weight with the inclusion of the United Kingdom, where more than half of the financial investments of households is made in this type of assets (among the countries under review, only the Netherlands are higher, standing at almost 60 per cent).

The results of the European countries' average (Monetary Union and others) mask considerable differences between countries when considered on

an individual basis. In the currency and deposits component, for instance, Austria shows the highest value (56 per cent), only comparable with Japan, and followed by Portugal (44 per cent), which is very close to the value recorded in Spain. In most other countries, the currency and deposits component has a smaller weight. In contrast, in the insurance and pension funds segment, Portugal stands (together with Spain, Italy and Belgium) in the group of countries in which investments have the smallest weight in total financial wealth (from 15 to 19 per cent), while most Northern European countries present higher relative importance of these assets. The debt securities and equities components also show wide variability between the countries considered; Portugal stands close to the average.

Compared to 1995, developments in Portugal until 2003 followed the trend observed in most other European countries, with a decline in the relative weight of deposits and an increase in other financial investments. The only exception is securities, which became more important in Portugal but remained below the euro area average. Overall, the structure of households' portfolios in Portugal over the last eight years came closer to the average of European countries, notably euro area countries. These movements contrast with those observed in the United States, where the weight of deposits stabilized, and in Japan, where deposits gained relative importance, reflecting the devaluation of shares. In the United States, the weight of shares and other equity remains above that observed in all the other countries under review. The increase in the weight of insurance technical reserves, in turn, was broadly based across all those countries under review, accounting for around one third of the financial assets of households in the areas considered (European countries, United States and Japan).

4. CONCLUSIONS

Over the past 25 years under review, household wealth as a percentage of disposable income presented an upward trend, notably during the 1990s. In parallel, there was an increase in the share of household financial wealth in total wealth, alongside a decrease in the relative weight of the housing component.

Growth in household wealth was counteracted by a very significant increase in indebtedness, mainly concerning long-term loans for house acquisition. Nevertheless, wealth net of indebtedness has also evolved positively in the period considered, albeit less than assets, maintaining the rising profile until the end of the 1990s, followed by a relative stabilization in the more recent period.

Over the 1990s, the declining trend of real and nominal interest rates conditioned household choices regarding the composition of their wealth. In the housing component, it allowed a growing number of households to purchase houses by recourse to credit, translated into an increasing trend in values of housing stock as a percentage of disposable income. In terms of financial wealth, the same factor (the declining trend of interest rates), along with the strengthening of the financial system, the capital gains offered by shares and other equity, as well as developments in social security schemes, determined changes in household portfolios of financial assets. Portfolios became more diversified and less liquid, but still quite "conservative" when compared with other European countries.

The 2003 figures effectively show that the weight of currency and deposits in total assets remains significantly higher than the observed average for the euro area whereas the net equity in insurance technical reserves has a smaller weight. In its turn, the weight of investments in securities, shares and other equity is similar in Portugal and in the euro area. When compared with the structure in 1995, developments in the period 1995-2003 in Portugal reveal similar trends to those observed in other European countries, with a decline in the relative weight of deposits and an increase in other financial investments, particularly in life insurance and pension funds. In general, households' portfolio composition in Portugal in this period moved closer to the average observed in European countries, in particular in the euro area countries.

BIBLIOGRAPHY

Banco de España (2002), "Estimación de los stocks de capital productivo y residencial para España e la UE", *Boletín Economico*, Octubre

Banco de España (2004) (site), "Síntesis de indicadores, indicadores del mercado da la vivienda"

Banco de Portugal (1997a), "New estimates for Portugal's GDP 1910-1958", História Económica no. 7, October

Banco de Portugal (1997b), Séries longas para a economia portuguesa

Brandolini, A. et al. (2003), "Household wealth distribution in Italy in the 1990s"

Cardoso, F. e Cunha, V. (2005), "Household wealth in Portugal: 1980-2004", Banco de Portugal, Working paper no. 4, June

Departamento Central de Planeamento (1994), "Metodologias de estimação do stock de capital: Aplicação do método do inventário permanente ao caso português", Documento de trabalho no. 5

Dias, M. (1996), "Riqueza e rendimento em Portugal - primeira abordagem do IPEF", Banco de Portugal, Boletim Económico, Junho

Direcção Geral de Estudos e Previsão (1999), Privatizações e Regulação, Ministério das Finanças

Eurostat (1996), European system of national and regional accounts - ESA95

Eurostat (2004), Newcronos Database

INE, General Population Census, General Housing Census 1981

INE, 1991 Census

INE, 2001 Census

INE (2004), Infoline

INSEE (2002), "Retropolation of the investment series (GFCF) and estimation of fixed capital stocks on the ESA-95 basis for the French balance sheets"

Farinha, L. (2003), "The effect of demographic and socioeconomic factors on households' indebtedness", Banco de Portugal, Economic Bulletin, June

Farinha, L. (2004), "Households' debt burden: an analysis based on microeconomic data", Banco de Portugal, Economic Bulletin, September

Farinha, L. and Noorali, S. (2005), "Debt and wealth of Portuguese households", Banco de Portugal, Financial Stability Report 2004

Hussain, I. (2000), "Households sector saving and wealth accumulation", Financial Services Authority, Occasional Paper Series no. 5

Luz, S. (1992), "The effects of liquidity constraints on consumption behaviour: The Portuguese experience", Banco de Portugal, Working Paper 3-92, February

Massaro, R. (2004), "Households' financial assets and liabilities in Europe", Eurostat, Statistics in Focus, theme 2 - 22

Observatoire de l'epargne européenne (2004), "L'endettement des ménages européens de 1995 à 2002", Avril

OCDE (1992), "Methods used by OECD countries to measure stocks of capital"

OCDE (2001), Measuring capital - OECD Manual - Measurement of capital stocks, consumption of fixed capital and capital services

OCDE (2002), "Household financial wealth: trends, structures and valuation methods"

OCDE (2003), "Household wealth in the national accounts of Europe, the United States and Japan", André Babeau e Teresa Sbano

ONS (2004), "United Kingdom National Accounts", The Blue Book 2004

United Nations et al. (1993), System of National Accounts - SNA93

ASSET PRICES AND MACROECONOMIC FUNDAMENTALS IN THE EURO AREA*

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1. INTRODUCTION

This study puts forward a new methodology for constructing indicators of asset price misalignments based on macroeconomic fundamentals. The basic hypothesis is that asset prices have a long run relation with macroeconomic fundamentals, namely with economic activity and interest rates. Generally, asset prices close to the levels implied by such long-run relation may be considered to be "fair" or normal levels. Large deviations from the levels implied by the fundamentals could be a sign of over or under valuation.

In the literature, several benchmarks for assessing asset price valuations have been proposed. Such indicators are useful as it is generally thought that it is undesirable that asset prices deviate too much from the levels implied by fundamentals. In particular, the development of speculative bubbles in asset prices that may later burst is a concern from the point of view of macroeconomic and financial stability. Thus, while recognising that it is difficult to determine the fundamental or "normal" value of an asset, there is a need for such benchmark indicators. This is reflected in the number of reference indicators that are commonly used with this aim, such as historical patterns of price-earnings, dividend yields, methods based on discounted cash flows, etc. (for a recent overview of this literature see Gürkaynak, 2005).

In a recent study of 18 OECD countries, Detken and Smets (2004) use a methodology based on deviations from a long-run trend for detecting periods of over or undervaluation in asset prices. More precisely, periods of overvaluation correspond to periods where a real composite index of asset prices (including house prices and equity prices) is continuously more than 10% above its long-run trend, which represents its fundamental value(1). Implicit in this definition of periods of overvaluation is the notion of the quantiles of the conditional distribution of the asset prices. In fact, implicit in such definition is an assessment of the likelihood of such occurrences. Periods of excessive valuation should correspond to extreme cases. In the method of Detken and Smets implies a price level 10% or more above the trend. However, this assessment is not quantified in probabilistic terms.

This article presents the results of a new methodology for detecting asset price misalignments using non-parametric quantile regressions which can complement other methods, such as the one of Detken and Smets. With our approach the whole conditional distribution of asset prices is estimated which makes it possible to assess with higher precision whether the periods identified by other methods correspond to situations of excessive valuation or not. With the estimates of the quantile approach it is also possible to analyse the evolution of dispersion and asymmetry of the distribution of share prices over time. One advantage of the method is that macroeconomic fundamentals can be taken into account in the analysis.

The quantile approach can also be useful for computing Value at Risk (VaR) measures of assets as a function of macroeconomic variables, finan-

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(1) The trend is computed recursively using a Hodrick-Prescott filter.

cial variables or risk indicators. Recent examples of this approach are given by Engle and Manganelli (1999) and Chernozhukov and Umantsev (2001). As in the current article, the basic idea is that the VaR should be measured conditionally. For example, at times of economic slowdown, it is more likely that firms make losses than in expansions. Therefore, VaR, measured as the maximum loss expected for a given asset and for a given probability, should rise in recessions and decline in expansions.

In this article, the quantile methodology is illustrated by an application to the euro area equity prices. The method consists in estimating the distribution of share prices, in real terms, conditional on its fundamental determinants. It can be shown that changes in the fundamental determinants alter not only the location of the conditional distribution of equity prices but also its shape. Periods of over or undervaluation correspond to values in the tails of the distribution.

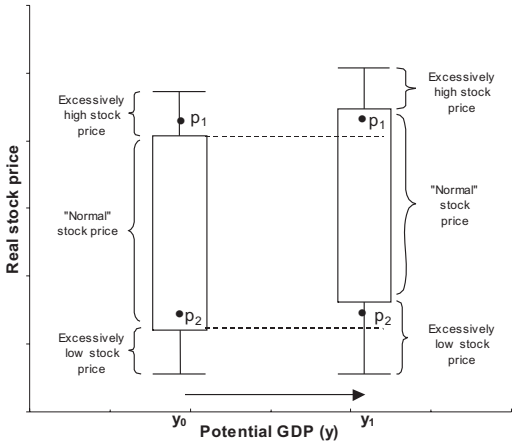
The remainder of the article is organised as follows. Section 2 presents the main features of the quantile regression approach used. Section 3 presents the empirical results for the estimation of different specifications of the conditional distribution of equity prices in the euro area (EMU price Index). Section 4 presents the main conclusions.

2. METHODOLOGY

The methodology is based on the estimation of the probability distribution of real asset prices conditional on the macroeconomic fundamentals. The basic hypothesis is that the probability distribution of asset prices is not constant over time but changes as a function of the macroeconomic environment. Thus, a given asset price may be considered to be too high, "normal" or excessively low depending on the concurrent macroeconomic conditions.

In order to illustrate how quantile regressions can be helpful for detecting periods of abnormal returns, Chart 1 shows the effect of a rise in potential GDP on the conditional distribution of the real stock prices represented by a box and whiskers chart. All other things constant, a rise in real GDP is expected to lead to an upward movement in the conditional distribution of real stock prices. As shown in the chart, this implies that if a particular

Chart 1
EFFECT OF AN INCREASE IN POTENTIAL REAL GDP ON THE CONDITIONAL DISTRIBUTION OF REAL STOCK PRICES



real stock price level would fall in the region of "too low" or "too high" stock prices in the previous period, it may now be considered as normal, given the more benign macroeconomic conditions. For instance, in period 0 and given a level of potential real GDP (y_0), the real stock price p_1 can be considered as being excessively high. However, with a higher level of real GDP growth (y_1) in period 1, the same real stock price can be considered as being within normal levels given the improvement in fundamentals. In turn, price p_2, which at the level of potential output y_0 could be considered as normal, is considered to be excessively low when potential output increases to y_1.

The quantile regression approach consists in estimating each quantile of the distribution as a function of economic variables such as real potential GDP. In the case of this study, we aim at estimating a function g_p of a vector of conditioning variables X_t corresponding to the quantile p (a value between 0 and 1), such that:

$$P\left(p_t \le g_p(x) \middle| X_t = x\right) = p$$

Where p_t is a share price index in real terms. Thus, once the value assumed by the variables X_t is known, the quantile regression provides an estimate of the corresponding pth quantile of the distribution of the real share price index. For instance, if p=0,5 then the quantile regression provides a representation of how the median share

price changes as a function of the macroeconomic background. Repeating this estimation for various values of p between 0 and 1 it is possible to characterise the whole conditional distribution of share prices. Lastly, with such estimate it is possible to assess, in probabilistic terms, a given level of share prices. For example, if on a given moment the real share price index is above the estimate of the 90% quantile (given by $g_{0,9}(x)$), then, with high likelihood, such value represents an overvaluation given that the probability of the real share price being above such value, taking the macroeconomic situation into account, is smaller than 10%.

There are several possible specifications for the quantile function. In this study we have opted for non-parametric specifications based on the approaches proposed by Koenker *et al*. (1994), He and Ng (1999) and Koenker e Mizera (2003). The methods were implemented using the statistical software R[(2)].

As for the conditioning variables, two possibilities were considered. In a first case, a time index was chosen as the only conditioning variable. This approach is close to the one of Detken and Smets (2004). In a second estimation the conditioning variables are economic activity and the real interest rate.

3. APPLICATION TO THE EURO AREA REAL SHARE PRICE INDEX

3.1. Data used

The data on stock prices used corresponds to the EMU Price Index taken from Datastream and expressed in euros. As for the fundamental variables, the real GDP series (as well as the nominal GDP data used for the calculation of the GDP deflator) is constructed by aggregating logarithms of seasonally adjusted national accounts data (ESA95 whenever available). Potential real GDP has been obtained by applying the HP filter to quarterly real GDP data and setting the parameter equal to 1600. The short-term interest rate corresponds to a weighted average of euro-11 (euro-12 from January 2001) short-term interest rates. The weights correspond to 2001 GDP weights at Purchasing Power Parity exchange rates. Up to the end of 1999, national interest rate series are obtained from the Bank for International Settlements. After 1999, the short-term interest rate corresponds to the three-month EURIBOR (from Reuters). The real interest rate is obtained by subtracting the annualised month-on-month inflation rate from the nominal rate. Similar to GDP, the real interest rate is also smoothed with the HP filter. The data cover the period from December 1980 to December 2003[(3)].

3.2. Conditioning on a time index

The simplest choice for the conditioning variable of the distribution of real asset prices is a time index. This model is estimated using the COBS (Constrained B-splines Smoothing) algorithm (He and Ng, 1999; Ng, 2005). The method can be seen as analogous to an HP filter, as it aims at smoothing the fluctuations of the real stock price index around a time index. In order to avoid that the smoothed real stock price index would follow too closely the actual stock price index, we imposed the restriction that the real stock price is non-decreasing with time. This does not seem to be an excessively restrictive restriction given that, theoretically, the real stock price index should rise over time in expanding economies.

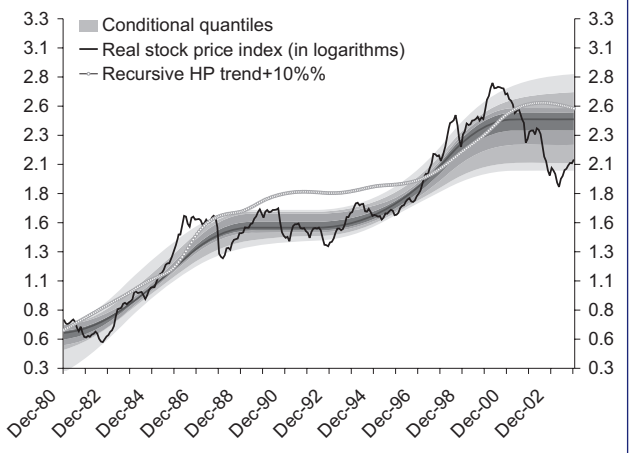
Chart 2 shows the real stock price index and the several deciles of the estimated conditional distribution. The darkest line represents the median while the several inter-decile intervals are shown as grey areas that become lighter with the distance from the median. The lower limit of the band is given by the first decile (i.e. the probability of the real share price index being lower than that limit in each period is 10%) while the upper limit is given by the 9th decile.

As can be seen in the chart, there is clear evidence that the conditional distribution of real stock prices varies over time. For instance, the distribution is narrower until 1997, becoming wider at the end of the sample. According to the results,

(2) R: A language and environment for statistical computing, R Development Core Team, R Foundation for Statistical Computing, Vienna, Austria, 2004, 3-900051-07-0. *URL=http://www.R-project.org*.

(3) The quarterly data on real GDP and the GDP deflator were converted into monthly data using a cubic interpolation.

Chart 2
MODEL WHERE THE CONDITIONING VARIABLE IS A TIME INDEX



at the end of the sample relatively pronounced fluctuations in the share prices around the median could be considered as being within normal bands.

The chart also shows the results of using a methodology similar to the one of Detken and Smets (2004) consisting in applying a Hodrick-Prescott filter to the time series of real stock prices, applying a high value to the smoothing coefficient (λ=1000) and multiplying the result by a factor of 1.1. This variable is chosen as the reference for identifying periods of overvaluation of asset prices (i.e. periods when the real stock price index is continuously more than 10% above its trend). Assessing the results of the HP filter in the light of the quantile approach it can be concluded that in some periods the measure based on the HP trend is too restrictive regarding the definition of the overvaluation periods. In fact, in some periods the HP trend is significantly above the 90% quantile thereby attributing a very low probability to the occurrence of an overvaluation. In other periods, the HP trend is lower than the median of the conditional distribution, consequently implying a too low threshold for defining the periods of excessively high share prices.

3.3. Conditioning on macroeconomic variables

In the literature, several authors have found evidence that the distribution of stock returns changes with the business cycle. For instance, Schwert (1989) and Hamilton and Lin (1996) find that the volatility of stock returns increases during recessions and decreases in periods of strong economic expansion. More recently, Péres-Quirós and Timmerman (2001) show that stock returns vary with the business cycle in the United States.

Given these results, in this second specification the vector X_t includes a measure of potential GDP and the real short-term interest rate. A rise in potential GDP is expected to lead to an upward movement in the conditional distribution of the real stock price index while a rise in the short-run real interest rate should lead to a downward movement of the conditional distribution.

The estimation method used corresponds to the approach of Koenker and Mizera (2003) based on penalized triograms(4). A previous analysis has shown that GDP should be introduced with a lag of two months while the trend real interest rate is lagged one month. These lags can be justified on the basis of information delays in the dissemination of the relevant macroeconomic information.

The results are shown in Chart 3. According to the results, changes in potential GDP and in the real short-term interest rate alter the shape of the conditional distribution of the real stock price index. The distribution narrows significantly during the period from 1991 to 1993, a period of slow growth (at times negative) and high real interest rates. After this period, the conditional distribution of equity prices continued to move upwards (reflecting the rising trend of potential GDP and the decline of the real interest rate) and at the same time became wider. Thus, recently, the range over which the real stock price index can be considered as in line with the macroeconomic fundamentals is wider than in the past.

The periods when the real stock price index moves beyond the limits given by the first and ninth deciles can be interpreted as periods of excessive deviation from "reasonable" levels given

(4) The value of the smoothing parameter was set to 3.5 and no other restrictions were imposed as to the relation between the variables.

Chart 3
MODEL WITH MACROECONOMIC CONDITIONING VARIABLES

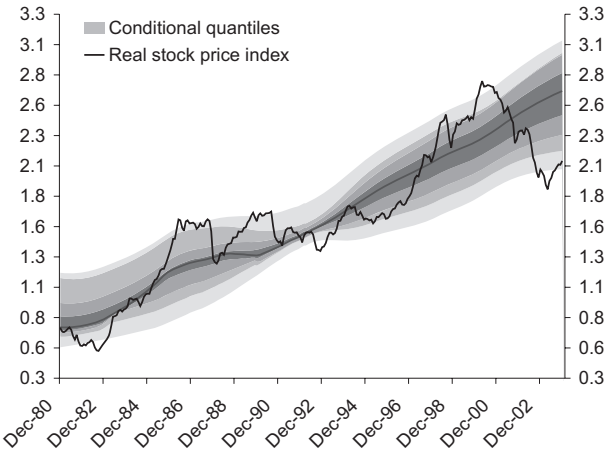


Chart 4
REAL STOCK PRICE INDEX AND OVER VALUATION PERIODS

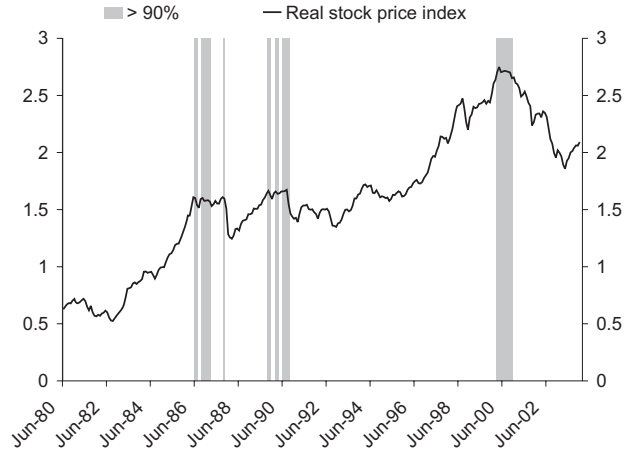
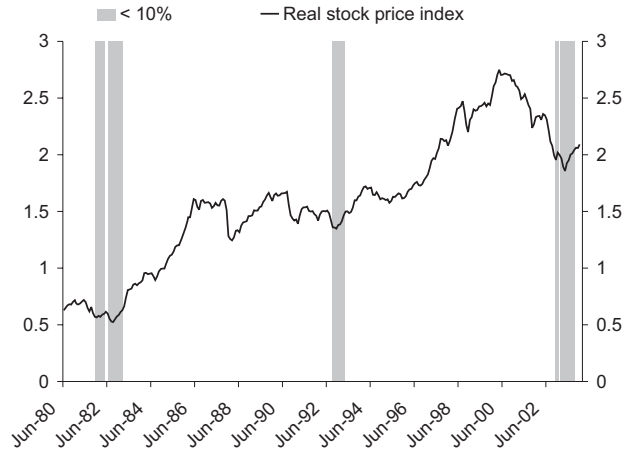


Chart 5
REAL STOCK PRICE INDEX AND UNDER VALUATION PERIODS



the macroeconomic fundamentals[5]. Given these definitions, two clear asset price overvaluation periods and two periods of undervaluation can be identified. The first period of undervaluation occurred at the beginning of the eighties. Afterwards, the period before the 1987 stock market crash is, according to the method, considered as one of excessive valuation of stock prices[6]. The second episode of overvaluation occurs in the year 2000, following a long period of rising real stock prices. Afterwards, there seemed to be a downward correction leading to an undervaluation episode at the end of 2002/beginning of 2003. More recently, stock prices have continued to rise. However, according to more recent estimates of the conditional distribution of the stock price index there is no evidence of an overvaluation of share prices. In fact, estimates with a more recent sample confirm that the real stock price index moved towards the central deciles of the conditional distribution. Thus, the real share price in the euro area in the more recent months is at a level that can be considered as consistent with a normal pattern given the macroeconomic fundamentals.

Charts 4 and 5 show the periods of over and undervaluation using the first and ninth deciles as a criterion for defining the interval over which real stock price levels can be justified by fundamentals. The charts show the periods when the real stock price index moves outside these limits.

As can be seen in the charts, there seems to be a tendency for periods of over or undervaluation to be concentrated in time. In addition, and contrary to the methods based only on the level of the real stock price index, the periods of strong increases in stock prices do not necessarily correspond to

(5) Even though there is some arbitrariness in this choice of quantiles, the option of basing the identification of asset price misalignments on extreme quantiles of the distribution allows a greater degree of confidence in the identification of such periods.

(6) Note that during this period the real stock price remained relatively constant which, based only on this observation, would not necessarily be interpreted as a period of excessive valuation. However, when the macroeconomic fundamentals are taken into account, the overvaluation becomes clear. It should also be noted that the correction implied that the index moved towards the median of the distribution.

overvaluation periods. For instance, during the period from 1984 and up to mid-1986, the strong rise in the real stock price index appeared to be justified by the macroeconomic fundamentals. Another example is given by the stock market movements in 1987. According to the method, the stock market crash in 1987 was not a period of undervaluation. In fact, during the year before the crash, the real stock price index is frequently above the 9th decile or within the range defined by the eight and ninth deciles (see Chart 3). A possible interpretation of these results is that the 1987 stock market crash was a correction that led to real stock prices more in line with the macroeconomic fundamentals. It is also possible to identify periods when the real stock price index remained relatively constant but, given the economic conditions, could be considered as periods of excessive valuation (as in 1989-1990). Finally, according to the method, there is a period of overvaluation in 2000 but only after a prolonged upward period of real stock prices. In fact, the period from 1997 to 2000 is frequently characterised as one of overvaluation (see Bordo and Wheelock, 2004). After 2000, there is a correction, with the index declining to levels consistent with an excessive undervaluation in 2003. After 2003, the real stock price index evolved towards the median of the conditional distribution of share prices.

4. CONCLUSIONS

The development of speculative bubbles in asset prices that may later burst is a concern from the point of view of macroeconomic and financial stability. Thus, it seems useful to have indicators of asset price misalignments.

This article shows the results of a new methodology for detecting periods of over and undervaluation of asset prices. The basic assumption is that the probabilistic distribution of asset prices is not constant over time but changes as a function of the macroeconomic situation. Thus, a given asset price can be considered as being too high, "normal" or excessively low depending on the macroeconomic conditions.

An application to the euro area provides some interesting conclusions. In particular, contrary to the methods based only on the level of the real stock price index, periods of strong increases in real stock prices do not necessarily correspond to periods of excessive valuation.

REFERENCES

Bordo, M. D. and Wheelock, D.C. (2004), "Monetary policy and asset prices: a look back at past U. S. stock market booms", NBER *Working Paper* no. 10704.

Chernozhukov, V. and Umantsev, L. (2001), "Conditional value at risk: aspects of modelling and estimation", *Empirical Economics*, 26(1), 271-292.

Detken, C. and Smets, F. (2004), "Asset price booms and monetary policy", ECB *Working Paper* No. 364.

Engle, R. F. and Manganelli, S. (1999), "CAViaR: Conditional autoregressive value at risk by regression quantiles", UCSD *Economics Department Working Paper,* 99-20.

Gürkaynak, R.S. (2005), "Econometric tests of asset price bubbles: taking stock", Federal Reserve Board, *Finance and Economics Discussion Series* no. 2005-4.

Hamilton, J. D. and Lin, G. (1996), "Stock market volatility and the business cycle", *Journal of Applied Econometrics*, 11, 573-593.

He, X. and Ng, P. (1999), "COBS: qualitatively constrained smoothing via linear program", *Computational Statistics*, 14, 315-337.

Koenker, R. and Mizera, I.(2003), "Penalized triograms: total variation regularization for bivariate smoothing", *Journal of the Royal Statistical Society*, Series B 66 (1), 145-163.

Koenker, R., P. Ng, and S. Portnoy (1994), "Quantile smoothing splines", *Biometrika*, 81, 673-680.

Ng, P. (2005), "A fast and efficient implementation of qualitatively constrained smoothing splines", proceedings of the 2005 International Conference on Algorithmic Mathematics and Computer Science.

Pérez-Quirós, G. and Timmermann, A. (2001), "Business cycle asymmetries in stock returns: evidence from higher order moments and conditional densities", *Journal of Econometrics*, Vol 103 (1-2), 259-306.

Schwert, G. W. (1989), "Why does the stock market volatility change over time?", *Journal of Finance*, 44, 1115-1153

Chronology of major financial policy measures

January

- ***7 January (Decree-Law No 13/2005, Official Gazette No. 5, Series I-A)*** — Introduces changes in the legal framework of real-estate based funds, as approved by Decree-Law No 60/2002 of 20 March.
- ***17 January (Circular Letter of Banco de Portugal No. 102/2004/DSB)*** — Provides indications on the accounting model to be adopted by institutions subject to the supervision of Banco de Portugal that are not covered by Article 4 of Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002, and on the implementation of a transitional regime during the year starting on 1 January 2005.
- ***17 January (Instruction of Banco de Portugal No. 23/2004)*** — Lays down the procedures to be followed in the reporting of consolidated accounting information, prepared in accordance with the International Accounting Standards.
- ***13 January (Regulation of the Securities Market Commission No 1/2005, Official Gazette No. 31, Series II)*** — Amends several articles, adds others and republishes, as duly amended, Regulation No 8/2002, of 18 June, which lays down the set of rules governing the legal regime governing real estate funds.
- ***24 January (Circular Letter of Banco de Portugal No. 7/2005/DET)*** — Banco de Portugal lays down that credit institutions should ensure that the distribution of banknotes through ATMs takes into consideration the structure of the currency circulation of the country, so as to allow a better adequacy between cash supply and demand.

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February

- ***15 February (Instruction of Banco de Portugal No. 1/2005)*** — Regulates the involvement and "implicit support" in securitisation operations.
- ***15 February (Instruction of Banco de Portugal No. 2/2005)*** — Defines the places and conditions under which current metal coins can be deposited with or withdrawn from Banco de Portugal. Revokes Instruction No 3/2003, published in the Official Bulletin No 2, of 17 February 2003.
- ***15 February (Instruction of Banco de Portugal No. 4/2005)*** — Provides for the application of a reduced rate to the calculation of the annual contribution to the Deposit Guarantee Fund regarding deposits opened in the off-shore financial centres of Madeira and Santa Maria Island. Revokes Instruction No 122/96, published in BNBP No 5, of 15 October 1996.
- ***21 February (Notice of Banco de Portugal No 1/2005, Official Gazette No. 41, Series I, B)*** — Lays down that institutions shall prepare their annual and consolidated accounts in conformity with the International Accounting Standards (IAS), as adopted, at each moment, by a EU regulation. Provides for a transitional regime during 2005, for the institutions, which are not subject to the provisions of Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002.
- ***21 February (Notice of Banco de Portugal No 2/2005, Official Gazette No. 41, Series I, B)*** — Following the adoption of the International Accounting Standards (IAS), amends Notice No 12/92 on the regulatory framework governing the own funds and the solvency ratio.
- ***21 February (Notice of Banco de Portugal No 3/2005, Official Gazette No. 41, Series I, B)*** — Following the adoption of the International Accounting Standards (IAS), redefines the regime governing the provisions to be set up by credit institutions and financial companies.

- ***21 February (Notice of Banco de Portugal No 4/2005, Official Gazette No. 41, Series I, B)*** — Following the adoption of the International Accounting Standards (IAS), amends Notice No 12/2001, of 23 November, on the coverage of liabilities on account of retirement and survivors pensions.
- ***21 February Notice of Banco de Portugal No 5/2005, Official Gazette No. 41, Series I, B*** — Following the adoption of the International Accounting Standards (IAS), amends Notice No 10/94, of 18 November, on the supervision and control of large exposures of institutions subject to the supervision of Banco de Portugal.
- ***21 February (Notice of Banco de Portugal No 6/2005, Official Gazette No. 41, Series I, B)*** — Taking into account the transposition of Directive 2003/51/EC of the European Parliament and of the Council of 18 June 2003, by Decree-Law No 35/2005, of 17 February, amends Notice No 8/94, of 15 November, as regards of composition of consolidation for prudential supervision purposes.
- ***28 February (Instruction of Banco de Portugal No. 6/2005)*** — Regulates Notice No 1/2005, of 28 February, with respect to (the accounting framework of) credit fallen due.
- ***28 February (Instruction of Banco de Portugal No. 7/2005)*** — Lays down provisions on imparity.

March

- ***10 March (Corrigendum No. 10/2005 Official Gazette No. 49, Series I, B)*** — Corrigendum to Notice of Banco de Portugal no. 4/2005, published in the Official Gazette no. 41, Series I, B of 28 February.
- ***17 March (Circular Letter of Banco de Portugal No. 9/2005/DET)*** — Following the Decision taken by the Governing Council of the European Central Bank on 16 December 2004, makes known the new framework laying down common principles for authentication and fitness sorting regarding banknote recycling by credit institutions and other professional cash handlers.
- ***18 March Instruction of Banco de Portugal No. 9/2005, disclosed through Circular Letter No. 18/2005/DSB***
- ***21 March Circular Letter of Banco de Portugal No. 13/2005/DSB*** — Concerning the reporting to Banco de Portugal of statistical data prepared in accordance with the International Accounting Standards (IAS) or with the Adjusted Accounting Rules (AAR). Following Notice no. 1/2005 of 28 February and Circular Letter no. 102/04/DSBDR of 23 December, provides clarification on the possible scenarios for the implementation of the accounting rules to be complied with in the transitional regime to 2005 by the institutions that must prepare consolidated and non-consolidated accounts or only non-consolidated accounts.
- ***24 March (Circular Letter of Banco de Portugal No. 19/2005/DSB)*** — Provides further clarification on pre-contractual information, with regard to loan requests for the acquisition of goods or services.

April

- ***1 April (Circular Letter of Banco de Portugal No. 20/2005/DSB)*** — Recommends that credit institutions and financial companies must identify the intervening parties and analyse with particular caution operations contracted with natural or legal persons resident or established in certain countries or territories, within the scope of the measures aimed at preventing money laundering. Revokes Circular Letter no. 101/2004/DSB of 3 December 2004.
- ***11 April(Regulation of the Ministry of Finance - Portuguese Insurance Institute No 28/2005, Official Gazette No. 70, Series II)*** — Under the provisions laid down in subparagraph a), of paragraph 1 of Article 13 of Decree-Law No 35/2005 of 17 February, defines the statutory regime and the legal framework for the implementation of the international accounting rules adopted in accordance with the provisions of Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 as far as insurance companies, pension fund management companies and insurance mediating companies are concerned. This regulation shall be applicable as from the 2005 fiscal year.
- ***14 April (Regulation of the Securities Market Commission No. 2/2005, Official Gazette No 96, Series II)*** — Establishes the regime governing the accounts of real estate investment funds, whose legal framework was approved by Decree Law No 60/2002 of 20 March, as amended by Decree Law No 13/2005 of 7 January.

• *29 April (Regulation of the Securities Market Commission No. 4/2005, Official Gazette, Series II)*	Introduces changes in the legal framework of the managing entities of stock markets, transferable securities centralised systems, securities settlement systems and services.
• *29 April (Regulation of the Securities Market Commission No. 5/2005, Official Gazette, Series II)*	Introduces changes in the regulations on the operation of markets in general and stock markets in particular, putting an end to the compulsory prior registration with the Securities Market Commission of commissions charged by market management entities, replacing this procedure with a prior notification.

May

• *5 May (Resolution of the Council of Ministers No 100/2005, Official Gazette No. 103, Series I-B)*	Adopts guidelines and measures with a view to ensuring an appropriate response of the judicial system to the mass litigation phenomenon and the protection of the occasional user of the judicial system.
• *16 May (Instruction of Banco de Portugal No 13/2005, BNBP No. 5/2005)*	Introduces changes in Instruction No 9/2003 (provisions maps), following the introduction of the International Accounting Standards (IAS) and the Adjusted Accounting Rules (AAR).
• *16 May (Instruction of Banco de Portugal No 14/2005, BNBP No. 5/2005)*	Introduces changes in Instruction No 25/97 (periodical reporting of data of a prudential nature), following the introduction of the International Accounting Standards (IAS) and the Adjusted Accounting Rules (AAR).
• *16 May (Instruction of Banco de Portugal No 15/2005, BNBP No. 5/2005)*	Provides data on the impact on own funds and own funds requirements of the adoption of the International Accounting Standards (IAS) and the Adjusted Accounting Rules (AAR).

June

• *1 June (Circular Letter of Banco de Portugal No. 41/2005/DSB)*	Makes known a set of recommendations and principles that credit institutions and similar entities shall take into account when carrying on international business, namely in terms of their organisation and definition of the internal control system.
• *6 June (Notice of Banco de Portugal No. 7/2005, Official Gazette No 108, Series I, B)*	Taking into account developments in the respective financial resources, introduces changes in the base contribution rate for the calculation of the annual contributions to the Deposit Guarantee Fund.Notice of Banco de Portugal No 8/2005, Official Gazette No 108, Series I, B Introduces changes in the rules on the adequacy of the own funds of the investment companies and credit institutions mentioned in Notice No 7/96 of 24 December: (a) subjects to its discipline mutual fund management companies when they are authorised to carry on cumulatively the discretionary and individual management of transferable securities belonging to their customers; (b) lays down the minimum own fund requirements for the coverage of merchandise risks; (c) introduces changes in the minimum own fund requirements for the coverage of settlement and counterparty risks; and (d) subject to prior authorisation of Banco de Portugal, allows the use of internal models for the calculation of minimum own fund requirements for the coverage of position risks on financial instruments incorporated in the trading portfolio, as well as of foreign-exchange and merchandise risks.
• *15 June (Instruction of Banco de Portugal No. 18/2005, BNBP No 6/2005)*	Provides for the reporting to Banco de Portugal of the financial statements and explanatory notes to the accounts of the institutions that adopt the International Accounting Standards (IAS) or the Adjusted Accounting Standards (AAS).
• *Instruction of Banco de Portugal No 19/2005, BNBP No. 6/2005*	Lays down rules governing the prudential monitoring of interest-rate risk.
• *Instruction of Banco de Portugal No 20/2005, BNBP No. 6/2005*	Amends Instruction No 72/96 on the internal control system as far as compliance, money-laundering prevention and internal audit is concerned.

- ***24 June (Notice of Banco de Portugal No. 9/2005, Official Gazette No. 120, Series I, B)***

  Taking into account the implementation of the international accounting standards, amends Notice No 6/2003 of 15 January on the publication of accounts by institutions subject to the supervision of Banco de Portugal. This Notice shall enter into force on the date of its publication, being applicable to the publication of the quarterly balance sheet as at 31 March 2005, unless publication in a different format has been required.

- ***24 June (Notice of Banco de Portugal No 10/2005, Official Gazette No. 120, Series I, B)***

  Introduces changes in the legal framework of the collection through bank account debit provided for in Notices No 1/2002 of 13 March on the direct debit system and No 10/2003 of 17 September on other types of collection though bank account debit. Provided that the exception foreseen in this notice is respected, this notice shall enter into force on 1 October 2005.

- ***27 June (Executive Order of the Minister of Finance No 556/2005, Official Gazette No. 121, Series I, B)***

  Under the provisions laid down in article 5 of Decree-Law No 232/96 of 5 December and for the purposes of Council Directive 93/22/EEC of 10 May, approves the list of regulated markets.

- ***28 June (Opinion of the European Economic and Social Committee OJ No.157 Series C)***

  Issues an opinion on the "Proposal for a Directive of the European Parliament and of the Council on statutory audit of annual accounts and consolidated accounts and amending Council Directives 78/660/EEC and 83/349/EEC" (COM(2004) 177 final - 2004/0065 (COD))

July

- ***7 July (Regulation nº 1073/2005/CE, OJ no. 175 Series L)***

  Amends Regulation (EC) No 1725/2003 of 21 September adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council, as regards IFRIC 2.

- ***13 July (Regulation of the Ministry of Finance. Stock Market Commission No. 3/2005 Official Gazette No. 133, Series II)***

  Introduces changes in the regulations governing regulated spot markets, the special market for wholesale operations and the new market, as well as in the regulations governing the supply of integrated registration, clearing and settlement services, and the respective rates, as a result of the restructuring leading to the implementation of a single regulated market, that is also the official quotation market (Eurolist by Euronext), and the consequent extinction of the secondary market.

- ***13 July (Notice of Banco de Portugal No. 11/2005 Official Gazette No. 139 1ª Series B)***

  Regulates the general conditions governing the opening of deposit accounts with credit institutions having their head office or a branch in national territory. The present Notice enters into force 90 days after publication.

- ***15 July (Notice of Banco de Portugal No. 22/2005, Official Gazette No. 7/2005)***

  Determines the procedures to be adopted in the process of recognising and monitoring internal models that institutions may wish to use in determining own fund requirements to cover market risks.

- ***15 July (Notice of Banco de Portugal No. 26/2005, Official Gazette No. 7/2005)***

  Establishes mechanisms preventing the utilisation of the Portuguese financial system for money laundering purposes. Revokes Instruction no. 8/2002.

- ***19 July (Executive order nº 597/2005 of the Ministry of Finance. Public Administration Ministry. Justice Ministry. Official Gazette No.137, Series I B)***

  Establishes the criteria for setting the supplementary rate of interest on arrears relating to credit held by corporations, natural or legal persons, in compliance with the provisions of article 102 (3) of the Commercial Code. The reference rate will be disclosed in Notice of the Directorate-General of the Treasury up to 15 January and 15 July each year. The present Executive Order is applicable as from 1 October 2004. References to Executive Order 1105/2003 (Series II) of 6 October made in the Notices published in the meantime shall refer to the present Executive Order. Current rate: 9.05% (see Notice 6923/2005 (Series II) of 19 July, in the Official Gazette no. 141 of 25 July 2005, Series II).

August

- ***11 August (Regulation of the Ministries of Finance and Public Administration - Portuguese Insurance Institute No 56/2005, Official Gazette No 120, Series II)***

  Issues a regulatory rule on the prevention of money laundering and revokes Regulatory Rule No 16/2002-R of 7 June.

- ***12 August (Executive Order of the Ministries of Finance and Public Administration No. 651/2005, Official Gazette No 155, Series I, B)***

  Under the provisions laid down in paragraph 1 of Article 5 of Law No 39-A/2005 of 29 July, approves the reporting form for the tax settlement of balance sheet items placed abroad (tax settlement reporting form) and the respective instructions for completing the form, published in an annex to this Executive Order.

- ***12 August (Circular Letter of Banco de Portugal No 17/05/DET)***

  With the scope of the approval of Regime *Excepcional de Regularização Tributária de elementos patrimoniais colocados no exterior - RERT* (Exceptional Regime of the Tax Settlement of balance sheet items placed abroad), lays down provisions on the implementation of procedures between Banco de Portugal and credit institutions as regards the receipt of *Declaração de Regularização Tributária - DRT* (Tax Settlement Declaration) and the respective payment.

- ***25 August (Executive Order of the Ministries of Finance and Public Administration No 712/2005, Official Gazette No 163, Series I, B)***

  Amends paragraphs 1, 2 and 3 of Executive Order No 913-I/2003 of 30 August, which lays down the new system of supervision fees in the transferable securities market. This Executive Order shall enter into force on 1 September 2005.

- ***26 August (Circular Letter of Banco de Portugal No 100/2005/DSB)***

  Makes known a set of principles, understood as "good practice principles", which shall be adopted by institutions in operational or financial contingency situations.

- ***26 August (Circular-Letter of Banco de Portugal No 100/05/DSB)***

  Discloses a range of Principles on the Contingency Pan to be implemented by credit institutions and financial companies, with a view to having in place a set of procedures ensuring the pursuit of activities of the institutions is crisis situations.

- ***29 August (Law No 48/2005, Official Gazette No 165, Series I, A)***

  Rewords Articles 2, 8, 11 and 11-A of Decree-Law No 454/91 of 28 December 1991, which approved the legal regime of uncovered cheques. This Law shall enter into force 30 days after its publication.

September

- ***14 September (Regulation of the Ministries of Finance and Public Administration. Securities Market Commission No 7/2005, Official Gazette No 177, Series II)***

  Introduces changes in Regulation No 12/2000, which establishes the system governing financial intermediation activities. This Regulation enters into force on 1 January 2006.

- ***15 September (Regulation of the Ministries of Finance and Public Administration. Securities Market Commission No 6/2005, Official Gazette No 178, Series II)***

  Introduces changes in Regulation No 5/2004, which updates the system governing autonomous warrants, following the changes introduced in the respective system by Decree-law No 70/2004 of 25 March, which amended Decree-Law No 172/99 of 20 May.

- ***15 September (Decree-Law of the do Ministry of the Economy and Innovation No 156/2005, Official Gazette No 178, Series I, A)***

  Makes it mandatory for every supplier of goods or service provider having direct contact with the general public to have available a complaint book, thereby reinforcing consumer and user protection. This does not apply to the general government services and bodies listed in Article 38 of Decree-Law No 135/99 of 22 April. This Decree-Law enters into force on 1 January 2006.

• ***21 September (Circular-Letter of Banco de Portugal No 35/2005/DPG)***	Recommends that, after the entry into force of Law No 48/2005 of 29 August, drawer credit institutions shall indicate the date of occurrence of the reason for return reported by drawee credit institutions.
• ***21 de September (Notice of Banco de Portugal of 29 July 2005, Official Gazette No 182, Series III, part A)***	Makes public that the final accounts submitted by the liquidators of the Mutual Agricultural Credit Bank of Feira, C.R.L. - now being wound up - are available for consultation in the premises of Banco de Portugal, for a period of 30 days.
• ***21 September (Regulation of the Ministries of Finance and Public Administration. Securities Market Commission No 8/2005, Official Gazette No 182, Series II)***	Introduces changes in Regulation No 7/2004 of 23 December, on the marketing of harmonised foreign collective investment undertakings that do not produce a simplified prospectus, thereby accommodating the recommendation issued by the Committee of European Securities Regulators (CESR) advising that, after 30 September 2005, European Union Member States should not trade in their territory UCITS from another Member States, if these have not adopted the simplified prospectus prepared in compliance with Directive 2001/107/CE of the European Parliament and of the Council of 21 January 2002. Rectified by Rectification No 1644/2005 of 21 September, Official Gazette No 189, Series II, of 30 September 2005.
• ***22 September (Instruction No 27/200, BNBP No 10/2005)***	Sets at 0.03% the basic contributory rate to be applicable to the calculation of the annual contributions to the Deposit Guarantee Fund by participating institutions in 2006. Revokes Instruction No 21/2005. Distributed with Circular Letter No 106/2005/DSB of 22 September.
• ***22 September (Instruction No 28/2005 BNBP No 10/2005)***	Sets a limit for the irrevocable payment commitments to be applicable to contributions to the Deposit Guarantee Fund in 2006 (distributed with Circular Letter No 106/2005/DSB of 22 September).
• ***22 September (Opinion of the European Economic and Social Committee of 9 March 2005 (2005/C 234/02), Official Journal C 234)***	Opinion on the "Proposal for Directives of the European Parliament and Council re-casting Directive 2000/12/EC of the European Parliament and Council of 20 March 2000 relating to the take up and pursuit of the business of credit institutions and Council Directive 93/6/EEC of 15 March 1993 on the capital adequacy of investment firms and credit institutions" (COM(2004) 486 final - 2004/0155 and 2004/0159 (COD)).
• ***23 September (Decision of the Ministries of Finance and Public Administration. Portuguese Accounting Standards Board, No 20289/2005, Official Gazette No 184, Series II)***	In the wake of the approval of Regulation No 1606/2002 of the European Parliament and of the Council of 19 July, and after the entry into force of Commission Regulation No 1725/2003 of 21 September, both of which regulate the application of international accounting standards in the European Union, it determines the rules that shall govern the application of the Generally Accepted Accounting Principles in national accounting regulations. This document replaces the accounting rule No 18 "Objectives of the financial statements and generally accepted accounting principles", issued on 18 December 1996.
• ***28 September (Report and accounts of the Securities Market Commission for 2004, Official Gazette No 187, 2nd Supplement, Series III, Part A)***	Publishes the annual report of the activities of the Securities Market Commission in 2004.
• ***28 September (Regulation of the Ministries of Finance and Public Administration. Securities Market Commission No 9/2005, Official Gazette No 187, Series II)***	Introduces changes in regulation No 15/2003, regulating the legal system governing undertaking for collective investment, approved by Decree-Law No 252/2003 of 17 October.

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