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THE PORTUGUESE ECONOMY IN 2005

1. INTRODUCTION

Developments in the Portuguese economy in 2005 were marked by subdued growth, employment stagnation and an increase in the unemployment rate. At the same time, the structural deficit of public accounts increased (Table 1.1). The situation in 2005 led to the widening of the real divergence from the euro area and reveals the difficulty of the Portuguese economy in adjusting to monetary union rules and to the globalisation process.

Banco de Portugal estimates a change in Gross Domestic Product (GDP) of only 0.3 per cent in 2005, i.e. 0.8 percentage points (p.p.) lower than the growth recorded in 2004. Recent developments were thus characterised by the absence of a sustained recovery in activity after the 2003 recession, contrasting with previous recession episodes.

The rise in commodity and energy prices and the maintenance of sustained labour cost growth, in a context in which the deterioration of labour market conditions does not seem to be translated into a significant real wage adjustment, have negatively affected domestic output. On the expenditure side, the slowdown in economic activity in 2005 chiefly reflected the contraction of investment and the significant deceleration in exports, while both private and public consumption continued to grow clearly above GDP.

Although external demand continued to grow at a strong pace in 2005, the deterioration of the competitive position of the Portuguese economy continued to negatively affect export performance. The latter has also been affected by an unfavourable specialisation pattern, characterised by a high weight of low-skill and low-tech goods, such as textiles, clothing and footwear. These sectors face increased competition in world markets from low-cost producers. According to data available, in 2005 and for the

Table 1.1

MAIN ECONOMIC INDICATORS

Rate of change

Per cent (unless otherwise indicated)

	2004	2005
GDP	1.1	0.3
Private consumption	2.3	1.8
Public consumption	1.6	1.9
GFCF	0.0	-2.6
Exports	5.3	0.9
Imports	7.0	1.8
Employment	0.1	0.0
Unemployment rate (as a percentage of the labour force)	6.7	7.6
Fiscal balance (as a percentage of GDP)	-3.2	-6.0
Excluding temporary measures (as a percentage of GDP)	-5.3	-6.0
Net lending (+) / net borrowing (-) capacity of the economy (as a percentage of GDP)	-5.7	-8.1
HICP	2.5	2.1

Sources: *INE* and Banco de Portugal.

fourth consecutive year, the export values of this type of goods declined significantly, and production and employment in these sectors of manufacturing contracted. In the past few years, exports of machinery and transport equipment have also performed poorly. These sectors gained significant weight in the structure of Portuguese exports following major foreign direct investment projects in the mid-1990s.

Gross fixed capital formation (GFCF) decreased in 2005, despite the maintenance of favourable financing conditions, bringing the cumulative decline since 2002 to over 15 per cent. Investment developments have been affected by uncertainty about the outlook for demand growth, in a context of high household indebtedness and increased competition in international markets. Uncertainty is also likely associated with doubts about the way in which the main imbalances of the economy, in particular the budget imbalance, will be corrected, and about the implementation of the structural reforms required to increase productivity.

Private consumption remained relatively sustained in annual average terms. The low levels of interest rates, the squeeze in bank profit margins and the lengthening of loan maturities seem to have continued to contain the growth of the debt burden and to sustain the increase in loans to households. In addition, transfers to households, typically associated with higher propensity to consume, continued to grow at a high pace in 2005. Private consumption however decelerated markedly in the second half of the year. This was due to factors such as unfavourable developments in labour market conditions, as well as to the increase in taxation and a better perception of the seriousness of the fiscal situation.

The increase in tax revenue was not sufficient to prevent a further deterioration of public accounts. Indeed, the primary current expenditure continued to grow at very high rates – around 7 per cent –, chiefly reflecting the growth of social transfers, in particular pension expenditure. Staff costs also recorded significant growth, accounted for by both the end of the partial freezing of civil servants wages and the rise in the number of civil servants.

The rise in the standard VAT rate and the strong increase in the price of energy goods did not prevent a further reduction in the average inflation rate. Both factors led, however, to an acceleration of prices in the second half of the year. The annual average rate of change in the Harmonised Index of Consumer Prices (HICP) stood at 2.1 per cent, compared with 2.5 per cent in the previous year. The very subdued growth of the prices of imports excluding fuels, associated with an increase in international competition, continued to have a moderating effect on inflation. In addition, unfavourable developments in the outlook for demand seem to have led companies to bear a squeeze on their profit margins. Finally, the reduction in average inflation was also due to the unwinding of the effects associated with the hosting in Portugal of the European Football Championship in June 2004, which had been particularly felt on services prices. The deceleration of prices in Portugal translated into a close-to-zero inflation differential between Portugal and the euro area in 2005.

2. MAIN INTERNATIONAL ECONOMIC DEVELOPMENTS

In 2005 world economic activity and trade continued to show robust growth – higher than the average figures of the last decades – albeit slowing down compared with 2004 (Table 2.1). The year 2005 was marked by a further rise in international commodity prices, particularly strong in the case of oil, which reached new historical highs. This rise translated into an increase in inflation in most countries, although underlying inflation[1] and long-term inflation expectations remained relatively contained. The global expansion continued to be underpinned by favourable financial market conditions. Foreign ex-

(1) Underlying inflation excludes energy and unprocessed food.

Table 2.1

DEVELOPMENTS IN WORLD ECONOMY

Rate of change

Per cent (unless otherwise indicated)

	2003	2004	2005
Gross domestic product			
World economy [a]	3.6	4.9	4.5
United States	2.7	4.2	3.5
Japan	1.8	2.3	2.7
Euro area	0.7	1.8	1.4
Germany	-0.2	1.1	1.1
France	0.9	2.1	1.4
Italy	0.4	0.9	0.1
Spain	3.0	3.1	3.4
Portugal	-1.2	1.1	0.3
United Kingdom	2.5	3.2	1.8
Non-Japan Asian economies	7.5	8.0	8.1
China	9.4	9.5	9.9
Trade of goods in volume	6.6	10.9	7.5
International commodity prices in US dollars			
Brent crude oil – level	28.5	38.0	55.0
Brent crude oil	13.8	33.3	44.7
Non-energy commodities	14.3	21.7	9.5
Consumer prices			
OECD countries			
Total	2.5	2.4	2.7
Total excluding energy and food	2.1	1.9	1.9

Sources: CPB Netherlands Bureau for Economic Policy Analysis, Eurostat, HWWA , OECD, Thompson Financial Datastream and Banco de Portugal.
Note: (a) Banco de Portugal calculations. The world GDP series was calculated on the basis of a sample of countries representing around 90 per cent of world GDP in 2004, expressed in purchasing power parities. The weighting assigned to each country is calculated on the basis of the weights disclosed by the IMF, which correspond to the share of the respective GDP in world GDP, expressed in purchasing power parities.

change markets recorded a reversal of the trend depreciation of the US dollar, observed over the past few years, notwithstanding a further deterioration of the global imbalances.

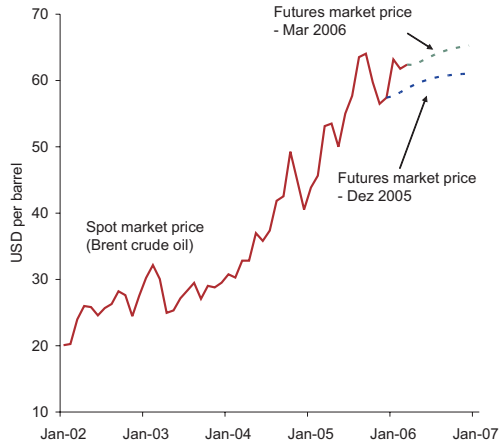
The outlook for the world activity remains favourable and most international organisations forecast the maintenance of strong growth in 2006. However, the balance of risks continues to be tilted to the downside, reflecting both the volatility and the high levels of the oil price, as well as the persistence of macroeconomic imbalances at world level.

Oil prices in international markets recorded a further sharp rise in 2005 and the price of Brent crude oil reached an all-time high of USD 67.5 per barrel at the beginning of September (Chart 2.1). In the year as a whole, the price of Brent increased by around 45 per cent, both in US dollars and in euro. In the early months of 2006, the price of oil resumed a rising trend and the futures markets point to the maintenance of high prices over the remainder of the year. The rise in oil prices continued to reflect the robust expansion of the world economy and the associated increase in the demand for energy – particularly marked in emerging market and developing economies –, the stepping up of the utilisation of productive capacity along the whole production chain, and the uncertainty resulting from disturbances on the supply side. The prices of the other commodities, in particular iron and steel, also increased in 2005 and early 2006.

Developments in oil prices contributed to the deterioration of global current account imbalances . On the one hand, the current account surpluses in oil-producing countries recorded a further strong rise (Chart 2.2). By contrast, net oil-importing countries, where Portugal is included, recorded a loss in terms of trade, with a spillover effect on the current account balance (see Section 7.1). In the United States, the current account deficit widened further, reaching 6.4 per cent of GDP in 2005 (5.7 per cent

Chart 2.1

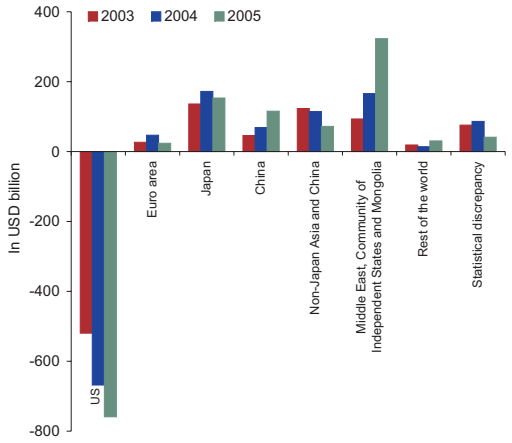
OIL PRICES IN SPOT AND FUTURES MARKETS



Source: Bloomberg.

Chart 2.2

CURRENT ACCOUNT



Source: IMF.

in 2004). With regard to the financing of this deficit, financial inflows from external official entities declined compared with the previous year (from 3.4 to 1.8 per cent of GDP). These flows continued to reflect the investment of international reserves accumulated by several central banks of Asia and oil-exporting countries – within the scope of their exchange rate policy management – in the acquisition of US Treasury securities. The reduction of flows from official entities was more than offset by an increase in the net acquisition of US securities by the non-resident private sector.

World GDP increased by 4.5 per cent in 2005, i.e. 0.4 p.p. less than in 2004. The world expansion continued to be driven by the United States and by the Asian countries, in particular China. In the United States, economic activity continued to expand at a high pace in 2005 and GDP increased by 3.5 per cent, reflecting the buoyancy of consumption and private investment. In intra-annual terms, activity recorded a deceleration in the last quarter of the year, which proved to be transitory, as it was partly associated with special factors. For most of the year, private consumption growth remained strong, underpinned by the rise in household wealth, chiefly associated with the increase in house prices and by the sustained improvement of labour market conditions. Non-residential private investment increased again at a high pace, benefiting from favourable financing conditions and high corporate profits. The contribution of net external demand to growth became less negative in 2005, as the moderation of import growth was stronger than that of export growth.

In Japan, economic recovery continued in 2005, with real GDP growing 2.7 per cent, i.e. 0.4 p.p. more than in 2004. The growth of exports remained relatively high – underpinned by strong demand in the United States and China and by the depreciation of the yen – and the contribution of domestic demand to growth strengthened significantly, reflecting an increase in employment and an improvement in corporate profitability. Growth in the other Asian economies remained strong in 2005. Activity in China was particularly buoyant, continuing to be supported by robust investment and by the significant contribution of net external demand to GDP growth.[2]

The euro area continued to be the worst performer amongst the main advanced economies. Real GDP growth stood at 1.4 per cent, i.e. 0.4 p.p. lower than in 2004. This slowdown reflected the smaller contributions of the change in inventories and of net external demand to GDP growth (Chart 2.3). Although

(2) It should be noted that recent revisions of Chinese national accounts data point to higher economic growth in the past few years than previously reported.

the growth of both exports and imports declined in 2005 as a whole , these flows accelerated from the first to the second half of the year. Domestic demand excluding inventories accelerated slightly from 2004 and also throughout 2005. These developments reflected chiefly higher GFCF growth (2.2 per cent, up from 1.8 per cent in 2004), which benefited from the favourable financing conditions, the improvement of the financial situation of companies and the more positive assessment of demand prospects. By contrast, private consumption recorded again weak growth, in a context where consumer confidence remained at relatively low levels, there were no visible improvements in the employment situation and energy prices increased strongly.

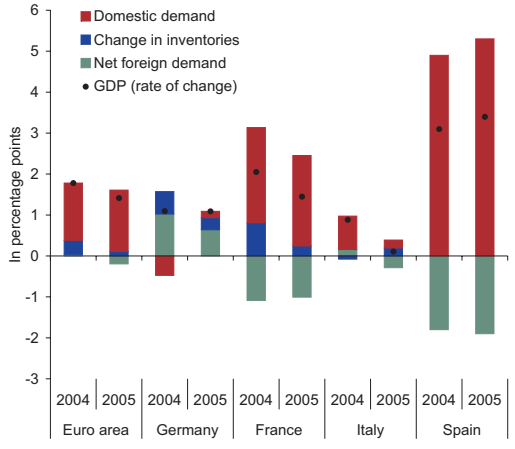
Euro area countries continued to show important growth differences in 2005, with the Portuguese economy again displaying one of the weakest growth rates (Chart 2.4). With regard to the major euro area economies, developments in Spain, which is the most important destination of Portuguese exports, should be highlighted. Activity in Spain accelerated in 2005, driven by domestic demand. In this context, import growth remained rather buoyant, continuing to have a positive impact on the behaviour of external demand for the Portuguese economy. In the remaining major economies, economic activity was weak in 2005. In Germany, the pace of GDP growth remained unchanged from 2004, with a slight recovery of the contribution of domestic demand to growth, reflecting the behaviour of investment. In France, GDP increased by 1.4 per cent (0.7 p.p. less than in 2004), continuing to be underpinned by domestic demand growth. In Italy, GDP stagnated, reflecting the weakening of both domestic demand and net exports.

In most of the remaining European Union (EU) countries, the rate of expansion of economic activity continued to be higher than in the euro area. However, in the United Kingdom, real GDP growth decreased from 3.2 per cent in 2004, to 1.8 per cent in 2005, reflecting a deceleration in private consumption and investment. In the new Member States, GDP growth on average remained rather robust in 2005. Turning to the largest countries, activity in Poland decelerated – although GDP growth remained close to 3 per cent – while in Hungary and in the Czech Republic, the growth pace of GDP was higher than 4 and 6 per cent respectively.

Chart 2.3

CONTRIBUTIONS TO GDP GROWTH

Euro area and major economies

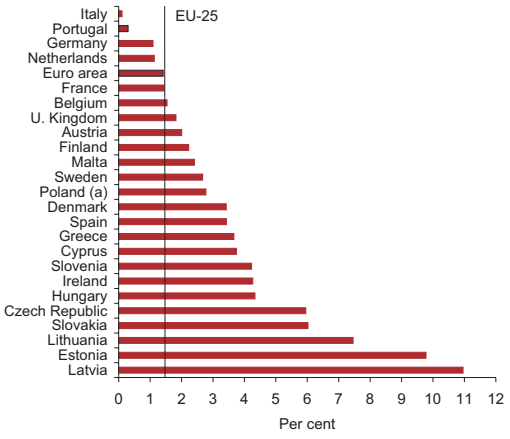


Source: Eurostat.

Chart 2.4

GROSS DOMESTIC PRODUCT IN 2005

Real rate of change



Source: Eurostat and Banco de Portugal.
Note: (a) Corresponds to the year-on-year change of the first three quarters of the year.

Table 2.2

EXTERNAL DEMAND FOR PORTUGUESE GOODS

Rate of change in volume

Per cent

	Weights 2004	2003	2004	2005
External demand [a]	100.0	4.5	8.5	5.0
Intra-euro area external demand	78.1	4.5	8.4	5.2
of which:				
Spain	29.7	6.4	10.1	7.0
France	15.9	0.8	7.4	5.7
Germany	15.3	6.6	8.2	4.4
Extra-euro area external demand	21.9	4.7	8.7	4.3
of which:				
United Kingdom	10.8	5.5	7.8	2.2
United States	6.7	4.9	11.0	6.4

Sources: European Commission, UK Office of National Statistics and *INE*.
Notes: (a) Calculated as a weighted average of the real growth in imports of goods from the 17 major trading partners. Each individual country was weighted according to its share in Portuguese exports of goods in the previous year. The 17 selected countries are the destination of around 90 per cent of total exports.

As economic activity in the main countries of destination of Portuguese exports slowed down, the growth of their imports also declined. Thus, external demand – as measured by the weighted real growth of goods imports from the main trading partners of Portugal – increased by 5.0 per cent in 2005, i.e. 3.5 p.p. less than in 2004 (Table 2.2). The nominal indicator of external demand moved closely in line. But, as explained in more detail in Section 4, Portuguese exports did not move in line with external demand growth. Hence, domestic producers recorded further falls in external market shares, both in real and in nominal terms.

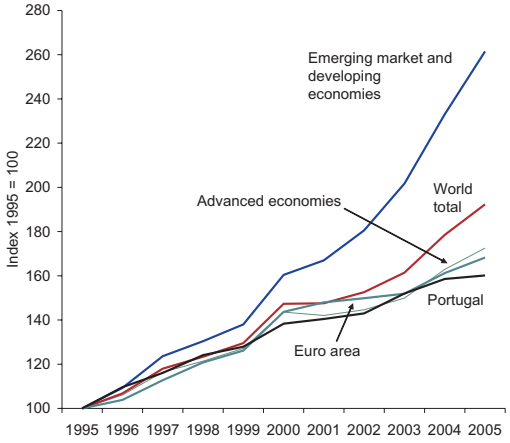
The loss of export market shares has also been recorded in other advanced economies, and is partly associated with the acceleration of the globalisation process seen in the past few years. Indeed, emerging market and developing economies have been increasing their participation in world trade. In 2005 these economies accounted for around 45 per cent of the growth of traded volumes, which is far higher than their share in world trade (less than 30 per cent). As a consequence, the weight of advanced economies in world exports has been declining. In turn, the growth of Portuguese exports also fell short of that recorded in these countries as a whole and in the euro area since 1995, indicating more marked losses in external market shares than in these economies over this period (Chart 2.5). This more unfavourable performance seems to be associated with both the sectoral specialisation and the cost-competitiveness developments of Portuguese exports.

The rise in international commodity prices translated into a slight increase in overall inflation in 2005. In OECD countries, average inflation increased from 2.4 per cent in 2004 to 2.7 per cent in 2005. Underlying inflation remained subdued in most countries, against a background in which the higher credibility of monetary policy and the pressures resulting from increased international competition have contributed to the maintenance of wage moderation.

Monetary policies in the major economies reflected the different degrees of pressure on price stability, having generally assumed a less accommodative stance (Chart 2.6). In the United States, the Federal Reserve has been gradually removing the monetary stimulus in response to emerging inflation pressures, owing to the high energy prices and to a possible increase in capacity utilisation. In 2005 the federal funds rate was raised at all meetings, by a total of 2 p.p., standing at 4.25 per cent at the end of the year. At the meetings held in the first quarter of 2006, this rate was further increased, standing at 4.75 per cent on 28 March. In the euro area, the Governing Council of the European Central Bank (ECB)

Chart 2.5

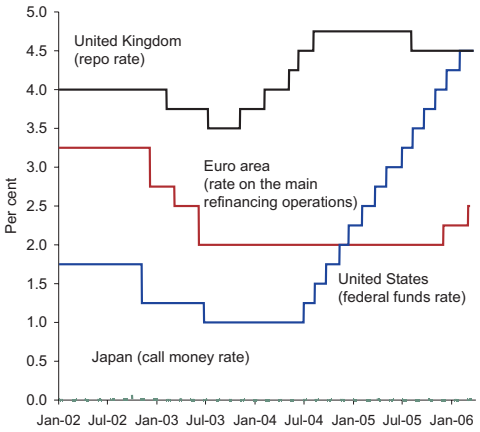
EXPORTS OF GOODS IN VOLUME



Source: CPB Netherlands Bureau for Economic Policy Analysis and Banco de Portugal.

Chart 2.6

OFFICIAL INTEREST RATES



Source: Bloomberg.

kept the key ECB interest rates unchanged during most of the year. But, at the meeting held on 1 December, the Governing Council decided to increase the minimum bid rate on the main refinancing operations by 25 basis points (b.p.), to 2.25 per cent. At the meeting held on 2 March 2006, the Governing Council again decided to increase the key ECB rates by 25 b.p. (see Section 3.1). In Japan, in a context of persistently moderate deflationary pressures, the monetary authority pursued the policy of liquidity injection throughout 2005. However, on 9 March 2006, the Bank of Japan decided to change its monetary policy operational target – which had been set in March 2001 for the outstanding balance on current accounts held by monetary financial institutions at the Bank of Japan –, adopting as its target the maintenance of the overnight call rate at zero per cent. In the United Kingdom, the slower pace of growth of activity in the first half of the year and the slackening in the pressure of demand on productive capacity led the Monetary Policy Committee of the Bank of England to reduce the repo rate by 25 b.p., to 4.5 per cent, at its meeting held on 4 August.

Turning to the fiscal policies, no significant progress was made in the reduction of the cyclically adjusted public deficits in the main advanced economies.[3] In the United States, this deficit declined by around 0.7 p.p., to 3.6 per cent of GDP, reflecting a strong increase in corporate tax revenue – only partially explained by an increase in profits – which more than offset the higher-than-expected rise in public expenditure. This improvement should be short-lived, as the cyclically adjusted deficit of the US economy is expected to increase again to 4.2 per cent of GDP in 2006. In the euro area, the cyclically adjusted general government deficit remained at 2.2 per cent. In the United Kingdom, the cyclically adjusted deficit narrowed slightly in 2005 (0.4 p.p.), standing at 3 per cent of GDP. Finally, in Japan the fiscal policy remained broadly unchanged, with the deficit standing at 6.3 per cent of GDP in 2005 (5.8 per cent in 2004).

Conditions in international financial markets remained globally favourable in 2005 (Table 2.3). The year was marked by a further rise in the main stock price indices and by the maintenance of long-term government bond yields at historically low levels, with a further decline of these rates in the euro area to around 3.5 per cent. In parallel, there was a broadly based decline in implied volatility in these mar-

(3) Figures for the cyclically adjusted deficits are based on OECD data (Economic Outlook, December 2005).

Table 2.3

INTERNATIONAL FINANCIAL MARKETS

	Averages			End-of-period		
	2003	2004	2005	2003	2004	2005
Stock price indices (percentage change)						
S&P 500	-3	17	7	26	9	3
Nasdaq	7	21	6	50	9	1
Nikkei 225	-8	20	11	24	8	40
FTSE 100	-12	12	14	14	8	17
Dow Jones Euro Stoxx	-18	18	17	18	10	23
10-year interest rates – public debt (per cent)						
United States	4.0	4.3	4.3	4.2	4.2	4.4
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	4.1
Euro area	4.2	4.1	3.4	4.3	3.7	3.4
Differentials between private and public debt bond yields (with a maturity of 7 and 10 years) (basis points)						
United States						
AA	20.3	13.1	24.1	14.1	19.7	40.0
BBB	128.5	72.8	76.1	79.7	58.2	98.5
Euro area						
AA	39.6	32.6	27.9	31.3	32.7	29.2
BBB	132.8	83.9	98.2	92.0	71.5	122.5
Emerging market debt spreads (basis points)						
EMBI+	561.8	437.2	316.7	418.0	356.0	245.0
Nominal effective exchange rates (percentage change)						
US dollar	-6.0	-4.6	-2.5	-8.8	-4.5	3.5
Japanese yen	-0.1	1.9	-3.1	2.2	-0.8	-7.8
Pound sterling	-4.8	4.1	-1.0	-3.4	1.4	-0.3
Euro	12.0	4.0	-0.9	12.2	2.1	-7.1
Memo:						
EUR/USD exchange rate [(a)]	19.6	10.0	0.0	20.4	7.8	-13.4

Sources: ECB, BIS, Bloomberg, JPMorgan and Federal Reserve Board.
Note: (a) A positive change corresponds to an appreciation of the euro.

kets. The differentials between private and public debt bond yields remained low, albeit increasing from 2004 with regard to the worst risks. In emerging market economies, equity markets recorded also a valuation and the yield differentials between sovereign bond issues and US Treasury securities narrowed further to historical lows.

In the first quarter of 2006, an increase was recorded in long-term interest rates in the United States and in the euro area (0.5 p.p. between the end of December 2005 and the end of March 2006). Data obtained from inflation-indexed securities indicate that in the euro area this increase was associated with a rise in real interest rates, which continued the upward trend observed since the last quarter of 2005, amid improving prospects for growth. By contrast, in the United States, the increase in yields in the first quarter of 2006 was due to an upward revision of inflation expectations.

Anyway, long-term interest rates remained at low levels by historical standards. This has been associated with a reduction in the risk premium owing to a number of factors. On the one hand, long-term securities became relatively more attractive due to lower macroeconomic volatility, which translated into more stable inflation and well-anchored inflation expectations remained anchored. On the other hand, in the United States, higher demand for government debt bonds seems to be related to the purchases by several Asian central banks and, more recently, by oil-exporting countries, in the context of their exchange rate policy management. In addition, increased holdings of long-term bonds by insurance corporations and pension funds in Europe and in the United States, motivated by regulatory changes

requiring a better matching of asset and liability maturities is likely to have also contributed to increased demand in the bond market.

In foreign exchange markets, there was a reversal in the trend appreciation of the euro observed in the past few years. Indeed, the euro depreciated by around 7 per cent in nominal effective terms between the end of 2004 and the end of 2005. The weakening of the euro was particularly marked against the US dollar – despite the widening of the US current account deficit – and may be partly related to developments in relative growth expectations in the United States vis-a-vis the euro area and to the interest rate differential between these economies.

The change in the exchange rate regime in China is also noteworthy. In July 2005, Chinese authorities announced formally that China would abandon the peg to the US dollar peg and would move to a managed floating regime, whereby the exchange rate would be managed with reference to a basket of currencies. In this context, the Chinese renmimbi was revalued by 2.1 per cent against the US dollar. Since the July revaluation until the end of the year, the renmimbi appreciated by a further 0.5 per cent against the US dollar.

3. MACROECONOMIC POLICIES

3.1. Monetary Policy of the ECB and Monetary and Financial Conditions of the Portuguese Economy

Monetary Policy of the ECB

As already mentioned in the previous section, during the first eleven months of 2005, the key ECB interest rates were kept unchanged from the levels fixed in June 2003. At the meeting held on 1 December, the Governing Council of the ECB decided to increase the minimum bid rate on the main refinancing operations by 25 b.p., to 2.25 per cent. The interest rates on both the marginal lending facility and the deposit facility were increased to 3.25 and 1.25 per cent respectively. At the meeting held on 2 March 2006, these rates were further increased by 25 b.p. (Table 3.1) (see "Box 1. *The impact of a monetary policy shock in the euro area*").

Table 3.1

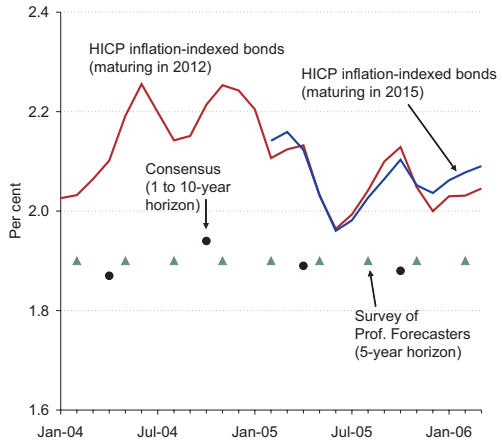
KEY ECB INTEREST RATES
Per cent

Date of the decision	Deposit facility	Main refinancing operations	Marginal lending facility
5 Oct. 2000	3.75	4.75	5.75
10 May. 2001	3.50	4.50	5.50
30 Aug. 2001	3.25	4.25	5.25
17 Sep. 2001	2.75	3.75	4.75
8 Nov. 2001	2.25	3.25	4.25
5 Dec. 2002	1.75	2.75	3.75
6 Mar. 2003	1.50	2.50	3.50
5 Jun. 2003	1.00	2.00	3.00
1 Dec. 2005	1.25	2.25	3.25
2 Mar. 2006	1.50	2.50	3.50

Source: ECB.

Chart 3.1

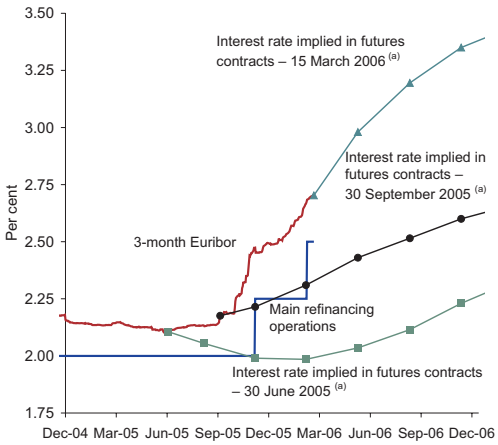
EURO AREA - LONG-TERM INFLATION EXPECTATIONS



Sources: ECB, Bloomberg,Consensus Economics.

Chart 3.2

EURO AREA - SHORT-TERM INTEREST RATES



Sources: Bloomberg and Banco de Portugal.
Note: (a) The abcissa axis indicates the delivery dates.

The decision to keep the key ECB interest rates unchanged for most of the year reflected the assessment by the Governing Council that despite the deterioration of long-term inflation expectations – chiefly associated with oil price rises – there was no significant evidence that domestic inflationary pressures were building up. In fact, in a context of low economic growth, the rise in wages remained moderate and inflation expectations remained anchored at levels consistent with price stability (Chart 3.1). Under these circumstances, the maintenance of the key ECB interest rates at low levels helped to support the economic recovery in the euro area.

The increase in upside risks to inflation – namely those associated with potential second-round effects on prices and wages from higher oil prices – as well as the situation of ample liquidity in the euro area and the buoyancy of monetary and credit aggregates, led the Governing Council to be particularly vigilant as from the end of the summer 2005. In the course of 2005 the demand for credit by the euro area private sector accelerated. This was due to the low real and nominal interest rate levels and to the gradual improvement of confidence in the several economic sectors. The year-on-year rate of change in loans to non-financial corporations increased from 5.4 per cent at the end of 2004, to 8.0 per cent at the end of 2005. According to the results of the Bank Lending Survey for the euro area, investment financing started to be mentioned as one of the factors contributing to the growth of demand for credit by non-financial corporations. Loans to households also accelerated. Housing loans were particularly buoyant, rising by 11.5 per cent at the end of 2005 (10 per cent at the end of 2004).

In this context, the increase in the key ECB interest rates in December 2005 and March 2006 was intended to ensure that medium and long-term inflation expectations remained solidly anchored at levels consistent with price stability. These decisions had already been incorporated in market expectations, which shifted upwards as from September 2005 (Chart 3.2). It should be noted that the current expectations point to further increases in ECB interest rates in 2006.

Monetary and Financial Conditions of the Portuguese Economy

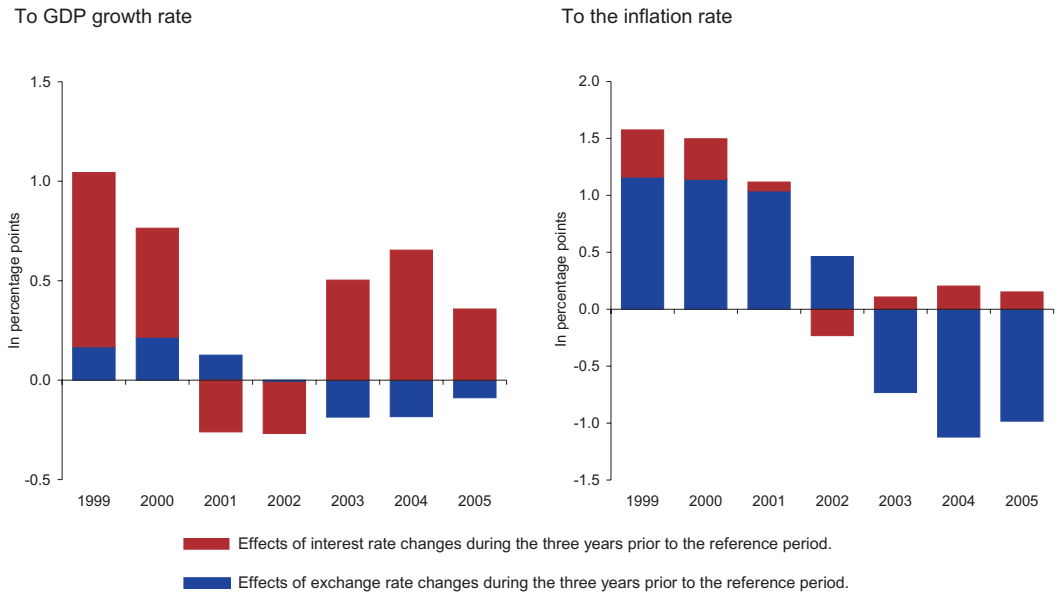
The monetary conditions of the Portuguese economy remained generally favourable both for GDP growth and for a reduction in inflation. Indeed, estimates on the basis of a monetary conditions index suggest that interest rate developments in the past few years had a cumulative positive impact on GDP growth in 2005, although developments in the effective exchange rate for Portugal have partially countered this effect. Monetary conditions seem to have also contributed significantly to the reduction of inflation, though the cumulative appreciation of the relevant exchange rate for the Portuguese economy (Chart 3.3).

In the course of 2005, interest rates remained at very low levels. In general, interest rates on outstanding amounts of bank loans to the non-financial private sector declined slightly in the first three quarters of the year, and reversed this trend in the last quarter of 2005 (Table 3.2 and Chart 3.4). These developments accompanied with a slight lag money market interest rates, which recorded an upward trend in the second half of the year in anticipation of the increase in the key ECB interest rates which materialised in December. This notwithstanding, the decline of interest rates on loans for house purchase until the end of October (when they reached a minimum around 3.6 per cent) was significant (12 b.p.). This development seem to have reflected an additional squeeze in interest margins in this segment. Despite the reversal of the trend followed by bank interest rates in the last quarter of 2005, the interest margin of loans for house purchase continued to decrease (Chart 3.5).

Long-term yields of Portuguese Treasury bonds continued to decline in the first half of 2005. However, in the second half of the year their path was more uneven, with a slight rise in their level and volatility. At the end of the year, the yield on Portuguese 10-year Treasury bonds stood slightly below the level one year before.

Chart 3.3

CONTRIBUTION OF MONETARY CONDITIONS [(a)]



Source: Banco de Portugal.
Note: For further details on this indicator, see the article entitled "Monetary conditions index for Portugal", by Esteves P., in the June 2003 issue of the *Economic Bulletin* of Banco de Portugal.

Table 3.2

MONETARY AND FINANCIAL CONDITIONS OF THE PORTUGUESE ECONOMY

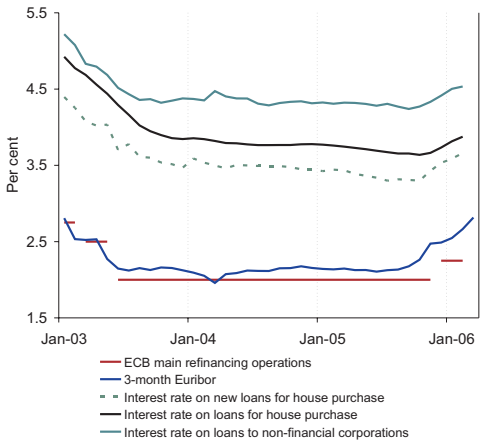
Period averages

	2003	2004	2005	2005			
				I	II	III	IV
IInterest rates - In percentage							
3-month Euribor	2.3	2.1	2.2	2.1	2.1	2.1	2.3
10-year fixed-rate Treasury bond yields	4.2	4.1	3.4	3.6	3.3	3.3	3.5
Interest rates on outstanding amounts of bank loans							
Non-financial corporations	4.6	4.4	4.3	4.3	4.3	4.3	4.3
Households for house purchase	4.3	3.8	3.7	3.8	3.7	3.7	3.7
Households for consumption and other purposes	7.9	7.8	7.7	7.7	7.7	7.6	7.7
Stock exchange							
PSI-Geral index (percentage change against the preceding comparable period)	-6.7	27.5	11.3	5.5	-1.1	1.7	6.2
Exchange rates							
EUR/USD exchange rate	1.13	1.24	1.24	1.31	1.26	1.22	1.2
Percentage change against the preceding comparable period [a]	19.7	9.9	0.1	1.1	-3.9	-3.2	-2.5
Nominal effective exchange rate index [b]	100.3	100.9	100.8	101.3	100.8	100.6	100.4
Percentage change against the preceding comparable period	2.6	0.7	-0.2	0.0	-0.5	-0.2	-0.2
Memo:							
HICP – Year-on-year rate of change	3.3	2.5	2.1	2.1	1.5	2.4	2.6

Sources: Euronext Lisboa, *INE*, Reuters and Banco de Portugal.
Notes: (a) A positive change corresponds to an appreciation of the euro against the US dollar. (b) A positive change corresponds to an appreciation of the index. Calculations against a group of 22 trading partners. For a detailed description of the methodology, see the article entitled "New effective exchange rate index for the Portuguese economy" by Gouveia, A. C. and Coimbra, C., in the December 2004 issue of the Economic Bulletin of Banco de Portugal.

Chart 3.4

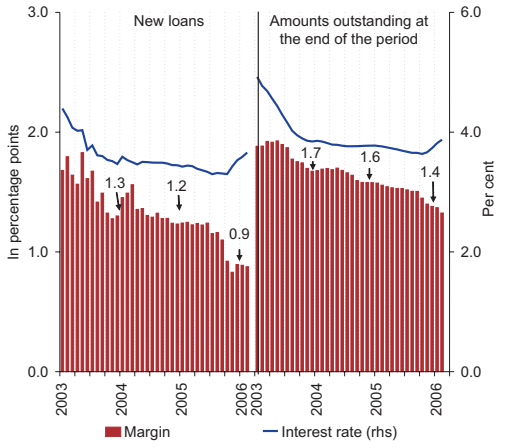
KEY ECB INTEREST RATES, MONEY MARKET RATES AND BANK LENDING RATES



Source: Banco de Portugal.

Chart 3.5

INTEREST MARGINS ON LOANS FOR HOUSE PURCHASE



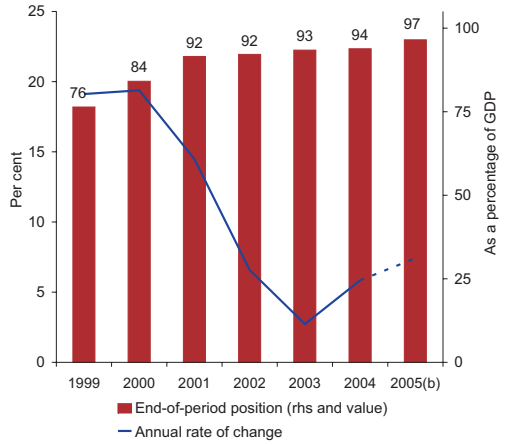
Source: Banco de Portugal.
Note: The interest margin implied in amounts outstanding is calculated as the difference between the interest rate on amounts outstanding and the 6-month moving average of 6-month Euribor. In the case of new loans, the interest margin is the difference between the interest rate on new loans and 6-month Euribor. The values in the chart are end-of-year figures.

The spread between Portuguese and German 10-year bonds widened in the first half-year, contrasting with the narrowing recorded in 2004. These developments were similar to those seen in other euro area countries with significant fiscal imbalances – such as Greece and Italy, whose spreads however

Chart 3.6

INDEBTEDNESS OF NON-FINANCIAL CORPORATIONS [a]

Annual rate of change and end-of-period position



Sources: *INE* and Banco de Portugal.
Notes: (a) Includes loans granted by resident and non-resident credit institutions; loans/additional capital granted by non-resident companies belonging to the same economic group (excluding those granted to non-financial corporations having their head office in the free trade zone of Madeira); commercial paper and bonds issued by non-financial corporations held by other sectors and trade credits received from other sectors. (b) Figures for 2005 are an estimate based on data available on loans granted by resident credit institutions, net issuance of debt securities, change in the amount outstanding of loans granted by non-resident credit institutions and external trade credit flows.

are higher than those of the Portuguese public debt – and seem to have been associated with the results of the referendums on the European Constitution in France and the Netherlands. The increase in the spread of the Portuguese public debt may also have reflected expectations of a downgrade of the Portuguese Republic rating by Standard & Poor's (a negative outlook had been announced in October 2004). This revision materialised by the end of June, together with a downgrading of the outlook for Portugal by Fitch (from stable to negative), having then a rather moderate impact on the long-term financing costs of the Portuguese public debt. In fact, in the second half of the year, the spread of the Portuguese public debt recorded no significant changes, remaining at levels close to those recorded in mid-2004. In this context of relatively low medium and long-term financing costs, the Portuguese Government reinforced this component of the debt issuing a significant amount of fixed-rate bonds in the course of the year (around EUR 7.7 billion in net terms, predominantly with a maturity of 10 and 15 years).

In the stock exchange market, the PSI-Geral index increased by around 17 per cent between the beginning and the end of 2005, in a context of reduced volatility levels. The share price valuation in the Portuguese market was similar to that observed in 2004 and was mainly recorded in the second half of the year. Nevertheless, it was slightly lower than that recorded by the Dow Jones Euro Stoxx index over the same period. Net issuance of (quoted and unquoted) shares by Portuguese companies stood at 1.4 per cent of GDP in 2005, i.e. far lower than in 2004 (nearly 4 per cent of GDP). This reflected chiefly the negative value of the net issuance of non-financial corporations shares, due to the winding up of a large company at the beginning of the year (worth 1 per cent of GDP). In turn, net issuance of shares by financial corporations, was slightly higher than in 2004 (1.5 per cent of GDP). In 2005 the rate of change in the gross debt of non-financial corporations was higher than in 2004 (according to preliminary data, around 7.5 per cent, i.e. 1.5 p.p. higher than in 2004), with an increase in the indebtedness

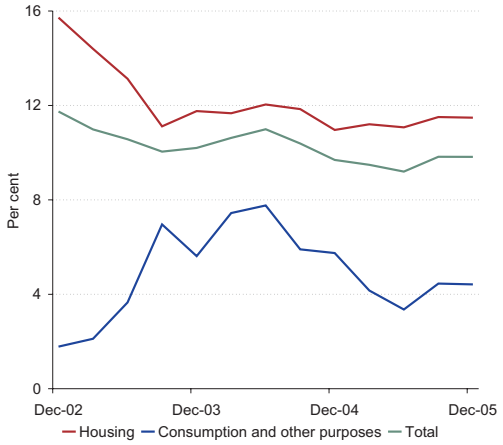
ratio of this sector as a percentage of GDP (Chart 3.6).[4] Loans granted by resident financial institutions to non-financial corporations increased by around 4.5 per cent (around 3 per cent in 2004).[5] According to the results of the Bank Lending Survey, the financing of the current activity of companies and debt restructuring have largely accounted for the increase in the demand for bank loans by non-financial corporations.[6] In turn, as indicated by reporting banks, investment financing was the main factor contributing to the reduction in the demand for credit by this sector, which is in line with the unfavourable developments in GFCF in 2005. In view of the maintenance of relatively favourable conditions for debt issuance in the market, in the course of 2005 there was a significant flow of net issuance of both bonds (mainly in the first half of the year) and commercial paper (more significant in the second half of the year) by non-financial corporations (in the total, around 3.7 per cent of GDP, up from 1.0 per cent in 2004).

Households' indebtedness recorded further significant growth in 2005, estimated at around 6 p.p. of GDP (Charts 3.7 and 3.8). The rate of change in loans granted by resident financial institutions stood at around 10 per cent, chiefly as a result of the high growth that credit for house purchase continued to show (above 11 per cent).[7] In turn, borrowing for consumption and other purposes except house purchase (which, at the end of the year, accounted for slightly more than one fifth of the total) increased at a far more moderate pace (around 4.5 per cent). In addition to the low interest rate levels, strong bank competition in the housing credit segment has continued to ensure favourable supply conditions in this market. In particular, and according to the results of the Bank Lending Survey, in parallel with the slight decrease in interest margins referred to above, loan maturities continued to be lengthened, allowing for the containment of the debt servicing burden of households.

Chart 3.7

LOANS TO HOUSEHOLDS GRANTED BY RESIDENT CREDIT INSTITUTIONS

Annual rate of change

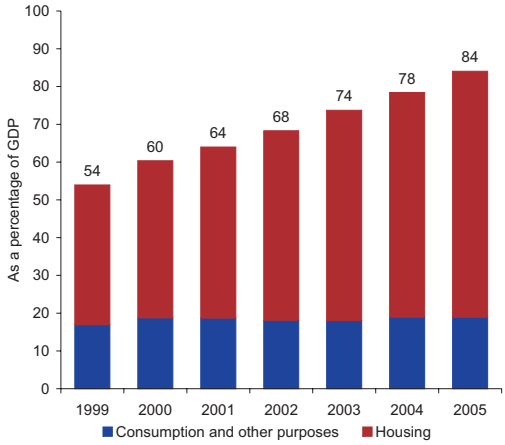


Source: Banco de Portugal.

Chart 3.8

HOUSEHOLDS' INDEBTEDNESS

As a percentage of GDP



Sources: *INE* and Banco de Portugal.

(4) For the concept of debt, see note (a) of Chart 3.6.

(5) The group of resident financial institutions includes other resident monetary financial institutions –usually mentioned in the *Monthly Indicators* published by Banco de Portugal – and other credit institutions included in other resident financial intermediaries and auxiliaries, whose data are only available on a quarterly basis. For the calculation of the rates of change in loans to the non-financial private sector, securitisation operations via non-resident special-purpose vehicles, and in the case of other monetary financial institutions, corrected of reclassifications, write-offs, figures were adjusted for exchange rate changes and price revaluations.

(6) For further details, see the results of the Bank Lending Survey on the website of Banco de Portugal, on www.bportugal.pt.

(7) For details on the resident financial institutions group, see footnote 5.

3.2. Fiscal Policy

The fiscal situation worsened in 2005 when compared with 2004, despite the consolidation measures implemented from the middle of the year onwards. In fact, the significant rise in tax revenue was not sufficient to offset the strong increase in primary current expenditure, in particular in social transfers. The fiscal consolidation measures adopted since 2002 did not reverse the fast pace of expenditure growth. Hence, notwithstanding the increase in the tax burden occurred in the meantime, in structural terms, the fiscal balance in 2005 stood approximately at the level recorded in 2001 (Table 3.3). It should be recalled that the current version of the Stability and Growth Programme envisages the reduction of the general government deficit to below 3 per cent of GDP in 2008 (see "Box 2. *Fiscal prospects*"). The public debt ratio increased sizeably in 2005, reflecting the magnitude of the current fiscal imbalance in a context of low economic growth.

The general government deficit, on a national accounts basis, stood at 6.0 per cent of GDP in 2005, significantly above the 3.2 per cent of GDP recorded in 2004.[8] This outcome was mainly due to the absence of extraordinary and temporary measures in 2005 to reduce the deficit, unlike in the previous years. Excluding the effects of the temporary measures in 2004, the deficit increased approximately by 0.7 p.p. of GDP, of which around 0.2 p.p. are accounted for by the worsening of the cyclical position of the economy. Considering that interest expenditure remained broadly unchanged as a ratio to GDP, the primary balance adjusted for the cycle and for the effect of temporary measures, which is the indicator usually used to assess the fiscal policy stance, declined by around 0.5 p.p. of GDP.

Tax revenue as a percentage of GDP increased by 1.1 p.p. in 2005 (1.0 p.p. in 2004, excluding the effect of temporary measures),[9] predominantly due to the performance of taxes on production and imports (Table 3.4). The growth of revenue from these taxes (10.0 per cent), which is far higher than the one recorded by the respective tax base, is explained by the effect of discretionary measures, in particular the rise in the standard VAT rate from 19 to 21 per cent, as from the beginning of July, combined with an upgrade of the tax administration collection procedures. Revenue from taxes on income and wealth increased by 2.7 per cent. The negative impact of measures approved in previous years on the receipts from these taxes in 2005 was significantly dampened by an increased effectiveness in tax collection. These measures were, on the one hand, the reduction in the personal income tax rates set out in the 2005 State Budget – already partially felt in the course of the year through the changes in the withholding table – and, on the other hand, the full effect of the reduction of the corporate income tax

Table 3.3

FISCAL BALANCES
As a percentage of GDP[(a)]

	2001	2002	2003	2004	2005
Overall balance	-4.3	-2.9	-2.9	-3.2	-6.0
(-) Temporary measures	0.0	1.3	2.4	2.1	0.0
Overall balance excluding temporary measures	-4.3	-4.2	-5.3	-5.3	-6.0
(+) Interest	3.0	2.9	2.7	2.6	2.7
Primary balance excluding temporary measures	-1.3	-1.3	-2.5	-2.7	-3.3
(-) Cyclical component[(b)]	1.1	0.7	-0.4	-0.5	-0.7
Cyclically adjusted primary balance, excluding temporary measures	-2.4	-2.1	-2.1	-2.2	-2.6

Sources: *INE*, *Ministério das Finanças* and Banco de Portugal.
Notes: (a) The value of GDP corresponds to the estimate of Banco de Portugal. (b) For a description of the methodology used, see the article entitled "The use of cyclically adjusted balances at Banco de Portugal", by Neves, P. D. and Sarmento, L. M., in the September 2001 issue of the *Economic Bulletin* of Banco de Portugal.

(8) Figures reported to the European Commission in the Excessive Deficit Procedure notification of March 2006.

(9) Of these increases, approximately 0.1 p.p. in 2005 and 0.3 p.p. in 2004 were due to the change in actual social contributions to the civil servants pension system and in imputed social contributions.

Table 3.4

GENERAL GOVERNMENT ACCOUNTS (excluding temporary measures)

National Accounts

	As a percentage of GDP [a]			Growth rates	
	2003	2004	2005	2004	2005
Total revenue	40.4	41.0	41.9	5.1	5.0
Current revenue	38.6	39.6	40.5	6.2	5.2
Tax revenue	34.3	35.3	36.4	6.8	6.0
Taxes on income and wealth	8.2	8.7	8.6	9.5	2.7
Taxes on production and imports	14.1	14.3	15.3	5.1	10.0
Social contributions	12.0	12.4	12.5	6.8	3.7
Actual	10.9	11.3	11.3	7.6	3.1
Imputed	1.1	1.1	1.2	-0.5	9.3
Other current revenue	1.9	1.9	1.6	-0.1	-9.2
Sales	2.4	2.4	2.4	3.6	5.1
Capital revenue	1.8	1.4	1.4	-18.4	-0.4
Total expenditure	45.7	46.3	47.9	5.1	6.3
Current expenditure	41.4	41.8	43.4	4.6	6.7
Current transfers	20.6	20.9	22.1	5.1	8.8
Social payments	16.9	17.0	18.0	4.2	8.9
in cash	13.8	14.1	14.8	6.3	7.9
in kind	3.1	2.8	3.2	-5.3	13.9
Subsidies	1.8	1.6	1.6	-11.2	4.8
Other current transfers	1.9	2.3	2.5	29.1	10.6
Interest	2.7	2.6	2.7	0.3	6.2
Compensation of employees	14.2	14.4	14.5	4.9	3.9
Intermediate consumption	3.8	3.9	4.0	4.3	6.7
Capital expenditure	4.3	4.5	4.5	9.7	2.7
Gross fixed capital formation	3.1	3.0	3.1	-0.8	4.8
Net acquisition of non-financial non-produced assets	-0.1	0.1	0.2		
Capital transfers	1.2	1.4	1.3	21.3	-3.7
Overall balance	-5.3	-5.3	-6.0		
Overall balance notified in the Excessive Deficit Procedure (including temporary measures)	-2.9	-3.2	-6.0		
Memo:					
Primary current expenditure	38.7	39.1	40.7	4.9	6.8
Public debt	56.9	58.6	64.0		

Sources: *INE*, *Ministério das Finanças* and Banco de Portugal.
Note: (a) The value of GDP corresponds to the estimate of Banco de Portugal.

rate from 30 to 25 per cent (included in the 2004 Budget). Revenue from actual social contributions to the general social security system remained stable as a percentage of GDP compared with 2004, having increased by 3.2 per cent.[10] Actual social contributions relating to civil servants, whose main component is the State transfer to the Portuguese civil servants' pension scheme (*Caixa Geral de Aposentações* – CGA), increased by 3.0 per cent in 2005, i.e. far less than in the previous years. These developments reflect the fact that CGA benefited from the earmarking of part of the additional VAT revenue resulting from the increase in the standard VAT rate referred to above, as well as from the repayment of debts by general government bodies in the framework of the 2005 Supplementary Budget. Compared with 2004, other current revenue recorded a decrease, particularly associated with the strong fall in dividends (71.9 per cent).

(10) On a public accounts basis, contributions to the general social security system increased by 5.0 per cent, above their change on a national accounts basis, since under the latter the figure for 2004 includes the amount of EUR181.8 million relating to the settlement of small farmers social contribution due between 2001 and 2003 whose payment was assumed by the State.

Primary current expenditure as a percentage of GDP increased significantly in 2005 (1.6 p.p.). The behaviour of social transfers in cash explains around half of this outcome. It is chiefly associated with pension expenditure growth which exceeded by for nominal GDP growth. Indeed, expenditure on the general pension system and the civil servants pension system increased by 8.6 and 7.9 per cent respectively in 2005 (8.2 and 9.5 per cent in 2004). These developments reflect the impact of the rise in the number of pensioners, as a consequence of population ageing (in particular, in the case of the general system), as well as of the rise in the average pension, resulting from the yearly update in pensions and from the fact that the new pensioners receive, on average, far higher pensions than those received by the other pensioners and particularly by those who deceased in the meantime. Also noteworthy is the significant rise in payments related to unemployment subsidies (8.5 per cent), albeit decelerating from 2004 (11.6 per cent). Social transfers in kind increased by 13.9 per cent in 2005, contributing to the hike in the primary expenditure-to-GDP ratio. Even taking into account that this ratio may be slightly revised downwards when a more final version of the 2005 accounts is compiled, it reflects anyway a strong rise in the payment of services provided by corporate hospitals and in the reimbursement by the National Health Service of expenditure made by households. Compensation of employees went up by 3.9 per cent (4.9 per cent in 2004), implying a slight rise in their ratio to GDP. This outcome is explained by the end of the partial public sector wage freeze, the rise in the number of civil servants and an increase in expenditure with the civil servants health subsystems. Turning to other current transfers, it should also be noted the strong growth of the financial contribution of Portugal to the EU budget in 2005, which included adjustments relating to previous years, reflecting the upward revision of the GDP level.

General government capital revenue, excluding temporary measures, decreased slightly in 2005 (0.4 per cent),[11] associated with a reduction in transfers from the EU as the Third Community Support Framework approaches the end. On the capital expenditure side, public investment increased by 4.8 per cent. However, this rate was negatively influenced by higher sales of real estate in 2005 than in 2004.[12] Excluding this effect, the increase of public investment amounted to 9.6 per cent, largely reflecting investments by local government. The capital account balance remained broadly unchanged.

The public debt ratio rose significantly, standing at 64.0 per cent at the end of 2005,[13] i.e. around 5.4 p.p. higher than a year earlier. This result was mainly due to the high primary deficit, which reached 3.3 per cent of GDP. The hike in the debt ratio was also a consequence of the differential between the implicit interest rate on public debt and nominal GDP growth. Finally, the deficit-debt adjustments amounted approximately to 1.0 p.p., reflecting the effect of several factors with opposite signs. It is worth mentioning as contributions to the increase of the debt ratio the issuance of public debt in 2005 to finance part of the expenditure made in the framework of the 2004 Supplementary Budget and the sizeable amount of the settlement of arrears by the Treasury. By contrast, it should be noted that CGA received most of the amount in debt relating to the transfer of assets of several state-owned enterprises in 2004, in exchange for the takeover of pension liabilities.

(11) As the effect of temporary measures in 2004 was concentrated in capital revenue, excluding them, the decline reached 60.3 per cent. The temporary measures in question consisted in the transfer of assets from state-owned enterprises to CGA, worth EUR 3,051.5 million, in exchange for the takeover by this entity of pension liabilities.

(12) The sale of real estate is recorded as negative capital expenditure.

(13) It should be recalled that all figures are calculated on the basis of Banco de Portugal estimate of nominal GDP. The debt ratio notified to the European Commission was 63.9 per cent.

4. OUTPUT AND EXPENDITURE

Banco de Portugal estimates that the Portuguese economy grew by 0.3 per cent in 2005, a deceleration of 0.8 p.p. from 2004 (Table 4.1). Activity growth was lower than in the euro area by around 1 p.p. and the per capita income of the Portuguese economy continued to deviate from the average EU levels (Chart 4.1).

The slowdown in activity in 2005 reflected in particular the fall in investment and a significant reduction in the contribution of exports to GDP growth. Private and public consumption, despite decelerating in the course of the year, continued to grow clearly above GDP. In this context, and notwithstanding the fall in investment, the external financing needs of the economy recorded a further rise.

Unfavourable export and investment developments, the two expenditure components that, chiefly in small open economies, typically reveal higher buoyancy in the recovery stages, have given rise in the past two years to a GDP behaviour far different from that recorded after the 1993 recession (Chart 4.2). In fact, and contrasting with such developments, the recent evolution of economic activity in Portugal is characterised by the absence of a sustained recovery. Although external demand continued to grow at a significant pace, the deterioration of the competitive capacity of the national economy, amid increased competition in international markets, has limited the contribution of exports to GDP growth. The deterioration of relative labour costs in the past decade and the structure of Portuguese exports have been the main contributors to the poor performance of exports. In addition, unfavourable developments in economic agents' confidence, in a context of uncertainty regarding not only demand growth prospects, but also the way how the major imbalances of the economy will be corrected, have negatively affected investment decisions in the past few years.

The rise in commodity and energy prices and the maintenance of sustained growth in labour costs, in a context in which the deterioration of labour market conditions does not seem to be translated into an adequate adjustment of real wages, may have negatively affected domestic output in 2005.

Table 4.1

GROSS DOMESTIC PRODUCT AND MAIN EXPENDITURE COMPONENTS [(a)]

Real rate of change

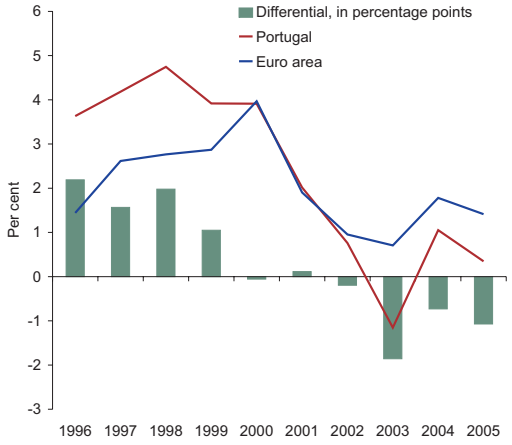
Per cent

	Weights 2004	2001	2002	2003	2004	2005
GDP	100.0	2.0	0.8	-1.2	1.1	0.3
Private consumption	64.4	1.3	1.3	0.0	2.3	1.8
Public consumption	20.6	3.3	2.6	0.7	1.6	1.9
Investment	22.9	1.2	-4.7	-9.8	1.1	-3.6
GFCF	22.3	1.0	-3.5	-10.0	0.0	-2.6
Change in inventories [(b)]		0.1	-0.4	0.0	0.2	-0.2
Domestic demand	107.8	1.7	0.1	-2.2	1.9	0.7
Contribution of domestic demand to GDP [(b)]		1.8	0.1	-2.4	2.0	0.7
Exports	28.6	1.8	1.4	3.7	5.3	0.9
Goods	20.9	1.5	1.8	6.3	4.3	1.0
Tourism and other services	7.7	2.6	0.5	-3.4	7.9	0.8
Imports	36.4	0.9	-0.7	-0.5	7.0	1.8
Goods	31.2	1.3	-0.3	0.5	6.9	1.7
Tourism and other services	5.2	-1.6	-2.9	-6.0	7.8	2.5
Contribution of net external demand to GDP[(b)]		0.2	0.7	1.2	-1.0	-0.4

Sources: *INE* e Banco de Portugal.
Notes: **(a)** Banco de Portugal estimates derived from the INE's National Accounts from 1995 to 2003. **(b)** Contribution to the rate of change in GDP in percentage points.

Chart 4.1

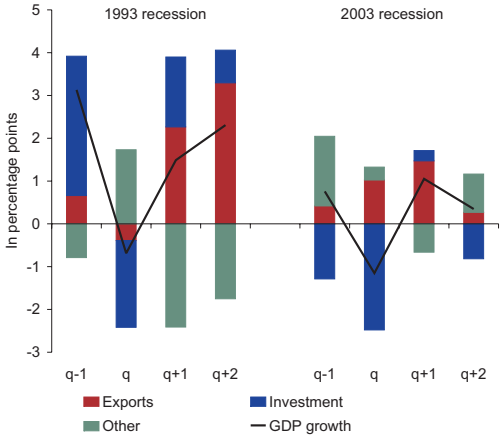
GROSS DOMESTIC PRODUCT
Real rate of change



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

Chart 4.2

CONTRIBUTIONS TO GDP GROWTH



Sources: *INE* and Banco de Portugal.

At the sectoral level, the growth rate of activity in services continued to be higher than the GDP growth rate and close to the rate of change estimated for employment in this sector (Table 4.2). By contrast, the remaining sectors, with the exception of the energy sector, recorded falls in activity, which were particularly marked in agriculture, forestry and fishing and construction. The reduction in agricultural production is related to the protracted period of drought in 2005, as well as to the implementation of the 2003 reform of the Common Agricultural Policy, which translated into the replacement of financial support to production with direct financial support to farmers. The decline in production in construction is in line with the deterioration of confidence in the sector and strengthens the recent trend, following a large expansion in the second half of the 1990s. Activity in manufacturing industry also declined, in particular in the first half of the year.

The estimate for GDP growth in 2005 has implicit a slight acceleration of activity in the second half of the year, despite the deceleration of private consumption and the maintenance of the fall in GFCF. Thus, the improvement of activity reflected the more favourable contribution of net external demand, owing to smaller import growth and the moderate acceleration of exports.

Table 4.2

GROSS VALUE ADDED BY SECTOR OF ACTIVITY [a]
Real rate of change
Per cent

	2001	2002	2003	2004	2005
GDP [b]	2.0	0.8	-1.2	1.1	0.3
Agriculture, forestry and fishing	-3.2	2.4	-3.1	-0.1	-7.4
Manufacturing industry	1.4	-0.4	-0.8	0.4	-1.7
Electricity, gas and water	3.6	0.3	6.5	5.7	5.4
Construction	2.8	-4.0	-12.7	-1.9	-5.2
Services [c]	2.9	1.5	0.4	1.9	1.5

Sources: *INE* and Banco de Portugal.
Notes: (a) Banco de Portugal estimates derived from INE's National Accounts from 1995 to 2003. (b) GDP at market prices. The nominal value of GDP includes, in addition to sectoral GVAs, VAT and import taxes. (c) Net of financial intermediation services indirectly measured considered as intermediate consumption.

The average growth of private consumption was 1.8 per cent in 2005. The maintenance of interest rates at low levels, associated in some cases with the squeeze in bank margins, as well as the lengthening of loan maturities, have allowed for the containment of the growth of the debt servicing burden, without curbing household consumption expenditure. In addition, transfers to households, typically associated with higher propensity to consume, continued to grow at a high pace in 2005. However, private consumption decelerated markedly in the course of the year, in line with the deterioration in consumer confidence (Chart 4.3).[14] Unfavourable developments in labour market conditions, a better perception of the seriousness of the fiscal situation, associated with tax hikes in the middle of the year, as well as expectations of a rise in interest rates as from September, in a context of strong household indebtedness, seem to have contributed to the lower buoyancy of private consumption in the second half of 2005.

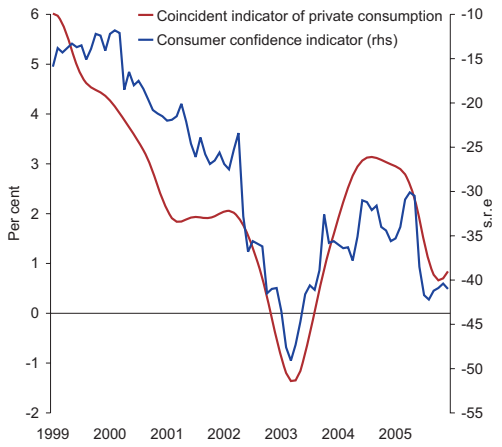
The announcement, at the end of May, of a rise in the standard VAT rate from 1 July onwards, led to a somewhat uneven intra-annual pattern of private consumption. In fact, this announcement seems to have led to an anticipation of purchase decisions by consumers, in particular of durable consumer goods, which translated into a slight acceleration of private consumption between the first and the second quarter of 2005. These developments were particularly evident in car sales, which recorded a year-on-year growth close to 35 per cent in June.

Banco de Portugal estimates point to real growth of public consumption around 2 per cent. This growth was due to the rise in the number of civil servants, as well as to the significant increase in transfers to corporate hospitals and in the National Health Service expenditure with the recourse to arrangements with private doctors and hospitals and pharmacies.

After strong declines in 2002 and 2003 and a virtual stagnation in 2004, GFCF decreased further in 2005, with its real rate of change standing at around -2.6 per cent. The unfavourable performance of GFCF was largely driven by developments in the construction component, which decreased steeply from 2004. GFCF in transport material also declined, while GFCF in machinery and metal products decelerated slightly compared with 2004.

Chart 4.3

COINCIDENT INDICATOR OF PRIVATE CONSUMPTION AND CONSUMER CONFIDENCE



Sources: European Commission and Banco de Portugal.

(14) Between the first and the second quarter of 2005, the growth rate of private consumption dropped from 2.5 to 1.1 per cent.

The behaviour of GFCF in the most recent period may be reflect unfavourable developments in economic agents' confidence, in a context of uncertainty regarding demand growth prospects. According to the results of the Investment Survey carried out by *INE*, the majority of companies continue to mention the deterioration of sales prospects as the main factor limiting investment,. The relative importance of this factor has increased in the past few years, to the detriment of other factors such as the difficulty in obtaining credit or the interest rate level (Chart 4.4). In turn, the results of the Bank Lending Survey suggest that unlike the situation in the euro area, the current favourable financing conditions are not being used to make new investments, but to finance the current activity and to restructure debts.

Against a background in which investment decisions are assessed in a global context and in which a significant reallocation of resources is required in the Portuguese economy, the current climate of uncertainty may also be associated with doubts regarding the way how the major imbalances of the economy will be corrected and the structural reforms required for the growth of productivity implemented. In fact, the predictability of the tax system, the qualification of labour (through the existing complementarity between investment in physical and human capital) and the prevailing institutional framework (in particular, as regards market flexibility) are the major factors conditioning corporate investment decisions.

In 2005 exports of both goods and services decelerated sharply compared with 2004. Despite slowing down somewhat, external demand for the Portuguese economy continued to grow at a strong pace. Like in 2004, there was a marked loss in export market share (Chart 4.5). On the other hand, the profit margin of the national export sector recorded a further decline, largely reflecting the fact that unit labour costs continued to grow at a higher pace than in Portugal's main trading partners.

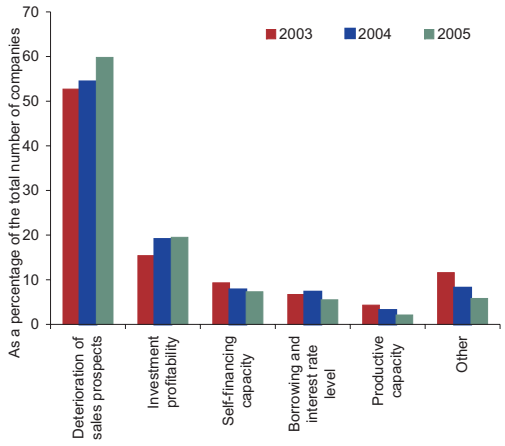
The loss in export market shares in the past few years has been broadly based across the majority of the euro area countries, suggesting the existence of several explanatory factors that are common to the euro area as a whole. These factors include not only some loss of competitiveness associated with the appreciation of the euro in the period under review, but also the stepping up of the globalisation process, that has led to an increasing participation of developing economies in world trade (see Chart 2.5 in Section 2). However, the deterioration of the relative performance of Portuguese exports compared with the euro area as a whole suggests that specific factors have also decisively contributed to the loss of Portuguese export market shares. The relative cost indicators usually calculated point to a deterioration of the competitiveness of Portuguese exports in the past few years, largely associated with the higher growth of unit labour costs in Portugal. The performance of Portuguese exports seems to be also affected by the specialisation pattern by product.

The structure of Portuguese exports continued to show a large share of products with low technological and human capital content, such as textiles, clothing and footwear, which have faced increased competition – based on low-cost wages – from the new players in international trade. Available data point to significant falls in the value of exports of this type of goods in 2005. However, the loss in market share has also affected some sectors with intermediate technological content, such as the car and machinery sectors, which gained a significant weight in the structure of Portuguese exports, following large foreign direct investment projects in the middle of the 1990s.

Turning to the market of destination, Portuguese exports to Germany, the United Kingdom and the United States declined in nominal terms, pointing to sharp falls in the market share of these countries in 2005 (Charts 4.6 and 4.7). Portuguese exports to Germany and the United Kingdom have been declining over the past few years, likely associated with the increased competition from the economies of Central and Eastern Europe and from the Asian developing economies. By contrast, Portuguese exports to Spain and to some emerging market or developing economies increased strongly in 2005.

Chart 4.4

MAIN FACTORS LIMITING INVESTMENT

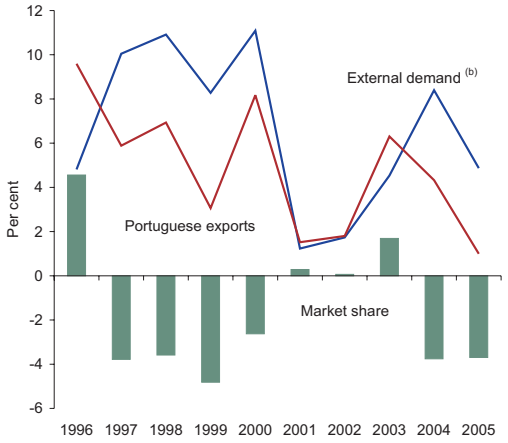


Source: *INE* (Investment Survey).

Chart 4.5

MARKET SHARE OF PORTUGUESE GOODS EXPORTS [a]

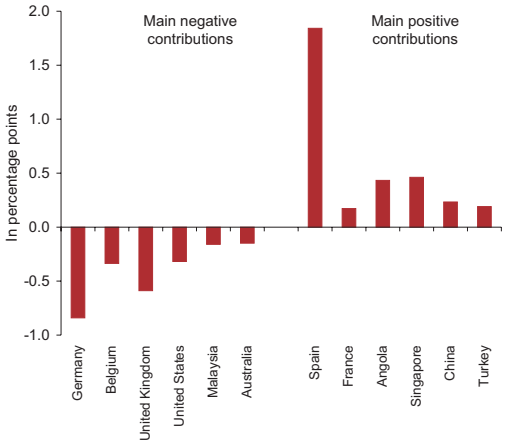
Rate of change in volume



Sources: European Commission, UK Office of National Statistics, *INE* and Banco de Portugal.
Notes: (a) Real growth of total exports of goods (excluding exports of aeronautic material after repair) against the real growth of external demand. An increase means a gain in the market share of Portuguese exporters. (b) Real growth of goods imports from the main trading partners. The 17 countries selected correspond to around 90 per cent of total exports. Each country was weighted according to its weight as export market in the previous year.

Chart 4.6

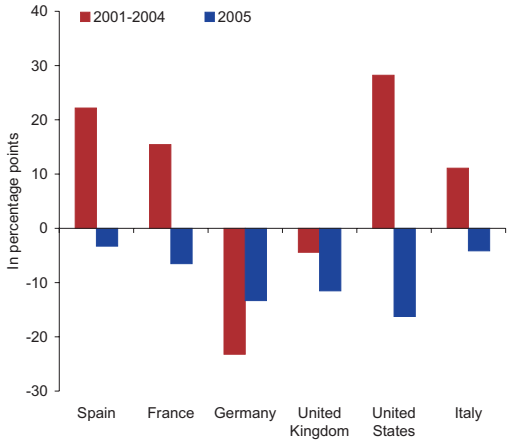
CONTRIBUTIONS TO NOMINAL EXPORT GROWTH IN 2005



Source: *INE*.
Note: Countries ordered by decreasing order of the respective share in Portuguese exports in 2004.

Chart 4.7

CHANGE IN THE MARKET SHARE IN MAIN EXPORT MARKETS



Source: *INE*.
Nota: Countries ordered by decreasing order of the respective share in Portuguese exports in 2004.

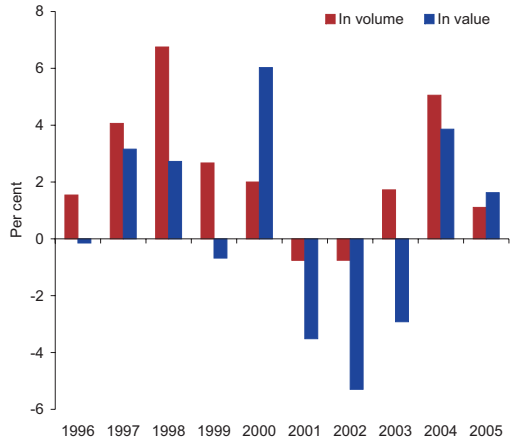
However, it should be noted that in the Spanish (and also in the French) market, export market shares declined in 2005, after the gains recorded in the past few years.

In the wake of strong growth in 2004, imports of goods and services decelerated sharply in 2005, in line with the smaller growth of weighted global demand. According to the available data, the deceleration in imports seems to have been broadly based across all types of goods. However, as in the most recent

Chart 4.8

PENETRATION OF GOODS AND SERVICES IMPORTS

Rate of change



Sources: *INE* and Banco de Portugal.
Note: (Real) nominal growth of goods and services imports vs (real) nominal growth of domestic demand. An increase means higher penetration of foreign producers in the domestic market.

years, the growth rate of imports was higher than that of domestic demand, giving rise to a further increase in the penetration rate of imported goods and services. This fact continued to be due to the trend decline in the relative price of consumer and equipment goods imports (Chart 4.8).

5. EMPLOYMENT AND WAGES

Labour market developments in 2005 were characterised by a virtual stagnation of employment and by an increase in the unemployment rate to 7.6 per cent, half of which corresponds to long-term unemployment[15] (Table 5.1). The behaviour of employment remained consistent with the cyclical position of the Portuguese economy, with a rise in productivity per employee of 0.4 per cent (1.0 per cent in 2004). Thus, and considering that the pace of growth in compensation per employee remained broadly unchanged from 2004, unit labour costs (ULC) went up strongly. The fact that the growth differential of ULC between Portugal and the euro area did not narrow, jeopardises the recovery of the competitiveness of the Portuguese economy and the correction of its macroeconomic imbalances. The current rigidity in the adjustment of real wages to the conditions prevailing in the labour market hampers the shift of resources to sectors with higher growth prospects, conditioning the evolution of both unemployment and economic activity (Charts 5.1 to 5.4).

The results of the Employment Survey carried out by *INE* reveal a nil change in total employment in 2005, with no marked intra-annual pattern. Developments in employment broken down by the professional situation were similar to those recorded in 2004, with an increase in the number of wage earners (0.8 per cent), which offset the drop in other forms of employment (-2.4 per cent). With regard to the type of labour contract, long-term contracts recorded an increase, following a decline in 2004. In sectoral terms, the rising trend of employment in the services sector persisted (1.4 per cent), resulting

(15) A long-term unemployed is an individual seeking work for a period of more than 12 months.

Table 5.1

EMPLOYMENT, UNEMPLOYMENT AND WAGES

Rate of change

Per cent (unless otherwise indicated)

	2000	2001	2002	2003	2004	2005
Total employment	1.7	1.7	0.4	-0.4	0.1	0.0
Unemployment rate (as a percentage of the labour force)	3.9	4.0	5.0	6.3	6.7	7.6
Long-term unemployment (as a percentage of total employment)	43.8	40.0	37.3	37.7	46.2	49.9
Compensation per employee – total economy [a]	5.6	4.1	4.5	1.8	2.9	2.8
Compensation per employee – private sector	5.1	3.6	4.6	2.0	3.3	2.9
Unit labour costs in Portugal – total economy [a]	4.0	3.8	4.1	2.6	1.9	2.4
Unit labour costs in the euro area – total economy [b]	0.9	2.3	2.2	1.8	0.9	0.9

Sources: European Central Bank, *INE* and Banco de Portugal.
Notes: (a) Gross wages net of contributions and income taxes, adjusted for the effect of temporary measures and excluding the government transfers to CGA. (b) Figures for 2005 are an estimate until the third quarter of the year.

from the strong contribution of employment in general government, education and health (including private employment in the latter two subsectors). Employment in manufacturing industry continued the trend decline observed in the past few years (3.4 per cent).

The unemployment rate stood at 7.6 per cent in 2005, accounting for a significant rise from the average figure recorded in 2004 (6.7 per cent). These developments were marked by an increase in the percentage of the long-term unemployed (to 49.9 per cent), which is influenced by most of the rules governing the allocation and the amount of the unemployment subsidy[16] and by the depreciation and inadequacy of the professional skills of the unemployed in a context of sectoral restructuring.

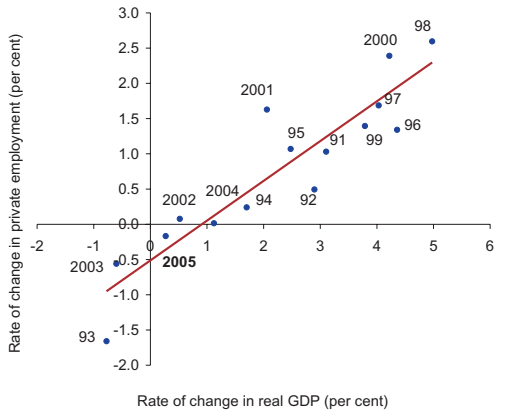
The analysis of the quarterly flows between the different labour market states reveals that the flow from employment to unemployment remained unchanged in 2005 and did not account for the rise in the unemployment rate (Chart 5.5). The net flow from employment to inactivity remained also unchanged from 2004. However, it should be noted that the gross flow between employment and inactivity decreased in the past few years, partly due to a deceleration in early retirements. On the other hand, the smaller gross flow between inactivity and employment resulted from developments in the cyclical position of the Portuguese economy. Flows between inactivity and unemployment contributed further to the increase in unemployment. All these effects as well as the demographic evolution, characterised by an increase in the age groups with higher participation rates, contributed to a 0.3 p.p. increase in the overall participation rate in the year as a whole.

Productivity per employee increased less than in 2004 (Chart 5.6), in line with the slow trend growth of this variable. Unfavourable developments in productivity and the rise in labour compensations had a significant impact on ULC in the total economy, which increased by 2.4 per cent in 2005, i.e. 1.5 p.p. more than in the euro area. The maintenance of ULC increases above those recorded in the euro area stresses the cost-competitiveness loss of the Portuguese economy, adding to the disappointing performance of exports and activity. However, it should be noted that the acceleration in ULC in 2005 was less marked in the private sector, reflecting the deceleration of wages in this sector. According to Banco de Portugal estimates, nominal compensation per employee in both the private sector and the total economy recorded rises close to 3 per cent. At macroeconomic level, the performance of wages in the economy may be affected by the labour force composition effects that counter the cyclical effects. In fact, considering that employment loss is predominantly recorded in workers with lower wages, the rise in unemployment may be accompanied by an increase in the average wage of the

(16) See the article entitled "Assessment of the changes in the portuguese unemployment insurance system" , in this issue of the *Economic Bulletin*.

Chart 5.1

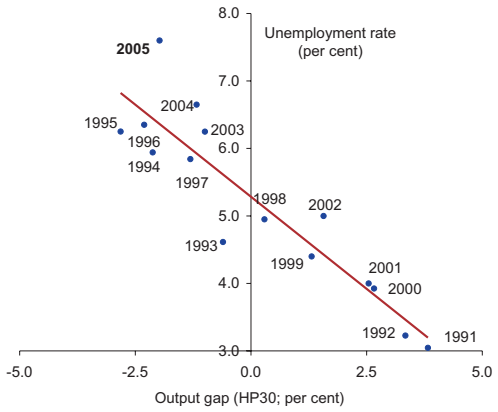
PRIVATE OUTPUT AND EMPLOYMENT GROWTH



Sources: *INE* and Banco de Portugal.
Note: Private employment is defined as total employment less public employment; private GDP is defined as total GDP less compensations and fixed capital compensation of general government.

Chart 5.2.

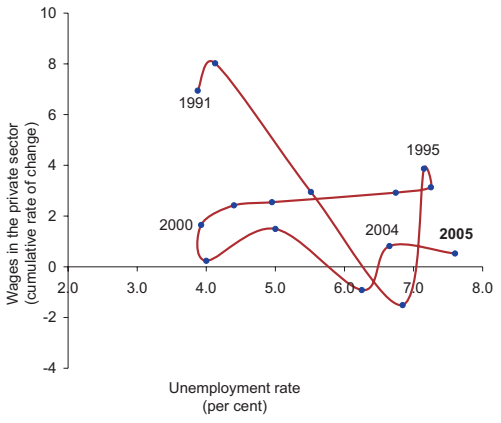
OUTPUT GAP AND UNEMPLOYMENT RATE



Sources: *INE* and Banco de Portugal.

Chart 5.3

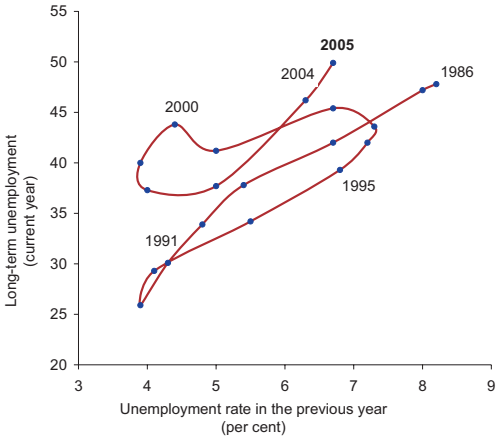
UNEMPLOYMENT RATE AND REAL WAGES IN THE PRIVATE SECTOR



Sources: *INE* and Banco de Portugal.

Chart 5.4

TOTAL AND LONG-TERM UNEMPLOYMENT



Source: *INE*.
Note: Series break in 1992 and 1998.

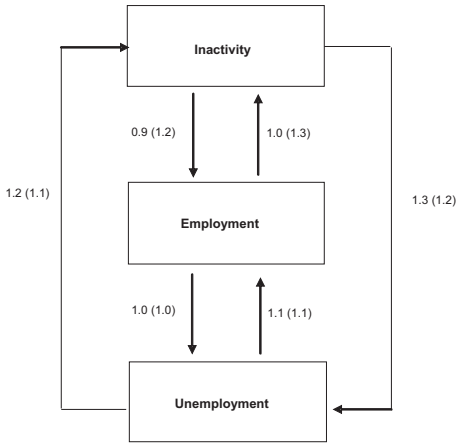
economy, although, usually the new labour contracts are more responsive to the aggregate labour market conditions.[17] This composition effect will tend to affect less developments in ULC, considering that typically there is at the same time a positive effect on productivity.

(17) See for instance, "Workers' flows and real wage cyclicality", by Carneiro, A. and Portugal P. (2004), Banco de Portugal Working Paper No. 9-04, May.

Chart 5.5

QUARTERLY FLOWS IN THE LABOUR MARKET

As a percentage of the labour force

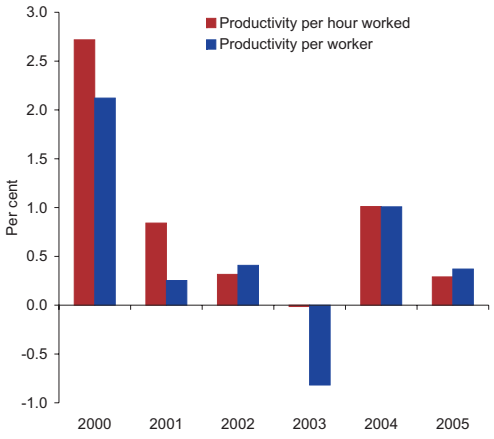


Sources: INE and Banco de Portugal.
Note: Considering the common sample component of quarter t and quarter t-1, and using the population weights of quarter t. Average figures for 2005 and 2004. Figures for 2004 in brackets.

Chart 5.6

PRODUCTIVITY PER HOUR WORKED AND WORKER

Rate of change



Sources: *INE* and Banco de Portugal.

6. PRICES

In 2005 and for the fourth consecutive year, inflation as measured by the year-on-year rate of change in the HICP, declined further, standing at 2.1 per cent, compared with 2.5 per cent in 2004. In addition to the cyclical developments in the Portuguese economy and the price performance of imports excluding fuels that favour a price deceleration, the reduction in average inflation was also due to the unwinding of the effects associated with the hosting in Portugal of the European Football Championship in June 2004, which had been particularly felt in services prices.[18] However, inflation recorded an upward trend in the second half of the year, reflecting, in particular, unfavourable developments in the international price of oil and the rise in the standard VAT rate from 19 to 21 per cent, whose impact was however lower than initially expected (Chart 6.1). Indeed, in a context of unfavourable developments in demand prospects, companies decided to reduce their profit margins, and therefore the rise in VAT was only partially passed through to consumer prices.

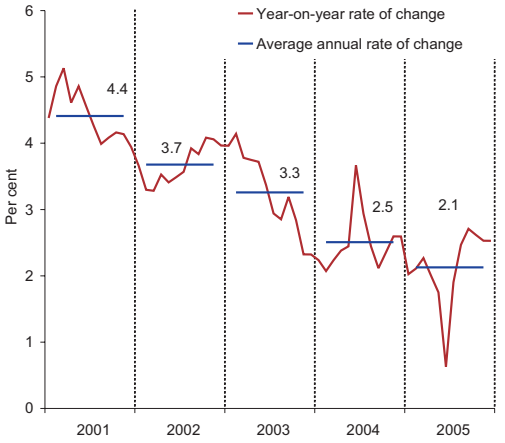
The considerable rise in the international price of oil had as a direct consequence an acceleration in energy prices, which was common to all euro area countries; the year-on-year rate of change in this component stood at 10 per cent (Table 6.1). Despite the rather significant growth of energy prices, inflation has remained reasonably contained. On the one hand, there are usually lags – typically of one or two years – in the pass-through of the changes in energy prices to the remaining prices.[19] On the other hand, and under the current circumstances, several factors have contributed to contain price pressures, namely, the performance of import prices excluding fuels, the cyclical position of the Portu-

(18) The phenomenon of reversal in the price rises of some services was less marked in the CPI than in the HICP, due to differences in the weighting structure used to aggregate the elementary price indices. Thus, unlike in 2004, the average annual inflation rate as measured by the CPI stood slightly above the rate of the HICP (0.2 p.p.). The difference between the two indices was particularly evident in June, when the year-on-year rate of change in the HICP reached a minimum of 0.6 per cent, i.e. 1 p.p. below the rate observed for the CPI.

(19) For further details, see "Evaluating core inflation indicators", by Marques, C. R., Neves, P. D. and Sarmento L. M., in the December 1999 issue of the *Economic Bulletin* of Banco de Portugal.

Chart 6.1

HARMONISED INDEX OF CONSUMER PRICES



Source: Eurostat.

guese economy and the fact that inflation expectations are anchored in the context of the ECB policy of maintenance of price stability.

As mentioned in Section 2, the very strong growth of important developing economies, namely in Asia, has significantly contributed to the rather strong rise in oil prices. However, the increasing participation of these economies, which are low-cost producers, in the world market, has also been reflected in a decline in the import prices of several types of consumer goods. Banco de Portugal, estimates based on data provided by *INE*, point to a rise in the price of imported goods of 4.0 per cent, or of 0.4 per cent excluding fuels. In addition,prices of imported consumer goods declined for the fourth consecutive year. Favourable developments in import prices, also associated with the lagged effects of the cumulative appreciation of the euro in the period 2001-2004, have helped to counter the impact of the rise in energy prices on consumer prices, in particular on the non-energy industrial goods component (Table 6.2).

The price performance in 2005 was also influenced by the domestic conditions of the Portuguese economy. Due to the reduced economic growth associated with a deceleration in domestic demand, there was no significant pressure of demand on prices. In addition, according to Banco de Portugal estimates, notwithstanding the maintenance of a sustained growth of wages in the economy as a whole, wage increases in the private sector recorded some moderation compared with 2004.

The deceleration of prices in Portugal translated into a close-to-zero inflation differential between Portugal and the euro area in 2005 (Chart 6.2). This is in line with the trend decline of the differential started in 2002. The narrowing of the average inflation differential reflects chiefly the reduction of the differential in services, which narrowed from 1.3 to 0.2 p.p. By contrast, the differential of non-energy industrial goods widened by 0.7 p.p., having been influenced by the rise in the standard VAT rate in Portugal, which seems to have affected more significantly the prices of this type of goods.

Table 6.1

HARMONISED INDEX OF CONSUMER PRICES – MAIN CATEGORIES AND AGGREGATES

Average annual rate of change

Per cent

	Weights in 2005	2000	2001	2002	2003	2004	2005
Total	100	2.8	4.4	3.7	3.3	2.5	2.1
Total excluding unprocessed food and energy	80.6	2.6	3.6	4.5	3.3	2.6	1.7
Goods	61.9	2.2	4.2	2.4	2.4	1.6	1.9
Food	21.5	2.0	6.1	1.9	2.6	1.4	0.1
Unprocessed	10.9	2.5	8.9	0.2	2.1	0.0	-0.5
Processed	10.7	1.4	3.1	3.8	3.1	2.8	0.8
Industrial	40.3	2.4	3.1	2.7	2.4	1.8	2.8
Non-energy	31.8	1.5	2.5	3.1	1.8	0.8	1.0
Energy	8.5	6.1	5.2	1.2	4.9	5.4	10.0
Services	38.1	4.0	4.7	5.9	4.6	3.9	2.5
Memo:							
CPI[(a)]	-	2.9	4.4	3.6	3.3	2.4	2.3

Sources: Eurostat, *INE* and Banco de Portugal.
Note: (a) Up to December 2002, the rates of change were calculated using 1997-based CPI. From January 2003 onwards, the rates of change were calculated using the 2002-based CPI.

Table 6.2

PORTUGAL - MAIN INTERNATIONAL PRICE INDICATORS

Rate of change

Per cent

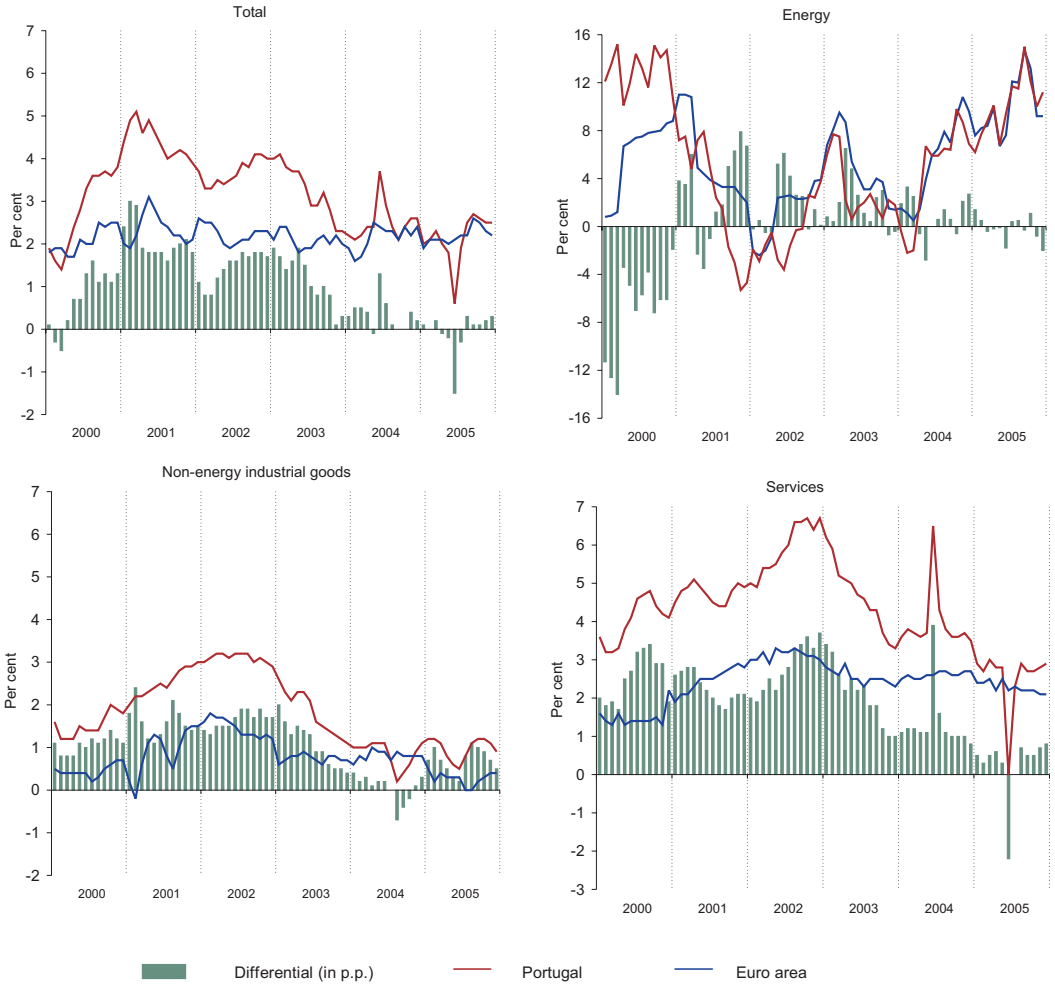
	2000	2001	2002	2003	2004	2005
Import prices of goods [(a)]						
Total	8.8	-0.1	-2.4	-2.5	2.1	4.0
Total excluding fuels	4.2	0.7	-1.8	-3.4	0.7	0.4
Consumer goods	3.4	3.6	-1.7	-3.3	-1.7	-1.6
International commodity prices						
Oil prices (Brent), EUR	83.0	-9.8	-4.9	-5.0	21.4	45.0
Non-energy commodity prices, EUR	20.4	-8.1	-0.9	-4.5	10.8	9.4
Memo:						
Nominal effective exchange rate index for Portugal [(b)]	-2.3	0.3	0.6	2.6	0.6	-0.2

Sources: Eurostat, Thomson Financial Datastream, HWWA, INE and Banco de Portugal.
Notes: (a) Banco de Portugal calculations based on information provided by INE. The classification by broad economic categories shown in this table differs from that used by INE, given that light passenger vehicles are included in consumer goods rather than in equipment goods. (b) A positive change corresponds to an appreciation of the index. For a detailed description of the methodology, see the article entitled "New effective exchange rate index for the Portuguese economy", by Gouveia, A. C. e Coimbra, C., in the December 2004 issue of the *Economic Bulletin* of Banco de Portugal.

Chart 6.2

HARMONISED INDEX OF CONSUMER PRICES: PORTUGAL AND EURO AREA

Year-on-year rate of change



Sources: Eurostat and *INE*.

7. BALANCE OF PAYMENTS

7.1. Current and Capital Account

In 2005 the net external borrowing requirements of the Portuguese economy, as measured by the combined current and capital account deficit, increased further, standing at 8.1 per cent of GDP (Table 7.1). There was thus a further deterioration of the external imbalance, after an adjustment in 2002 and 2003. Given that the level of investment as a percentage of GDP declined in 2005, the rise in borrowing requirements continued to be accounted for by a reduction in domestic saving, of both the private and public sector, reflecting the easy financing of the external deficit in international markets, against a background of low interest rates and absence of foreign exchange risk (Chart 7.1).

The worsening of the combined current and capital account resulted from a broadly based deterioration in its main components. The goods deficit increased to 11.4 per cent of GDP, reflecting in addition to a negative volume effect resulting from the maintenance of higher import than export growth, a loss in terms of trade, associated with an increase in the prices of imported fuels (Chart 7.2). According to Banco de Portugal estimates, based on data provided by *INE*, in 2005 import and export prices of goods increased by 2.1 and 4.0 per cent, respectively. However, excluding the energy component, there was a 0.9 p.p. gain in terms of trade, corresponding to changes in import and export prices of 1.3 and 0.4 per cent respectively. Excluding imports and exports of fuel, the goods balance stabilised by comparison with 2004.

The remaining components of the current and capital account recorded a deterioration. The services surplus as a percentage of GDP decreased in 2005. After a strong growth in 2004, associated with the hosting in Portugal of the European Football Championship, tourism receipts recorded more moderate growth in 2005 (1.1 per cent), while imports of tourism services expanded strongly (11.2 per cent). The income deficit as a percentage of GDP recorded a further deterioration in 2005, which was broadly based by type of investment. The trend decline in emigrants/immigrants remittances, which are the main component of current transfers, persisted in 2005. There was also a reduction in both current and capital transfers from the EU, of which the decline by around 20 per cent in transfers within the framework of the European Regional Development Fund is particularly noteworthy. As a consequence, the capital and current transfers accounts deteriorated further by comparison with 2004.

Table 7.1

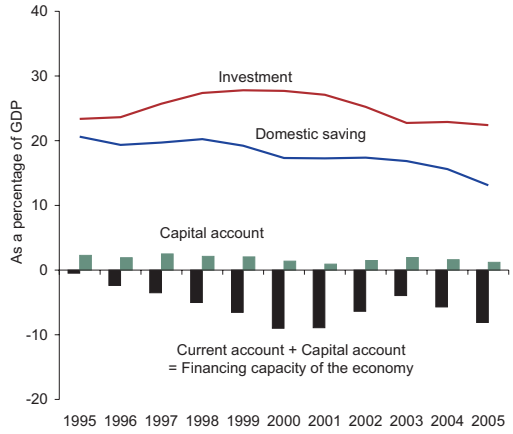
CURRENT AND CAPITAL ACCOUNT
As a percentage of GDP

	2000	2001	2002	2003	2004	2005
Current account	-10.4	-9.8	-7.8	-5.9	-7.3	-9.3
Goods	-12.9	-12.0	-10.4	-9.1	-10.5	-11.4
Services	1.8	2.2	2.5	2.6	2.9	2.8
of which:						
Travel and tourism	2.7	2.9	2.8	2.7	2.9	2.7
Income	-2.2	-2.9	-2.1	-1.5	-1.7	-2.1
Current transfers	3.0	2.9	2.2	2.1	2.0	1.5
of which:						
Emigrants/immigrants remittances	2.7	2.6	1.8	1.4	1.4	1.2
Capital account	1.4	0.9	1.5	1.9	1.6	1.2
Memo:						
Current account + capital account	-9.0	-8.9	-6.4	-4.0	-5.7	-8.1

Sources: *INE* and Banco de Portugal.

Chart 7.1

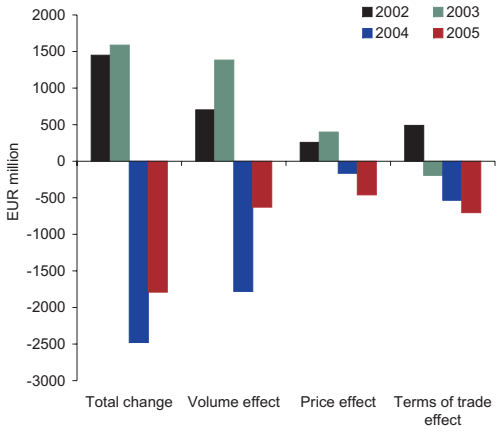
INVESTMENT, DOMESTIC SAVING AND FINANCING CAPACITY OF THE ECONOMY



Sources: *INE* and Banco de Portugal.

Chart 7.2

BREAKDOWN OF THE CHANGE IN THE GOODS ACCOUNT



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

7.2. Financial Account

The external financing of the resident sectors was chiefly made through the general government, whose borrowing from non-residents increased sizably. The use of external funds by the Portuguese banking groups was more moderate than in the previous years while direct financing of the non-financial private sector increased.

Thus, in the financial account, acquisitions of Portuguese government debt securities by non-residents were particularly high (nearly 7 per cent of GDP) (Table 7.2).[20] This amount, which exceeded the net borrowing requirements of the general government in 2005, seems to have benefited from the strategy put in place by the Portuguese Government in the course of the year to strengthen the medium and long-term component of general government financing.

The borrowing requirements of the non-financial private sector continued to be chiefly met by the resident banking system, which resorted to the issuance of debt acquired by non-residents. In 2005 the external financing of monetary financial institutions was made both through the interbank money market (chiefly in the case of non-domestic institutions carrying on their activity in Portugal), and through the issuance of medium and long-term securities by branches abroad of Portuguese banks.[21, 22] In the year as a whole, net issuance of bonds by branches abroad totalled around 4 per cent of GDP, being however lower than in 2004. Likewise, securitisation continued to play an important role in the raising of external funds by Portuguese banking groups.[23] In 2005 the amount of securities issued by securiti-

(20) The financial account records the channels (instruments and institutional sectors) through which the external financing of the economy is processed. The difference between the financial account (8.9 per cent of GDP) and the combined current and capital account corresponds to errors and omissions of a statistical nature.

(21) Like in the previous years, registrations in the financial account are affected by operations of a temporary nature between monetary financial institutions and monetary authorities, which albeit not implying a change in the overall financial account balance, affect the external position of these two sectors at the end of the year, making their analysis more difficult. Typically, these operations affect the other investment liabilities of the monetary authorities as well as the other investment assets of other monetary institutions. Table 7.2. records in brackets the amounts corresponding to the adjusted flows of these operations.

(22) These operations are reflected in the financial account of Portugal, chiefly in flows recorded as an increase in other investment liabilities of monetary financial institutions, corresponding to loans or deposits made by non-resident financial institutions with resident institutions.

(23) These operations are materialised in the issuance of securities by non-monetary financial institutions, which are typically underwritten by non-residents, corresponding in the financial account to increases in the portfolio investment liabilities of these institutions.

Table 7.2

FINANCIAL ACCOUNT
As a percentage of GDP

	January-December 2004			January-December 2005		
	Change liabilities	Change assets	Net change	Change liabilities	Change assets	Net change
Current and capital account			-5.7			-8.1
Financial account [a]	15.1	-8.7	6.4	16.2	-7.4	8.8
Direct investment	1.3	-4.5	-3.1	1.7	-0.6	1.1
Excluding Madeira and Santa Maria (Azores) off-shores	1.6	-2.3	-0.7	1.8	-1.1	0.7
Portfolio investment	8.1	-7.6	0.5	9.4	-10.5	-1.1
Financial derivatives	-2.4	2.3	-0.1	-2.8	2.7	-0.1
Other investment	8.0	0.0	8.0	7.8	0.1	7.9
Reserve assets	-	1.1	1.1	-	1.0	1.0
By institutional sector of resident investor:						
Monetary authorities [b]	4.1	1.2	5.3	2.8	-0.1	2.7
	(0.9)		(2.1)	(1.3)		(1.2)
Portfolio investment	-	0.7	0.7	-	-0.7	-0.7
Financial derivatives	0.0	0.0	0.0	0.0	0.0	0.0
Other investment	4.1	-0.5	3.6	2.8	-0.4	2.4
	(0.9)		(0.3)	(1.3)		(0.9)
Reserve assets	-	1.1	1.1	-	1.0	1.0
General government	4.1	0.3	4.5	5.9	0.3	6.2
Direct investment	-	0.0	0.0	-	0.0	0.0
Excluding Madeira and Santa Maria (Azores) off-shores	-	0.0	0.0	-	0.0	0.0
Portfolio investment	4.2	-0.1	4.1	6.8	-0.1	6.7
Financial derivatives	-0.3	0.3	0.0	-0.4	0.4	0.0
Other investment	0.3	0.1	0.4	-0.5	0.0	-0.5
Other monetary financial institutions [b]	-0.2	-2.8	-3.0	-0.3	-1.6	-1.8
		(0.5)	(0.2)		(0.0)	(-0.3)
Direct investment	0.1	-0.2	-0.1	0.0	-0.3	-0.3
Excluding Madeira and Santa Maria (Azores) off-shores	0.1	-0.2	-0.1	0.0	-0.3	-0.3
Portfolio investment	-0.8	-3.3	-4.1	-3.8	-2.2	-6.0
Financial derivatives	-1.4	1.4	0.0	-1.6	1.6	-0.1
Other investment	1.9	-0.7	1.2	5.2	-0.6	4.5
		(2.5)	(4.5)		(0.9)	(6.1)
Non-monetary financial institutions	3.5	-3.4	0.1	5.3	-6.2	-0.9
Direct investment	0.0	-0.1	-0.1	0.7	-0.3	0.5
Excluding Madeira and Santa Maria (Azores) off-shores	0.0	-0.1	-0.1	0.8	-0.3	0.5
Portfolio investment	3.7	-3.6	0.2	4.8	-6.3	-1.5
Financial derivatives	-0.5	0.5	0.0	-0.4	0.6	0.1
Other investment	0.2	-0.2	0.0	0.2	-0.2	0.0
Non-financial corporations and private individuals	3.6	-4.0	-0.5	2.4	0.2	2.5
Direct investment	1.3	-4.2	-2.9	1.0	-0.1	0.9
Excluding Madeira and Santa Maria (Azores) off-shores	1.6	-2.1	-0.5	1.1	-0.6	0.5
Portfolio investment	1.0	-1.3	-0.3	1.6	-1.2	0.4
Financial derivatives	-0.1	0.1	0.0	-0.3	0.1	-0.1
Other investment	1.4	1.4	2.8	0.1	1.3	1.4
Errors and omissions			-0.7			-0.7

Sources: *INE* and Banco de Portugal.
Notes: (a) A (+) sign means an increase in foreign liabilities or a decrease in foreign assets, i.e. a financial inflow. A (-) sign means a decrease in foreign liabilities or an increase in foreign assets, i.e. a financial outflow. (b) The figures in brackets in other investment of monetary authorities and of other monetary financial institutions are adjusted for temporary end-of-year operations between the two sectors (reversed in the first days of the subsequent year).

sation funds and companies stood close to 4 per cent of GDP, i.e. slightly higher than in 2004, around half of which was repurchased by resident banks.[24]

(24) Acquisitions by banks selling the claims (or by other resident banks typically belonging to the same banking group) of securities issued as a result of securitisation operations are recorded in the financial account as an increase in portfolio investment assets of other monetary financial institutions, as they correspond to the acquisition from non-resident institutions that have initially underwritten them.

In addition to the external financing directly intermediated by banks, there were also net direct inflows to non-financial corporations, as a result, on the one hand, of the acquisition by non-residents of debt securities issued by this sector and, on the other, of the use of deposits previously open with non-resident monetary financial institutions. With regard to household external assets, there were some shifts in terms of instruments, translated into a reduction of deposits and an increase in investment in both medium and long-term debt securities and in mutual funds.

With regard to portfolio investment, investment by non-monetary financial institutions was very high.[25] This chiefly reflects the increased demand for medium and long-term debt securities by insurance corporations and pension funds. This type of demand mirrors the search for diversification opportunities by these institutions, with a view to ensuring a better match between the duration of their portfolios and their liabilities (which typically have very long maturities). It should be noted that this behaviour has been observed internationally by this type of institutions, on the one hand, as a reflection of the higher sensitivity to interest rate developments of the discount rates applied to liabilities, following the adoption of the International Accounting Standards and, on the other, favoured by increasing investment opportunities due to the progressive integration of financial markets.

The amount outstanding of direct investment operations, excluding those associated with companies located in the Madeira and Azores off-shore centers, corresponded to a net inflow of around 0.7 per cent of GDP, accounting for a slight recovery of this type of financing compared with 2004.[26]

8. CONCLUSION

Although an accurate quantification is difficult to make, the reduced trend growth of labour productivity has played an important role in the Portuguese economic dynamics over the past few years. This development, besides contributing to the divergence from the average per capita income levels recorded in Europe, is the key determinant of the reduced growth of economic welfare in Portugal. In fact, productivity, i.e. the quantity and quality of goods and services produced in each hour worked is, in the long run, the main determinant of real wages and household consumption.

Developments in productivity are necessarily a complex phenomenon and their understanding involves a combination of several factors. In addition, given that productivity has a pro-cyclical nature, it is difficult to distinguish between trend and cyclical developments. Developments in economic activity in Portugal in the past few years have mirrored the dynamics of productivity, in a context of employment stagnation, although with large sectoral differences. In any case, it is important to analyse the factors that may have been associated with the low growth of aggregate productivity in the past few years. The latter seems to have resulted not only from the impact of major economic shocks – some common to the euro area and some specific to Portugal -, but also from the domestic propagation mechanism, in the context of the participation of the Portuguese economy in the euro area.

Among the external economic shocks that affected the Portuguese economy in the most recent years, the following should be mentioned: increased global economic integration – in particular, the dynamics associated with the integration of the new EU Member States in the mid-1990s and the increasing participation of the Asian developing economies in international trade – which changed the pattern of comparative advantages; the marked deceleration of the euro area economy after 2000 and the sub-

(25) In 2005 portfolio investment flows of other monetary financial institutions were still influenced by a rather significant reduction in liabilities (approximately 4 per cent of GDP), resulting from the fact that a branch of a non-resident bank located in the Madeira free trade zone displaced a large part of its activity to outside the Portuguese territory. This fact was also mirrored in a reduction of other investment assets of this sector.

(26) The exclusion of these operations is justified because they frequently involve huge amounts, which merely represent the use of these free trade zones for the carrying out by non-residents of investment in third countries and therefore they do not have relevant consequences for the Portuguese economy.

sequent weak economic recovery; and the oil price shock since 2003. Among the specific shocks that hit the Portuguese economy, the following should be highlighted: the permanent interest rate decline in the second half of the last decade, which implied an increase in private indebtedness levels, but also a subsequent gradual deceleration in consumption and investment, in a context in which the solvency conditions resulting from the intertemporal budget constraints of economic agents continue to be relevant; the significant rise in the tax burden; and, more recently, the increased uncertainty about the way in which the major economic imbalances will be corrected. The combination of these shocks, most of which are of a permanent nature, with several others of a more temporary nature, affected economic developments.

It should be noted, however, that these developments resulted not only from the type of shocks that hit the economy, but also from the economy's ability to adapt to them. The latter depends in particular on the functioning of product and labour markets, the quantity and quality of both physical and human capital and the existence of policies and institutions conducive to an efficient functioning of markets. In Portugal, distortions in the operation of product and labour markets, structural weaknesses in physical and human capital and in the institutional framework, and an unsustainable budgetary path, have negatively affected the performance of exports and investment. This scenario is also hampering the adjustment of the economy to the new environment resulting from increased global economic integration. These elements are particularly relevant at a time when the change in the pattern of comparative advantages, associated with the globalisation process, requires a significant reallocation of resources in the economy. In turn, the growth rates of private consumption have been higher than the GDP growth rates. This phenomenon is associated with the favourable financing conditions resulting from the participation in the euro area which improve the ability of households to smooth their consumption. However, in the absence of a pick-up in activity, these different dynamics are unsustainable in the long run, requiring an adjustment in consumption and an increase in the savings rate.

Against this background, the implementation of measures ensuring higher trend productivity growth is crucial. If, at the human capital level, potential policy measures will tend to produce visible effects only in the medium to long-term, at the institutional level, reforms aimed at the correction of the structural imbalance of public accounts and conducive to improvements in the functioning of markets, may have significant effects on productivity and investment over a shorter horizon. The consolidation of public accounts – if associated with lower public expenditure growth and the rationalisation of general government services – will tend to reduce uncertainty about the evolution of the tax burden. In turn, policies aimed at promoting mobility and effective competition – namely by making it easier for companies to enter or leave the market – and the reallocation of resources in the economy, will stimulate the growth of firms and of the more competitive sectors.

The cut-off date for the data included in this issue was 31 March 2006.

Box 1. The Impact of a Monetary Policy Shock in the Euro Area

There is a large amount of literature trying to identify, on the basis of different methodologies, the response of the macroeconomic variables to a change in the interest rate. The answer to this question is not straightforward, as central bank changes in interest rates reflect the response to macroeconomic developments, which in turn depend on the past and current level of interest rates, as well as on expectations regarding their future trend. Thus, the question arises of how to calculate the effect on macroeconomic variables of a given change in interest rates, isolating it from the effects resulting from other variables and from past interest rate changes.

The literature has tried to overcome this difficulty by trying to identify the response of a set of macroeconomic variables to an unexpected change in the monetary policy instrument, usually called a monetary policy shock.[1] This methodology enables the measurement with higher accuracy of the effect of a change in official interest rates, as it makes it possible to take into consideration the endogeneity of the above-mentioned variables.

This box estimates the impact of a monetary policy shock in the euro area on the basis of structural Vector Auto-Regressive (VAR) models, as proposed by Christiano, Eichenbaum and Evans (1999). According to this methodology, monetary policy shocks are estimated as deviations of the short-term interest rate from a monetary policy rule assumed to be credible and perfectly known to economic agents. This rule formalises the systematic response of the monetary authority to economic conditions. A monetary policy shock corresponds to the part of the change in the monetary policy instrument that does not result from this systematic response. It should be noted that such shocks are purely exogenous, i.e. they are not correlated with the set of information made available to the central bank, which is proxied by a limited number of variables summarising the relevant information for monetary policy decision-making.

The estimation of the structural VAR model follows the specification used in a recent study by Altig et al. (2004). The VAR model contains the following euro area variables: labour productivity, hours worked per capita, inflation (based on the GDP deflator), consumption-to-GDP ratio (in real terms), investment-to-GDP ratio (in real terms), productive capacity utilisation, labour productivity-to-real wages ratio, short-term (3-month) interest rate and velocity of circulation of money (using the monetary aggregate M3).[2] It is assumed that economic activity indicators, wages and prices do not react contemporaneously to the monetary policy shock; conversely, the velocity of money reacts at the time of the shock. The estimation period runs from the first quarter of 1970 to the third quarter of 2004 and four lags were used for eaxch variable.

Chart 1 illustrates the impact of an unexpected rise in short-term interest rates (standardised at 25 b.p.) on the main macroeconomic variables of the euro area in the first 20 quarters after the shock. The solid lines represent point estimates and the dashed lines represent the 95 per cent confidence intervals around these point estimates.[3] The analysis of Chart 1 shows that the main consequences of the monetary policy shock are the following:

- *An interest rate increase has a contractionary and gradual impact on GDP, consumption, investment, capacity utilisation and hours worked. According to the point estimates, the maximum downward effect on euro area GDP of a 25 b.p. increase in interest rates is 18 b.p. This effect occurs around one year and a half to two years after the shock. It should be noted that, as expected, the response of investment is stronger than the response of consumption.*
- *The response of inflation to an unexpected rise in the interest rate is characterised by a slight increase in the period of the shock, followed by a gradual decline, taking around two years to reach the maximum effect. This initial rise, known in the literature as "price puzzle", is frequently obtained in studies using structural VAR models.[4]*

(1) *Such "surprises" are inevitable, as there is always a degree of uncertainty, however small it may be, in any monetary policy decision.*

(2) *The variables included in the VAR model were previously stationarised through the removal of linear trends or, where justified, of broken linear trends. In the case of the velocity of circulation of money a quadratic trend was removed.*

(3) *The response of the macroeconomic variables is measured as a percentage, except in the case of the interest rate, which is measured in basis points, and of inflation and the money growth rate, which are measured in percentage points.*

(4) *There are various explanations in literature. One is that the "price puzzle" results from the fact that the central bank reacts to leading indicators of inflationary tensions (for instance, to the prices of raw materials). As the monetary policy effects are lagged, inflation increases at a first stage, declining only in the medium term, as the monetary policy effects are felt. Another explanation is that the rise in interest rates increases corporate costs, being passed through to consumer prices in the very short term.*

- *Finally, the growth rate of money declines and the velocity of circulation increases in response to a monetary policy shock. It should be noted that the fact that only the velocity of circulation of money and the growth of the monetary aggregate react at the time of the shock results from the assumption made in its identification.*

In sum, a monetary policy shock in the euro area has a non-negligible contractionary effect on economic activity, although it only produces significant effects one year after the shock. As expected, in the case of inflation, the downward effect of the monetary policy shock occurs only in the medium term. These conclusions are broadly consistent with those presented in the literature (see for instance, Peersman and Smets, 2003, and Mojon and Peersman, 2003).

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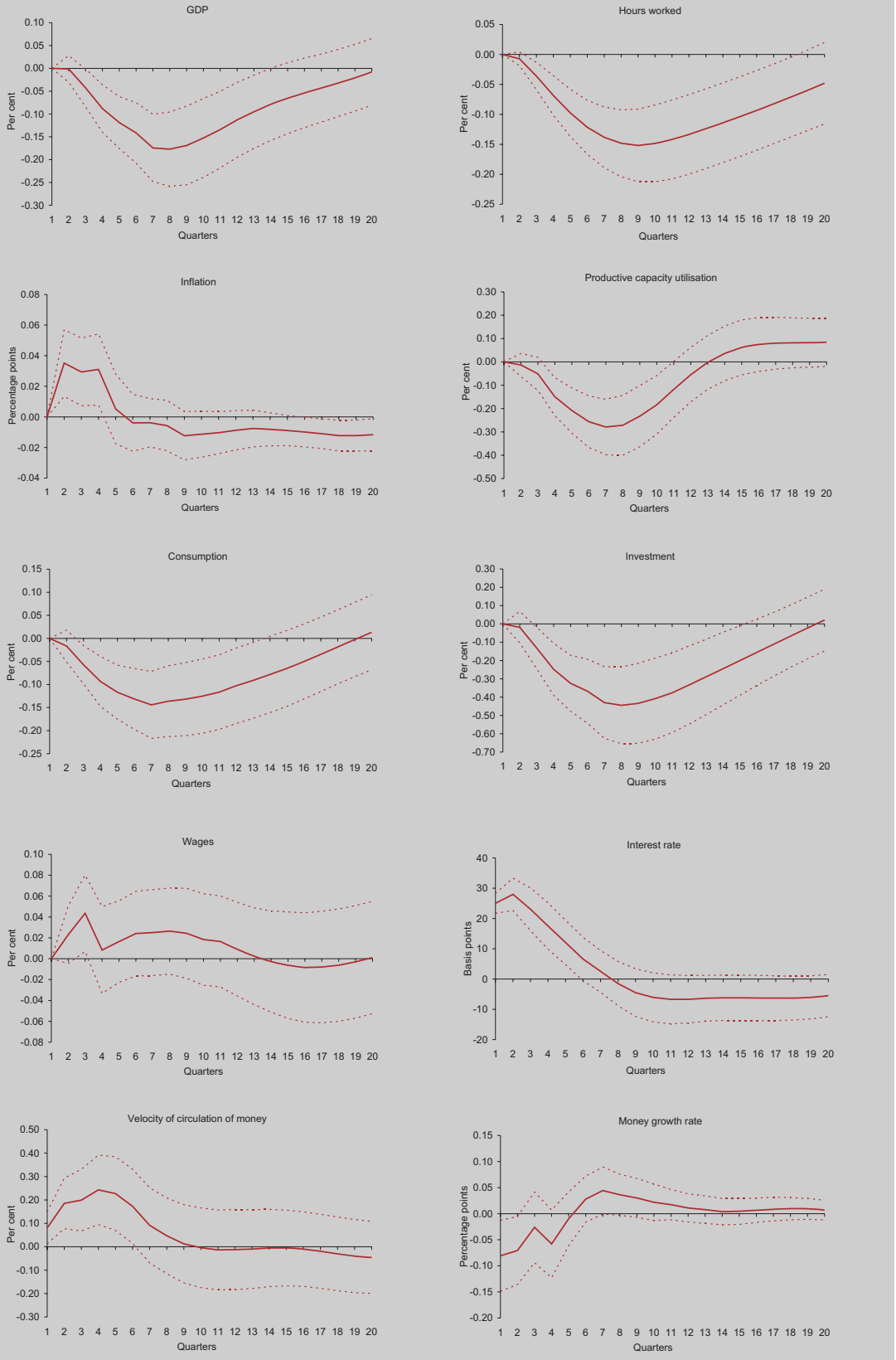
Chart 1

IMPACT ON THE EURO AREA OF A MONETARY POLICY SHOCK OF 25 BASIS POINTS



Box 2. Fiscal Prospects

The update of the Stability and Growth Programme (SGP) submitted to the European Commission in June 2005, following the reassessment of fiscal prospects,[1] laid down a fiscal consolidation strategy aimed at reducing the general government deficit in Portugal to below 3 per cent of GDP in 2008.[2]

The SGP was updated again in December 2005, in accordance with the schedule established at EU level. The targets for the fiscal balance defined in June 2005 remained unchanged (taking into account most of the change in the GDP level brought about by the review of National Accounts sources and methods), despite the assumption of a less favourable macroeconomic scenario. Notwithstanding the revision of the GDP level, according to the Programme, the public debt ratio is now expected to develop less favourably, reaching a peak of 69.3 per cent in 2007.[3] Table 1 shows the main fiscal targets set out in the SGP.

Table 1

MAIN FISCAL INDICATORS IN THE DECEMBER 2005 UPDATE OF THE STABILITY AND GROWTH PROGRAMME

As a percentage of GDP

	2005	2006	2007	2008	2009
Overall balance	-6.0	-4.6	-3.7	-2.6	-1.5
Overall balance adjusted for the cycle	-4.8	-3.3	-2.5	-1.8	-1.4
Change in the primary balance adjusted for the cycle		1.6	1.0	0.7	0.4
Public debt	65.5	68.7	69.3	68.4	66.2

Source: Stability and Growth Programme 2005-2009, December 2005, available at www.portugal.gov.pt

The 2006 State Budget is a cornerstone for the implementation of the fiscal consolidation strategy, as it refers to the period of higher adjustment effort. In fact, it is assumed that the deficit will decline by 1.4 p.p. of GDP (Table 2). Taking into consideration cyclically adjusted figures, the correction foreseen amounts to 1.6 p.p. of GDP. This figure is based on a wide array of tax policy measures, aimed at increasing revenue, and also reflects several expenditure cuts and overhaul measures already approved or under preparation. It should be noted that in 2006 most of the consolidation effort will still be concentrated on the revenue side, which is expected to make up around two thirds of the adjustment foreseen.

In 2006 the growth of revenue from both taxes on income and wealth and on production and imports is likely to exceed the one of the respective bases, as a consequence of measures included in the 2006 Budget and approved in previous years. Indeed, despite the substantial positive effect of enhanced tax collection procedures on revenue of the main taxes in 2004 and 2005, fiscal forecasts for 2006 do not seem to incorporate additional gains in tax collection. These assumptions are surrounded by some degree of uncertainty, as it is not possible to anticipate whether in 2006 a more effective collection of taxes due during the year will compensate a possible decline in the receipts from tax arrears.

With respect to tax policy measures with an impact on the budget outturn in 2006, regarding the personal income tax (IRS) it is worth mentioning the elimination of tax benefits in the 2005 Budget, the increase in the taxation of pension income and the creation of a new tax bracket with a marginal rate of 42 per cent, which should be only partially offset by the additional impact of the reduction of tax rates in the 2005 Budget (which the update of the withholding tables in 2005 reflected only partially). Turning to the taxes on production and imports, special reference

(1) See "Relatório da Comissão para a Análise da Situação Orçamental" (Report of the Commission for the Analysis of the Fiscal Position), available at www .portugal.gov.pt.

(2) See Box 2 entitled "Portuguese fiscal policy in the context of the Stability and Growth Pact", in the Autumn 2005 issue of the Economic Bulletin of Banco de Portugal.

(3) The GDP used in the December 2004 SGP update did not yet take into consideration the new treatment given to Financial Intermediation Services Indirectly Measured (FISIM).

(4) The State transfer to CGA by itself does not alter the general government deficit figure, as it is also recorded on the expenditure side, under compensation of employees.

Table 2

GENERAL GOVERNMENT ACCOUNTS INCLUDED IN THE 2006 STATE BUDGET [a]

National accounts

	As a percentage of GDP [b]		Growth rate	*Memo*:
	2005	2006	2006/2005	2005 outturn [c] (as a percentage of GDP [b])
Total revenue	41.4	42.3	5.7	41.9
Current revenue	39.9	40.9	6.0	40.5
Taxes on income and wealth	8.7	8.9	5.8	8.7
Taxes on production and imports	15.2	15.8	7.7	15.3
Social contributions	12.3	12.2	2.3	12.6
Other current revenue	3.7	4.0	11.5	3.9
Capital revenue	1.5	1.4	-0.5	1.4
Total expenditure	47.4	47.0	2.4	48.1
Current expenditure	43.4	42.9	2.3	43.6
Intermediate consumption	3.9	3.7	-1.8	3.9
Compensation of employees	14.6	14.1	0.2	14.7
Social payments	17.8	18.2	5.6	18.2
Interest	2.8	2.9	6.3	2.8
Subsidies	1.6	1.5	-7.2	1.6
Other current expenditure	2.5	2.5	0.3	2.5
Capital expenditure	4.0	4.0	3.5	4.5
Investment	2.9	2.9	4.9	3.0
Other capital expenditure	1.2	1.1	0.1	1.5
Overall balance	-6.0	-4.6		-6.2

Sources: *Ministério das Finanças* and Banco de Portugal.
Notes: (a) Totals may not add up due to rounding to one decimal place. (b) As a percentage of the 2000-based GDP considered in the 2006 State Budget. (c) Based on the 1995 National Accounts, except for the time adjustment in the recording of revenue of some taxes on production and imports, so as to make them comparable with the accounts included in the 2006 State Budget Report.

should be made to the additional impact of the rise in the standard VAT rate from 19 to 21 per cent in July 2005 and the increase in the rates of the tax on oil products and in the unit component of the tax on tobacco. Overall, in 2006 the impact on revenue of the tax policy measures included in the initial 2005 Budget, approved by mid-2005 and foreseen in the 2006 Budget will amount to 0.1, 0.3 and 0.3 p.p. of GDP respectively.

Contrary to taxes, social contributions are expected to record a small growth rate owing to the decline in the State transfer to the Portuguese civil servants' pension scheme (Caixa Geral de Aposentações - CGA [4]), associated with the earmarking of 50 per cent of the additional revenue resulting from the rise in the standard VAT rate to the financing of CGA expenditure, and to the marked decrease assumed for imputed contributions (which are a counterpart to social benefits given by general government to its employees). Still regarding revenue, following a sharp fall in 2005, dividends received by the State are expected to recover to a level closer to the average of the past few years.

As referred to above, expenditure outturn in 2006 will still be affected to some extent by the measures approved in 2005 and by those envisaged in the 2006 Budget. Due to their relevance, the following should be mentioned: (i) freeze of automatic wage progression in civil servants' careers until the end of 2006; (ii) reduction in the reimbursement of medicine expenditures; (iii) change in the health subsystems covering specific categories of general government employees; (iv) freezing at the 2005 level of the government transfers to municipalities, combined with the enforcement of tighter rules regarding local government indebtedness. In addition, there is still some uncertainty about the specification of some of the measures already announced, namely with regard to the reform of the central government and the revision of the civil servants wage system, which are expected to have a more significant impact in 2007 and afterwards.

Turning to the main expenditure components, several aspects are worth highlighting. Firstly, the virtual stabilisation of the compensation of employees-to-GDP ratio. Despite the freeze of automatic wage progression and the

moderate wage scale update (1.5 per cent in 2006), the fulfilment of that objective depends on the strict implementation of the rule to hire only one employee for every two leaving public administration, which may translate in 2006 into a decline in the number of civil servants of around 1 per cent. Secondly, given the current information on the budget outturn in 2005, social payments would remain unchanged as a ratio of GDP in 2006, which does not seem feasible given the developments in several components of this item in the past few years, even taking into account a possible decline in expense related to imputed contributions and a deceleration in social transfers in kind. In fact, the change in the civil servants' retirement rules is not likely to have a significant impact on 2006 expenditure, due to the large number of retirement requests in 2005, and the general system pensions are expected to to grow again at a very high rate. Finally, other capital expenditure is likely to stay significantly above the budget forecast, given the significant upward revision of the figure for 2005.

In its assessment of the SGP, the European Commission and the European Council considered that the medium-term budgetary objective (-0.5 per cent of GDP) and the adjustment path to achieve it are consistent with the guidelines of the Stability and Growth Pact. However, they stressed that the measures announced for 2006, in particular the reform of central government, should be implemented in full and significant additional measures should be adopted in 2007 and in the following years. The latter will be all the more necessary as the growth of the economy may remain below the quite optimistic assumptions of the SGP for 2006 and 2007 (above the Autumn 2005 projections of the European Commission); and for 2008 and 2009 (also above potential growth estimated by the European Commission). Another important aspect of the assessment made by the European Commission and the European Council regarding the SGP of Portugal is related to the sustainability of public finances, since, according to the latest projections, the country will face in the next decades a rise in public expenditure due to population ageing, which will be one of the highest in the EU. Thus, the containment of public expenditure is a challenge that goes beyond the correction of the current fiscal position, requiring reforms in addition to the measures introduced in the recent period.

ARTICLES

ASSESSMENT OF THE CHANGES IN THE PORTUGUESE UNEMPLOYMENT INSURANCE SYSTEM *

Ana Pereira **

1. INTRODUCTION

The unemployment insurance system is one of the public policies with major influence in the labour market, in the sense that conditions the workers' reservation wage and their search behaviour for a new job.

Within this context, there are several labour economics theories that attempt to explain the existence of a significant relationship between decisions by individuals on job take-up and how generous the unemployment insurance is. The Job Search Model[1] is one of the theoretical models that try to explain individual job decisions through the reservation wage concept, incorporating the fact that unemployment benefits affect the opportunity cost of workers. This theoretical approach shows that the existence of income during the unemployment spell reduces the search intensity for a new job and increases the minimum wage at which individuals are willing to work. This means that unemployment spells are longer for those on benefit.

The aim of the present study is to investigate how changes in the Portuguese unemployment insurance scheme affected the behaviour of the unemployed on benefit, to this end an analysis was undertaken of two legislative reforms to the unemployment compensation system.

The first reform was enacted on 1 July 1999 and made unemployment benefits more generous, both in terms of value and in terms of maximum entitlement period. We intend to assess the effect of this reform on the relationship between longer maximum entitlement periods and the length of insured unemployment spells. The economy and labour market in 1999, were suitable for such an assessment because that period was characterized by strong economic growth and a decreasing unemployment rate. The later reached historical low values, although long-term unemployment was still high when compared with others European countries. This implies that the impact of the legislative change on the duration of insured unemployment was probably not significantly contaminated by changes in the economy.

A more informative approach, according to Lalive, Van Ours and Zweimueller (2004), consists in measuring the joint effect of simultaneous changes in the two main unemployment insurance parameters – replacement rate and maximum entitlement period – and separate this into two effects as if each change was carried out individually. There were, however, problems on two sides: the quality of information meant that this approach was not viable, and there was no change in the replacement rate significant enough to justify in-depth analysis.

The second reform was implemented in 2003 and introduced a set of temporary measures, operating in tandem with existing legislation. This package was known as the Employment and Social Protection

* The views expressed in this article are those of the author and do not necessarily reflect those of Banco de Portugal.
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(1) For a description of the model see Mortensen (1970).

Programme (ESPP). One of the salient features of this programme was the lowering of the legal age giving the right to a retirement pension. It was extremely likely that this would influence the behaviour of insured unemployed with longer contribution periods. To check this relationship we assess possible changes in the pattern of workers aged 45 years old or over entering the unemployment benefit scheme.

The study is organized as follows. Section 2 briefly describes the unemployment insurance system and the 1999 and 2003 legislative changes. In section 3 we characterize the data set used. In section 4 we assess how the 1999 legislative change affected the duration of insured unemployment spells. Section 5 provides an assessment of individual reaction to the possibility of lowering the retirement age. Section 6 sets out the conclusions.

2. A SHORT SUMMARY OF THE UNEMPLOYMENT INSURANCE SYSTEM

In Portugal, the unemployment insurance system is characterised by the payment of a fixed amount during a limited period of time. This is dependent, in the most common form, on the claimant's previous income. These payments have two objectives: to encourage the creation of self employment and to compensate the individuals for the lack of income due to unemployment.

Act 79-A/89 of 13 March 1989 regulated the eligibility to unemployment benefits until 1 July 1999. On this date, a new act came onto the statute books. The 1989 legal framework stated that income support due to unemployment was available to all individuals in involuntary unemployment with capacity and availability to work. The income support was granted through two types of monthly payments, due from the claim date: unemployment benefit (UB) and unemployment social benefit. The entitlement to unemployment payments was for anyone unemployed who fulfilled certain conditions – previous contributions requirement and means test condition. They also had to be registered in their local area employment office.

The UB was geared to individuals with longer and more regular contributions. With this type of unemployment insurance, an unemployed individual could draw a monthly payment equal to 65% of their last income, provided that the individual had paid social security contributions at least during 18 months within the last 2 years before unemployment. The maximum entitlement period depended on age at unemployment and the upper limit was 30 months (table 1).

The unemployment social benefit was conceived to support survival level unemployed individuals. Therefore it was dependent on the income level of all family members. The eligibility to this benefit required a minimum number of contributions to social security of at least 180 days within 1 year before unemployment and a means test condition that the family income per capita could not be higher than 80% of national minimum wage. This type of unemployment insurance was subdivided into initial unemployment social benefit (USB), for all individuals who did not qualify for UB, and unemployment social benefit paid following unemployment benefit (USB-UB), for those whose maximum entitlement period to UB had exhausted. As in the UB case, the maximum entitlement period depended on unemployed age at claim date (table 1), with the detail that USB-UB recipients were granted with half the maximum entitlement periods set for UB or USB recipients. There was not one global replacement rate, for payments, as there was for UB. Here, it was contingent on the number of family members.

In 1999, the 1989 legal framework was changed. The aiming was to follow macroeconomic decisions to achieve lower unemployment rates and to adjust social protection in unemployment to the labour market profile at the time. One of the most significant amendments, set out in Act 119/99 of 14 April 1999 and enacted on 1 July 1999, was the change in the maximum entitlement period, specifically for

Table 1

CHANGE IN THE MAXIMUM ENTITLEMENT PERIODS

Group	Age Group [(a)]	Maximum Entitlement Period (Act 79-A/89)	Maximum Entitlement Period (Act 119/99)	Change
1	< 25	10 months	12 months	+ 2 months
2	[25,30[	12 months	12 months	no change
3	[30,35[	15 months	18 months	+ 3 months
4	[35,40[	18 months	18 months	no change
5	[40,45[	21 months	24 months	+ 3 months
6	[45,50[	24 months	30 months + 2 months [(b)]	+ 6 a 14 months
7	[50,55[	27 months	30 months + 2 months [(b)]	+ 3 a 11 months
8	≥ 55	30 months	30 months + 2 months [(b)]	+ 0 a 8 months

Notes: (a) Age at insured unemployment date. Age group built according to the maximum entitlement periods division establish by Act 79-A/89. (b) 2 months for each group of 5 years with contributions within the last 20 years prior to the unemployment.

those in higher age groups. In most age groups the maximum entitlement periods to unemployment insurance increased (table 1). The lower limit of the maximum entitlement period changed from 10 months to 12 months and the upper limit to 30 months. The later could be increased by periods of 2 months for unemployed individuals aged 45 or over at unemployment date. These changes were applied to all three types of benefits, with the proviso that the maximum entitlement period for USB-UB is half of the periods established.

Another significant change for the study that we intend to carry out was the lowering of the entitlement age for a retirement pension. The pensionable age, as in the previous act, was 60 years old for all recipients aged 55 years old or over at unemployment. This implicitly required a period of at least 30 months of benefits. The amendment made by the 1999 Act, was that pensionable age could also be taken as 55 years old for the recipients aged 50 years old or over at unemployment if they had at least 20 years of contributions. This measure was mainly for everyone in long-term unemployment.

It should also be noted that this study did not consider the extensions made in 1996 to the maximum entitlement period for USB recipients aged between 45 and 54 years at claim date.

In 2003, the Government introduced a set of complementary measures to the legal framework of social protection in unemployment. These measures, as outlined above, are the ESPP, Act 84/2003. The change in pensionable age is the only measure whose impact we can assess by comparing it with the situation set out in the previous legislation. According to this programme, the pensionable age is brought forward to 58 for all insured unemployed aged 55 or over at unemployment date, had 30 years of social contributions and had completed a 30 months period of UB or USB.

3. DATA

This study uses information on unemployment insurance recipients from the administrative records of the National Social Security Institute. The data base, built by the *Instituto de Informática e Estatística da Segurança Social (IIESS)*, is organized in periods of six months and includes information on the transfers of unemployment payments carried out between 1998 and 2004. This information is inherent

to the benefit, and includes monthly amount, claim date, number of entitlement days already fulfilled or type of unemployment insurance, and there is also information on some individual characteristics of the recipients, such as age and gender.

The use of administrative data is common practice in empirical studies similar to the one we intend to carry out. There are two major advantages of this data base in comparison with survey data: one is the fact that there is information on all insured unemployed between 1998 and 2004, useful for finding both the flow and the stock of insured unemployed; and the second is that it allows us to overcome problems such as non-response or length bias that can cause skewed results.

For the present analysis it is sufficient the information for each unemployment insurance claim gathered in the first and last semester of observation. We therefore built a parallel data base where each line contains only the relevant information on each unemployment insurance claim. The results, displayed below, were obtained from this new data base, containing information on 1 274 612 claims for unemployment insurance.

In any analysis, the description of some variables through empirical numbers is an important exercise because it allows for early detection of possible structures and patterns in the information. Thus, table 2 presents elementary statistics for two variables – age and number of entitlement days already fulfilled – by gender and by type of unemployment insurance. According to these statistics, the unemployed on benefit are on average 37 years old at claim date and remain, on average, out of work and receiving unemployment insurance over a period slightly longer than one year and two months. By gender, women claim more in unemployment insurance. This reflects the female participation rate increase and the higher difficulties of this group in entering the labour market, specifically in terms of job stability.

The proportion of UB claims in the data base is approximately 66%, though this shows even so the existence of a substantial number of USB claims. The less restrictive access to USB in terms of previous contribution requirements and the possibility of using this type of unemployment insurance repeatedly to face frequent unemployment periods in between jobs of short duration are factors that may explain this result. In turn, due to the fact that UB recipients may extend their benefits for an additional time period, the average insured unemployment duration of the UB recipients is rather longer than the average insured unemployment duration of the USB recipients (table 2).

Chart 1 presents the annual inflow to insured unemployment between 1998 and 2004 and the evolution of the quarterly unemployment rate, using figures from National Statistics Institute (*INE*). Between 1998 and 2000, the number of new claims for unemployment insurance moves downwards in spite of

Table 2

DESCRIPTIVE STATISTICS [(a)]

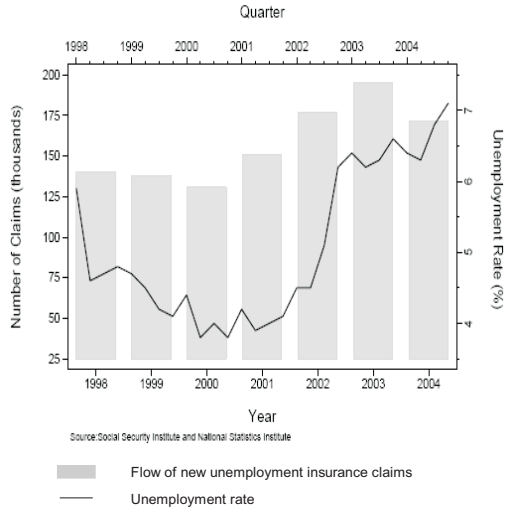
					Unemployment Benefit			Unemployment Social Benefit		
Variable	**Statistical**	**Men**	**Women**	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**	**Total**
Age	Mean	39,24	35,42	37,06	41,17	36,37	38,59	34,39	33,83	34,03
	Standard Deviation	13,24	11,56	12,46	13,02	11,41	12,42	12,51	11,63	11,97
Duration	Mean	444,56	413,43	426,82	493,39	461,16	476,07	322,55	333,32	329,38
	Standard Deviation	357,58	320,82	337,48	380,59	349,84	364,73	254,16	244,99	248,44
	Number of observations	548 219	726 393	1 274 612	391 512	455 189	846 701	156 707	271 204	427 911

Note: (a) Own calculations based on information provided by the *Instituto de Informática e Estatística da Segurança Social (IIESS)*.

the fact that the social protection system in unemployment became more generous in 1999. This falling of the inflow to insured unemployment may be the reflection of improvements in the aggregate labour market conditions that characterized the year of 1999[2]. However, the behaviour of the unemployed in general does not necessarily dovetail with the behaviour of the insured unemployed, as pointed out in Katz and Meyer's (1988) analysis for the USA. Even so, it is clear that the behaviour of the new insured unemployed flow reveals a very close connection to labour market developments during the period 1998-2004 (chart 1).

Chart 1

ANNUAL FLOW OF NEW UNEMPLOYMENT INSURANCE CLAIMS AND QUARTERLY UNEMPLOYMENT RATE BETWEEN 1998 AND 2004



4. ASSESSMENT OF THE IMPACT OF THE 1999 LEGISLATIVE REFORM

The empirical evidence of this section is presented within the context of the 1999 legislative reform and the aim is to assess the effect of longer maximum benefit entitlement periods on the length of insured unemployment spells. For that purpose, in this first part of the empirical work the selected sample contains all the UB or USB claims put in between 1 January 1998 and 31 October 2002, to a total of 702 434.

In this case, the problem approach follows the methodology used by Ours and Vodopivec (2005) in "How changes in benefits entitlement affect the duration of unemployment?". In a first phase therefore we use the Differences-in-Differences method, which consists of comparing the changes in average insured unemployment duration between control groups and treatment groups.

The division of the maximum entitlement periods in terms of age (table 1) allows us to assign the sample recipients to eight distinct age groups. This fact, added to the heterogeneous changes in maximum entitlement periods means that we can establish two control groups[3] and six treatment groups[4]. To

(2) See Banco de Portugal *Annual Report*.
(3) Age groups for which there was no change in the maximum entitlement period.
(4) Age groups for which there was a change in the maximum entitlement period.

take advantage of the existence of two control groups, group 2 and group 4 (table 1), we established that the first group would be compared to control group 2, due to the closeness between age classes, and the remaining groups would be compared to control group 4. Furthermore, since the legislative reform of the unemployment insurance system only applies to unemployment spells starting after 1 July 1999[5], we have in the selected period a group of individuals that do not benefit from the new conditions, which we will name group "before the change", and a group of individuals for whom the new law is applicable and which we will name group "after the change".

Tables 3 and 4 exhibit average insured unemployment duration by age group for both types of benefits: UB and USB. In column (7) there will be found the change in average duration of insured unemployment spells, showing that average permanence in insured unemployment increases in all treatment groups, with the exception of group 8 and group 3 of UB recipients. The changes in average duration of insured unemployment spells for control groups can be seen as the result of changes in aggregate labour market conditions, because the maximum entitlement periods inherent to those groups remain unchanged after the introduction of a new unemployment insurance system. In the light of this, the change in average insured unemployment duration of individuals eligible for UB aged between 25 and 29 years old suggests a significant improvement in aggregate labour market conditions over the first year of insured unemployment, while the results of control group 4 associated to USB recipients exhibit a small deterioration in aggregate labour market conditions, and this will impact on the other treatment groups. The remaining changes in average insured unemployment duration associated to control groups are not statistically different from zero.

In the last column of both tables the "diff-in-diff" estimate is computed assessing the difference between the values in column (7) for the relevant groups. Working on the assumption that changes in aggregate labour market conditions are similar for all age groups, we can infer that the last change stems from the impact of a more generous unemployment insurance system on the average insured unemployment period of recipients. On the whole, the average duration of insured unemployment spells increases in all age groups. The only statistically significant exception occurs in the behaviour of the duration of insured unemployment spells for individuals aged 55 years old or over. For these recipients, the legislative reform led to a significant reduction in the average duration of the insured unemployment period. This result does not coincide with what might have been expected, in the sense that age tends to restrict reinsertion in the labour market. Nonetheless, it is important to remember that the legislative reform in question, included not only changes to the maximum benefit entitlement periods but also set out the possibility of bring forward retirement age to 58. This last measure affects the group in analysis and may have led the recipients to stop their benefits earlier. We cannot, however, check the truthfulness of this statement because we have no information on what happened to recipients after leaving insured unemployment.

In the set of insured unemployment spells linked to UB the most significant effect of the legislative reform can be seen in two distinct age groups. Recipients aged less than 25 and those aged between 50 and 54 remain, on average, 2 more weeks in insured unemployment than in the previous situation, characterized by less generous benefit entitlement system. In turn, among USB recipients it is the younger individuals aged no more than 34 whose average spell in insured unemployment is significantly longer. In this group the increase in average insured unemployment duration is almost 18 days.

In short, the breakdown of the results by type of unemployment insurance shows different behaviour patterns among UB and USB recipients. The empirical evidence points to the fact that a new unemployment insurance system had a greater effect on the average insured unemployment duration of USB recipients than on the average duration of UB recipients, despite possible seasonal effects asso-

(5) When Act 119/99 came into force.

Table 3

AVERAGE INSURED UNEMPLOYMENT DURATION FOR UNEMPLOYMENT BENEFIT SPELLS [(a), (b)]

	Age Group	Type		Before 1 July 1999	After 1 July 1999	Difference (After – Before)	Diff-in-Diff
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group 1	< 25	Treatment	Average Duration	217,6	220,6	3	13,5
			(Standard Deviation)	(0,78)	(0,53)	(0,94)	(1,37)
Group 2	[25;30[	Control	Average Duration	266,2	255,7	-10,5	-
			(Standard Deviation)	(0,88)	(0,54)	(1,03)	-
Grupo 3	[30;35[	Treatment	Average Duration	332	327,4	-4,6	-2,8
			(Standard Deviation)	(1,2)	(0,74)	(1,41)	(2,35)
Group 4	[35;40[	Control	Average Duration	396,1	394,3	-1,8	-
			(Standard Deviation)	(1,59)	(1)	(1,88)	-
Group 5	[40;45[	Treatment	Average Duration	463,5	466,1	2,6	4,4
			(Standard Deviation)	(2,02)	(1,28)	(2,39)	(3,04)
Group 6	[45;50[	Treatment	Average Duration	547,9	549,7	1,8	3,6
			(Standard Deviation)	(2,46)	(1,59)	(2,93)	(3,48)
Group 7	[50;55[	Treatment	Average Duration	658,4	669,6	11,2	13
			(Standard Deviation)	(2,77)	(1,63)	(3,21)	(3,72)
Group 8	≥ 55	Treatment	Average Duration	804,3	787	-17,3	-15,5
			(Standard Deviation)	(1,62)	(1,1)	(1,96)	(2,72)

Notes: (a) Own calculations based on information provided by the *Instituto de Informática e Estatística da Segurança Social (IIESS)*. (b) Length counted in days.

Table 4

AVERAGE INSURED UNEMPLOYMENT DURATION FOR UNEMPLOYMENT SOCIAL BENEFIT SPELLS [(a), (b)]

	Age Group	Type		Before 1 July 1999	After 1 July 1999	Difference (After – Before)	Diff-in-Diff
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group 1	< 25	Treatment	Average Duration	188,4	205,2	16,8	17,4
			(Standard Deviation)	(0,56)	(0,44)	(0,71)	(1,32)
Group 2	[25;30[	Control	Average Duration	233,5	232,9	-0,6	-
			(Standard Deviation)	(0,91)	(0,62)	(1,11)	-
Grupo 3	[30;35[	Treatment	Average Duration	276,5	299,6	23,1	17,5
			(Standard Deviation)	(1,3)	(0,99)	(1,63)	(2,88)
Group 4	[35;40[	Control	Average Duration	346	351,6	5,6	-
			(Standard Deviation)	(1,96)	(1,35)	(2,38)	-
Group 5	[40;45[	Treatment	Average Duration	384,7	393,8	9,1	3,5
			(Standard Deviation)	(2,66)	(1,77)	(3,2)	(3,99)
Group 8	≥ 55	Treatment	Average Duration	668	630,2	-37,8	-43,4
			(Standard Deviation)	(3,78)	(2,72)	(4,66)	(5,23)

Notes: (a) Own calculations based on information provided by the *Instituto de Informática e Estatística da Segurança Social (IIESS)*. (b) Length counted sin days.

ciated to USB claims. The UB recipients, after exhausting the entitlement period, could extend their unemployment insurance payments for an additional period. This fact may justify the smaller impact of the 1999 legislative reform on this group, in the sense that the observed results suggest that the additional time for unemployment insurance is incorporated in these individuals' working decisions from the start.

The findings for recipients aged 55 or over show a bigger fall in the average insured unemployment period in USB recipients than in the UB recipients. Assuming that this behaviour results from the possibility of claiming retirement pension earlier, this fact is surprising since the general idea is that unemployed individuals entitled to USB find it more difficult to access retirement pension earlier than those entitled to UB, particularly because they have made fewer and more irregular contributions.

4.1. Duration Analysis

Subsequently, in order to reach a better understanding of the effects of the 1999 legislative reform, we completed the non parametric assessment carried out in the previous section, with an analysis on the durations of insured unemployment spells using an approach based on the Job Search model.

The main variable in the information collected is the length of the period (counted in days) when the recipient received unemployment insurance. This allowed us to estimate the survival function for each of the eight age groups in the period before and after the legislative reform. The survival function (S(t)) of each age group by period, was established by using the Kaplan-Meier estimator[6]. This corrects the fact that there are uncompleted[7] insured unemployment spells. This function indicates the probability of insured unemployment lasting at least t days, and this means that it indicates the probability of recipients' permanence in insured unemployment at each time moment.

Note that it is possible to relate the expected duration of insured unemployment to the survival function (Lancaster (1990)) through the following:

$$E[T] = \int_0^{\infty} S(y)\, dy$$

this shows that changes in expected insured unemployment duration (tables 3 and 4) are due to differences between survival functions across each period in analysis.

The set of Charts 2 and 3 present the survival curves for each type of unemployment insurance by age group. The fact that insured unemployed after the 1 July 1999 can count on longer maximum entitlement periods explains the progressive divergence between survival curves along the duration distribution. It is clear, however, that this extension does not influence the behaviour of recipients with short insured unemployment spells.

The group of UB recipients aged between 25 and 29 is a group for which the maximum benefit entitlement period did not change. Therefore the differences between the survival functions reflect the changes in the aggregate labour market conditions, which seems likely to have had an impact on group 1. The greater the magnitude of these changes, the greater the distance between survival func-

(6) For details on this estimator see Kaplan and Meier (1958).

(7) An observation is said to be censored when the initial moment and/or the final moment that establishes the record of the duration is unknown, and therefore we can have censure at left and/or at right. An observation is left-censored if the occurrence of the event that establishes the beginning of the duration is unknown and is right-censored if the occurrence of the event that establishes the ending of the duration is at a moment after the selected period. An observation is complete if is not censored. In the present case, the knowledge of the claim date for unemployment payments means that we know the exact moment at which the recipient starts to be under observation and this avoids left censor. However, the observation period ends at 31 December 2004 and this implies right censor, but since the insured unemployment spells considered in the sample must have started at around 1 July 1999, the number of right-censored observations is insignificant (0,006%).

tions. In particular, this is the group that exhibits the widest difference between survival curves of all the control groups. The fact that the survival curve in the period after the legislative change is always below the survival curve in the period before the legislative change implies significant improvements in the labour market conditions for these individuals. These improvements were observed along the whole duration distribution and not only during the first year of insured unemployment, as discussed in the analysis of table 3.

Chart 2

SURVIVAL FUNCTIONS FOR UNEMPLOYMENT BENEFIT RECIPIENTS, BY AGE GROUP

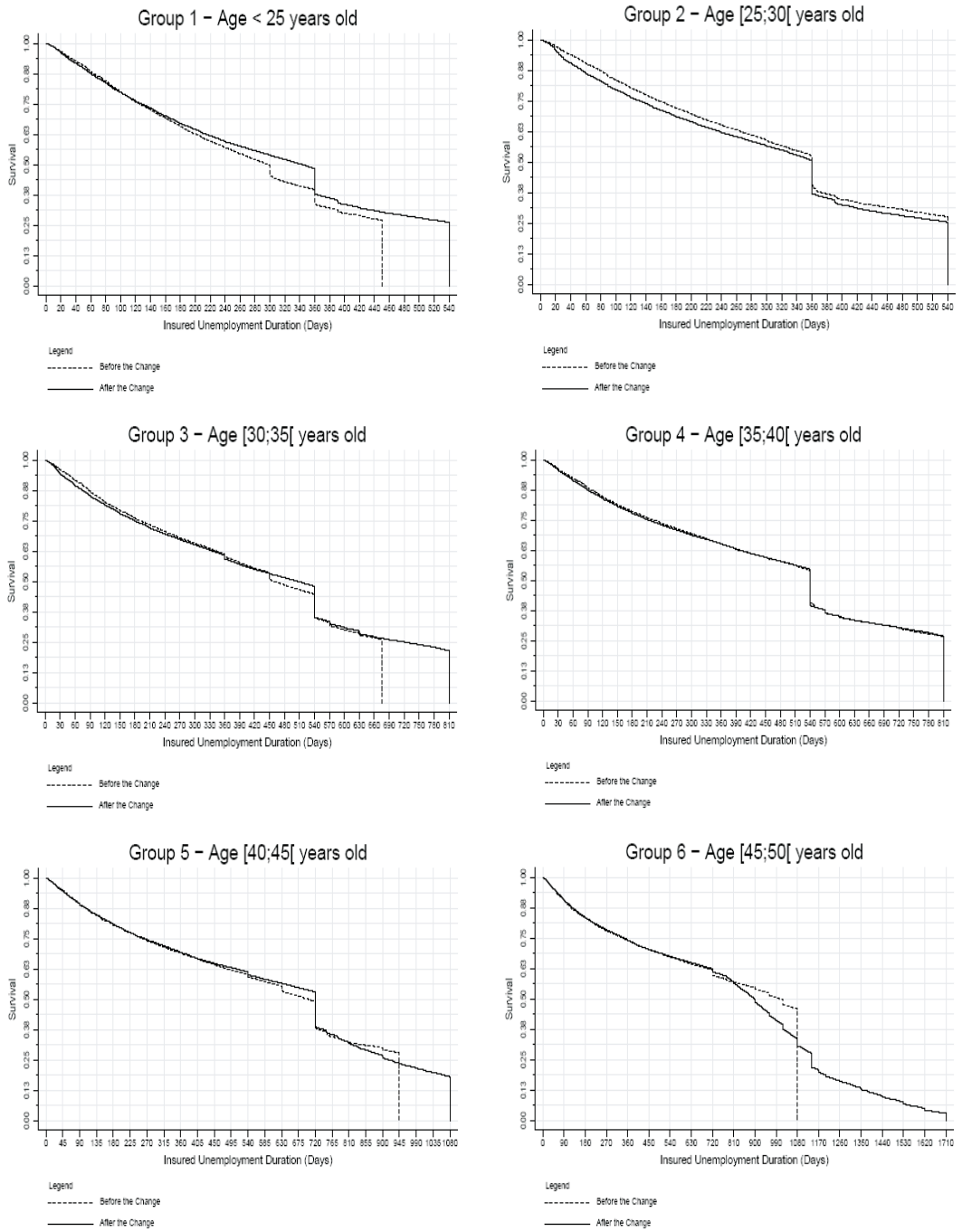


Chart 2 (continued)

SURVIVAL FUNCTIONS FOR UNEMPLOYMENT BENEFIT RECIPIENTS, BY AGE GROUP

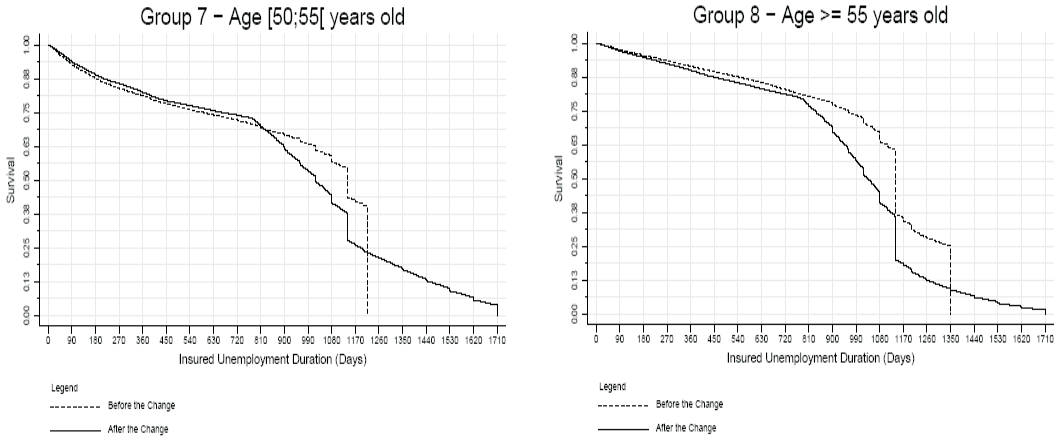


Chart 3

SURVIVAL FUNCTIONS FOR UNEMPLOYMENT SOCIAL BENEFIT RECIPIENTS, BY AGE GROUP

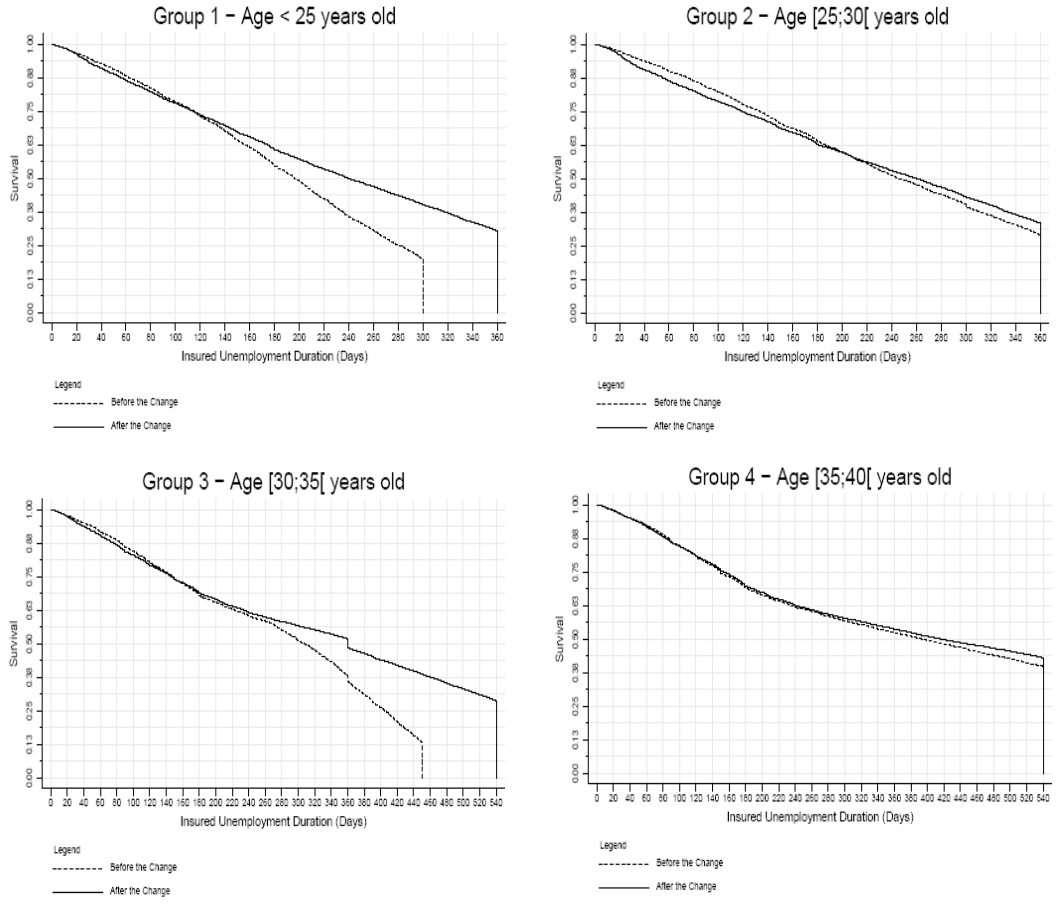
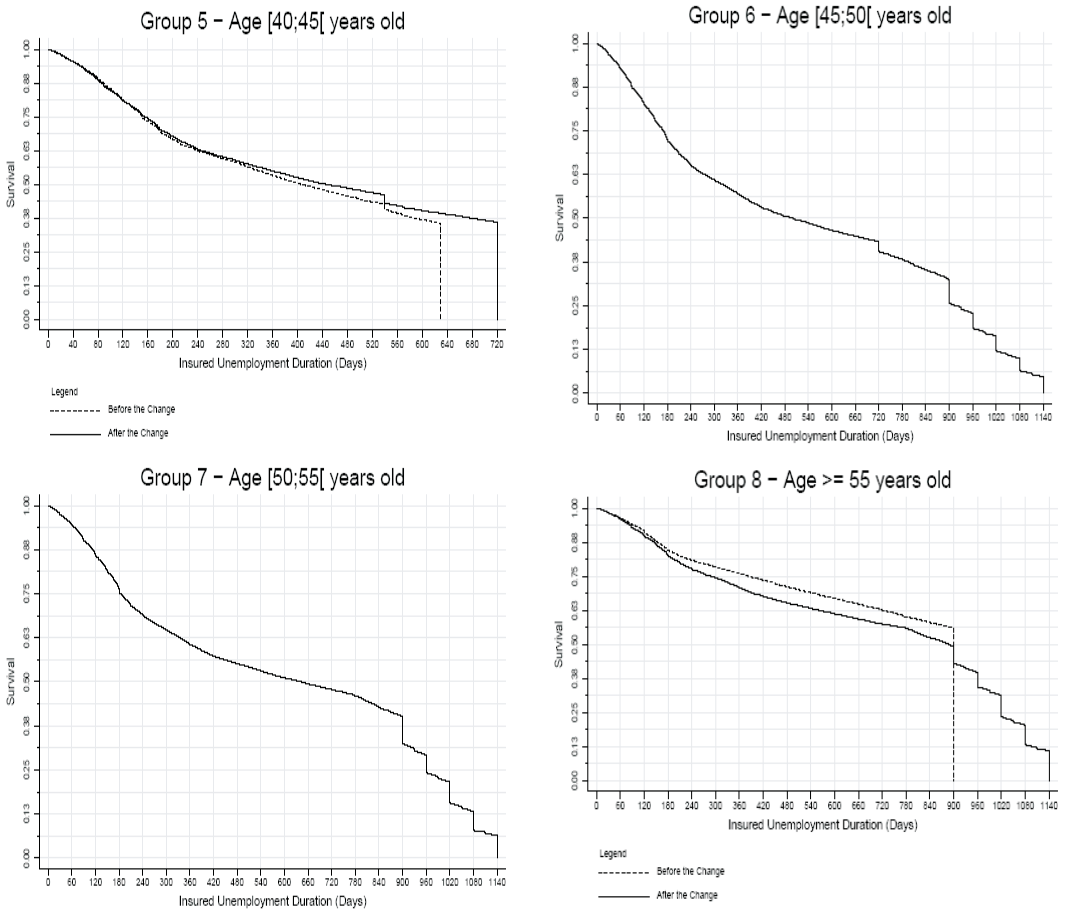


Chart 3 (continued)

SURVIVAL FUNCTIONS FOR UNEMPLOYMENT SOCIAL BENEFIT RECIPIENTS, BY AGE GROUP



As the remaining control groups of UB and USB do not exhibit significant changes in the aggregate labour market conditions, we can assume that the differences between survival functions for most treatment groups will be explained to a great extent by the new unemployment insurance system adopted in 1999.

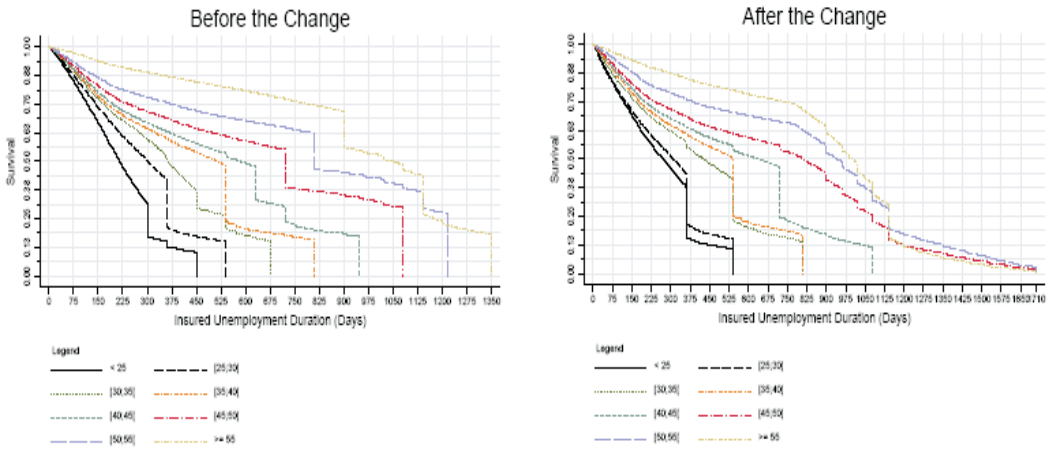
In the younger age groups we can see that insured unemployed under the new unemployment insurance legal framework move to another situation outside insured unemployment at a significantly lower rate than unemployed individuals in the old system, especially USB recipients. In this last group, we can see a difference of 10 p.p in group 1 and to 16 p.p. in group 3 between the survival probabilities, at two months before benefits cease.

The behaviour of individuals aged 45 or over is clearly different since it moves in the opposite direction. The new social protection system, especially the possibility of taking retirement early, implies a significant increase in the exit rate of these individuals from insured unemployment, mainly for long spell durations.

On the whole, we can see that the individuals eligible to UB were those whose behaviour adjusted less in response to the new insurance system. The long maximum entitlement periods that they could enjoy even before the change, by applying for USB-UB, could well have conditioned their behaviour, making

Chart 4

SURVIVAL FUNCTIONS BEFORE AND AFTER THE 1999 LEGISLATIVE CHANGE



them indifferent to extensions in the maximum benefit entitlement periods which varied between 1 month and 14 months in 1999. Even so, we found that the most part of the individuals who see their benefits extended remain in insured unemployment until they complete the additional time span.

Lastly, it is important to underline the fact that we do not observe any reaction from the individuals, in either type of benefit, at the moment immediately before benefit ceases, since the survival curve slopes are unchanged.

These results should be interpreted with some reservations because the simple comparison of survival functions for the periods before and after the legislative change by age group does not allow for identification of all the effects. This is firstly because we do not control for the different situations of the insured unemployed at labour market and secondly because there are individual characteristics, such as level of schooling, that influence the exit rate from insured unemployment. Furthermore, the results drawn from longer durations have possibly a higher degree of uncertainty because fewer observations are used in survival probability estimates.

The expected relation between the maximum benefit entitlement periods and the survival probability in insured unemployment is displayed in chart 4. The longer the maximum entitlement period, the higher is the individuals' survival probability in insured unemployment for a particular duration. Nevertheless, we cannot ignore the fact that age also has a negative impact on exit from unemployment and worsens the survival probability in unemployment even more. Addison and Portugal (2003), using the *Inquérito ao Emprego* (Labour Force Survey) from the National Statistics Institute, conclude that exit rates from unemployment in Portugal indeed decrease with age.

5. ASSESSMENT OF THE IMPACT OF THE 2003 LEGISLATIVE REFORM

Within the context of the ESPP, we intend to establish if individual working decisions changed with the possibility that those age 55 or over at unemployment date could take retirement at 58. The selected sample is therefore composed of all unemployment insurance spells of individuals aged 45 years old or over started around 1 March 2003, the date at which the ESPP came into force (March 2002 to February 2004).

As in the section 4 analysis, we use the "Difference-in-Difference" method. However in this case, there

is only one control group, embracing all recipients between 45 and 54 years old at claim date, and a single treatment group, embracing the remaining insured unemployed who are the potential beneficiaries of the measure. The unemployment insurance claims put in before 1 March 2003 make up the group termed "before the ESPP" and the claims put in after that date make up the group termed "after the ESPP".

The variable in this section will be the ratio between the insured unemployed flow and the employed population. The number of employees in each month and year was found from the *Inquérito ao Emprego* (Labour Force Survey) carried out by the National Statistics Institute.

The monthly evolution of this ratio from March 2002 to February 2004 is presented in chart 5, where we see that the incidence values for the control group are always lower than the incidence values for the treatment group. The months of January 2003 and January 2004 are characterized by high ratios. However, these are seasonal since they are observed in both groups. The only important difference between the control group and the treatment group occurs at the end of 2002/beginning of 2003. In the over-55 group the relative incidence in January of 2003, even if seasonal, explodes in comparison with the November 2002 value. This behaviour is not observed in the control group and could therefore be interpreted as a reaction to the possibility of taking retirement early, since they will have to be entitled to benefit to take advantage of this measure. From the chart we still see some smaller differences between groups, specifically around the month at which the programme was implemented and in the period that elapses between November 2003 and January 2004. On the whole, the results suggest that there was not a big reaction from the individuals to the fact that pensionable age had gone down.

Lastly, in table 5 we present the results for average incidence of insured unemployment as a percentage of the employed population. In column (6) there is a calculation of the first "difference" in average incidence. The aim is to take out the effects inherent in the group from the possible impact of ESPP as it comes into force. The difference presented in column (7) attempts to eliminate from the impact the effects common to the groups, mainly the changes in labour market conditions. This last column identifies the impact on average incidence stemming from the reduction in the pensionable age to 58.

The group embracing the recipients aged between 45 and 54 is a control group and therefore any os-

Chart 5

MONTHLY INCIDENCE OF INSURED UNEMPLOYMENT AS A PERCENTAGE OF THE EMPLOYED POPULATION

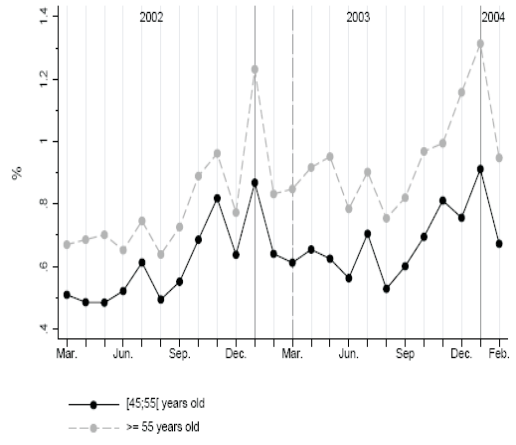


Table 5

AVERAGE INCIDENCE OF INSURED UNEMPLOYMENT AS A PERCENTAGE OF THE EMPLOYED POPULATION

Age Group	Type		Before 1 March 2003	After 1 March 2003	Difference (After – Before)	Diff-in-Diff
(1)	(2)	(3)	(4)	(5)	(6)	(7)
≥ 55	Treatment	Average Incidence (%)	0,79	0,95	0,16	0.09
		(Standard Deviation)	(0,049)	(0,046)	(0,067)	(0,07)
[45;55[	Control	Average Incidence (%)	0,61	0,68	0,07	-
		(Standard Deviation)	(0,037)	(0,031)	(0,049)	-

Note: (a) Own calculations based on information provided by the *Instituto de Informática e Estatística da Segurança Social (IIESS)* and *Instituto Nacional de Estatística (INE)* , *Inquérito ao Emprego*.

cillation in average incidence is due to changes in the labour market. This group is represented in the last row of table 5 and presents, in both periods, an average incidence lower than the average incidence of the treatment group. The three differences computed suggest an increase in average incidence; however we can see that the changes in labour market conditions and the impact of early retirement on average incidence are not statistically significant. This leads us to conclude that the potential recipients of the measure under analysis did not change their working decisions significantly. There would seem to be two factors justifying this result: over access conditions restrictive and the fact that this measure is already set out in previous legislation.

6. CONCLUSION

The empirical analysis presented through the previous sections investigated how the unemployment insurance system conditioned the job decisions of insured unemployed in Portugal during 1998-2004.

In terms of the 1 July 1999 reform the findings suggest a big negative relationship between the duration of maximum entitlement periods and the probability of leaving insured unemployment found in different age groups. Because we did not observe repeated spells of unemployment during the period under analysis, the empirical evidence is quite clear as to the magnitude of this relationship. It is therefore apparent that unemployment insurance generosity produces undesired effects regarding the move to employment. This fact inevitably leads us to a question mark over the suitability of the current unemployment protection system.

The higher increases due to changes in maximum entitlement periods occurred in the younger age groups with magnitudes varying as a function of the type of benefits. In turn, in the group with longer professional experience, the increase in the maximum entitlement periods did not necessarily result in a decrease in the exit rate from insured unemployment. For these individuals, we observe a single behaviour pattern characterized by a decrease in the duration of the insured unemployment spells, justified partially by the possibility of taking the retirement early. These different situations reflect the fact that there was a differentiated impact of the legislative change on the duration of insured unemployment according to the type of benefit and to the claimant's age.

As for the effect on job decisions stemming from the possibility of taking retirement early, included in ESPP, the results suggest that there is no evidence to show a significant relationship. Fundamentally,

we can conclude that the minimal association is due to the fact that the time span chosen to assess this change was not the ideal, since the previous legal framework on this subject already allowed the possibility of early retirement for the insured unemployed.

The extension of some of these conclusions to the labour market in general is tempting but incorrect. First unemployment in an economy is not only insured unemployment. Second because, as discussed above, the behaviour of insured unemployed is not the same as that of non-insured unemployed. The latter in particular have fewer incentives to remain unemployed because they are not entitled to unemployment insurance and therefore their job search pattern is different from that of insured unemployed. This situation is reflected in the different exit rates from unemployment.

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LEGALISATION COSTS, CONTRACT ENFORCEMENT AND THE INFORMAL SECTOR*

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*Tiago Cavalcanti****

1. INTRODUCTION

It is known that the informal sector size depends on the development level of a country. Table 1 presents estimates for the dimension of the informal sector of selected countries. In the United States, estimates suggest that the informal sector represents around 10 percent of the official Gross Domestic Product. In Peru, for example, the informal sector is 60 percent of the official GDP, which means that more than a third of this country's total output (including the formal and informal sectors) is not accounted for in official figures.

There is a set of countries, however, that seem to escape this rule. These are developed countries that have an informal sector size comparable to that of less developed countries. Examples include Spain, Greece, Italy and Portugal. In Portugal, for instance, it is estimated that almost a fifth of total national output is produced outside the realm of official accounts.

A first question that one might ask is – how can we measure the informal sector weight in total economy? The literature describes several methods for tackling this issue. For example, Schneider and Enste (2000) describe an approach used in areas with strong industrial activity, which consists of measuring the energy consumed in that area. If one knows the technologies used by the industrial units of the area, based on actual energy consumption in that area it is possible to estimate the expected output. By comparing this figure with the output accounted for in official figures, one is able to estimate the

Table 1

DATA ON THE INFORMAL SECTOR AND INCOME FOR SELECTED COUNTRIES

	Informal sector (% of official income per capita)	Official income per capita (in 1999 USD)	Total income per capita (in 1999 USD)
Denmark	9.4	32030	35041
Canada	14.8	19320	22179
Germany	13.2	25350	28696
France	13.8	23480	26720
United States	10.0	30600	33660
Belgium	15.3	24510	28260
Portugal	22.1	10600	12942
Spain	22.4	14000	17136
Italy	26.0	19710	24834
Argentina	21.8	7600	9257
Brazil	35.0	4420	5967
Peru	60.0	2390	3824
Nigeria	76.0	310	546

Source: Antunes and Cavalcanti (2006).

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

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unofficial output. As should be expected, the methods vary with the activity sector that one is interested in.

The second important question, and the one that we shall address in this study, is – which factors determine the size of the informal sector and the performance of the economy? Authors such as De Soto (1989, 2000) have argued that barriers to activity in the formal sector create the conditions for a large informal sector. Among these barriers, De Soto emphasizes the administrative fees and bribes paid to bureaucrats. Other important factors include the tax burden imposed on firms, the absence or insufficient quality of public services, and the cultural environment.

From an economic viewpoint, the existence of an informal sector might not be deleterious for the efficiency of the economy. After all, if people and firms are willing to operate outside the legal and institutional protection inherent to the formal sector, that is because, operating unofficially, they expect to have larger gains than what they would get if they operated in the formal sector. If the aggregate benefit that all these people and firms get in informal activity exceeds the net benefit that their inclusion in the formal sector would entail, then the economy as a whole will be better off.[1] However, the informal sector distorts the economy in several different dimensions, and this may lead to attempts at reducing it.

One of the distortions is that, by operating in the informal sector, it is difficult for an entrepreneur to use his wealth as collateral for credit. By operating in the formal sector, any entrepreneur will have to pay taxes and bear the cost of entry in the formal sector. However, he will have the great advantage of being able to borrow under legally binding contracts, and presenting his wealth as collateral for credit. Legal protection means that, in the case he wants to renege on his bank debt, he will lose a fraction of his profits as an entrepreneur; this punishment will be larger the larger the level of contract enforcement in the economy. The possibility of borrowing and using collateral increases the potential scale of the entrepreneur's firm and improves the efficiency of the economy.

If, on the contrary, the entrepreneur decides to operate informally, he will not pay taxes or the costs of operating formally. However, his access to credit will be severely limited. In some cases, he might have to resort exclusively to his personal wealth in order to become entrepreneur. This balance between the costs of formal operation and the benefit of easy access to credit will determine the sector the entrepreneur will operate in, as well as the scale of his project.

Another distortion is fiscal. By widening the fiscal base, the average tax burden could be alleviated. Since, as we shall see, the best entrepreneurs operate with higher probability in the formal sector, any reduction in the tax burden would tend to increase the average productivity of the overall economy (including both the formal and the informal sector).

A third distortion is more subtle and has to do with the agents' occupational choice. Before deciding which sector he will operate in, the agent has to decide whether he will be a worker or an entrepreneur.[2] If he thinks that he will have higher income as a worker than as an entrepreneur, given the interest rate, the equilibrium wage rate and the agent's ability as entrepreneur, his choice will be to become a worker. The existence of barriers to become entrepreneur – which give rise to the informal sector – implies that, instead of being entrepreneurs, some agents become workers. This will tend to lower wages (because it increases the labour supply) and the entrepreneurs' costs, thereby increasing inequality in the distribution of income.

This article describes a model economy that incorporates all these factors, namely: i) a formal as well as an informal sector; ii) the possibility that formal firms borrow from credit institutions, unlike informal

1 It should be noted that when we think about the informal sector we do not mean the exercise of criminal activities, but rather the exercise of activities that, although outside the realm of legality, could be pursued in the formal sector.

2 The notion of "entrepreneur" is consistent with self-employed workers, as well as entrepreneurs in the usual sense.

firms; iii) barriers to entry in the formal sector such as administrative costs and payment of bribes to bureaucrats and other agents; iv) endogenous sorting of agents among occupational choices (workers, formal entrepreneurs, informal entrepreneurs) and endogenous determination of the wage rate.

We study how much of the differences in terms of output per capita and informal sector size are explained by differences in terms of barriers to entry in the formal sector and the level of enforcement of legally binding contracts, between the reference economy (the United States) and other economies under study (Southern Europe and Latin America). Our quantitative conclusions allow us to estimate how much the economies under study would gain if their barriers to entry and the level of contract enforcement were changed to the United States level.

We conclude that: i) barriers to entry do a better job than the level of contract enforcement at explaining the observed differences between the United States and Southern Europe in terms of the informal sector size; ii) for developing countries (such as Peru), however, the two factors have comparable importance; iii) the two factors do not explain a large fraction of the observed variation of output per capita across the economies under study.

These conclusions have important policy consequences. One is that, for instance in the Portuguese economy, a large informal sector suggests the existence of large barriers to formal sector operation, which might be explicit (taxes or fees on the creation of new firms) or implicit (delays in project approval, a long lapse of time between legal registration and formal operation of firms, insufficient advantages of formal activity, corruption, etc.). A way to increase efficiency would be to reduce these costs. In a favourable scenario and in the very long run, that would mean the reduction of the informal sector size to 10 or 15 percent, and a reduction between half and a third in the difference between the Portuguese official output per capita and its United States level (which corresponds to a reduction of about a fifth in the difference between the two economies if we consider both sectors). This process would consist, essentially, of a shift of firm activity from the informal to the formal sector.[3]

2. DESCRIPTION OF THE MODEL ECONOMY

Let us consider a small open economy with a large number of agents. Each agent represents a household which perpetuates itself across generations. After living for a given period of time, each agent leaves a successor.

At the beginning of his life, the agent is endowed with a given ability level as an entrepreneur, x, and a personal level of wealth left as bequest by the previous generation, b. The agent's inheritance is determined by his predecessor's decisions, but his level of entrepreneurial ability is random and does not depend on his predecessor's. The link between generations is determined only through inheritance b. In each generation, agents are all born simultaneously, and they all have the same lifespan. Each agent has a utility function given by

$$U(c,b') = c^{\gamma}(b')^{1+\gamma}$$

where c is lifetime consumption, b' is the bequest left to the next generation, and γ is a parameter between 0 and 1 that defines how much of the agent's lifetime income is consumed or left to the next generation.

Production is done using work and capital. Given the agent's capacity as an entrepreneur, x, his production function will be given by

3 For a detailed description of the economic model and the results obtained, see Antunes and Cavalcanti (2006).

$$y(k,n) = xk^{\alpha}n^{\beta},$$

where k is the amount of capital used in production and n is the number of workers hired in the labour market. Parameters α and β lie between 0 and 1 and define the weight of each input in production. In order to have positive profits, restriction $\alpha + \beta < 1$ must hold. The good produced using this technology may be consumed, used as capital, or left to the next generation.

The capital market is organised as follows. First, we admit that financial intermediaries (which we can define as banks) lend money exclusively to entrepreneurs in the formal sector so as to finance their projects. To make things simpler, we shall assume that banks have access to external financial markets at the fixed and exogenous interest rate r, and the intermediation margin is zero. Given that each agent acts in his own best interest, contracts will be designed in a way that entrepreneurs prefer to honour them rather than defaulting. To model such environment, we need to know the agent's income in case of default, as well as when the entrepreneur repays the loan. In the first case, the agent does not pay interest but looses all capital presented as collateral; moreover, he suffers a punishment proportional to the output of his firm net of labour costs. The punishment will be larger the larger the level of contract enforcement imposed by official institutions. In the second case, the agent repays the interest, keeps his capital and is not punished.

We admit perfect mobility of labour across sectors, implying that the wage rate in the formal and informal sectors is the same. Let us designate it by w. The profit net of labour costs of an entrepreneur with ability x investing k is

$$\pi(k,x,w) = \max_{n} y(k,n) - (1+\tau)wn,$$

where τ is the tax rate paid by the entrepreneur by each hired worker. We assume that the fiscal revenue is used to maintain the infrastructure of the economy.

Each formal sector entrepreneur's income, expressed in end-of-period units of the final good, is equal to

$$\pi(a+l,x,w) - (1+r)(a+l+\varsigma),$$

where r is the interest rate over the entire period, a is the self-financed part of capital using his bequest, l is the loan amount, and ς is the cost of entry in the formal sector, under the form of taxes and legal fees, as well as bribes and other costs incurred in order to operate in the formal sector.

The restriction that it is in the entrepreneur's best interest to repay his loan must ensure that the entrepreneur never chooses to default, meaning that his lifetime income his higher if he repays the loan. Let us call ϕ the fraction of $\pi(k,x,w)$ that the agent looses in case of default – his punishment. This parameter reflects the capacity of authorities to enforce contracts, since the higher its value, the larger the fraction of the entrepreneur's profit that authorities are able to seize. Each agent will have a credit limit given by expression

$$\pi(a+l,x,w) - (1+r)(a+l+\varsigma) \geq (1-\phi)\pi(a+l,x,w) - (1+r)a.$$

The left-hand member of this inequality is the entrepreneur's income if he operates in the formal sector and honours his debt, as we saw. The right-hand member is the income that the agent gets in case he defaults: the first term, $(1-\phi)\pi(a+l,x,w)$, is the portion of profit net of labour costs that authorities are not able to seize after default, and the second, $-(1+r)a$, is the loss of capital given as collateral. Absent from the right-hand member of the inequality are l, since the agent does not repay the loan, and ς, because he switches to the informal sector and does not have to pay the costs of operating in the formal sector. The optimization problem of the entrepreneur, therefore, is to find a non-negative value for

a and l so as to maximize is income subject to the restriction of non-default that we have just seen, and to the constraint that self-finance must not exceed inheritance, $a \leq b$. Let us define $V_f(b, x, w)$ as the maximum income of a formal sector entrepreneur with inheritance b and entrepreneurial ability x, given that the equilibrium wage rate is w. Since contracts are self-enforcing, in equilibrium there are no defaults.

The income of an informal sector entrepreneur is given by

$$\pi(a, x, w) - (1+r)a.$$

If the entrepreneur operates in the informal sector, he will not pay taxes or the costs of operating formally. He will not be able to borrow, so the incentive restriction for not defaulting does not apply. Given that the agent must rely solely on his inheritance to start up an informal sector firm, his only restriction is $a \leq b$. Let use designate the maximum income of an informal sector entrepreneur with inheritance b and entrepreneurial ability x, given that the equilibrium wage rate is w, by $V_I(b, x, w)$.

The agent's total wealth will be the value of his inheritance plus his lifetime income, either as an entrepreneur or as a worker. The agent's total wealth, in end-of-period units of the consumption good, will be given by

$$Y = \max\{w, V_F(b, x, w), V_I(b, x, w)\} + (1+r)b.$$

The agent's utility function implies that he will consume fraction γ of Y and will leave $b' = (1-\gamma)Y$ to the next generation.

The agent's occupational choice will depend on his pair (b, x) and the equilibrium wage rate w. Figure 1 depicts occupational choice in the (b, x) space for a given level of the wage rate. For values of x below a certain threshold, $x^*(w)$, the agent will choose to become worker, since his ability is low. Above that value, the agent might work because he has insufficient bequest in order to start a business and obtain a sufficiently high credit limit. The agents with higher ability operate in the formal sector (since they are able to borrow large amounts of resources, thereby exploring all their ability as entrepreneurs). For intermediate levels of ability and moderate or high inheritance, agents might prefer to operate in the informal sector.

3. EQUILIBRIUM

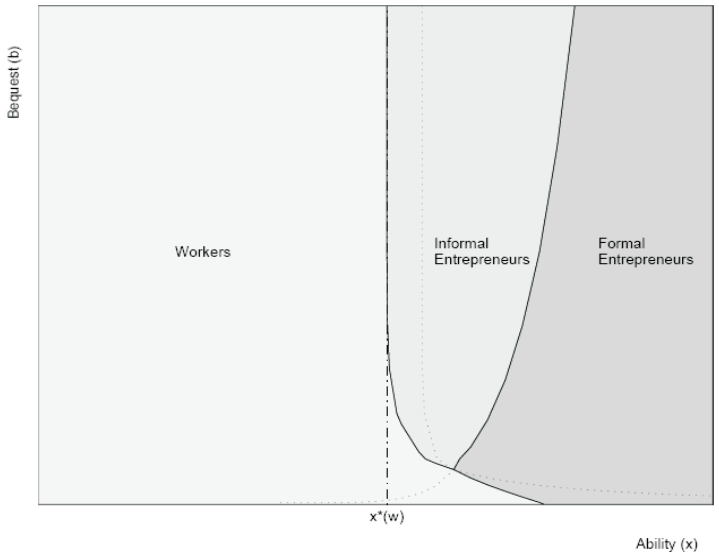
The shape of the distribution of the entrepreneurial ability x is an important driver of the final results. In this study we normalise x to interval [0, 1] and assume that the cumulative distribution function is $\Gamma(x) = x^{\varepsilon}$, where ε is a positive parameter. When the value of ε is a lot larger than 1, inequality in the distribution of x is large, with few agents with very low x; when its value is much smaller than 1, inequality is large, with few very good entrepreneurs; when its value is 1, x is uniformly distributed. This functional form for the distribution of x has been used in the literature because it is simple and has good adherence to data on earnings and wealth.

Given the cumulative distribution of bequests at the beginning of the period, $\Upsilon(b)$, the equilibrium of the economy is defined as a pair $(w, \Upsilon'(b))$ of a wage rate and a bequest distribution for the next generation such that:

- All agents do their occupational choices and investment decisions (for those that become entrepreneurs) optimally, according to the rules that we saw.

Figure 1

OCCUPATIONAL CHOICE OF AGENTS



- The wage rate is such that the labour demand (in the formal and the informal sector) equals supply. In mathematical terms, this means that the number of agents in the lightest shaded area of Figure 1 should equal that of the two darkest shaded areas of the figure.

Antunes and Cavalcanti (2006) show that, after some generations, the equilibrium wage rate and the bequest distribution remain unchanged, that is, $\Upsilon'(b) = \Upsilon(b)$, and *w* does not change from one generation to the other. This does not mean that the members of the same family have always the same inheritance; it means that they might change occupation and income, but in aggregate terms the distribution remains unchanged. Furthermore, they show that such stationary equilibrium is unique, that is, it does not depend on the initial wealth distribution. All the simulations carried out in what follows correspond to the stationary equilibrium.

4. QUANTITATIVE EXERCISES

As a starting point, we choose the United States economy as the baseline, and for that reason we are going to parameterize the model in such a way that it reproduces some key facts of that economy. The most relevant parameters for our analysis are the cost of formal sector operation (under the form of taxes, legal fees, bribes and other implicit costs), the level of contract enforcement, and the inequality parameter in the entrepreneurial ability distribution (respectively, ς, ϕ, and ε). These three values are determined so as to make the entry costs in the formal sector equal to 0.5 percent of the official Gross Domestic Product per capita (a value obtained by Djankov *et al.*, 2002), the informal sector size is around 10 percent of the Gross Domestic Product, and the percentage of entrepreneurs in the active population is around 9 percent.[4]

Table 2 presents some values of interest for the American economy, as well as the results of the model when we change some of the parameters. Beyond the informal sector size and the percentage of en-

4 In the appendix we present the values of all parameters, as well as a justification for the value used.

Table 2

SOME QUANTITATIVE EXERCISES

	Informal sector (%)	Total income per capita (EUA=100)	Official income per capita (EUA=100)	% of enterpreneurs	Income Gini (%)
Baseline (US)	**10**	**100**	**100**	**9**	**34**
Part (a)					
Change on the punishment in case of default parameter, ϕ					
From the baseline value to:					
Half $(\phi / 2)$	29	79	67	10.8	33
A quarter $(\phi / 4)$	59	69	40	11.5	30
A eighth $(\phi / 8)$	90	60	19	11.6	25
Part (b)					
Change on the regulation parameter, ς					
From the baseline value to:					
Half (2ς)	10.5	99.6	99.2	9.1	33
A quarter (4ς)	11.1	99	98	9.2	33
Eight time (8ς)	13.5	97.8	95.2	9.3	33

Fonte: Antunes e Cavalcanti (2006).

trepreneurs, the table also shows the income Gini index obtained using the model. This is a measure of inequality in income distribution. A low value of the index corresponds to a more equal distribution; a high value identifies high inequality.[5] In part (a) we see that if we lower the level of contract enforcement (all other things equal), the informal sector size increases, as well as the percentage of entrepreneurs in the active population. Although inequality in income distribution falls, official income per capita falls faster. Total income falls but not as fast. How can we interpret these results? What happens is that the credit limit decreases when the level of enforcement (measured by ϕ) decreases. Many agents that were previously operating in the formal sector are forced to switch to the informal sector; others simply become workers. This in turn increases labour supply, thus reducing wages. The increase in the percentage of entrepreneurs means that there are more entrepreneurs in the economy but on average with lower production – although their ability as entrepreneurs remains the same! Income decreases uniformly for all agents, and in net terms inequality decreases.

The impact of an increase in the costs of formal operation, which we can observe in part (b), leads to an increase in the informal sector size and the percentage of entrepreneurs, and to a reduction in official and total output. The increase of the informal sector is expected: if formal operation becomes more expensive, many entrepreneurs substitute it by informal operation. Some agents become workers, thus reducing wages and making it more attractive to operate informally. The net effect is an increase in the number of entrepreneurs.

We can use this model as an economic analysis tool. An interesting experiment is the following. Let us think of the American economy as the baseline and ask the question – for example, what would the United States income per capita be if a given parameter were equal to that of economy *X*, all other things unchanged? The answer allows us to have an idea of the extent to which that parameter is able to explain the observed differences between the American economy and economy *X*. Table 3 contains

5 The numbers shown are low when compared to those in the American economy, which lie above 40 percent. However, we are only interested in their variation. On this issue, see Antunes and Cavalcanti (2006).

Table 3

SIMULATIONS FOR THE "SOUTHERN EUROPE ECONOMY" AND PERU

	ϕ	ς / y	Informal sector (% of official income per capita)	Total income per capita (US=100)	Official income per capital (US=100)
Baseline (US)	**0.25**	**0.005**	**10**	**100**	**100**
Southern Europe (data)	**0.209**	**0.18**	**24**	**62**	**55**
Model predictions:					
Contract enforcement (ϕ)	0.209	0.005	13.4	94	91
Regulation (ς)	0.25	0.18	25	94	82
Both	0.209	0.18	31	87	72
Peru (data)	**0.13**	**0.2**	**60**	**11**	**8**
Model predictions:					
Contract enforcement (ϕ)	0.13	0.005	28	81	68
Regulation (ς)	0.25	0.2	27	93	79
Both	0.13	0.2	63	74	41

Fonte: Antunes e Cavalcanti (2006).

the result of this exercise for two types of economy: a "Southern Europe economy", and the Peruvian economy (which epitomises Latin-American economies).[6] The main difference between these two types of economy is the level of income per capita, while Southern Europe is substantially different from the American economy in terms of the informal sector size.

The baseline economy (the United States) displays an informal sector size of 10 percent of the Gross Domestic Product. The fraction of profits taken from the entrepreneur in case of default that is consistent with American data is 25 percent (that is, parameter ϕ is 0.25), and the cost of entry in the formal sector is 0.5 percent of the official output per capita (that is, ς / y is 0.005, where y is official income per capita[7]).

We estimate that the Southern European economy has an official income per capita of around 55 percent of the American level. (Including the informal sector, this number is 62 percent.) The informal sector attains 24 percent. The fraction profits seized by authorities, ϕ, is 0.209, while entry costs, ς / y, are 18 percent. In the case of Peru, the official income per capita is 8 percent of the American level. The informal sector is as high as 60 percent. Estimates for ϕ and ς / y are 0.13 and 20 percent, respectively.[8] Let us look first at Southern Europe. If instead of using the punishment for default, ϕ, for the United States we feed in the Southern Europe value, we see that the informal sector increases to 13.4 percent, while official output per capita falls 9 percent. If we only increase the operation costs in the formal sector, ς / y, the informal economy climbs to 25 percent and official output falls 18 percent, which are closer to those observed empirically (respectively, 24 percent and 45 percent). The level of regulation for formal operation does a better job at explaining the differences observed between Southern Europe and the United States than the ability to enforce credit contracts. This suggests that bureaucratic inefficiency and barriers to entry in the formal sector is more acute than access to credit in Southern Europe. Changing both parameters, the model underestimates the informal sector size (31 against 24 percent) and overestimates output per capita (72 percent of the American level in the model against 55

6 The Southern Europe economy is a synthesis of the economies of Italy, Portugal and Spain.

7 Given the normalizations that we performed in terms of x and the production function, the value of ς is 0.0004.

8 The estimates are calculated for the late 1990s. For values of ϕ and ς / y, see La Porta *et al.* (1998) and Djankov et al. (2002).

percent in the data). This means that other factors should explain the difference in difference – quality of infrastructure, utilization of technology, education, size of the economy, taxes, etc.

From the previous exercise we see that the model is able to account for a little over half the gap between the Southern European economy and the United States: the gap predicted by the model is 28 pp; the actual gap is 45pp. While other differences between the American economy and Southern Europe certainly exist, even in the context of this model,[9] this result shows that the gains in terms of the official output per capita stemming from the elimination of barriers to formal operation (under the form of bureaucratic costs, regulation costs, and other costs, including corruption) and, to a lesser degree, the efficiency in the enforcement of contracts, might be, in the long run, very large. Starting from the situation where both parameters have the Southern European value, and changing the parameters to the baseline level, the model predicts a rise of 19 pp in the level of the official output per capita as a percentage of the baseline level (from 72 percent of the baseline level to 91 percent, a little less than half the observed gap), and to a decrease of the informal sector from 31 to 13.4 percent. This case is interesting in that it suggests that the costs of regulation and entry in the formal sector encourages people operating in the informal sector to switch to the formal sector, as can be seen by the fact that the increase in total output being just 7 pp (from 87 percent of the baseline level to 94 percent). As we lower the regulation costs, more entrepreneurs will find it profitable to operate in the formal sector. With access to credit, they will be able to expand their projects. This, in turn, will increase labour demand and, consequently, the wage rate. Finally, higher wages might encourage some informal entrepreneurs to leave their current occupation and become workers. The informal sector shrinks through these two effects. In this process, some firms might simply disappear for not being competitive in the formal sector. But most remain competitive and operate legally.

For the case of Peru, a typical Latin America economy with low income per capita and a large informal sector, we see that the model explains fairly well the informal sector size, but again does not account for the total difference to the United States level. The simulation suggests that the contribution of the two factors under study is comparable.

As is usual, one must look at these results carefully. First, the calculations are for a time span of at least 35 years. Second, the parameters whose variations we analysed may capture effects different from formal operation costs and the ability to enforce contracts. Specifically, formal operation costs also capture any fiscal component (other than the payroll tax explicitly modelled) affecting production costs. Correlation between parameters may also occur. For instance, a legal system good enough to enforce contracts (a high ϕ) should also be able to punish officials that ask for bribes, thus reducing formalization costs (a low ς). Finally, other factors not included in the model may interact in complicated ways with the model variables and counter the effects that we obtained.

5. CONCLUSIONS

Using a general equilibrium model with occupational choice among workers, entrepreneurs in the formal sector and entrepreneurs in the informal sector, we show that the differences between some economies in terms of the informal sector size may be explained by differences in the costs of operating formally (under the form of administrative fees, including taxes, bureaucratic costs, bribes and corruption costs) and in the ability of authorities at enforcing credit contracts by punishing defaulters effectively. These two factors, however, do not explain the differences in income per capita observed in the

9 Beyond the differences between ϕ and ς,other potential differences in terms of the parameters pertaining to taxes, the production function and the ability distribution function, may arise. Separate exercises suggest that, for reasonable values of these parameters, our conclusions are still valid. In the case where the weight of capital in the production function is larger (a less probable, albeit possible, scenario), the model tends to attach more importance to the level of contract enforcement.

data. In the Portuguese case, a reduction in the costs of operating formally to the United States level would originate, in the long run, a reduction in the informal sector size to half the current value, and to a reduction between a third and half the gap between the Portuguese output per capita and that of the United States. These figures, of course, should be interpreted as estimates conditional on a set of working hypotheses.

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Annex

CALIBRATION OF THE BASELINE ECONOMY

Parameter	Value	Comments
γ	0.8	Estimated by Laitner and Juster (1996)
β	0.55	Weight of labour in production, based on Gollin (2002)
α	0.35	Weight of capital in production, based on Gollin (2002)
r	1	Yearly real interest rate of 2% (for a 35-year period)
τ	0.33	Tax rate on labour, based on Jones, Manuelli and Rossi (1993)
ς	0.0004	Formalisation costs, based on estimates by Djankov et al. (2002)
ϕ	0.25	Informal sector size of 10%, according to Schneider and Enste (2000)
ε	6	9% of total population are entrepreneurs, based on Quadrini (1999)

Fonte: Antunes e Cavalcanti (2006).

THE EFFECTS OF A GOVERNMENT CONSUMPTION SHOCK*

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1. INTRODUCTION

There are two puzzling results in the empirical literature. The first is that either private consumption is unchanged or rises in response to an unanticipated increase in government consumption. The second is that prices decline in response to the same shock. The behavior of consumption has deserved more attention than the behavior of prices. The behavior of consumption, although, consistent with the Keynesian multiplier theory, stands in stark contrast with the prediction of the standard real business cycle (RBC) model. That is because in the standard RBC model an increase in government consumption raises the present value of the stream of taxes over time which generates a negative wealth effect that brings down private consumption. This prediction of the RBC model is described in Christiano and Eichenbaum (1992) and Baxter and King (1993), among others. The behavior of prices is even more difficult to explain since with the shock, aggregate demand increases more than aggregate supply. This pushes up prices.

A few explanations have been proposed for the behavior of private consumption but none for the behavior of the prices. To explain the behavior of consumption researchers were led to search for features that could be introduced in the standard RBC model in order to account for the empirical finding that private consumption responds positively to fiscal spending shocks. The few existing explanations are very intricate. Rather than using a complex model, full of frictions, to explain the apparent puzzles what we propose in this paper is a simple RBC model without capital but with three added features. All these features are empirically relevant. First, we give money a role in transactions by introducing cash-in-advance constraints for the agents, as in Lucas and Stockey (1987). Second, we assume that monetary policy has a liquidity effect like in Fuerst (1992) and Lucas (1990). Third, we suppose that the monetary authority reacts to government consumption innovations.

The first modification places the interest rate in the consumption-leisure margin. This gives the monetary policy additional power to influence the economy. The second assumption makes the monetary policy non-neutral. As agents choose their portfolio of assets in advance, unexpected changes in the money supply change the interest rate. The third assumption allows the monetary policy to react to shocks in the economy, in particular to government consumption shocks. Theory shows that monetary policy improves economic performance if it is used to respond to shocks.

It has been thought that there cannot be a positive response in private consumption to government consumption shocks as long as monetary policy is conducted in a reasonable manner. The common wisdom has been that the reasonable monetary policy will amplify the private consumption response. The government shock will create inflationary pressures and the anti-inflationary central bank will increase the interest rate in order to control inflation expectations. Thus, in that way it will decrease further the private consumption. To obtain the reverse result it would be necessary that the monetary

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policy be specified so that the central bank would react by increasing the money supply in response to a government consumption shock. In doing that the central bank would be, due to the rigidity in the adjustment of portfolios, varying the interest rate, decreasing it.

In the context of a simple RBC model with a cash in advance constraint for private consumption, a positive government consumption shock has a negative income effect that decreases both consumption and leisure. If money supply is unchanged, from the cash in advance constraint we obtain that the price level must increase. An active central bank that has as one of its main objectives to maintain price stability will react to this shock by using the instruments at its disposal to counteract the effects of this shock over the prices. In the context of our model in order for the prices to decrease the central bank must decrease the interest rate.

Since we do not have any a priori or any hard evidence on how the central bank reacts to a government consumption shock, we take this matter to the data by conducting our own empirical analysis in a structural VAR framework. We allow the monetary policy to react contemporaneously to the government consumption shock and to all past variables. It is important to allow the monetary policy to react contemporaneously to the shock because, otherwise the central bank will not be able to counteract the effect of the shock over the current prices. As it turns out, we estimate that a positive government consumption shock triggers an accommodating reaction by the monetary authorities, the real money supply rises and the nominal interest rate decreases. In the context of our model, that affects the consumption-leisure margin in such a way that an increase in private consumption and a decrease in leisure of private individuals is possible. As a consequence output goes up. Moreover, the interest rate reaction to the shock has an effect over the price level that is of the opposite sign to the one generated by the government shock, prices drop. This explains why a central bank that has the incumbency of maintaining price stability might want to have an expansionary policy in response to a positive government shock.

The rest of the paper is organized as follows. Section 2 presents the results in the literature, section 3 describes the empirical evidence obtained by us, section 4 explains the effects of the government shock in the context of the model and section 5 concludes. In the end there are two appendices that give additional details of the empirical results and of the model.

2. LITERATURE

As already referred much of the evidence in the literature concerns the behavior of consumption. Evidence about prices can be obtained from Edelberg, Eichenbaum and Fisher (1999), Fatás and Mihov (2001) and Mountford and Uhlig (2002). They find a negative response of prices to the government shock. The evidence on private consumption suggests that either private consumption is unchanged or rises in response to an unanticipated increase in government consumption. Some of the evidence is obtained from structural vector autoregressive (VAR) models. Blanchard and Perotti (2002), Fatás and Mihov (2001) and Gali et al (2004) identify exogenous shocks to government consumption by assuming that this variable is predetermined with respect to the other variables. They find that private consumption rises significantly and persistently after an unanticipated increase in government purchases. In the same methodological vein, Perotti (2004) finds that this result is pretty robust to a sample of five OECD countries. Mountford and Uhlig (2002) employing a different identification method obtain similar results.

There is also other type of evidence, besides that obtained from VARs. Perotti (1999) studies the comovement of private consumption and government consumption and finds out that only during fiscal consolidation episodes, characterized by large spending cuts, private consumption and output rise,

but in all other experiences the opposite happens, private consumption moves together with government consumption. Others, like Edelberg, Eichenbaum and Fisher (1999), and Burnside, Eichenbaum and Fisher (2003) use additional information such as timing of wars to identify the fiscal policy shock. They reach the conclusion that the fiscal policy has no noticeable impact on private consumption.[1] Edelberg, Eichenbaum and Fisher (1999) find a small and delayed fall in the consumption of nondurables and services, though durables consumption increases on impact. Burnside, Eichenbaum and Fisher (2003) find a flat response of aggregate consumption in the short run, followed by a small (and insignificant) rise in that variable several quarters after the shock.

Researchers either have not been able or have not been willing to explain the behavior of prices, but there have been attempts to understand the behavior of consumption. As the standard RBC model is not able to explain the behavior consumption, researchers were led to search for features that could be introduced in the standard RBC model in order to account for the empirical finding that private consumption responds positively to fiscal spending shocks. Linnemann and Schabert (2003) consider a sticky price model where government consumption provides utility to households. Private consumption is crowded in by a positive government consumption shock as long as the elasticity of substitution between the private and the public good is sufficiently small. Devereux, Head and Lapham (1996) have a production function of the final good with constant returns on the quantity employed of intermediate goods but increasing returns to an expansion of variety, holding constant the quantity employed of each intermediate good. An increase in government consumption will create an opportunity for profits, inducing more firms to enter which will increase the variety of intermediate goods produced. If the degree of increasing returns is sufficiently high the real wage will increase as well as private consumption. The negative wealth effect of increased taxation on households is more than offset by the increase in factor productivity due to the entry of new firms. Gali, Lopez-Salido and Valles (2004) offers an explanation for the effects over private consumption of a government spending shock financed by a deficit rather than current taxes. They modify substantially the RBC model by including non-Ricardian rule-of-thumb consumers, which are consumers that consume all their available disposable income in each period, and by assuming that employment is determined by firms alone. The labor market assumption is there to make real wages increase significantly so that the wage income of the rule-of-thumb consumers goes up after the shock. The rule-of-thumb consumers are necessary to ensure that private consumption does not drop after a government consumption shock because of the wealth effect.

3. EMPIRICAL EVIDENCE

In this section we describe our empirical analysis. Additional details are supplied in appendix 1. We do a VAR and use the traditional identification procedure. The one that takes government consumption as predetermined relative to the other variables in the VAR. In doing so, we use a longer sample, which imparts added robustness to the results. Moreover, we include the variables money and interest rate in order to test empirically the predictions of our model.

3.1. Identification of the Government Expenditure Shock

In the context of structural VARs, Blanchard and Perotti (2002) developed a methodology to identify fundamental government consumption shocks as well as their dynamic effects on a set of macroeco-

(1) Rotemberg and Woodford (1992) consider an autoregressive model where innovations in military spending are treated as an exogenous shock that is uncorrelated with any other shocks. They obtain that the responses of output, hours and real wage to a military spending shock are positive.

nomic variables. Their identification strategy bears on the insight that the institutional framework that lies behind fiscal policy decisions is such that public consumption is essentially exogenous. In practice, this means assuming that government consumption is predetermined with respect to the other variables in the VAR. For our purposes, we follow the strategy of Blanchard and Perotti (2002) with an added twist, needed to make our identification strategy consistent with the possibility that the central bank may react to innovations in government consumption. So, apart from assuming that the government consumption is predetermined relative to all the other variables in our VAR, we also impose the supplementary identifying restriction that money supply reacts contemporaneously only to shocks to itself and to government consumption. The reason for imposing that the money supply reacts contemporaneously only to government consumption is to ensure that the response, on impact, of money to a government consumption shock is being driven by that shock directly and not indirectly through the dynamic response of the remaining variables in the VAR.

The analysis is based on the following reduced-form VAR,

$$Z_t = \eta + B(L)Z_{t-1} + u_t, Eu_t u_t^{'} = V \qquad (1)$$

where $Z_t \equiv [G_t, M_t, Y_t, C_t, T_t, P_t, R_t, W_t]$ is the vector of the endogenous variables comprising the following variables: real government consumption, real money supply, real GDP, real private consumption, real net taxes, GDP deflator, nominal interest rate and real wage. η is a vector of constants, $B(L)$ is a polynomial of order q in the lag operator, L, and u_t is the vector of the one-step-ahead forecast errors to Z_t with invariant variance matrix V.

3.2. Data Description

The statistical series used to measure the variables in our VAR come in quarterly frequency, and cover the period 1948:I-2004: III, which is the longest available sample for the United States. We took the same definitions of government consumption and revenue as Blanchard and Perotti (2002). For government consumption (G) we took the item real government consumption consumption and gross investment from the National Income and Product Accounts (NIPA) tables of the Bureau of Economic Analysis (BEA). The measure for nominal net taxes is defined as current government receipts less current transfer payments and interest payments. The real net taxes (T) were obtained by dividing the nominal net taxes by the GDP deflator. The real GDP (Y) and GDP deflator (P) series were extracted from the NIPA tables, BEA. The consumption variable (C), was taken from the item real personal consumption expenditures of the NIPA tables, BEA. The real money supply (M) is the ratio between the nominal money aggregate M1 and the GDP deflator. The M1 series was taken from the FRED database of the Federal Reserve Bank of St. Louis in monthly frequency and transformed into quarterly series by simple averaging. The variable R was proxied by the secondary market yield of the three-month Treasury Bill as published by the Board of Governors of the Federal Reserve System. This series was transformed from monthly frequency into quarterly frequency through simple averaging. The real wage variable (W) was computed by dividing the nominal hourly compensation of the non-farm business sector published by the Bureau of Labor Statistics (BLS), by the GDP deflator. Except for R which is expressed in levels, all variables are expressed in log levels and seasonally adjusted. All quantity variables were normalized by the size of the working age population as measured by the series $P16$ published by the BLS.

3.3. Impulse Responses

Our VAR analysis is conducted for the period 1949:I-2004:III, since we have to drop the first four observations to account for the fact that we set the VAR lag-length to four ($q = 4$). The plots of the impulse response to a government consumption shock are displayed in figure 1.These plots are similar to the ones obtained by the empirical VAR literature.

All variables are measured in percentage deviations from the base line, except for *R*, which is measured in basis point deviations. The dashed lines correspond to 95% confidence bands constructed using standard error estimates of impulse responses obtained from 2,000 bootstrap simulations.

The shock induces a significant and protracted rise in both government consumption and real GDP. The government consumption multiplier on real GDP was estimated to be of 0.7 and 1.5 after one and two years, respectively[2], values that are in line with Blanchard and Perotti (2002) and Gali et al (2004). The results of figure 1 are compatible with the monetary authority accommodating the government consumption shock by raising the money supply and decreasing the nominal interest rate. We do observe the puzzle reported in the literature, private consumption going up with the government consumption shock. Finally, the response of prices to a government consumption shock is negative. The deflation rate is bigger after the shock and converges to zero.[3]

4. THE GOVERNMENT SHOCK

In this section we propose a dynamic general equilibrium model which is described in more detail in appendix 2. We study whether the model can replicate the impulse responses obtained in the VAR and shown in Figure 1. We are interested in knowing if the model can deliver increases in private consumption, output and money and decreases in interest rate and prices after a positive government consumption shock. We assume that the economy is in its deterministic steady state when it receives a positive temporary government shock and the central bank responds by increasing the money supply.

The model is a dynamic general equilibrium model with two cash in advance restrictions, one for the households and one for the firms, with a friction to deliver money non-neutrality and without capital. The friction considered is sticky portfolios. Government levies lump-sum taxes, injects money and makes consumption expenditures. Households maximize expected utility $U = E_0\left\{\sum_{t=0}^{\infty} \beta^t u(C_t, 1-N_t)\right\}$ where β is a discount factor, C_t is consumption, $1-N_t$ is leisure and N_t is hours of work. We simplify the exposition by taking a particular utility function, $u(C_t, N_t) = \frac{1}{1-\sigma}\left(C_t - \frac{(N_t)^{1+\chi}}{1+\chi}\right)^{1-\sigma}$, $\sigma > 0, \chi > 0$. Firms maximize profits. The production function is $Y_t = AN_t, A > 0$. All markets clear.

As the only friction present in the model economy is that the portfolios must be chosen one period in advance, the economy is only one period outside the steady state. In order to get the persistence that the responses show in the VAR and graphically represented in Figure 1 it would be necessary to include additional frictions.[4] Instead of following that route we opted for the less realistic, but perhaps

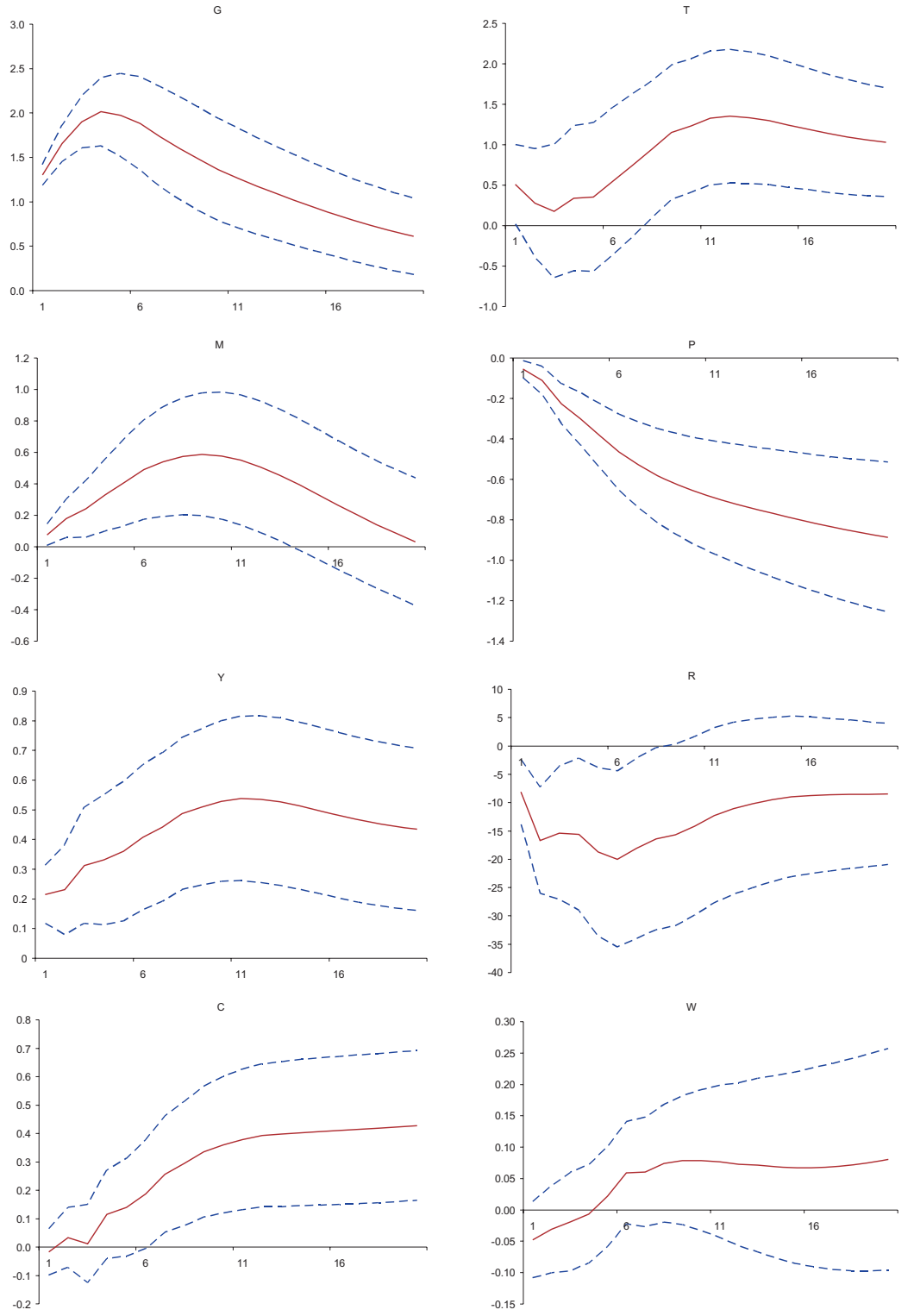
(2) In these calculations we used the sample mean of the share of *G* in *Y*, which is around 23%.

(3) The estimated effect over consumption is larger than the one obtained by Christiano *et.al.*(2005)for a monetary policy shock.The real wage increases after a few periods but it is not statistically significant. According to the model presented in section 4 the real wage should increase after the shock.

(4) For instance Gali *et al* (2004) are able to obtain persistence but need various frictions: monopolistic competition in the production of intermediate goods, Calvo price setting, a monetary policy rule, a special rule for tax-setting, a special labor market assumption consistent with countercyclical mark-ups and investment adjustment costs.

Figure 1

IMPULSE RESPONSES TO A GOVERNMENT CONSUMPTION SHOCK



more instructive one, of considering a simple economy that is able to deliver the impact responses of private consumption and prices observed in the data after a government consumption shock.

The shock occurs in period T. The economy before the shock in period T is in its deterministic steady state and as it takes only one period to adjust. In period $T+1$ the economy is back to the steady state. In the steady state the growth rate of money is zero, i.e. $\frac{M_t^S}{M_{t-1}^S} = 1$ for $t < T$ and $t \geq T+1$. The deterministic steady state for $t < T$ and for $t \geq T$ is characterized by the following equations,

$$R_t = \beta^{-1} \tag{2}$$

$$\frac{W_t}{P_t} = \frac{A}{R_t} \tag{3}$$

$$N_t^{\chi} = \frac{A}{R_t^2} \tag{4}$$

$$C_t = AN_t - G_t \tag{5}$$

and

$$\frac{P_t}{P_{t-1}} = \frac{W_t}{W_{t-1}} = 1 \tag{6}$$

Equation (2) says that in the steady state the nominal interest rate, R_t is equal to the inverse of the discount factor. Equation (3) is the condition that the real wage must equal the marginal productivity of labor. Equation (4) is derived from the condition that equates the intratemporal marginal rate of substitution between leisure and consumption to the marginal rate of transformation. Equation (5) is a feasibility condition. It says that private consumption is equal total production minus government consumption. Finally, equation (6) reflects the fact that in the steady state there is neither inflation nor wage increases.

We now concentrate on the effect of the shock on the variables of period T. The relevant equations in period T to determine the evolution of prices, output and consumption are the cash in advance constraint for the households

$$P_T C_T = M_T^S \tag{7}$$

and equations (4) and (5) for period T. First, we consider the case in which the central bank does not react to the government shock. The N_T would remain constant according to (4), C_T would decrease from (5) and P_T would increase by (7). Thus, if the central bank would not react to the government shock prices would increase and consumption would decrease.[5]

Now we assume that the central bank to maintain price stability is going to react to the shock. It can be seen from (4) that if the value for χ is sufficiently small then when R_T decreases, N_T will increase substantially and more than G_T. From (5) when N_T increases more than G_T then C_T goes up.

It is trivial to show that the price level may go down in period T. The price level is given by (7).The P_T will fall if C_T increases by more than M_T^S. It is clear from (5) that in order for that to happen the output, AN_T, must respond strongly to the shock in G_T.

(5) In this case output remains constant in response to the shock. This is entirely due to the functional form chosen for the preferences. The preferences chosen belong to a particular class of preferences, in which there are no income effects over the labor supply. For general preferences, the income effect of a positive government shock is negative, so that labor supply increases.

Finally, the intuition for the negative relationship between interest rate and money supply is simple. Agents are willing to accept more money only if its opportunity cost, which is the nominal interest rate, goes down. A formal proof of this is given in appendix 2.

5. FINAL REMARKS

Past researchers have obtained evidence that indicates that a government consumption shock raises output, does not decrease consumption and decreases prices. This evidence is difficult to reconcile with the standard RBC model. In the standard RBC model a positive government consumption, no matter how it is financed, leads to smaller consumption and higher prices. The literature has a few explanations for that, we offer a different one. Our explanation was motivated by economic theory. According to theory the central bank should use the instruments at its disposal to respond to shocks. In the context of an RBC model with a cash in advance and sticky portfolios the monetary authority can counteract the effects of a positive government shock by increasing money supply.

We conduct a VAR analysis, as it is done in the literature, but with alternative variables and equations, for a longer time span that confirms that a government consumption shock raises output and private consumption, but also that the central bank reacts to the government consumption shock by increasing money supply and decreasing the interest rate. The effect of the monetary policy over consumption is of the opposite sign and dominates the initial effect of the government consumption shock. A RBC model with portfolios chosen in advance is used to argue that this type of reaction by the central bank can explain the behavior of consumption after a government consumption shock. The reaction of the central bank is taken as exogenous, but it is coherent with the objective alleged by many central banks of maintaining inflation stable. Ceteris paribus, the government shock brings the price level up and to offset that effect the central practices an expansionary policy. The behavior of the central bank is in line with economic theory, which says that monetary policy must react to shocks in the economy. However, we do not attempt to verify if the central bank's reaction function is optimal.

The impulse responses of the various variables to the government consumption shock show a high degree of persistence that our simple model does not capture. To capture that persistence of the variables it would be necessary to include various type of frictions. That is the way it is done in the literature. We decided that, at this time, it was not worthwhile to complicate the model so that it could satisfy this feature of the evidence.

APPENDIX 1

In this appendix we describe additional details of the VAR. The VAR can alternatively be represented by the structural form:

$$A_0 Z_t = A(L) Z_{T-1} + e_t. \tag{8}$$

where the structural shocks, e_t, which are unobservable, are assumed to be mutually independent and related linearly to the one-step-ahead forecast errors, u_t:

$$u_t = De_t \quad Ee_t e_t^{'} = I$$

The parameters of the structural form are therefore linked to those of the reduced form by:

$$D = A_0^{-1}, \quad B(L) = A_0^{-1} A(L) \tag{9}$$

where the first column of D is the object we need to identify uniquely in order to compute the impulse responses pertaining to a government consumption shock. Moreover, given (9),

$$A_0^{-1}\left(A_0^{-1}\right)' = V \tag{10}$$

Let, for notational convenience, the vector of the VAR variables be re-written as:

$$Z_t \equiv \left[G_t, M_t, X_t\right] \tag{11}$$

where X_t includes all variables apart from government consumption and the money supply. In this context, our identification strategy imposes not only that condition (10) be satisfied but also the following block-recursive structure to the matrix A_0:

$$A_0 = \begin{bmatrix} \underbrace{A_0^{1,1}}_{(1\times 1)} & \underbrace{0}_{(1\times 1)} & \underbrace{0}_{(1\times 6)} \\ \underbrace{A_0^{2,1}}_{(1\times 1)} & \underbrace{A_0^{2,2}}_{(1\times 1)} & \underbrace{0}_{(1\times 6)} \\ \underbrace{A_0^{3,1}}_{(6\times 1)} & \underbrace{A_0^{3,2}}_{(6\times 1)} & \underbrace{A_0^{3,3}}_{(6\times 6)} \end{bmatrix} \tag{12}$$

where A_0 is partitioned conformably with Z_t in (11). The first row of A_0 reflects the assumption that government consumption is predetermined with respect to all other variables in the VAR. The second row reflects the assumption that the money supply is predetermined with respect to all other variables but government consumption. The absence of restrictions on the elements of the third row is just reflecting that we are not imposing any structure on the coefficients of the last six equations of our VAR. This means that the elements of the third row in (12) are not identified. That, however, does not constitute a problem for our purposes because the block-recursiveness implied by our identification strategy is enough to uniquely pin down the dynamic responses of all the variables to a government consumption shock.

It can be shown without any loss of generality that, first, the dynamic responses of the variables in Z_t are uniquely identified if one adopts the normalization that A_0 is lower-triangular with positive diagonal elements and, second, that adopting that normalization, the dynamic responses are invariant to an arbitrary change in the ordering of the variables in X_t.This implies that we can uniquely identify the impulse responses pertaining to a government consumption shock by setting A_0 equal to the inverse of the Choleski factor of the V matrix, without worrying about the order in which the variables in X_t appear in the reduced-form VAR.

APPENDIX 2

Here we present in detail the simple model economy that we use, similar in structure to Christiano, Eichenbaum and Evans (1995), which is able to replicate the main features of the data. The economy consists of a representative household, a representative firm, a representative financial intermediary and a government. There are shocks in the economy. The history of these shocks up to period t, is the state of the economy in period t. All variables are indexed to the state of the economy, but to simplify notation we do not do it explicitly. An equilibrium in this economy is a sequence of policy variables, quantities and prices such that firms, financial intermediaries and households solve their problems given the sequence of policy variables and prices, the budget constraints of the government and of the central bank are satisfied and markets clear.

- Government and Central Bank:

The government gets revenues from lump-sum taxes T_t, makes government consumption G_t and supplies money M_t^s. Government consumption is a random variable. Since there are lump-sum taxes government debt plays no role. Taxes are an endogenous variable.

The central bank makes a lump-sum monetary transfer K_t to the representative financial intermediary at each date $t = 0, 1, 2, ...$ The money supply evolves according to $M_t^s = M_{t-1}^s + K_t$. The central bank reacts to the government consumption shock. Positive innovations in public consumption are met with contemporaneous increases in money supply.

- Financial Intermediaries:

The representative financial intermediary receives deposits L_t from the households and make loans M_t^f to the firms. The gross nominal interest rate on the deposits and on the loans to the firm is R_t. The financial intermediary receives from the monetary authority the transfer of money K_t. In order to maximize profits the financial intermediary chooses $M_t^f = L_t + K_t$.

- Households:

The preferences of the representative household are described by the expected utility function:

$$U = E_0\left\{\sum_{t=0}^{\infty}\beta^t u\left(C_t, 1-N_t\right)\right\} \tag{13}$$

where β is a discount factor, C_t is consumption, $1-N_t$ is leisure and N_t is hours of work.

The good market is open at the beginning of each period and the asset market at the end of each period. At the end of period $t-1$ the household is in the asset market with wealth $\mathcal{W}_{t-1}$, part of it he decides to maintain as cash to carry out transactions in period t, M_t^h, and the remaining, L_t, he decides to deposit at the intermediary. Thus,

$$L_t + M_t^h \leq \mathcal{W}_{t-1} \tag{14}$$

The household starts period t with outstanding money balances, M_t^h, and outstanding deposits at the financial intermediary, L_t. The household receives the labor income, W_tN_t, where W_t is the wage rate. The labor income is paid in advance and can be used to purchase consumption in the same period. The purchases of consumption goods are such that,

$$P_tC_T \leq M_t^h + W_tN_t. \tag{15}$$

At the end of the period, the household receives the gross returns on the loans R_tL_t and pays taxes T_t. Thus the cash holdings for the household at period t are

$$\mathcal{W}_t = M_t^h + W_tN_t - P_tC_t - T_t + R_tL_t \tag{16}$$

The representative household maximizes (13) subject to (14), (15), (16) and the requirement that portfolios must be chosen one period in advance.

Among the first order conditions we have,

$$E_t\frac{R_{t+1}u_{1-N}(t+1)}{W_{t+1}} = E_t\frac{u_C(t+1)}{P_{t+1}}$$

and

$$\frac{u_{1-N}(t)}{W_t} = \beta E_t \frac{R_{t+1} u_{1-N}(t+1)}{W_{t+1}}$$

The first condition is the standard intratemporal condition in expected value, since the household must decide his portfolio in advance. The second condition is the standard intertemporal condition between two consecutive leisure levels.

- Firms:

The problem of the representative firm is to choose production in order to maximize profits. The profits are,

$$\Pi_t = P_t Y_t - W_t n_t - (R_t - 1) M_t^f,$$

where Y_t is production and n_t is hours of labor employed. The firm solves the problem

$$\max \Pi_t$$

subject to the linear technology

$$Y_t \leq A_t n_t,$$

where A_t is the level of technology, and subject to the cash-in-advance restriction

$$W_t n_t \leq M_t^f$$

A first order condition of this problem is the standard expression for the real wage

$$\frac{W_t}{P_t} = \frac{A_t}{R_t}. \qquad (17)$$

- Market clearing:

The clearing conditions for the deposits, good, labor and money markets are:

$$L_t + K_t = M_t^f = W_t n_t$$

$$C_t + G_t = Y_t$$

$$N_t = n_t$$

and

$$M_t^S = M_t^f + M_t^h$$

- Interest rate and money relationship:

Finally, we verify that the decrease in the interest rate, R_T can only be attained through an injection of money, K_T. Using the various market clearing conditions and cash in advance constraints we can write

$$\frac{M_T^h + W_T N_T}{K_T + L_T} = \frac{M_T^h}{K_T + L_T} + 1 = \frac{P_T C_T}{W_T + N_T} = \frac{R_T}{A_T} \frac{A_T N_T - G_T}{N_T} = R_T \left(1 - \frac{G_T}{AN_T}\right).$$

$$= R_T \left(1 - \frac{G_T}{A\left(\frac{A}{R_T^2}\right)^{\frac{1}{\chi}}} \right) = R_T - \frac{G_T}{R_T^{\frac{2}{\chi}-1} A^{1+\frac{1}{\chi}}}.$$

Since R_T decreases and $\frac{G_T}{R_T^{\frac{2}{\chi}-1} A^{1+\frac{1}{\chi}}}$ increases then the ratio $\frac{M_T^h}{K_T + L_T}$ goes down. Thus, K_T must go up since M_T^h and L_T were chosen in advance.

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THIRD CONFERENCE ON "PORTUGUESE ECONOMIC DEVELOPMENT IN THE EUROPEAN CONTEXT": A SYNTHESIS*

*José A. Ferreira Machado***

Following identical initiatives in 2004 and 2004, the Bank of Portugal organized on the 10th of February a conference on the topic of "Portuguese Economic Development in the European Context". This article provides a personal synthesis of the communications to the conference as well as of their major policy implications.

A nation's standard of living is determined by the productivity of its workers that is, by the amount of goods and services produced for each hour of a worker's time. For a given state of technological knowledge, this productivity depends essentially on the quantity of factors of production per worker and on the efficiency of their utilization. Generally speaking, most of the papers presented to the Conference address some basic forces behind productivity growth namely, human capital accumulation, market competition, the role of the services sector and the efficiency costs of taxes.

Olivier Blanchard's keynote address to the conference ("Adjustment with the Euro: The difficult case of Portugal") focused not so much on the fundamentals of economic development but rather on the current Portuguese economic situation. Portugal, as Blanchard's put it, is a country in economic trouble: very low growth, low productivity growth, increasing unemployment, large current account and fiscal deficits. A major culprit is the continuous overvaluation clearly apparent in the cumulative growth of 22.3% of unit labor cost relative to the euro area since 1995. Blanchard pointed out two and only two ways out of the current ordeal: an increase in productivity growth or a cut in nominal wages. Given the current low euro area wage growth, a mere wage freeze will increase competitiveness only very slowly. Nominal wage cuts however difficult are not different from currency devaluation and will eventually occur if unemployment continues to rise. There is a large scope for productivity improvements (the papers in the conference provide some clues how) but this is necessarily a slow process. Interestingly, however, and contrary to popular belief, Blanchard remarked that the targets for productivity gains in a shorter run are not necessarily the tradable's sector or high tech industries. Given the stock of human capital of work force, the level of R&D and the existing employment protection legislation, Portugal has no real comparative advantage in high tech. More promising look to the author the services in general and especially those related directly or indirectly to tourism, leisure and third-age (the Tuscan model in Blanchard's words).

In the second-half of the twentieth century the Portuguese aggregate productivity grew at a remarkable pace close to 4% per year. Taking the U.S. as a benchmark, this translated into a significant convergence of standards of living. At the same time, as all developed countries, Portugal underwent a process of marked structural transformation with the share of employment in agriculture dropping almost 40 p.p. and the share of services increasing about 30 p.p. The paper by Margarida Duarte and Diego Restuccia ("The structural Transformation and Aggregate Productivity in Portugal"), quantifies the relative contributions of structural transformation and sectorial productivity to the growth of aggregate labor productivity. The authors show that the observed convergence reflected mainly the increase of the

* This paper represents the views and analysis of the author and should not be thought to represent those of the Banco de Portugal.

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productivity in manufacturing since productivity growth in agriculture and services lagged behind the US. Owing to an income elasticity of demand superior to unit, services tend to gain weight in GPD as economies progress. Consequently, the authors point out that further convergence of GDP per capita will be in jeopardy unless productivity in services starts growing faster.

The previous analysis is probably too aggregate to draw specific policy recommendations on how to increase productivity. Nevertheless, the focus on the service sector is quite useful and important. Indeed, since services industries are usually more regulated and shielded from market forces than manufacturing and are also more human capital intensive, faster productivity growth will demand increased competition and faster human capital accumulation. These were the topics of five of the communications to the conference.

Education is unanimously regarded as critical to increase productivity. Pedro Carneiro ("Equality of Opportunity and Educational Achievement in Portugal") shows that education explains roughly half of the variability observed in Portuguese workers' wages (a measure of their productivity) which is quite a significant share as, a similar figure for the US is 15% and for several European countries is often below 30%. Also, an overwhelming proportion of low wage and non employed individuals have very low levels of education. At the same time it was found that there is a very strong association between parent's education and their children education. The author goes further, and disentangles the relative contribution of the school's quality and of family background for the student's success (measured by PISA test scores taken by 15 year old individuals) in Portugal. Schools quality and socio-economic family background both influence the academic achievement (although they jointly explain less than half of the scores variance). More interesting, however, is that the most important factor explaining school's quality indices is the family background of students in the school and not measures of school resources. The author thus concludes that the family background of ones school peers is the most important factor affecting individual performance while school resources only play a limited role. Quite important is also the large degree of persistence in educational status: the chances of a child of parents with less than primary education never completing high school are more than 90% while virtual all of offspring of parents with a university degree complete at least high school. Changing significantly the stock of human capital of Portuguese working force will take generations and traditional policies based upon increasing the amount of resources in schools have a very limited effect. The family, Carneiro concludes, must be seriously taken into account when designing new policies and it is necessary to intervene at the family level much before children get to school.

But, not only formal education increases the stock of human capital: as Rita Almeida and P. Carneiro note ("On-the-Job Training: Estimating Returns Using Firm Level Data") , more than 50% of the human capital accumulated during a typical life time results from post schooling investments in particular from on-the-job training. The rate of return on this type of investment was found to exhibit a huge dispersion: there are firms for which investing in training is a bad idea while others have suboptimal levels of investment. The sources of this inefficiency are left unexplained but, one may safely infer that incentive schemes to formation and training that do not accommodate the existing heterogeneity in returns should be avoided.

Besides their direct effects, education and training have also indirect effects on productivity. As the paper by Cátia Batista ("Joining the EU: capital Flows, Migration and Wages") remarks the aggregate technology in Portugal is characterized by complementarities between physical capital and skilled labor. These complementarities imply that the more qualified the work force is the more productive capital will be, the higher the return on investment and, consequently, the more attractive will Portugal be to new capital.

Improving the productivity of workers and firms is certainly a way of improving aggregate productivity. The paper by Luis Cabral (PME's em Portugal: Factos, Teorias e Consequências para Política Económica) draws attention to an alternative: the selection process. The micro structure of the Portuguese economy as far firms' demography is concerned is quite similar to that of most European countries: high turnover rates, lower survival probability of smaller firms, higher growth rates of smaller firms conditional on survival. The share of firms with less than 20 employees in the total number of firms and in total employment is also remarkably constant across countries. But in one respect is Portugal different: the average productivity is half of European leaders. However, and in a sense this constitutes the major point of the paper, focusing on average is highly misleading since within each sector, firms with low productivity coexist with those with relatively high productivity: 10 to 20% of firms have productivity levels that more than double the sector average. This dispersion is quite natural in face of uncertainty about cost and demand conditions. Given the spread of productivity, if somehow resources were relocated from less efficient top more efficient firms, average productivity would necessarily increase. Is this relocation that Cabral refers to when he speaks about selection process of firms. So, one way of improving aggregate productivity is to ensure that competition works on a "leveled playing field" so that the most efficient firms survive and prosper. Properly functioning markets are thus key to productive efficiency.

The capital market is preeminent in this respect; distortions in this market imply that the best projects may lack funding and less efficient firms survive. The paper by Rui Albuquerque and Clara Vega ("Asymmetric Information in the Stock Market: Economic News and Co-movement") studies how the Portuguese capital market reacts to local and U.S. news and, in this way, provide a test of its efficiency. Using real time U.S. and Portuguese macroeconomic announcements and high frequency stock market returns, the authors find a strong correlation between U.S. public macroeconomic news and PSI-20 stock market index. The question is whether such correlation is spurious and due to mere contagion of the American market responses or results from correlated fundamentals and, thus, is consistent with market efficiency. The evidence provided indicates that the correlation of returns remains unchanged when news about the U.S. economy are released, as if the Portuguese market was free riding on the American market and on its treatment of U.S. information; however, the correlation is substantially lower during Portuguese announcement days. The authors conclude against the hypothesis of contagion and that the co-movements between indices of the two markets are consistent with efficiency in the sense of adequate reaction to fundamentals.

Governments' interventions have also major effects on the incentives to an efficient use of resources and on productivity. Susana Peralta ("Budget Setting Autonomy and Political Accountability") deals with the issue of budget decentralization. Specifically, she proposes a game theoretical model of political accountability to analyze the case for decentralizing taxes in a context where local governments already decide on the provision of local public goods. Under the centralized regime budgets are set by the central government and local officials decide on the public good level. With decentralization, local officials decide both on the budget size and the public good. At this stylized level, Portugal clearly falls in the centralized regime category since the fiscal autonomy of local government is extremely low. The basic trade-off identified in the model is between ability to identify and vote out bad incumbents – bigger under tax autonomy – and discipline – bigger under a centralized tax regime. No system dominates but, autonomy tends to be preferred the higher the proportion of politicians who care with the public interest. However, since quality in endogenous, greater autonomy may increase the number of good politicians and, thus, reinforce its own attractiveness.

André C. Silva ("Taxes and Labor Supply: Portugal, Europe, and the United States") analyses the impact of taxation on income and consumption on the labor supply decisions. From 1986 to 2003 the number of hours worked per week in Portugal dropped more than 2.5 hours; in the same period the

hours in the U.S. fell only 0.5 hours. The paper purports to explain these changes with the changes in taxes. From the theoretical standpoint the effect is clear: higher taxes increase the opportunity cost of market activities and, thus, labor supply decreases and, with it, the aggregate output and per capita income. The question is whether that effect is sizable enough to mimic the hour's worked behavior. The author shows that the increase in taxes is shown to explain the reduction in hours worked in Portugal and in some other European countries over the last decade and a half. Taxes, he concludes, displace people from the market into less productive activities and, thus, lower productivity.

As a very personal summation, four major lessons may, in my view, be drawn from these communications to the Bank of Portugal 3rd Conference:

- Services are critical to continued convergence of productivity and standards of living.
- Income and consumption taxes destroy incentives to work and this effect in empirically relevant.
- It is not enough to invest additional resources in education in order to improve results; policies should address the issue of the student's family background and reach children well before they enter the school system.
- Sound competition policies (in a broad sense that include also flexible labor laws, efficient judicial system, combat to corruption and informality) promoting economic mobility may provide a significant boost to aggregate productivity.

CHRONOLOGY OF MAJOR FINANCIAL POLICY MEASURES

January and February 2006

January

- 3 January (Circular Letter No 1/06/DSBDR)

  Expresses Banco de Portugal's availability to launch the (informal) application procedure for the use of internal rating systems (credit risk) as well as standard approaches and advanced mediation (operational risk), in the context of the future transposition into national law of Directives 93/6/EEC and 200/12/EC.

- 9 January (Opinion of the European Central Bank 2005/C 323/10, Official Journal of the European Union No 323, Series C)

  Opinion of the European Central Bank at the request of the Council of the European Union on a proposal for a directive of the European Parliament and of the Council amending Directive 2004/39/EC on markets in financial instruments as regards certain deadlines (CON/2005/53).

- 16 January (Instruction of Banco de Portugal No 33/2005, BNBP No 1/2006)

  Amends Instruction No 23/2004, on accounting reporting prepared according to International Accounting Standards (IAS) and Adjusted Accounting Standards (AAS).

- 16 January (Instruction of Banco de Portugal No 34/2005, BNBP No 1/2006)

  Amends Instruction No 18/2005, on the reporting of financial statements and other items for the presentation of accounts of institutions that adopt International Accounting Standards (IAS) and Adjusted Accounting Standards (AAS).

- 16 January (Instruction of Banco de Portugal No 35/2005, BNBP No 1/2006)

  Establishes the accounting items to be reported to Banco de Portugal by institutions adopting IAS and AAS, in addition to those required by Instructions No 23/2004 and No 18/2005.

- 16 January (Instruction of Banco de Portugal No 36/2005, BNBP No 1/2006)

  Amends Instruction No 19/97, updating the list of Zona A countries, for the purpose of the solvency ratio.

- 19 January (Circular Letter No 2/2006/DPG)

  Urges all card issuers to check whether their regulations comply with the minimum standard general provisions for the use of bank cards, substantiated in regulatory provisions as set out in paragraphs 6 to 8 of Notice of Banco de Portugal No 11/2001, of 20 November.

- 20 January Circular Letter No 12/06/DSBDR)

  Provides clarification on the impact framework of the recognition of liabilities with long-service rewards for active staff, resulting from the transition to International Accounting Standards (IAS) or Adjusted Accounting Standards (AAS).

February

- 15 February 2006 (Circular-letter no. 5/2006/DPG)

  Clarifies doubts as to the opening of bank deposit accounts by individuals who are not engaged in a professional activity. In the view of Banco de Portugal, such fact shall not constitute a valid ground for refusal by credit institutions.

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— *Olivier Blanchard, Pedro Portugal*

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— *Pedro Portugal, John T. Addison*

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— *Nuno Cassola, Carlos Santos*

6/98 CONSUMER EXPENDITURE AND COINTEGRATION
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