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OUTLOOK FOR THE PORTUGUESE ECONOMY: 2004-2005

1. INTRODUCTION

This article presents projections for the Portuguese economy for 2004 and 2005, corresponding to an updated version of the forecasts prepared by the Banco de Portugal within the framework of the Eurosystem's Spring 2004 Exercise. The euro area projections, disclosed after the meeting of the Governing Council of the European Central Bank, held on 3 June, were based on information available up to 17 May. The figures disclosed in this *Economic Bulletin* have already taken into account a set of indicators for the Portuguese economy made available between mid-May and mid-June, which enabled a reassessment of the behaviour of output and its composition in the early months of 2004.

These projections point to a gradual recovery in economic activity in Portugal. Gross Domestic Product (GDP) growth is projected to be in the range of ¾ to 1¾ per cent in 2004 and of 1 to 2½ per cent in 2005, following a contraction in economic activity in 2003 (-1.2 per cent change in GDP) (Table 1). The recovery in economic activity in Portugal is foreseen to be based on strong export growth, in line with the acceleration of economic activity recorded projected for the main trading partners of the Portuguese economy. Albeit less markedly than exports, private expenditure is also expected to pick up, in terms of both private consumption (of durable and non-durable goods) and

Table 1

PROJECTIONS OF THE BANCO DE PORTUGAL – CENTRAL SCENARIO

Year-on-year rates of change

	2003	Current projection		Memo: Economic Bulletin Dec/2003		
		2004	2005	2003	2004	2005
Private consumption	-0.5	[¼ ; 1¾]	[½ ; 2½]	[-1¼ ; -¼]	[0 ; 1½]	[½ ; 2½]
Public Consumption	-0.4	-0.6	-0.4	0.0	-0.8	-1.5
Gross fixed capital formation	-9.5	[-¼ ; 2¾]	[¼ ; 4¼]	[-11 ; -9]	[-4¾ ; -¾]	[½ ; 6½]
Domestic demand	-2.5	[0 ; 2]	[¼ ; 2¾]	[-3¼ ; -2¼]	[-1 ; ½]	[¼ ; 2 ¼]
Exports	4.1	[5 ; 6½]	[5 ; 8½]	[2½ ; 3½]	[4¾ ; 6¾]	[6 ; 9]
Overall demand	-1.1	[1; 3]	[1¼ ; 4¼]	[-2 ; -1]	[¼ ; 1¾]	[1¾ ; 3¾]
Import	-0.7	[2¾ ; 5¾]	[3¼ ; 7¼]	[-2¾ ; -1¾]	[1 ; 3]	[4¼ ; 7¼]
GDP	-1.2	[¾ ; 1¾]	[1 ; 2½]	[-1½ ; -¾]	[0 ; 1½]	[¾ ; 2¾]
Current account + Capital account (% GDP)	-3.0	[-4; -2]	[-4½ ; -1½]	[-3¼ ; -2¼]	[-2½ ; -½]	[-2¾ ; ¼]
Harmonised Index of Consumer Prices	3.3	[2.2 ; 3]	[1.5 ; 2.7]	3.3	[2 ; 3]	[1½ ; 3]

Note: For each variable, the central scenario (understood as the most likely figure for the variable conditional on the assumptions considered) corresponds to the midpoint of the range. As explained in more detail in section 4, probability distributions for the possible figures of the variable may be asymmetric. In this case, the probabilities of a figure standing on the upper or lower half of the range are not identical.

business investment. Household investment in housing is projected to decrease slightly in 2004 and 2005, after a sharp fall in 2003. The pattern of private expenditure will induce a continued increase in household indebtedness position over the projection horizon — in a context of constant interest rates, at historically very low levels, as assumed in the technical assumptions of the exercise — implying positive growth of credit to households, albeit slightly decelerating compared with the recent past. Finally, the projections hereby presented assume that general government final expenditure (public consumption and investment) will record negative rates of change, in real terms, reflecting a need for fiscal consolidation and also a decline in structural funds transferred by the European Union within the context of the Third Community Support Framework.

Turning to inflation, the growth rate of the Harmonised Index of Consumer Prices (HICP) is expected to decline from 3.3 per cent in 2003, to a value between 2.2 and 3.0 per cent in 2004, and between 1.5 and 2.7 per cent in 2005. The assumed moderate growth of international prices and the projected deceleration in unit labour costs — reflecting a more favourable cyclical pattern of productivity and moderate wage growth — will allow for a reduction in the inflation rate in Portugal over the projection horizon.

The projected path of the recovery in economic activity and inflation in 2004 and 2005 is not free from risk, understood as the factors that render asymmetric the distribution of the forecast values for these variables. With respect to the current year, there is still the risk, albeit moderate, that output may grow in the upper half of the projection range. In this exercise, the latest developments in the economic indicators — which show a relatively dynamic performance of domestic demand in the first half of 2004 — were not fully extrapolated for the remainder of the year, since they may have been significantly affected by temporary effects related to the hosting of the European Football Championship (Euro 2004) in June. If this picture does not hold true, domestic demand growth (and, to some extent, output growth) may be higher than the central projection scenario. By contrast, for 2005

downside risks to activity prevail, reflecting on the one hand, the possibility that the pick-up in external demand does not consolidate as forecast and, on the other, the materialisation of less favourable developments in oil prices than assumed in the technical assumptions of the exercise. Indeed, if the recent increase in the prices is not as temporary as assumed in the Eurosystem projection exercise, it may imply a slight downside risk to activity and above all an upside risk to inflation. In the case of the latter variable, the upside risk dominates the moderating effect on consumer prices associated with a possible materialisation of the risk of a smaller recovery in economic activity in 2005.

The current projections present some qualitatively important changes compared with those published in the December 2003 issue of the *Economic Bulletin*. In particular, the midpoint of the projection range for the GDP growth rate in 2004 stands presently ½ percentage point (p.p.) higher than in the December projections. This upward revision reflects a stronger pick-up in domestic demand than assumed in the previous exercise, which is particularly significant in Gross Fixed Capital Formation (GFCF) (Table 1). As a consequence, the projections also point to a higher growth of imports of goods and services, which led to a revision of the projection for the combined current and capital accounts. The current projection indicates that the financing needs of the Portuguese economy, as measured by the combined deficit of the current and capital accounts, over the projection horizon, remain close to 3 per cent do GDP, i.e. the figure observed in 2003. By contrast, in the *Economic Bulletin* of December 2003 — in a scenario of smaller domestic demand growth, in particular in the case of GFCF — the projections pointed to a continued narrowing of the external deficit, as recorded up to 2003. Finally, it should be noted that the projection currently disclosed for inflation corresponds broadly to the figures presented in December projection. The effects resulting from the less favourable trend of oil prices, compared with the previous projection exercise, seem to have been offset by a more favourable scenario for developments in the remaining import prices denominated in euro.

2. ASSUMPTIONS AND INFORMATION UNDERLYING PROJECTIONS
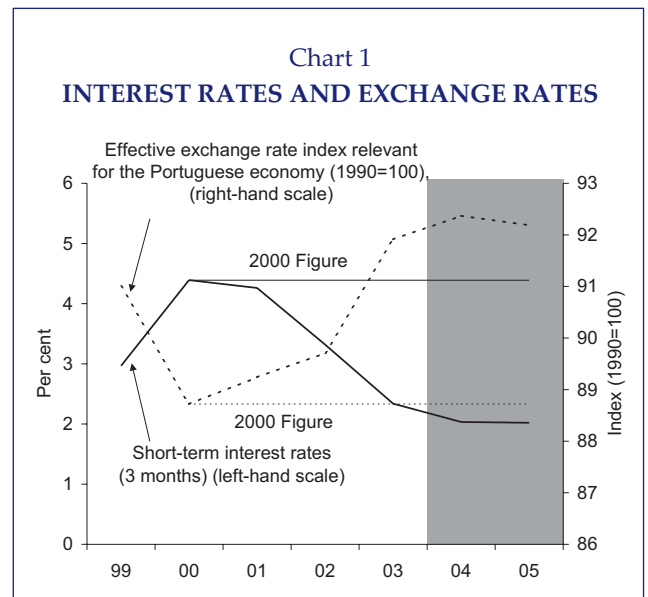
2.1. Assumptions of the Eurosystem exercise

As usual, the Eurosystem projection exercise, on which these projections are based, incorporates a series of technical assumptions, in particular that short-term interest rates and bilateral exchange rates will remain unchanged at the mid-May levels and commodity prices will be in line with prices in futures markets. In addition to these technical assumptions as well as to the assumptions on developments in non-euro area economies, which are common to all Eurosystem central banks, a series of specific assumptions was also assumed for the Portuguese economy, of which the assumptions for public finance developments are particularly important.

2.1.1. Interest rates and exchange rates

The technical assumptions that interest rates and exchange rates will remain unchanged imply for 2004 a further decline, in annual average terms, in short-term interest rates and an appreciation of the effective exchange rate index relevant for the Portuguese economy (Chart 1), reflecting the pattern of these two variables in the course of 2003. Technical assumptions with regard to long-term interest rates — which play a relatively limited role in this projection exercise for Portugal[1] — point to a slight upward pattern over the projection horizon.

A quantification of the effects of interest rate and exchange rate developments, taking as counter-factual a situation in which interest rates and exchange rates remain unchanged at the level observed three years before the year under review, is illustrated in Chart 2 through the use of a Monetary Conditions Index[2]. Reflecting in particular the sensitivity of GDP to changes in the short-term interest rate — which has declined by more than 2 p.p. since 2000 — the results point to a contribution of monetary conditions of around ½ p.p. to GDP

Chart 1
INTEREST RATES AND EXCHANGE RATES

annual growth, both in 2003 and in 2004. For 2005, reflecting the assumption that interest rates will remain unchanged and thus, taking only into account the lagged effects of the declines in the interest rates observed up to May 2004, this estimated contribution diminishes to around ¼ p.p.

Turning to prices, the contribution of monetary conditions to the annual inflation rate is estimated at approximately -¾ p.p. in the period 2003-2005, also compared with a hypothetical situation in which interest rates and exchange rates remain unchanged at the average levels of the previous three years. This negative contribution reflects chiefly the transmission to prices, with some lag, of the euro appreciation since 2000, which recorded an appreciation of around 4 per cent of the effective exchange rate index for the Portuguese economy.

2.1.2. External demand relevant for the Portuguese economy

The assumptions as to economic developments in non-euro area economies and euro area projections broadly point to the continuation of the recovery in world economic growth apparent since the second half of 2003.

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(1) In Portugal, short-term interest rates are the most relevant for the transmission of the monetary policy, because both credit and deposits bear interest rates indexed to short-term money market interest rates.

(2) Indicator presented in Esteves (2003), "Monetary conditions index for Portugal", June 2003 issue of the *Economic Bulletin* of the Banco de Portugal. For instance, the counter-factual for 2003 corresponds to considering that interest and exchange rates remain unchanged at the average figure for 2000, while for 2005 the counter-factual is defined with constant rates at the average figure for 2002.

Chart 2
CONTRIBUTION OF MONETARY CONDITIONS

GDP growth rate — Inflation (CPI)

■ Effects of the changes in short-term interest rates over the past three years.
□ Effects of the changes in the exchange rate over the past three years.
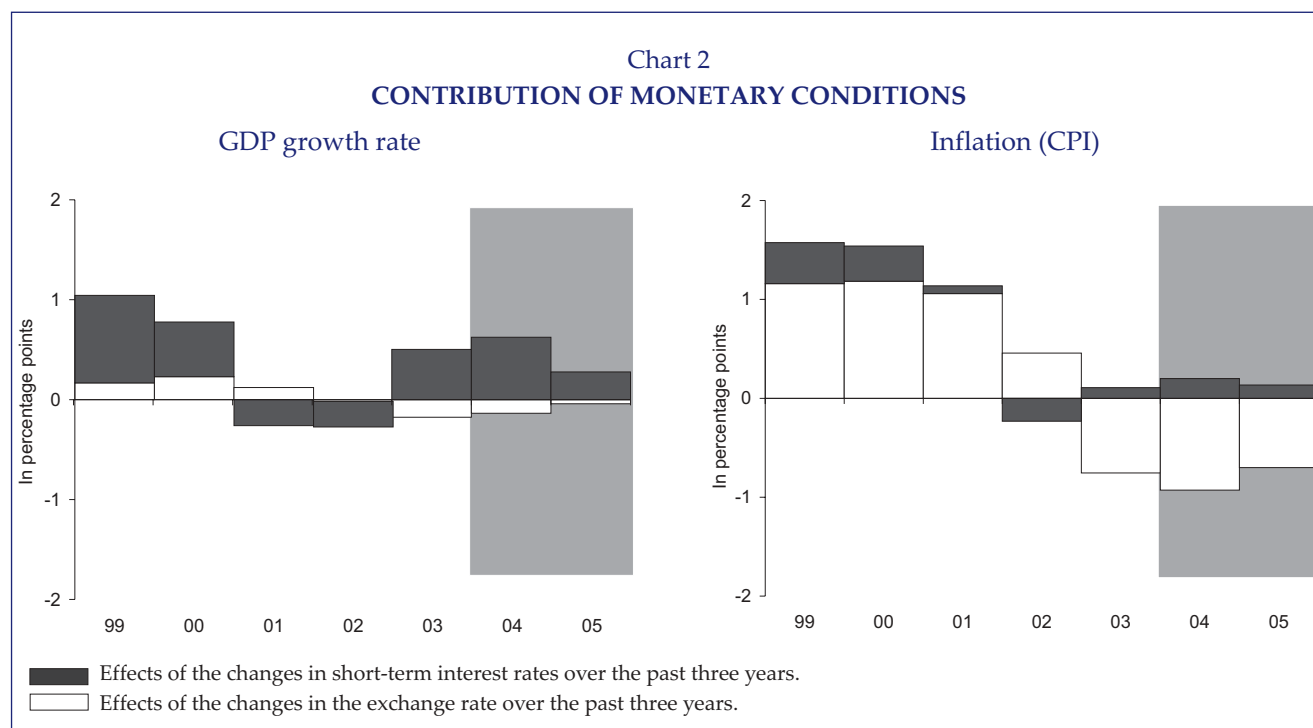
The Eurosystem projections assume that growth outside the euro area will increase to around 5 per cent in both 2004 and 2005 (from 4.5 per cent in 2003), with special emphasis on developments in the United States and non-Japan Asia. In the United States, growth is expected to be driven by the pick-up in investment, and supported by consumption, reflecting the continued improvement in the labour market. It should be noted that the Eurosystem projections exercise does not incorporate a significant adjustment of the current US fiscal and balance of payments imbalances. Asian economies are expected to display continued strong growth in both domestic expenditure and exports; the Japanese economy is expected to continue on its current gradual recovery path, reflecting, namely the easing of deflationary pressures over the projection horizon. With regard to the Member States of the European Union that do not participate in the euro area, growth of economic activity is expected to remain buoyant, in particular in the new Member States, where growth is projected to continue at a relatively strong pace.

For the euro area as a whole, economic activity is also expected to accelerate. Eurosystem projections point GDP growth to be between 1.4 and 2.0 per cent in 2004, and between 1.7 and 2.7 per cent in 2005. Higher growth in external markets, the recovery in the confidence indicators of economic

agents and the maintenance of interest rates at low levels, in line with the technical assumptions of the exercise, are the main factors underlying the trend acceleration of economic activity.

Taking into consideration the trend of imports in the main markets of destination of Portuguese exports, external demand for goods and services relevant for Portugal is expected to accelerate over the projection horizon, from a growth of 2.8 per cent in 2003, to 5.5 per cent in 2004 and 6.9 per cent in 2005 (the average growth in the 1990s was approximately 7 per cent).

2.1.3. International prices

The Eurosystem technical assumptions with regard to international commodity prices are based on expectations implied by futures markets. In the case of oil, after the strong rise recently recorded, the assumptions envisage a gradual decline in the price of Brent crude oil over the projection horizon, to levels that, on annual average terms, remain however above USD 30 per barrel (USD 34.6 and 31.8 in 2004 and 2005 respectively). With regard to the other commodities, the assumptions envisage a rise in prices both in 2004 and 2005, albeit at a lower pace than in 2003.

In 2004, considering the rise in oil prices — rapidly passed through to consumer fuel prices — and

the effects of the increases in indirect taxation and administered prices, the Eurosystem exercise projects an annual average change in HICP in a range of 1.9 to 2.3 per cent, for the euro area as a whole. For 2005, the projections point to a rate of change in HICP between 1.1 and 2.3 per cent, reflecting (i) limited rises in import prices, partly resulting from the assumed oil path, (ii) the reduced contribution of the rise in indirect taxes and administered prices considered in the projection and, finally, (iii) the deceleration in unit labour costs, provided by higher productivity growth and the maintenance of the nominal growth rate of compensation per employee.

2.2. Specific assumptions for Portugal

The projections presented in this article also incorporate a series of specific assumptions for Portugal, of which the public finance variables are particularly important. These assumptions envisage, namely, a reduction in the number of effective civil servants, due to the fact that retirements are expected to be only partially offset by new hirings, while intermediate consumption of public administrations is assumed to remain constant in real terms. As a result public consumption is assumed to decline in volume by 0.6 per cent in 2004 and 0.4 per cent in 2005 (Table 1). Public investment is also assumed to decline in 2004 and 2005, chiefly reflecting the foreseeable decrease in transfers from the European Union within the context of the Third Community Support Framework.

These projections for the Portuguese economy also incorporate an assessment of the effects of the European Football Championship hosted in June 2004, which were considered through estimates of the number of non-residents entering the country for specific reasons related with this event, the average stay in the country and the average expenditure made. As a consequence, these projections incorporate a positive effects of approximately 0.2 p.p. in the real GDP growth rate for 2004 — reflecting mainly an increase in exports of tourism services — and approximately 0.1 p.p. in the HICP growth rate in 2004, as a result of possible rises in services more sensitive to non-resident expenditure (hotels and restaurants). This temporary impact will tend to dissipate after the European Football Championship and, through a base effect, will affect negatively the rates of change in 2005.

Turning to price developments, the projections assume that consumer prices, which are conditioned by procedures of an administrative nature, will record in general a growth similar to that of the previous years. On the other hand, consumer fuel prices are assumed to change in line with the price of oil in international markets. Thus, considering the aforementioned assumptions, fuel prices are assumed to decline over the projection horizon, after the recent rises recorded since January 2004.

2.3. Recent conjunctural information

As mentioned above, the projections of the Banco de Portugal were initially developed within Eurosystem's Spring 2004 projection exercise, on the basis of information available up to 17 May. However, several indicators for the Portuguese economy were disclosed subsequently, which enabled a reassessment of the growth and composition of output. Thus, the projections disclosed in this *Economic Bulletin* are an update of the projection made in the context of the Eurosystem exercise referred to above.

Recent conjunctural data point definitely to a stronger pick-up in domestic demand than previously expected, particularly visible in GFCF. In the three-month period ending in May, sales of light commercial vehicles increased by 16.0 per cent in year-on-year terms, compared with a rise of 3.4 per cent, in the first quarter of the year; over the same period, sales of heavy commercial vehicles increased by 25.9 per cent, after a growth of 17.9 per cent in the first three months of the year. Nominal imports of capital goods (excluding transport material) increased by 10.6 per cent in the first quarter of the year, in year-on-year terms, confirming the strong growth observed in January and February.

As to private consumption, sales of light passenger vehicles, including four-wheel drive, increased by 11.3 per cent in the quarter ending in May (4.8 per cent in the first quarter of the year). The Retail Trade Turnover Index increased by 1.6 per cent, in real terms, in the quarter ending in April (0.5 per cent in the first quarter of the year).

The Economic Sentiment Indicator, which is a synthetic measure of economic developments, based on qualitative surveys of several sectors of

the economy — industry, services provided to companies, construction, retail trade and consumers — displayed a clear upward path in the first five months of the year, although in May it was still below the 1990-2003 average value.

The analysis of the available information for 2004 led to an assessment of a stronger recovery in domestic demand and in particular of GFCF, than previously projected. As this performance may be associated, at least in part, with the effect of the preparatory activities of the European Football Championship — which cannot be quantified on the basis of the available information — it seemed more adequate that in the central projection scenario this performance not to extrapolated this development for the year as a whole, admitting that some factors may have affected only temporarily domestic demand, and in particular investment.

3. PROSPECTS FOR THE PORTUGUESE ECONOMY

3.1. Economic activity

The projections for the Portuguese economy presented in this *Economic Bulletin* foresee a pick-up in economic activity in 2004. The recovery will be driven by a progressively more favourable external environment, in line with the technical assumptions of the exercise and with the prospects of economic developments in the euro area, i.e. the economic area within which approximately two thirds of Portuguese external trade takes place.

However, the pick-up in domestic demand will be gradual. On the one hand, the necessary and desirable continuation of the fiscal consolidation process and the foreseeable decline in transfers from the Community to Portugal — with an impact respectively on public consumption and investment — will have, over the projection horizon, a moderating effect on domestic demand. On the other hand, although the technical assumptions of the exercise assume historically low interest rate levels, the current indebtedness position of private economic agents will continue to limit the growth of private domestic demand, since there is less room for expenditure growth financed through the concession of credit.

As a consequence, economic activity in Portugal is projected to recover more gradually than after

Chart 3
GROSS DOMESTIC PRODUCT
Year-on-year rates of change,
in volume
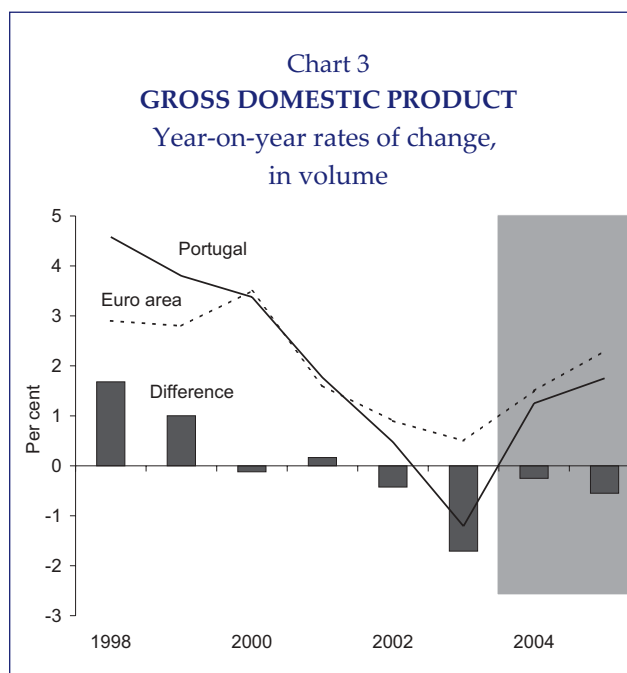
the previous downturns, whereby output growth will continue to be lower than that in the euro area, albeit less markedly than in 2003 (Chart 3)[3]. It should be noted, however, that fiscal consolidation and the endogenous adjustment of private domestic expenditure — after the imbalances accumulated in the public and private sectors — are essential so that the Portuguese economy may acquire again prospects of sustainable economic growth at a stronger pace.

The financial position of the private sector recorded a significant improvement in the past few years, shifting from a net borrowing position corresponding to roughly 6 per cent of GDP in 2000, to a net lending position of approximately 2 per cent of GDP in 2003[4]. This adjustment translated into a significant narrowing of the combined deficit of the current and capital accounts of around 9 per cent of GDP in 2000 to levels close to 3 per cent of GDP in 2003. Over the projection horizon, the financing needs of the Portuguese economy are expected to remain around this figure, contrasting with the re-

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(3) For a comparison with the previous downturn of the Portuguese economy, see "Box: *Some facts on the 1984, 1993 and 2003 recessions*", in the Annex to the Introduction of the 2003 *Annual Report*.

(4) See the article entitled "The Portuguese economy in 2003", in the March 2004 issue of the *Economic Bulletin*, for a detailed description of the definition of net lending/net borrowing of the various institutional sectors (households, firms and general government).

duction projected in previous exercises. This reflects the current assessment of a more marked growth in domestic demand, which, compared with previous exercises, also translates into less marked decelerations in credit to households and higher indebtedness levels. As a result, the upward revision of domestic demand and output has as consequence an increased vulnerability of the private sector to an interest rate increases, highlighted by the fact that expectations implied in futures markets point in this direction (see section 4).

Despite the gradual recovery in economic activity, the unemployment rate is not expected to decline, in annual average terms, before 2005, highlighting the usual lag of this variable in relation to the development of economic activity. The current projections also assume the maintenance of some sensitivity of wages to the prevailing labour market conditions, which in addition to avoiding more significant and permanent rises in the unemployment rate, will also allow for more moderate developments in unit labour costs. Thus, the moderation in real wages — which, contrary to developments since the mid-1990s, will grow below productivity — will boost the competitiveness of the sectors producing manufactured goods, paving the way for more sustainable economic growth.

3.1.1. Private consumption

Projections with regard to private consumption should be analysed in the light of recent developments in this variable. Consumption decelerated markedly after 2000, reflecting the compensation of some intertemporal substitution effects (which may have contributed to the anticipation of some consumption in the previous years, in particular in the case of durable goods), the higher weight of the debt service, and the effects of the slowdown in economic activity on disposable income. After having reached a trough in 1999, the household savings rate increased by approximately 3 p.p. of disposable income. This increase, which occurred during the downturn in economic activity, was a clear sign of the private expenditure adjustment process. In part, the precautionary effects related to developments in economic activity seem to have contributed to the increase, but the forced allocation of resources to debt repayments, recorded as household savings, were crucial to developments observed in

the savings rate. Indeed, in the past few years, despite the significant deceleration in private consumption and housing investment, the stock of household debt continued to grow significantly, resulting in the increase in the share of debt repayments in disposable income.

After the previous trend deceleration, which ended with a decline of 0.5 per cent in 2003, private consumption is expected to recover gradually over the projection horizon (Table 1). The growth rate of this aggregate is projected to be in a range of ¼ to 1¾ per cent in 2004, and ½ to 2½ per cent in 2005. These projections for private consumption correspond basically to the same forecasts published in the December 2003 issue of the *Economic Bulletin*, with only an upward revision of ¼ p.p. in the midpoint of the projection range for 2004. Households' disposable income is expected to increase marginally slower than private consumption, thus inducing a small decrease in the households' saving rate, in the context of the maintenance of interest rates at historically low levels.

3.1.2. Gross Fixed Capital Formation

The projections published in this *Economic Bulletin* point to GFCF growth in 2004 between -¼ and 2¾, after marked falls in the two previous years (-5.5 per cent in 2002 and -9.5 per cent in 2003). In 2005 this variable is expected to accelerate to a value in the range of ¼ and 4¼ per cent (Table 1). The projections for 2004 were significantly influenced by the latest information available, which suggest a faster recovery in GFCF than previously foreseen, leading to an upward revision of 4 p.p. of the midpoint of the projection range published in the *Economic Bulletin* of December 2003. However, the more marked pick-up in 2004 is not expected to be matched in 2005. By contrast, due to the base effect, the projection for GFCF in 2005 is revised downwards by 1¼ p.p., from the midpoint of the previous projections.

Developments in total GFCF are highly influenced, first, by the evolution assumed for public investment — reflecting the foreseeable decline in capital transfers from the European Union within the context of the Third Community Support Framework — and, second, by the trend of household investment in housing, for which marginally negative changes are projected over the projection

horizon, despite the historically low levels of interest rates. These developments are consistent with the continued increase in household indebtedness position in 2004 and 2005, reflecting the still high growth ratio of credit to households, albeit slightly decelerating from the recent past.

Firms' investment, after a cumulative fall of approximately 20 per cent in 2002 and 2003, is expected to be positive and clearly above that projected for output, as is common at this stage of the business cycle. In addition to the financial restrictions related to the corporate indebtedness levels, the strong reduction in corporate investment in 2002 and 2003 seems to have been conditioned by the fading out effects associated with the declining interest rates in the second half of the 1990s. Along this line, in the past two years, the deterioration of economic conditions seems to have contributed to the postponement, redimension or even cancellation some investment intentions, which may gradually be resumed.

3.1.3. Exports and imports

Exports of goods and services are expected to accelerate over the projection horizon from 4.1 per cent in 2003 to between 5 and 6½ per cent in 2004, and 5 to 8½ per cent in 2005. These developments projected for exports correspond basically to those published in the *Economic Bulletin* of December 2003, reflecting a progressively more favourable external environment, translated into strong growth — albeit not higher than the average rate recorded in the 1990s — of external demand relevant for the Portuguese economy.

The growth projected for goods and services exports is in general very much alike to the figures assumed for the external demand for the Portuguese economy, whereby no significant changes are projected in external market shares. This reflects, however, factors with opposite signs that will compensate each other out.

The stronger growth of exports is underpinned by three main factors. The relative weakness of domestic demand, albeit less intense than in 2003, may continue to induce a redirection of domestic production to external markets; the deceleration in unit labour costs, which may also create more favourable competitive conditions than in the recent past; and finally, in the case of services, the projec-

tions reflect the usual strong sensitivity of tourism exports to the international environment. Thus after the negative change observed in the past two years, tourism exports are expected to recover significantly, coupled with the effect of the European Football Championship in 2004.

As to factors determining slower growth of exports, mention should be made of the negative developments in exports of the automobile sector projected for 2004. In addition, the effects of the appreciation of the euro exchange rate in the recent past will tend to influence negatively the competitiveness of Portuguese exports. Despite the fact that Portuguese exports to the euro area economies account for around two thirds of the total, competition from non-euro area countries in the euro area markets may amplify the appreciation effect, unless this effect is absorbed by corporate profit margins, as it seems to have been the case in the past few years.

The pattern of imports over the projection horizon will continue to mirror the developments of the various components of global demand. The higher import content of the components that traditionally are more sensitive to the business cycle — corporate investment and purchase of durable consumer goods, in particular — will fuel a recovery in imports of goods and services, after the negative rates of change observed in the last two years. However, imports are projected to continue to record lower growth rate in volume than exports, given the gradual and lagged pick-up in domestic demand. The current projections envisages a growth of imports of goods and services in the range of 2¾ to 5¾ per cent in 2004, and 3¼ to 7¼ in 2005. Basically reflecting the revisions of the projections for GFCF, an expenditure component with high import content, the projections that are now published assume for 2004 higher import growth that in the *Economic Bulletin* of December 2003, translating into a revision of the midpoint of the projection range of 2¼ p.p. In contrast, the midpoint of the projection range of imports is revised downwards by ½ p.p., which was chiefly due to the revision of GFCF.

3.2. Current and capital accounts

After the significant reduction in net borrowing requirements of the Portuguese economy over the

past years, which was a major characteristic of the adjustment process of the Portuguese economy, the projections published in this article point to a stabilisation of this indicator at around 3 per cent of GDP over the projection horizon.

These developments reflect, first, the continuation of the trend decline in the deficit of goods and services account, in a context of higher buoyancy in exports than in imports, and basically constant terms of trade over the projection horizon (although the technical assumptions of the exercise with regard to oil price developments induce a slight loss in terms of trade in 2004, which is offset by a gain of similar magnitude in 2005). Second, both the surplus in current transfers account and the deficit in the income account are foreseen to stabilise, the latter in a context of maintenance of the interest rates at historically low levels, in line with the technical assumptions of the exercise. Finally, the capital account surplus is projected to decrease, owing to the above-mentioned reduction in transfers from the European Union within the context of the Third Community Support Framework.

Finally, the *Economic Bulletin* of December 2003 — in the context of a slower domestic demand growth, particularly in the case of GFCF — projected the continuation of the narrowing trend of the external deficit observed until 2003. The upward revision of domestic demand and, in particular, of the expenditure categories with higher import content, explains the less favourable scenario for the borrowing requirements of the Portuguese economy.

3.3. Inflation

The current projections foresee a fall in the inflation rate over the projection horizon. After a reduction from 3.7 per cent in 2002, to 3.3 per cent in 2003, the current central scenario assumes an annual average rate of change in the HICP in the range of 2.2 to 3.0 per cent in 2004, and of 1.5 to 2.7 per cent in 2005. This pattern of inflation is chiefly explained by the projected moderation of wage costs and by a relatively favourable external environment, which translates into only marginally positive increases in import prices (Chart 4).

The unfavourable developments in economic activity in 2003 and the gradual recovery projected

Chart 4
CONTRIBUTIONS TO INFLATION [a]
Midpoints of the projection range

Note:
(a) Contributions calculated on the assumption that inflation results from a weighted average between developments in wage costs and import prices in the past two years.

Chart 5
HICP: GOODS VERSUS SERVICES
Midpoints of the projection range
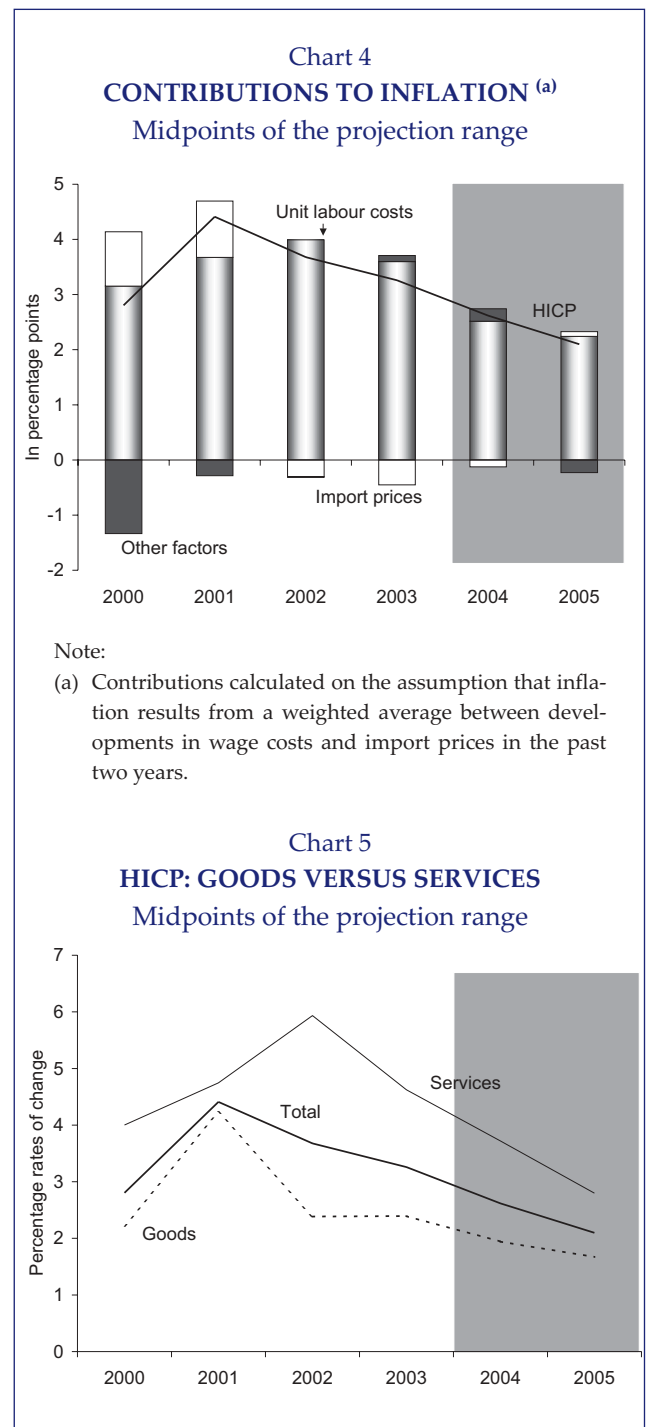
for 2004 and 2005 — when economic activity will continue to grow below its potential rate — favour a reduction in the inflation rate, through both lower pressure on the goods and services market and their indirect effects through the labour market. The rise in the unemployment rate in the last two years will tend to favour moderate wage developments, which together with a higher cyclical buoyancy of productivity will enable a significant deceleration in unit labour costs over the projection horizon.

Chart 6
PROJECTION RANGES

GDP

Consumer prices

75 per cent confidence interval

50 per cent confidence interval

75 per cent confidence interval

50 per cent confidence interval

Percentage rates of change
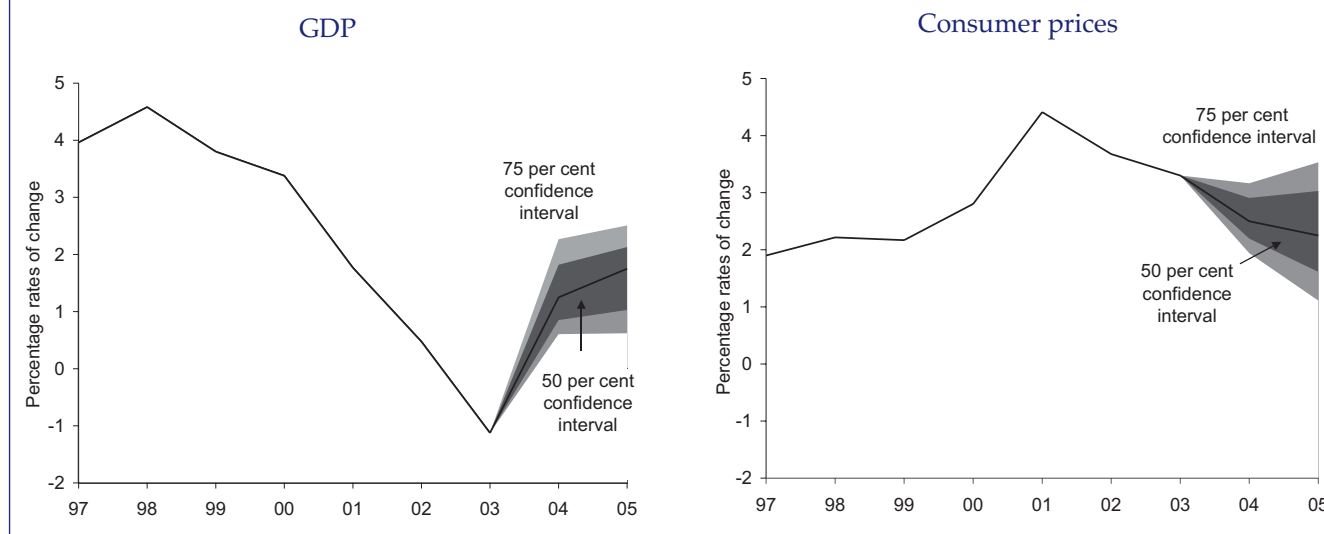
The current projections envisage a very sub-dued growth in import prices (approximately ½ per cent per year), after the negative change in 2003. The lagged effects of developments in import prices in 2003 and the pattern assumed for the price of oil in international markets — translated into a decline in fuel prices over the projection horizon, after the significant rises recorded since the beginning of the year — will enable the maintenance of an external environment characterised by a minor contribution to price rises in Portugal.

The fall in consumer price inflation in 2004 and 2005 results largely from the deceleration in the prices of services, (Chart 5) in which labour input costs generally correspond to a larger proportion of total costs. Prices of goods are expected to decelerate more moderately, also reflecting the reduction in wage costs, partially offset by the acceleration in energy prices in 2004 and by the resumption of positive growth rates of import prices of goods.

It should be noted that the trend decline in the inflation rate in 2004 may be interrupted in June and July, reflecting the effects of the European Football Championship on the prices of some services more sensitive to demand by non-residents, in particular restaurant and hotel services. However, the current projection assumes that this effect will completely unwind over the year and its con-

tribution to the average inflation rate in 2004 will be marginal.

4. UNCERTAINTY AND RISK ANALYSIS

This section presents a quantitative analysis of the uncertainty and risks underlying[5] the projections published in this *Economic Bulletin*, which is based on the errors committed in similar past projection exercises and on the assumption of the existence of five major risk factors: (i) more unfavourable developments in the price of oil in international markets; (ii) gradual increase in short-term interest rates in line with market expectations; (iii) less buoyant growth of external demand in 2005; (iv) higher growth of public consumption in 2004 and 2005; (v) stronger growth of private domestic demand in 2004, in line with the latest information on the short-term economic developments.

Overall, this analysis translates into a balance of risks on the upside with regard to developments in

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(5) For technical details on the procedure used, see A. Novo and M. Pinheiro, "*Uncertainty and Risk Analysis of Macroeconomic Forecasts: Fan Charts Revisited*", published in December 2003 in the *Working Paper* series no.19. A simplified explanation of this procedure and an application to the projections for 2004 made in the Autumn of 2003 is presented in the article by P. Esteves and A. Novo, "*Uncertainty and risk analysis: an application to the projections for the Portuguese economy*", published in the December 2003 issue of the *Economic Bulletin*.

Chart 7
OIL PRICE
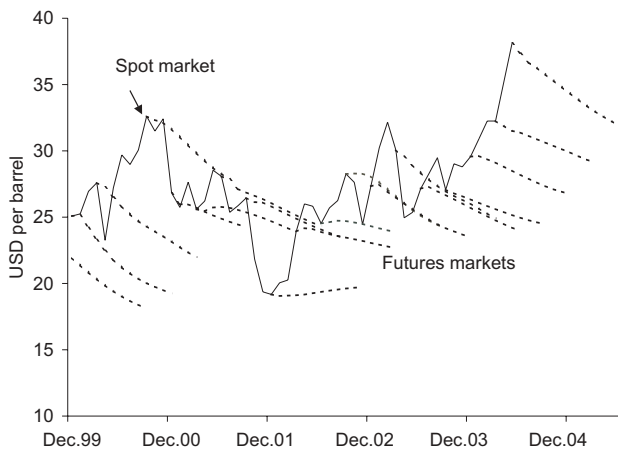
Chart 9
EXTERNAL DEMAND RELEVANT FOR THE PORTUGUESE ECONOMY
Observed vs. assumptions
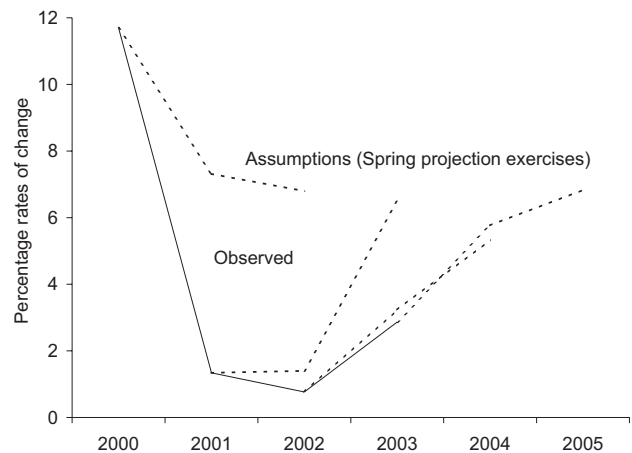
Chart 8
SHORT-TERM INTEREST RATES
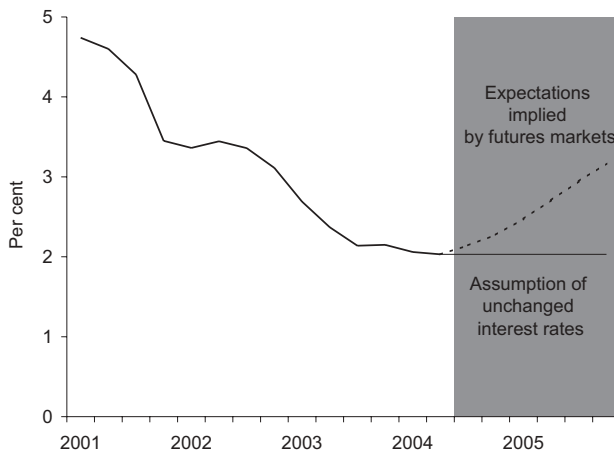
Chart 10
PUBLIC CONSUMPTION
In real terms
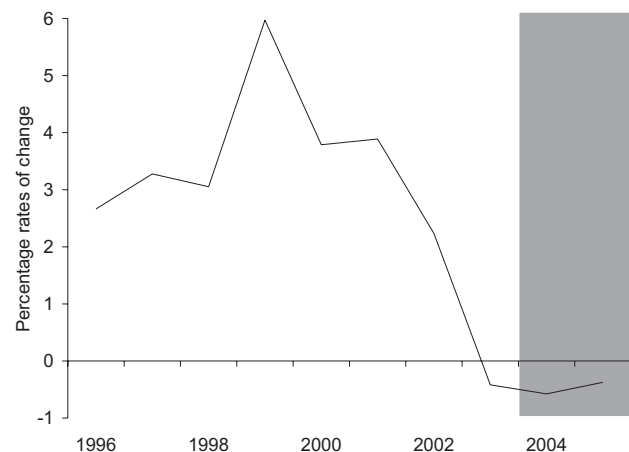
economic activity in 2004, but into a higher probability of GDP growth falling short of the midpoint of its projection range. Turning to prices, the balance of risks points to a higher inflation rate in 2004 and 2005, if the risk of a more unfavourable trend in the price of oil in international markets materialises.

4.1. Risk factors

The first risk factor considered is related to international oil price developments. The behaviour of oil futures markets (technical assumption of the Eurosystem projection exercise) indicates that the recent rise in oil prices was interpreted as being temporary. Nevertheless, and also considering past errors (Chart 7), there is a risk that the reduction in oil prices over the projection horizon may not be as marked as that underlying the information gathered from futures markets.

The second risk factor is related to short-term interest rate developments. As mentioned in section 2, the Eurosystem projection exercise is based on the technical assumption that interest rates will remain unchanged, at the current levels, while the expectations implied by futures markets point to a gradual increase over the projection horizon (Chart 8).

The third risk factor is related with the Euro-system assumption of a strong recovery in external markets (Chart 9), which is the main element of the recovery in overall economic activity in Portugal over the projection horizon. Data already available for 2004 seem to confirm the continuation of the current path of acceleration in external demand relevant for the Portuguese economy. However, the existence of some international imbalances — in particular, imbalances in public and external accounts in the United States — may jeopardise the consolidation of the international recovery in 2005.

The fourth risk factor is related to developments in public consumption. The figures assumed for its evolution — decreases in real terms of 0.6 and 0.4 per cent in 2004 and 2005 respectively — mirror an assumption of a gradual progress of fiscal consolidation. However, there is the risk that this process may weaken somewhat, which becomes more evident when the figures assumed for the projection horizon are compared with the trend of this variable over the past few years (Chart 10).

Finally, and taking into account the recent rapid rebound in some economic indicators, there is the risk that private consumption and investment may grow more strongly towards the end of 2004 than expected in the central projection scenario.

4.2. Quantification of risk factors

The quantification of the assessment of risks to output and its components and to inflation is based on the assumption of subjective probabilities of the materialisation of each of the risk factor mentioned (Table 2). In the specific case of short-term interest rates, the evolution for their expected value was based on the futures markets expectations. The main results are illustrated in Table 3, which presents the probability of the main macroeconomic variables falling short of the one assumed in the central scenario. Thus, in Tables 2 and 3, a probability above 50 per cent corresponds to the identification of a downside risk, i.e. the result is more likely to be below the midpoint of the central scenario presented in Table 1; downside risks are more likely the higher the probability therein presented. Symmetrically, a probability below 50 per cent reflects an upside risk, i.e. a higher result than that of the central scenario is more likely to occur.

Table 2

SUBJECTIVE PROBABILITIES OF RISK FACTORS[a]

In percentage

	Oil prices	External demand	Public consumption	Private consumption and investment
2004	40	50	40	45
2005	40	60	40	50

Note:
(a) Probability of the annual growth rate being lower than assumed in the central scenario, due to the direct effect of each risk factor considered.

Table 3

PROBABILITY OF A LOWER VALUE THAN OF THE CENTRAL SCENARIO

In percentage

	2004	2005
Private consumption	43	58
GFCF	42	57
Exports.	50	60
Imports	43	57
GDP	44	58
HICP	45	46

As illustrated, the risks related to developments in economic activity are on the upside for 2004, but on the downside for 2005, given that the estimated probabilities that output growth will be lower than the midpoints of the projection ranges are respectively 44 and 58 per cent. The result for 2004 is mainly explained by the possibility of a higher growth of domestic demand. For 2005, if the risk of smaller external demand growth materialises, the performance of Portuguese exports will be affected, while more unfavourable oil price developments and a rise in interest rates will negatively affect the evolution of both consumption and investment. In 2005 these two risks, on the whole, dominate the risk that public consumption growth may be higher than assumed in the central scenario.

With respect to trend inflation, the results reflect chiefly the risk of less favourable developments in oil prices, which in 2005 are partially offset by the effects on prices related with a possible smaller growth of economic activity than in the

base scenario. The estimated probability of the inflation rate being higher than the midpoints of the projection range is of 55 and 54 per cent in 2004 and 2005 respectively[6].

5. CONCLUSION

Available information on short-term economic developments for 2004 point to more dynamic growth of private domestic demand — in particular investment and purchase of durable consumer goods — than admitted in previous projection exercises. As a result, the projections presented in this *Economic Bulletin* envisage an upward revision of GDP growth in 2004. In addition, this projection presents some qualitatively important changes compared with the previous one: i) GFCF is expected to display positive growth already in 2004; ii) imports of goods and services, despite continuing to grow at a lower pace than exports, are expected to have a clearly more buoyant growth than previously assumed, largely reflecting the performance of corporate investment; iii) the borrowing requirements of the Portuguese economy are expected to stabilise over the projection horizon at around 3 per cent of GDP, contrasting with the trend decline previously foreseen. According to the current assessment, in 2004 moderately upside risks may prevail for GDP growth.

Two technical assumptions play a very important role in this projection. On the one hand, it is assumed that the fiscal consolidation effort will be pursued. Given the magnitude and the nature of the current public accounts imbalance, the fiscal policy is unable to play an active role in the cyclical stabilisation. On the other hand, short-term interest rates are assumed to remain unchanged over the projection horizon, although it is inevitable that the projected recovery in the European economy will be accompanied, sooner or later, by a rise in interest rates, as incorporated in market expectations.

The current gross indebtedness levels render the expenditure evolution of private agents, in particular of households, quite vulnerable to significant rises in the interest rate. Thus, the maintenance of relatively high growth rates of credit to households as implied in the projections, is not a desirable scenario, as it will further amplify the sensitivity of the Portuguese economy to interest rates changes, which are determined in the current context, by the overall economic conditions in the euro area as a whole and not specifically by the Portuguese cyclical conditions. Although it is true that the participation in the euro area has brought about important benefits for the economic agents — namely easier access to credit, which enabled a substantial improvement, within a short period of time, in the welfare of the Portuguese population — it is also important that economic rationality rules should not be ignored, considering that their non-observance may imply heavy adjustment costs in the future.

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(6) These figures, i.e. 55 and 54 per cent, correspond to the complementary figures for 100 per cent of the probabilities presented in Table 3 (which, by construction, are defined as probabilities that may be lower than the central projection scenario).

Articles

A NEW COINCIDENT INDICATOR FOR THE PORTUGUESE ECONOMY*

*António Rua***

1. INTRODUCTION

Within the macroeconomic policy framework, it becomes crucial to track down ongoing economic developments. However, the assessment of the economic situation can be challenging when the policymaker is confronted with data providing mixed signals about the current state of the economy. Although primary focus can be given to Gross Domestic Product (GDP), since it is the most comprehensive measure of economic activity as a whole, GDP *per se* presents several drawbacks. In particular, GDP is affected by measurement errors, it is available only on a quarterly basis and the first estimate, which is typically subject to revisions, is released with a lag of around 70 days in the Portuguese case. Therefore, one has to resort to other available data in order to have a clear and timely economic picture on a higher frequency basis. The need to summarise the information contained in the data leads to the construction of composite indicators. The main aim of this article is to obtain a comprehensive measure of economic activity that reflects the underlying trend of economic developments in Portugal. There is a considerable amount of literature on how to synthesize data, which includes, for example, the well-known Stock and Watson (1989) approach as well as the latest Stock and Watson (1998) and Forni, Hallin, Lippi and Reichlin (2000) methods. More recently, Azevedo, Koopman and Rua (2003) proposed a new approach for the construction of a composite indicator by merging several recent innovations regarding unobserved components time series models.

This article aims to present a new coincident indicator for the Portuguese economic activity using the methodology developed by Azevedo, Koopman and Rua (2003). The resulting indicator is compared with the one proposed by Dias (1993), which is currently published by Banco de Portugal. Moreover, the suggested composite indicator is evaluated in a real-time environment.

The article is organised as follows. In section 2, a brief overview of the model behind the construction of the composite indicator is given. The data used as input is discussed in section 3 and the resulting coincident indicator for economic activity is presented in section 4. In section 5, a real-time evaluation of the proposed composite indicator is performed. Finally, section 6 concludes.

2. THE MODEL

This section briefly presents the intuition of the model underlying the pursued composite indicator (see Azevedo, Koopman and Rua (2003) for a more technical and detailed discussion). The first building block of the model rests on the standard assumption that each series i, possibly after log transformation, can be modelled as the sum of a trend (μ_{it}), cycle (ψ_{it}) and irregular (ε_{it}) components, *i.e.*,

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

In particular, the trend-cycle modelling adopted is the one suggested by Harvey and Trimbur (2003) which allows to obtain a smooth cycle likewise a

band-pass filter. In the spirit of Burns and Mitchell (1946), if one believes that the business cycle consists of expansions and recessions occurring in several economic activities then one can assume a common cyclical component to all series. Thus, the model becomes

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

where the coefficient δ_i measures the contribution of the common cycle ψ_t for each series. However, as it stands it only allows for the simultaneous modelling of coincident variables. One can generalise the model in order take into account that some variables may be leading while others may be lagging. This can be done by shifting the common cycle for each series according to their lead/lag. Allowing for shifts, the model can now be written as

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

where ξ_i is the shift for series i. However, each series cycle can only be shifted with respect to another cycle. Therefore, one of the series has to be subject to parameter constraints, namely $\delta_j = 1$ and $\xi_j = 0$, with the model for that particular series given by

$$y_{jt} = \mu_{jt} + \psi_t + \varepsilon_{jt}, \qquad t = 1,...,T.$$

Thus, the shifts and loads of the other series are all relative to the cycle of series j. $I.e.$, the cycle is common to all series but scaled differently and shifted ξ_i time periods with series j being the reference series for the identification of the cycle. The model can be put in the state-space form and estimated by maximum likelihood. The resulting common cyclical component is the business cycle indicator. The growth indicator can be obtained by trend restoring the common cyclical component and then computing the corresponding growth rate.

3. DATA

As a preliminary step, one has to choose the variables to be included in the coincident indicator. As argued by Stock and Watson (1999), "[...] fluctuations in aggregate output are at the core of the business cycle so the cyclical component of real GDP is a useful proxy for the overall business cycle [...]". If this is the case, one should not disregard real GDP in the construction of the composite indicator for economic activity[1]. In particular, it seems natural to use real GDP for the reference cycle. As mentioned earlier, this can be done by imposing a unit common cycle loading and a zero phase shift for real GDP.

The remaining set of potential series to be included in the composite indicator was constrained to those variables available on a high frequency basis and promptly released and that have a minimal time span for business cycle analysis. The set of series that fulfilled those requirements were then subject to a preliminary analysis in order to assess which series are more informative about the business cycle[2]. Relying also on economic reasoning and bearing in mind the aim of obtaining a broadly based measure of economic activity one ended up with 8 series. Besides real GDP, the other series are[3]: retail sales volume (retail trade survey), sales of heavy commercial vehicles, cement sales, manufacturing production index, households' financial situation (consumer survey), new job vacancies and an external environment proxy. Note that 3 of the 8 series are of qualitative nature. The rationale of the chosen series can be put forward as follows. The retail sales volume variable intends to reflect mainly consumption developments while sales of heavy commercial vehicles is linked to investment. Cement sales are also related to investment but in particular, in the construction sector. On the other hand, the manufacturing production index captures the industrial sector behaviour. In order to take into account income and wealth developments, the households' assessment of their current financial situation was included. Concerning the situation in the labour market, the variable considered was new job vacancies. Finally, to reflect external environment, it was included a

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(1) For example, Stock and Watson (1989) discarded GDP presumably because it was available only on a quarterly basis. Recently, Mariano and Murasawa (2003) extended Stock and Watson (1989) coincident indicator by including quarterly GDP along with the monthly series.

(2) From a starting set of almost a thousand variables, one only considered slightly more than three hundred series due to time span availability. Then, resorting to a band-pass filter, each series cycle was compared with GDP cycle in terms of comovement through the cross-correlogram.

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

Chart 1
THE INPUT SERIES

Real GDP (log)

Retail sales volume

Heavy commercial vehicle sales (log)

Cement sales (log)

Manufacturing production index (log)

Households' financial situation

New job vacancies (log)

External environment proxy
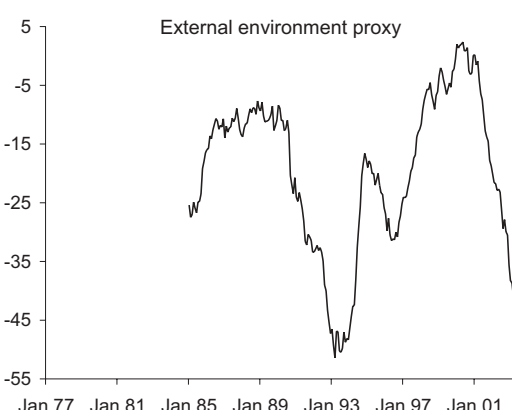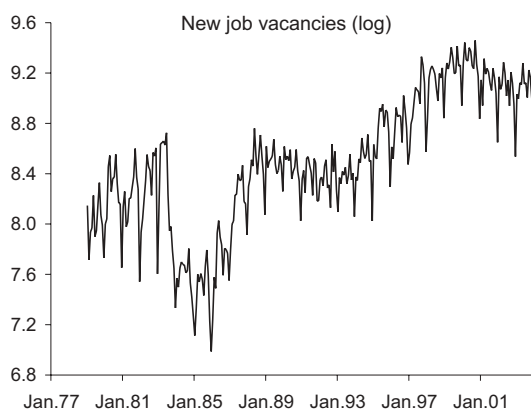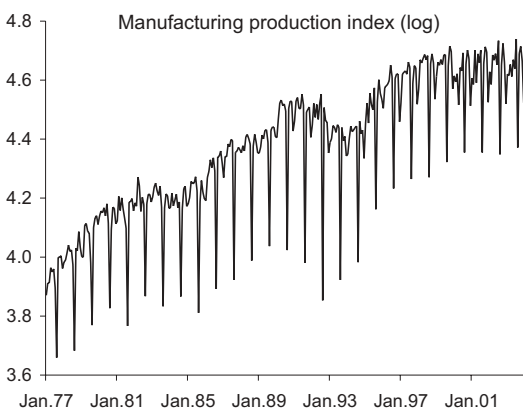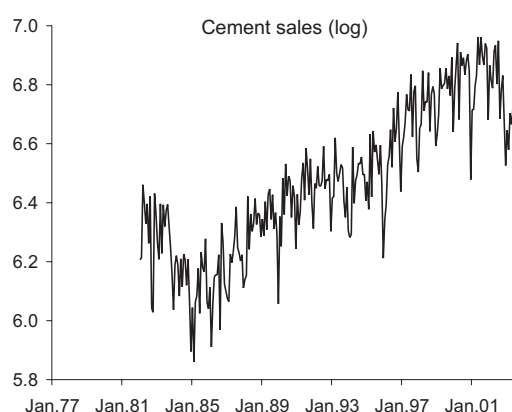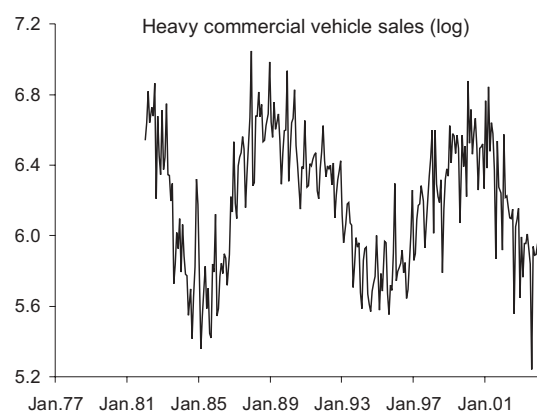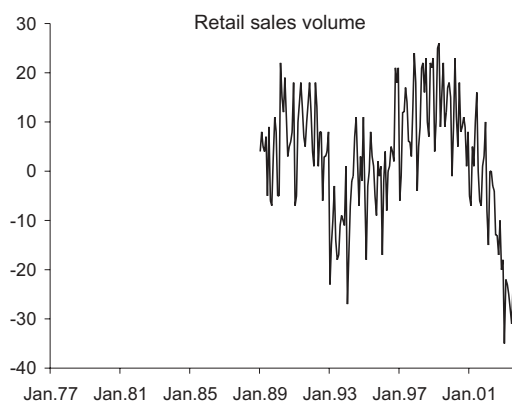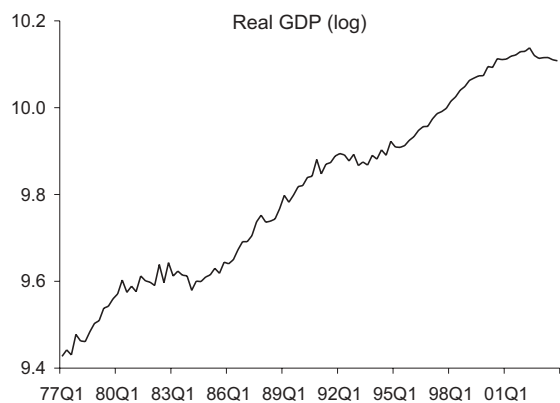
weighted average of the current economic situation assessment (consumer survey) of the Portuguese main trade partners, where the weights correspond to the share of each partner country in Portuguese exports. The input series are plotted in Chart 1. Note that real GDP is available only on a quarterly basis whereas all the other series are monthly. Moreover, the series have different sample periods. However, as it is well-known, one can deal with the missing observations problem straightforwardly in the state-space framework (see, for example, Harvey (1989)).

4. THE COINCIDENT INDICATOR

Once chosen the series, the model was estimated by maximum likelihood. Some selected estimation results are now discussed. The estimated common cyclical component is plotted in Chart 2. Note that it is available on a monthly frequency and can be interpreted as a latent monthly measure of GDP cyclical component within a multivariate framework. Additionally, it seems to be in line with common wisdom regarding Portuguese business cycle developments. The corresponding estimated shifts are reported in Table 1. Obviously, real GDP does not present a phase shift as it was used for the reference cycle. Only cement sales present a lag, although negligible. Regarding the other series, notice that both manufacturing production and new job vacancies lead the cycle by around six months while the external environment proxy presents a lead of almost a year. The leading nature of new job vacancies is in line with what

Table 1

PHASE SHIFTS

In months

	Phase shifts
Real GDP	0.0
Retail sales volume	4.7
Heavy commercial vehicle sales	1.1
Cement sales	-1.6
Manufacturing production index	6.1
Households' financial situation	2.8
New job vacancies	6.0
External environment proxy.	11.4

Note: A positive figure denotes a lead whereas a negative one denotes a lag.

was found elsewhere in the literature and the lead of the other two variables reflect the fact that Portugal is a small open economy. Another interesting estimation result refers to the duration of the cycle. A duration of almost 122 months (around 10 years) was estimated for the Portuguese business cycle.

As mentioned earlier, a growth indicator can be obtained by trend restoring the common cyclical component and then computing the growth rate. In particular, using the estimated GDP trend and calculating the year-on-year growth rate, results in the growth indicator presented in Chart 3[4]. Note that the use of GDP for the reference cycle in a first step and the corresponding trend in a second one is intended to allow one to obtain a coincident indicator with a meaningful scale[5]. One can see that the coincident indicator for economic activity

Chart 2

THE COMMON CYCLICAL COMPONENT

Chart 3

THE COINCIDENT INDICATOR FOR ECONOMIC ACTIVITY
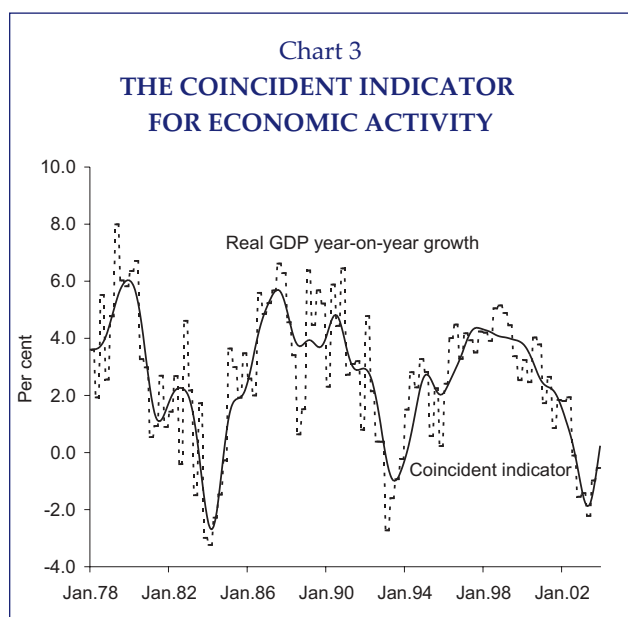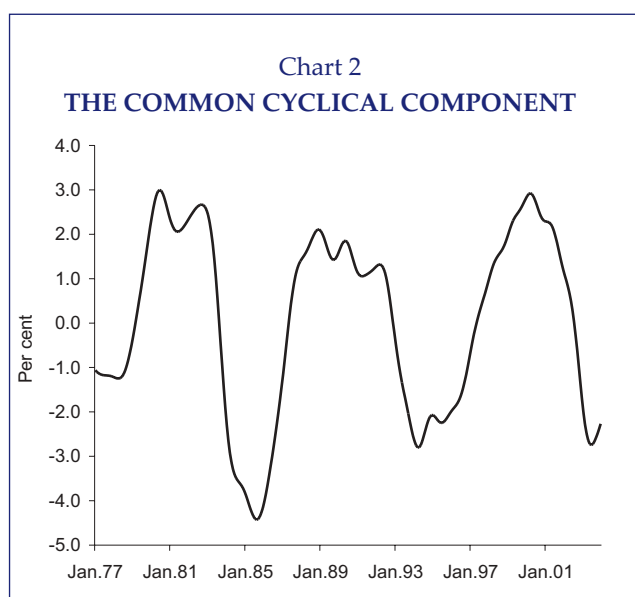
Chart 4
**THE COINCIDENT INDICATOR
AND THE ONE PROPOSED BY DIAS (1993)**

Chart 5
**MONTHLY ESTIMATES
OF THE COINCIDENT INDICATOR**
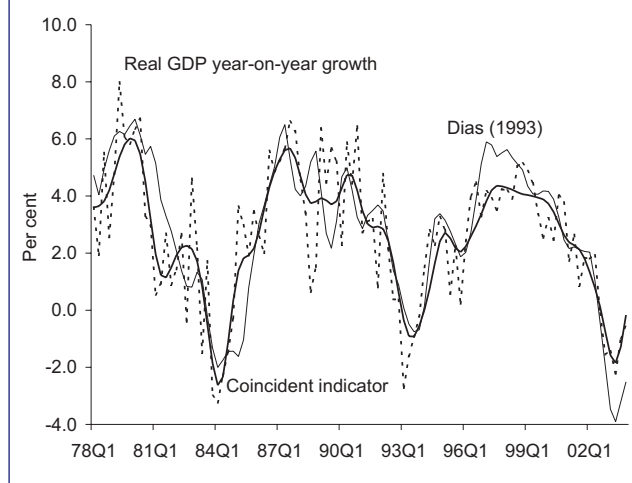
seems to capture quite well the underlying trend of economic developments. It should be stressed, however, that the coincident indicator is not aimed to pinpoint GDP growth. In contrast with GDP, the coincident indicator is available on a monthly basis and it provides a more clear picture regarding the current state of the economy since it avoids the erratic behaviour of GDP growth.

In Chart 4, the coincident indicator is plotted against the one proposed by Dias (1993). The coincident indicator developed by Dias (1993), which is currently released by Banco de Portugal, is based on Stock and Watson (1989) approach. It uses only 4 series, namely: retail sales volume (retail trade survey), wholesale trade volume (wholesale trade survey), manufacturing production (manufacturing survey) and cement sales. Note that 2 of the 4 series are also included in the coincident indicator proposed in this article and that 3 of the 4 series are of a qualitative nature, which overemphasizes somehow this kind of data. Thus, the suggested coincident indicator seems to cover more aspects of the economy while diversifying further the nature of the data used as input. Although both indicators present, in general, a simi-

lar pattern over time, the proposed coincident indicator appears to track more closely the underlying trend of overall economic activity. In particular, the coincident indicator developed by Dias (1993) has overstressed considerably the last recession. Moreover, the suggested coincident indicator is available on a monthly basis whereas the former is quarterly.

5. A REAL-TIME EVALUATION

In practice, the coincident indicator is subject to revisions over time due to data revisions and to its re-computation when additional data becomes available. In order to assess the real-time reliability of the coincident indicator the following out-of-sample exercise was performed. First, the model was estimated using the available data up to December 2000[6]. One should note that the estimated values for the parameters of interest are very close to the ones obtained with the whole sample, which provides some evidence of model stability over time. Then, taking into account also data release schedule, the coincident indicator was computed every month until the end of 2003[7]. This mimics a true real-time setting over the last 3 years. The dif-

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(4) In this figure, as in others bellow, due to the monthly nature of the time axis, the same value is given within the quarter for real GDP year-on-year growth.

(5) In Dias (1993) coincident indicator, the rescaling is done through a linear transformation using GDP year-on-year growth rate series.

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(6) Since only real GDP and manufacturing production index are subject to revisions, only for these variables were real-time estimates considered.

(7) At each month, the estimate is obtained using the data released up to the end of the following month.

Chart 6A
QUARTERLY ESTIMATES
OF THE COINCIDENT INDICATOR

Legend: 01Q1, 01Q2, 01Q3, 01Q4, 02Q1, 02Q2, 02Q3, 02Q4, 03Q1, 03Q2, 03Q3, 03Q4, Final, GDP
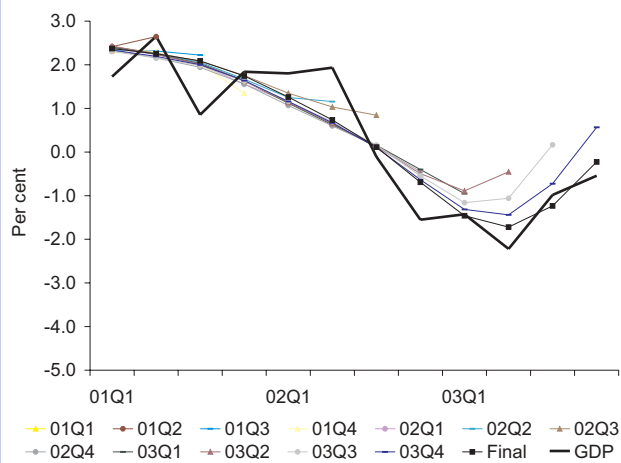
Chart 6B
ESTIMATES OF DIAS (1993)
COINCIDENT INDICATOR

Legend: 01Q1, 01Q2, 01Q3, 01Q4, 02Q1, 02Q2, 02Q3, 02Q4, 03Q1, 03Q2, 03Q3, 03Q4, GDP

Chart 7
FIRST ESTIMATES OF THE COINCIDENT
INDICATOR, GDP AND DIAS (1993)
COINCIDENT INDICATOR

Legend:
Estimate after 15 days
Estimate after 1 month
Estimate after 2 months
Estimate after 1 quarter
Final estimate
GDP estimate
Dias (1993) estimate after 15 days
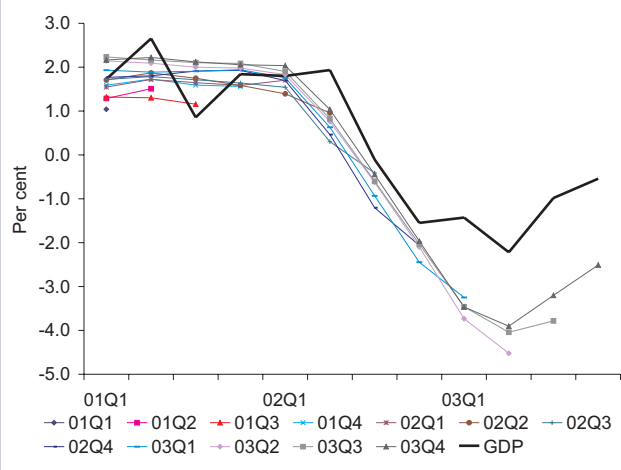
ferent estimates of the monthly coincident indicator at each month are plotted in Chart 5[8]. One should stress that this period is a particularly demanding one for a real-time assessment since it includes an economic activity turning point. As expected, the revisions are slightly more pronounced around the turning point. Nevertheless, these revisions affect mainly the level of the coincident indicator not changing meaningfully the qualitative assessment of economic activity in terms of acceleration/deceleration trend.

In order to assess the magnitude of the revisions of the suggested coincident indicator against the revisions of the one developed by Dias (1993), which is available only on a quarterly frequency, the quarterly estimates of the coincident indicator are also plotted in Chart 6. One can see that, on average, the revisions are roughly of similar size.

However, since economic agents tend to focus more on the most recent available estimate for the state of the economy, one should also assess how well first estimates reflect the underlying trend of economic activity. Obviously, the reliability of an estimate depends on the amount of data used to obtain it. Therefore, the first estimate will always be the least reliable and the sooner one wants to obtain it the fewer data is available for its computation. The ability to deal straightforwardly with the missing observations problem in the state-space framework, allows one to compute the coincident indicator even in the presence of unreleased data[9]. Thus, one considered the estimates that could be obtained 15 days[10], one month, two months and one quarter after the reference period. These estimates are plotted in Chart 7 along with the first estimates of real GDP and Dias (1993) co-

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(8) In this figure, as in others bellow, the final estimate refers to the estimate obtained with the whole sample data.

(9) In practice, the missing data is extrapolated with the estimated model.

(10) Besides GDP, which is released with a lag of 70 days, this estimate is also obtained without the manufacturing production index, which is released only at the end of the following month.

incident indicator. Although subject to revisions, in particular nearby the turning point, one can see that even the estimate obtained 15 days after the reference period seems to be quite informative about the overall trend of economic developments. Once again, it becomes clear that it is the level that is more affected by revisions not the signal.

6. CONCLUSIONS

In this article, a new coincident indicator for the Portuguese economy was developed using the methodology proposed by Azevedo, Koopman and Rua (2003). The resulting indicator uses as input eight series reflecting both the demand and supply side of the economy, income and wealth developments, the situation in the labour market and external environment. Therefore, the composite indicator turns out to be a very comprehensive measure of the economy. Note that, despite all the noise of the input series, it was possible to obtain a smooth coincident indicator that tracks quite well the underlying trend of economic activity. This feature allows the policymaker to have a clear picture regarding current economic developments. Its usefulness as a tool for short-term analysis is reinforced by the fact of being available on a monthly basis, in contrast with the one proposed by Dias (1993) which is currently published by Banco de Portugal. Moreover, timely estimates can be obtained and it was shown that these estimates, though subject to revisions, seem to be quite informative about the current state of the economy. Thus, the suggested coincident indicator allows for an up to date assessment of economic activity on a high frequency basis.

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ANNEX

Quarterly real GDP (seasonally adjusted) is provided by INE (National Statistics Office), in accordance with the European System of Accounts (ESA) 1995, since 1995. From 1995 backwards the series was growth chained using ESA 1979 quarterly figures. The retail sales volume variable stems from the monthly business survey released by INE. The figures refer to the balance of respondents regarding current volume sales in retail trade and are not seasonally adjusted. The series only start in June 1994. However, using the series previously published by INE, which was based on a different survey sample, it was possible to obtain a series beginning in January 1989. The values prior to June 1994 were adjusted by a constant value, which resulted from the average difference between both series for the common period. The number of new heavy commercial vehicles (above 3.5 ton.) sold is released by ACAP and it is not seasonally adjusted. The volume of cement sold includes the sales of national firms (CIMPOR and SECIL) to the domestic market as well as cement imports and it is not seasonally adjusted. The

manufacturing production index (working days adjusted) is released by INE but due to several basis changes, the most recent series was growth chained with the previous ones. Regarding households' financial situation, it comes from the monthly consumers survey released by the European Commission. It refers to the balance of respondents regarding households' assessment of their current financial situation against 12 months ago and it is seasonally adjusted. New job vacancies are published by IEFP and are not seasonally adjusted. The external environment proxy is calculated as a weighted average of the current general economic situation assessment taken from the consumers survey released by the European Commission in the case of the European Union countries (EU-15) and reported by the Conference Board in the case of the United States (seasonally adjusted). The weights are the share of each country in Portuguese goods exports in the previous year. It was possible to cover almost 90 per cent of the total exports market.

INSTRUMENTS OF MONETARY POLICY*

*Bernardino Adão***
*Isabel Correia***
*Pedro Teles***

1. INTRODUCTION

A classic question in monetary economics is whether the interest rate or the money supply is the better instrument of monetary policy. Until recently practice and theory seemed to be in disagreement. Most will agree that monetary policy decision making has focused on setting a target for the short-term interest rate. However, most theoretical work has considered the monetary policy as being a choice about the trajectory of the money supply. One thing that is frequent in all the literature is that the monetary policy is not specified in sufficient detail. If the interest rate is the chosen instrument it is not described how the associated money supply is determined or vice versa; if the money supply is the instrument it is not explained how the interest rate is determined.

It is confirmed both theoretically and empirically that the demand for real money depends on the nominal interest rate and on the real output level. Thus, unless both the real output level as well as the price level are fixed, setting the nominal interest rate is not equivalent to targeting a monetary aggregate. And vice-versa, fixing money is not equivalent to fixing the nominal interest rate.

There are *ad-hoc* models where there is just one monetary instrument. For instance, the obsolete static IS-LM model with fixed prices has only one instrument. The IS curve is the set of nominal interest rates and output levels for which the good market is in equilibrium when the supply of the good is demand determined. The LM curve is the set of nominal interest rates and output levels for which the money market is in equilibrium. Thus, given the money supply the intersection of the IS and the LM determine the output and the nominal interest rate. And instead, given the nominal interest rate the IS determines the real output, and given the nominal interest rate and the output the LM determines the money supply.

By contrast, this paper considers a standard dynamic macroeconomic model with microeconomic foundations. The main result is that in order to obtain a unique equilibrium, that is, well defined trajectories for variables like inflation and output, the central bank should use both the money supply and the interest rate as instruments. This is a sufficiency result as it is known that in some particular non-robust frameworks[1], uniqueness may be obtained with less instruments.

The rest of the paper is set out as follows: section 2 describes the literature. Section 3 portrays the model. Section 4 shows that the Taylor principle guarantees local determinacy but not unique-

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[1] For instance endowment economies with separable logarithmic utility functions in consumption and real balances, with convertibility of money and no public debt. See Obstfeld and Rogoff (1983).

ness of the equilibrium in the deterministic version of the model. Section 5 reveals which policy variables need to be used as instruments in order to have uniqueness of the equilibrium in the stochastic version of the model. Section 6 concludes. The appendix extends the results of section 4 to the stochastic framework.

2. THE LITERATURE

This section provides a brief description of the main contributions to the literature on the monetary instrument choice problem. The earliest notorious effort was by Friedman (1968), who argues against the use of the interest rate as an instrument. His concern was that if agents have irrational expectations about inflation, the economy would not converge to the rational expectations equilibrium. No matter what nominal interest rate the central bank would choose, if people expected inflation above the rational expectations equilibrium, that would result in lower perceived real interest rate, which would generate a higher demand for current goods, leading to an even higher inflation, which in turn would lead to an even lower real interest rate, stimulating more the economy, and so on without bound.

Unlike Friedman (1968), in the recent literature agents are taken as being rational. The departing point has been that the instrument must be able to generate local determinacy of the equilibrium. Local determinacy means that in the neighbourhood of an equilibrium there are no other equilibria. However, in general besides this locally determined equilibrium there is an infinity of other equilibria that cannot be ruled out. It is very intriguing that all the literature as been satisfied with this local determinacy property. To us the multiplicity of equilibria is a disturbing result. For it implies that the same economic fundamentals are compatible with many values for the macroeconomic variables. Random events completely unrelated to the fundamentals, sunspots, can cause large fluctuations of the output and inflation. From the view point of the central bank this is undesirable, since usually its objective is to promote output and inflation stabilization.

In this literature of local determinacy there have been a few very influential papers. Sargent and Wallace (1975) shows that interest rate rules that depend only on exogenous variables do not guarantee local determinacy and defend instead the use of the money supply as the instrument. Mc Callum (1981) shows that if instead, the central bank chooses interest rate rules that depend on endogenous variables the Sargent and Wallace result does not apply necessarily. The classic Taylor rule, Taylor (1993), is one such example, setting the interest rate as a function of the current estimates of the output gap and inflation. Recently the most forceful defence of the use of the interest rate as the instrument is Woodford's influential book, Woodford (2003).

In this paper we present the concept of equilibrium in a stochastic environment. We show that in general if the monetary authority uses just one instrument, no matter which, there will be a large multiplicity of equilibria. As a corollary, we get that there is an infinite number of equilibria when the monetary authority uses only one instrument, even if it guarantees local uniqueness.

3. MODEL

We consider a cash in advance economy. The economy consists of a representative household, a representative firm behaving competitively, and a government. Production uses labour according to a linear technology. This environment is the simplest to study the instruments of monetary policy. More complex models deliver similar results, as long as agents take decisions for at least two periods.

We consider shocks to technology A_t and government expenditures G_t. The period t vector of shocks is denoted as $s_t = (A_t, G_t)$. The set of all possible shocks in period t is denoted by S_t, the history of these shocks up to period t, which we call state at t, $(s_0, s_1, ..., s_t)$, is denoted by s^t, and the set of all possible states in period t is denoted by S^t. The initial realization s_0 is given. To simplify the exposition, we assume that the history of shocks has a discrete distribution. The number of all possible shocks in period t is $\# S_t$ and the number of all possible states in period t is $\# S^t$.

An example may help clarify the terminology. Suppose that G_t is a constant, i.e. $G_t = G$ for all t and A_t for all $t \geq 1$ can assume only 3 values: a high, A_h, a medium, A^m or a low value, A^l. For each period $t \geq 1$, the number of possible shocks is

Chart 1
STATES

Chart 1
STATES

Consumption must be purchased with money according to the cash in advance constraint

$$P_t C_t \leq M_t \qquad (3)$$

At the end of the period, the households receive the labour income $W_t N_t$ where $N_t = 1 - L_t$ is labour and W_t is the nominal wage rate and pay lump sum taxes, T_t. Thus, the nominal wealth households bring to period $t+1$ is

$$\mathbb{W}_{t+1} = M_t + R_t B_t - P_t C_t + W_t N_t - T_t \qquad (4)$$

The households' problem is to maximize expected utility (1) subject to the restrictions (2), (3), (4), together with a no-Ponzi games condition on the holdings of assets[2].

The following are first order conditions of the households' problem:

$$\frac{u_L(t)}{u_C(t)} = \frac{W_t}{P_t} \frac{1}{R_t} \qquad (5)$$

$$\frac{u_C(t)}{P_t} = R_t E_t \left[\frac{\beta u_C(t+1)}{P_{t+1}} \right] \qquad (6)$$

Condition (5) sets the intratemporal marginal rate of substitution between leisure and consumption equal to the real wage adjusted for the opportunity cost of using money, R_t. Condition (6) is an intertemporal marginal condition necessary for the optimal choice of nominal bonds. It says that the utility today of an additional unit of money must be equal to the expected utility tomorrow of R_t additional units of money.

3, $S_t = \left\{ \left(A^h, G\right), \left(A^m, G\right), \left(A^l, G\right) \right\}$. But the number of possible states is different across periods. The number of possible states in the following period is always bigger. In period 0 there is 1 state, the number of possible states in period 1 is 3, the number of possible states in period 2 is 9 and so on. Chart 1 provides a graphical representation of this example.

3.1. Competitive equilibria

Households

The households have preferences over consumption C_t, and leisure L_t. These two variables as all variables in the economy, which we describe in detail below, are a function of s^t, but to shorten the notation instead of writing down $C(s^t)$ we write C_t. The expected utility function is:

$$U = E_0 \left\{ \sum_{t=0}^{\infty} \beta^t u(C_t, L_t) \right\}, 0 < \beta < 1, \qquad (1)$$

where β is a discount factor. The households start period t with nominal wealth $\mathbb{W}_t$. They decide to hold money, M_t, and to buy B_t nominal bonds that pay $R_t B_t$ one period later. The R_t is the gross nominal interest rate at date t. Thus, in the assets market at the beginning of period t they face the constraint

$$M_t + B_t \leq \mathbb{W}_t \qquad (2)$$

Firms

The firms are competitive and prices are flexible. The production function of the representative firm is linear

$$Y_t \leq A_t N_t.$$

The equilibrium real wage is equal to the marginal productivity of labour,

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(2) The implied constraint is that the household must hold a net portfolio at the end of the period that is larger in absolute value than the present value of its future net income.

$$\frac{W_t}{P_t} = A_t. \qquad (7)$$

Government

The policy variables are taxes, T_t , interest rates, R_t, money supplies, M_t, and public debts, B_t. The government chooses the policy, which is defined as the behaviour of some, but not all of these policy variables. The government cannot choose the behaviour of all of the policy variables because, as we will see, there are equilibrium conditions that together with the policy determine endogenously the values for the remaining policy variables. A policy is a set of functions, chosen by the government, that map quantities, prices and policy variables into policy variables. One example of a policy is the Taylor rule, that specifies the interest rate as a function of inflation and output. Another example of a policy is a constant growth money supply.

The period by period government budget constraints are

$$M_{t+1} + B_{t+1} = M_t + R_t B_t + P_t G_t - P_t T_t, t \geq 0. \quad (8)$$

At each state s^t equation (8) has an intertemporal counterpart that establishes that the present expected value of the future seigniorage flows must be equal to today's government responsibilities plus the present expected value of the future government deficit flows. This stochastic intertemporal condition can be written as a function of only the trajectories for consumption, leisure and policy variables.

Market clearing

Market clearing in the goods and labour market requires

$$C_t + G_t = A_t N_t,$$

$$1 - L_t = N_t.$$

We have already imposed market clearing in the money and debt markets.

Equilibrium

A competitive equilibrium is a sequence of policy variables, quantities and prices such that the private agents, households and firms, solve their problem given the sequences of policy variables and prices, the budget constraint of the government is satisfied and markets clear.

The equilibrium conditions for the 7 variables $\{C_t, L_t, P_t, B_t, R_t, M_t, T_t\}$ are 5. They include the resources constraint

$$C_t + G_t = A_t(1 - L_t), t \geq 0 \qquad (9)$$

the intratemporal condition that is obtained from substituting the households intratemporal condition (5) into the firms optimal condition (7)

$$\frac{u_C(t)}{u_L(t)} = \frac{R_t}{A_t}, t \geq 0 \qquad (10)$$

as well as the cash in advance constraint (3), the intertemporal condition (6), and the government intertemporal budget constraint.

These conditions define a set of equilibrium allocations, prices and policy variables. The number of equations at state s^t is equal to 5. The number of equilibrium variables that must be determined at state s^t is equal to 7. If none of the policy variables is chosen exogenously, there is an infinity of allocations, prices and policy variables satisfying the 5 equilibrium conditions. Since there are less equilibrium equations than equilibrium variables there are many equilibria unless the government chooses exogenously some of the policy variables. There can be equilibria with high inflation or low inflation as there can be equilibria with low output or high output. Anything is possible. On the other hand, if all the policy variables, taxes, money supplies, interest rates and debt are chosen exogenously, there is no equilibrium.

There are many ways in which the degrees of freedom can be fulfilled. As we are primarily interested in studying monetary policy we assume that the fiscal policy adjusts to satisfy the intertemporal government budget constraint. In other words, we assume that the fiscal policy is endogenous in the sense that whatever are the choices of the monetary authority, the fiscal instruments, B_t and T_t, adjust to satisfy the intertemporal government budget constraint implied by (8).

Now, the number of relevant variables is 5 and the number of relevant equations 4, being one of them, (6), a stochastic dynamic equation. By counting equations and unknowns, it would seem enough in order to get determinacy that the government would have just one monetary instrument, as that would be equivalent to adding to the remaining equilibrium conditions another condition, which would result in a system with the same number of equations as unknowns. That intuition is wrong because one of the equations, (6), is a stochastic dynamic equation. If the environment was deterministic, (6) would be a first order difference equation and in order to get a unique solution it would be enough to have an initial or terminal condition. Because the environment is stochastic, the number of conditions necessary to get uniqueness is much larger as we will see below.

In section 5 we show that in general by setting only a function for one of the monetary policy variables uniqueness of the equilibrium is not achieved. As we explain in section 4, this implies that by simply following an interest rate rule, even if it guarantees local determinacy, the monetary authority is allowing an infinite number of equilibria, many of which can be associated with very high inflation levels.

4. LOCAL DETERMINACY AND INTEREST RATE RULES

The literature is currently dominated by a rule-based approach to monetary policy. According to the literature local determinacy is among the most desirable properties that a rule must possess. Local determinacy means, as we said before, that in the neighbourhood of an equilibrium there is no other equilibrium. In this section we clarify what is meant by an interest rate feedback rule guaranteeing local determinacy and show that for a standard environment local determinacy is achieved if the Taylor principle is followed. Roughly speaking, the Taylor principle is verified if in response to an increase in inflation the increase in the nominal interest rate is higher.

This section is an exception, as here, to simplify the exposition we consider a deterministic environment, i.e. $A_t = A$ and $G_t = G$ for all t and $u(C_t, L_t) = C_t + v(L_t)$. In the appendix we present

the more complex stochastic counterpart. Let $\mathbb{R}$ be the steady state competitive equilibrium for the interest rate and let Π be the steady state competitive equilibrium for the inflation rate. Then, $\mathbb{R} = \dfrac{\Pi}{\beta}$, where $\dfrac{1}{\beta}$ is the real interest rate. Assume that the central bank conducts a pure current nonlinear Taylor rule[3]:

$$R_t = \mathbb{R} \left(\frac{\pi_t}{\Pi} \right)^{\tau\beta},$$

where $\tau\beta \geq 1$ (the Taylor principle), and $\pi_t = \dfrac{P_t}{P_{t-1}}$. After substituting the Taylor rule in (6) get

$$z_{t+1} = (z_t)^{\tau\beta}$$

where $z_t = \dfrac{\pi_t}{\Pi}$. By recursive substitution we get

$$z_{t+k} = (z_t)^{\kappa\tau\beta}, \text{ for all } k \text{ and } t. \tag{11}$$

There is no condition to pin down the initial value for inflation. Since the initial inflation level can be any value there is an infinity of equilibrium trajectories for the inflation rate. Nevertheless, they can be typified in 3 classes. Either inflation is constant, $\pi_t = \Pi$, or there is an hyperinflation, $\pi_t \longrightarrow \infty$, or inflation is approaching zero, $\pi_t \longrightarrow 0$. This is easy to verify. If $\pi_0 = \Pi$ then (11) implies that $\pi_t = \Pi$ for all t. If $\pi_0 > \Pi$ then (11) implies that $\pi_{t+1} > \pi_t$ and $\pi_t \longrightarrow \infty$, since $\tau\beta > 1$. If $\pi_0 < \Pi$, then (11) implies that $\pi_{t+1} < \pi_t$ and $\pi_t \longrightarrow 0$ since $\tau\beta > 1$.

Thus, when the central bank follows a Taylor rule that obeys the Taylor principle it is able to get local determinacy. In a neighbourhood of the steady state inflation Π there is no other equilibrium inflation trajectory. But we have just seen that there is an infinity of other equilibria for inflation which converge to zero or to infinity. These results beg two interrelated questions: Why is local determinacy such an interesting property? Or why has most of the literature assumed that undesirable equilibria do not happen? We do not know the answer to these questions.

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(3) Usually the Taylor rule is presented in its linearized form. As can be verified the linearized version is,
$$R_t - \mathbb{R} = \tau(\pi_t - \Pi).$$

There may be institutions that we have ignored in the model, which can be used to eliminate some of these "undesirable" equilibria. For instance, in some models an hyperinflation can be eliminated if the central bank has sufficient resources and can commit to buy back its currency if the price level exceeds a certain level. We are not going to pursue this issue here. Those readers interested in this topic should start by seeing the seminal paper of Obstfeld and Rogoff (1983). In general, there are still an infinity of equilibria that pass these types of tests.

It is easy to verify, using an argument similar to the one above, that if the Taylor rule did not obey the Taylor principle, i.e. $\tau\beta < 1$, there would be just two types of equilibrium. The steady state and an infinity of equilibria converging to the steady state. At first sight it would seem that it would be preferable that a central bank would follow a Taylor rule that did not satisfy the Taylor principle, as "undesirable" equilibria, hyperinflations or hyperdeflations would not be possible. This conclusion is not correct because whenever there is multiplicity of equilibria it may be possible that sunspots can cause large fluctuations in inflation. Inflation can fluctuate randomly just because agents come to believe this will happen. The interested readers should start with Farmer (1993).

5. EXOGENOUS POLICY INSTRUMENTS

We are interested in identifying what are the exogenous instruments of policy that guarantee that there is a unique equilibrium for allocations and prices. This provides a measure of degrees of freedom in conducting policy. This is a question of policy relevance. As mentioned above, it is associated with the instrument problem in monetary economics on whether to use the interest rate or the money supply as the monetary policy instrument.

Under very general conditions the system of equations defining the equilibrium can be summarized by,

$$\frac{u_C\big(C(R_t), L(R_t)\big)}{\dfrac{M_t}{C(R_t)}} =$$

$$= \beta R_t E_t \left[\frac{u_C\big(C(R_{t+1}), L(R_{t+1})\big)}{\dfrac{M_{t+1}}{C(R_{t+1})}} \right], t \geq 0 \tag{12}$$

where $C(R_t)$ and $L(R_t)$ mean that consumption and leisure depend only on the level of the interest rate.

5.1. Conducting policy with constant functions

In this subsection, we show that in general when policy is conducted with constant functions for the policy instruments, it is necessary to determine exogenously both interest rates and money supplies.

Suppose the path of money supply is set exogenously in every date and state. In addition, in period zero the interest rate, R_0, is set exogenously and, for each $t \geq 1$, for each state s^{t-1}, the interest rates are set exogenously in $\#S_t - 1$ states that follow. In this case (12) at date $t = 0$ would determine the R_1 in the remaining state, since $\#S_t - 1$ of the R_1s were already given. The usage of (12) for the other dates would determine recursively all the R_ts that were not set exogenously. Thus, there is a single solution for the allocations and prices. Similarly, there is also a unique equilibrium if the nominal interest rate is set exogenously in every date and state, and the money supply is set exogenously in period 0, as well as, for each $t \geq 1$ and state s^{t-1}, in the $\#S_t - 1$ states that follow.

Thus, we have the following result when policy is conducted with constant functions: in general, if money supply is determined exogenously in every date and state, and if interest rates are also determined exogenously in the initial period, as well as in $\#S^t - \#S^{t-1}$ states for each $t \geq 1$, then the allocations and prices can be determined uniquely, similarly, if the exogenous policy instruments are the interest rates in every state, the initial money supply and the money supply, in $\#S^t - \#S^{t-1}$ states, for $t \geq 1$, then there is in general a unique equilibrium.

Chart 2 illustrates this result for the example of section 3. For instance, a unique equilibrium can

Chart 2
INSTRUMENTS
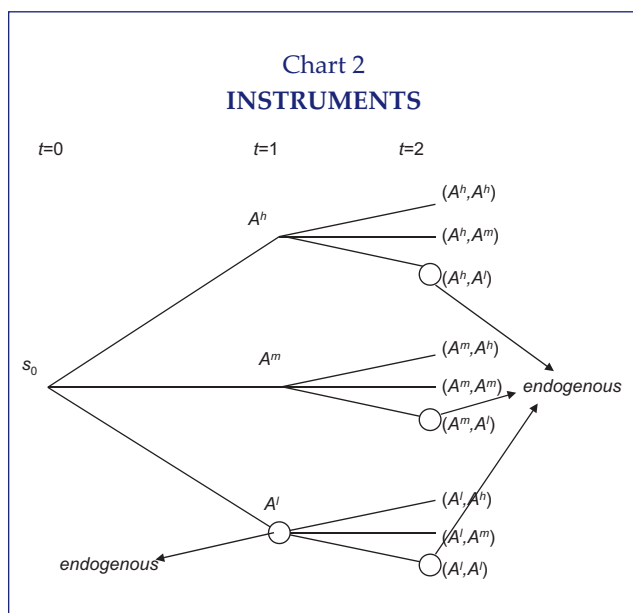
be guaranteed if for the states with a circle one of the instruments, be it the money supply or the interest rate, is determined endogenously by (12) and in the remaining states money supply and interest rate are exogenous[4].

5.2. Conducting policy with feedback rules

It is commonly assumed that policy is conducted with feedback rules, in particular, interest rate feedback rules. In this subsection, we argue that the results of the previous section do not change if instead the monetary policy is conducted with feedback rules for the policy instruments instead of constant functions. The use of interest rate rules that depend on current or past variables (these are the type of rules that guarantee local determinacy) preserves the same degrees of freedom in the determination of the equilibrium. It is still necessary to determine exogenously the levels of money supply in some of the states.

When the policy is conducted with current or backward interest rate feedback rules in order to have a unique equilibrium, it is necessary to determine exogenously the money supply in $\#S_t - 1$ states, for each state s^{t-1}, $t \geq 1$, as well as

M_0. We can use the argument used before. At any state s^{t-1}, $t \geq 1$ given M_{t-1} and R_{t-1} there is one equation (12) that relates s^{t-1} with period t, and $\#S_t$ equations for the subsequent R_ts, which are implied by the feedback rule. Thus, to obtain the $\#S_t$ values of the R_ts and the $\#S_t$ values of the M_ts, the monetary authority needs to set $\#S_t - 1$ values for the M_ts.

In general, a similar result holds if the monetary policy is conducted with money feedback rules. When the monetary policy is conducted with a money feedback rule in order to have a unique equilibrium, it is necessary to determine exogenously the interest rate in $\#S_t - 1$ states, for each state s^{t-1}, $t \geq 1$, as well as R_0.

6. CONCLUSION

Under the assumption that the fiscal policy was endogenous, a monetary policy that uses just one monetary policy instrument, either the nominal interest rate or the money supply, is not able to eliminate the multiplicity of equilibria. In particular, a Taylor rule that obeys the Taylor principle generates local determinacy. But local determinacy is still consistent with an infinity of equilibria. Any level of inflation can be an equilibrium. Since most central banks have the stabilization of inflation as their main objective it is crucial to know how a unique equilibrium for inflation can be achieved. To obtain uniqueness of the equilibria, it is sufficient for the central bank to use its two instruments simultaneously. The central bank must choose interest rates and money supplies concurrently.

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(4) If instead, taxes were exogenous, a single monetary instrument would be enough to get a unique equilibrium. For instance if the central bank set exogenously the interest rate and the fiscal authority set taxes exogenously, the price level would be determined by the government intertemporal budget constraint. This result is known as the fiscal theory of the price level. See Woodford (2003).

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APPENDIX

In the appendix we study local determinacy in the stochastic environment. The introduction of the concept of the time-invariant equilibrium is necessary to study local determinacy. In order to proceed an assumption is made, for each state s^t, the shocks (A_t, G_t) have an identical and independent distribution. The time-invariant equilibrium is a competitive equilibrium with the property that it is just a function of the shock. Formally, the time-invariant equilibrium is a tuple for consumption, leisure, interest rate, money growth and inflation, $\left\{ \mathbb{C}(s_t), \mathbb{L}(s_t), \mathbb{R}(s_t), \dfrac{\mathbb{M}(s_{t+1})}{\mathbb{M}(s_t)}, \Pi \right\}$ that satisfies the relevant competitive equilibrium conditions. These conditions are given by (3), (9), (10) and (12),

$$\Pi = \frac{\mathbb{C}(s_t)}{\mathbb{C}(s_{t+1})} \frac{\mathbb{M}(s_{t+1})}{\mathbb{M}(s_t)},$$

$$\mathbb{C}(s_{t+1}) + G_t = A_t (1 - \mathbb{L}(s_t)),$$

$$\frac{u_C(s_t)}{u_L(s_t)} = \frac{\mathbb{R}(s_t)}{A_t},$$

$$u_C(s_t) = \frac{\beta}{\Pi} \mathbb{R}(s_t) E_t [u_C(s_{t+1})]. \quad (13)$$

For a given $\mathbb{R}(s_t)$ the two middle equations determine $\mathbb{C}(s_t)$ and $\mathbb{L}(s_t)$. Given Π the first equation determines the growth rate of money between a state and any of its subsequent states. Finally (13) determines $\mathbb{R}(s_t)$. To economize on notation we now assume without loss of generality that the utility function is separable and linear in consumption. In this case (13) can be written as

$$\mathbb{R} = \frac{\Pi}{\beta}$$

That is the time-invariant nominal interest rate does not depend on the shocks.

Suppose that the central bank conducts a pure current Taylor rule:

$$R_t = \mathbb{R} \left(\frac{\pi_t}{\Pi} \right)^{\tau\beta} \quad (14)$$

where $\tau\beta \geq 1$ (the Taylor principle), and $\pi_t = \dfrac{P_t}{P_{t-1}}$.

After substituting (14) in the households' intertemporal condition, (13), we get

$$E_t [z_{t+1}^{-1}] = (z_t^{-1}) \tau\beta \quad (15)$$

where $z_t = \dfrac{\pi_t}{\Pi}$. By recursive substitution we get

$$\left\{ E_t \left\{ \left\{ E_{t+1} \left[\dots \left(E_{t+k-1} z_{t+k}^{-1} \right)^{\frac{1}{\tau\beta}} \dots \right] \right\}^{\frac{1}{\tau\beta}} \right\} \right\}^{\frac{1}{\tau\beta}} = z_t^{-1}, \text{ for all}$$

$$\quad (16)$$

k, t.

In the following paragraph we supply an heuristic proof that the only equilibria are the time-invariant equilibrium and an infinity of other equilibria which have the characteristic that in some states of nature either inflation is going to infinity or is going to zero.

Since $\tau\beta > 1$ if $z_t^{-1} > 1$ then $z_t^{-1} \to \infty$ with positive probability. The proof is by contradiction. Assume it was not converging to infinity with positive probability, then it would be bounded with probability one, which means that no matter how arbitrary in the future you take the z_{t+s}^{-1} its expected value would be bounded with probability one. But since the exponent is a constant smaller than one by taking s sufficiently large will get the left hand side of (16) smaller than the right hand side. By a similar argument if $z_t^{-1} < 1$, have $z_t^{-1} \to 0$ with positive probability.

Thus, when the central bank follows a Taylor rule that obeys the Taylor principle it is able to get local determinacy. In a neighbourhood of the time-invariant equilibrium inflation Π there is no other equilibrium. We have just seen that the other equilibria which are infinite in number are either associated with inflation converging with probability bounded from zero to infinity or to zero.

REVISITING THE NAIRU ESTIMATES FOR THE PORTUGUESE ECONOMY*

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*Paulo Soares Esteves***
*Ricardo Mourinho Félix***

1. INTRODUCTION

Several empirical studies have estimated the Non Accelerating Inflation Rate of Unemployment (NAIRU) for Portugal as having been fairly constant, despite some minor differences in the estimates therein presented. For instance, using a sample period beginning in 1983, Marques and Botas (1997) and Luz and Pinheiro (1993) estimated a NAIRU around 5.5 per cent that is somewhat smaller than the estimates of around 6 per cent obtained in Marques (1990) and in Gaspar and Luz (1997). The stability of the NAIRU seems to be a particular feature of the Portuguese economy, which is at odds with the results obtained for other European countries where the available estimates point to a non-constant NAIRU. For instance, Fabiani and Mestre (2000) present alternative estimates for the euro area NAIRU, that exhibit a clear upward trend, in particular, during the seventies and the eighties.

The first objective of this article is to revisit the NAIRU estimates for the Portuguese economy, evaluating, in particular, the maintenance of a constant NAIRU throughout the sample period (1983-2003). In order to address this issue, alternative formulations are used, in particular allowing explicitly for a time-varying NAIRU specification.

Secondly, this article analysis the flexibility of real wages to the prevailing economic conditions, which is a traditional argument presented to justify the stability of the Portuguese NAIRU. It seems important to revisit this stylised fact, given the current new exchange rate framework. In fact, the flexibility of real wages might have been related with the sudden unexpected depreciation episodes of the former Portuguese currency — the escudo — that took place in the past and thus it could have been reduced by the gradual increase of the exchange rate stability along the integration process in the Economic and Monetary Union.

This article is organized as follows: section 2 briefly presents single equation methods most commonly used to compute the NAIRU estimates; section 3 describes the dataset used in the empirical analysis; section 4 presents the empirical results obtained using the alternative approaches to measure the NAIRU; section 5 analyses the flexibility of real wages ; finally, section 6 summarizes the main conclusions.

2. ALTERNATIVE APPROACHES

The natural rate of unemployment is a theoretical concept widely used in macroeconomics to define the excess demand/supply pressures stemming from the labour market. In particular, whenever the unemployment rate is below (above) the natural rate of unemployment there is an excess demand (supply) of labour that, therefore, exerts an upward (downward) pressure on real wages. Thus, the concept of natural rate of unemployment is a crucial element in the identification of the long-run equilibrium of labour market variables. It can be defined as the rate of unemployment that would prevail after all price changes in the econ-

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omy freely adjust to their equilibrium values, in particular, the real wage rate.

However, the definition of the natural rate of unemployment is a purely theoretical concept and it can only be implemented in theoretical models. In applied economic modelling, it is not possible to identify moments in time where all prices changes have adjusted to their long-run levels. Thus, a parallel concept that can be implemented in any forecasting and/or simulation model to pin point the long-run of the labour market variables had to be sketched. This concept is the NAIRU, and it can be estimated using several alternative approaches. Here to derive the NAIRU for Portugal three alternative methods were considered in order to estimate and evaluate the robustness of the final outcomes.

The first approach is probably the simplest way of estimating the NAIRU and it relies on the strong statistical correlation between the cyclical position of the economy and the unemployment rate known in the literature as the Okun's Law. The main idea behind this approach is that the NAIRU is the rate of unemployment that is consistent with the closure of the output-gap and thus with the vanishing of the demand side pressures on prices.

A second method relies on the wage equation. In this case, the NAIRU estimate is also at times named as NAWRU (Non-accelerating wage rate of unemployment) and is estimated under the assumption that it must be consistent with a long-run growth of real wage in line with the long-run growth of labour productivity.

Finally, we use a Phillips curve to estimate the non-accelerating inflation rate of unemployment, that, in this case can be defined as the rate of unemployment that is consistent with a constant rate of inflation in the absence of supply side shocks (for instance, terms of trade or productivity shocks).

Once in the long-run not only the output-gap must close, but also prices (including nominal and real wages) must converge to their steady-state growth path. Under these conditions, the NAIRU that is consistent with the above mentioned requirements must be fairly the same. Thus, there is no reason to expect significant discrepancies between the estimates computed using the three alternative methods.

2.1. Okun's law

The Okun's Law represents an empirically observable relationship between the unemployment-gap (the deviation of the unemployment rate from its natural rate level) and the output-gap (the deviation of the output from its potential level). This empirical regularity first presented in the seminal paper by Okun (1962), became an important relationship used in macroeconomics. Assuming that inflation could be completely explained by the excess demand/supply pressures in the goods and services market, this statistical feature is probably the simplest way to get a quick estimate of the NAIRU. The Okun's Law is represented by the following equation[1]:

$$u_t - \bar{u}_t = -\beta\left(y_t - \bar{y}_t\right) + v_t \qquad (1)$$

where u_t and y_t stand respectively for the observed unemployment rate and the log of output, $\bar{u}_t$ and $\bar{y}_t$ stand for their corresponding unobserved sustainable long-run levels and v_t is the usual stochastic error term. The parameter β is the so-called Okun parameter. Using this relationship, it is straightforward to derive an estimate for the NAIRU, the unemployment rate consistent with output-gap closure.

However, this specification describes a long-run relationship, since it does not need to hold in every quarter. Therefore, an obvious solution to estimate this relationship is to formulate equation (1) as an autoregressive distributed lag model to include dynamic features among the two variables. This formulation incorporates in a single equation both long-run features and short-run dynamic elements of the relationship between the set of variables.

2.2. The wage equation

The wage equation approach is based on the long-run relationship between real wage growth rate $\Delta(w - p)$ and the growth rate of labour productivity, measured by the labour efficiency index (Δf)[2]. Whenever the unemployment rate is below

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(1) For a discussion of the theoretical foundations of the Okun's law and its derivation from a Cobb-Douglas production function, see Prachwony (1993).

NAIRU, real wages will grow faster than the labour efficiency index leading to an increase in unit labour costs that can be identified as an inflation source[3]:

$$\Delta w_t = \Delta p_t + \Delta f_t - \beta\left(u_t - \bar{u}_t\right) + v_t \qquad (2)$$

In the case of the wage equation, the level of NAIRU corresponds to the level of unemployment that assures that the real wage grows in line with labour efficiency (productivity). The wage equation approach was the one most frequently used for Portugal to derive the NAIRU showing simultaneously that the sensitivity of real wages to the unemployment rate was higher in Portugal than in other European countries. This is commonly pointed out as an argument to justify the mean reversion feature of the unemployment rate (constancy of the NAIRU) for Portugal. In the present case, the NAIRU estimates were also obtained through an autoregressive distributed lag formulation reparametrized in the form of an error-correction model.

2.3. The Phillips curve

The use of the Phillips curve in the estimation of the NAIRU is widespread in the literature. Amongst others, the Phillips curve specification to estimate a time-varying NAIRU was used in Gordon (1997) and in Eller and Gordon (2003) for the United States; and in Fabiani and Mestre (2000) for the euro area[4].

Following Gordon (1997), the Phillips curve model is based on the coined triangle model which is composed of three building blocks: the inertia of the inflation rate, the excess demand variable and the supply shocks. A general specification can be represented as:

$$\pi_t = A(L)\pi_{t-1} + B(L)D_t + C(L)z_t + \varepsilon_t \qquad (3)$$

where $X(L)$ represents a polynomial in the lag operator, the dependent variable π is the inflation rate and the inertia is captured through the lagged term $A(L)\pi_{t-1}$. D_t represents a centered excess demand variable like the output-gap or the unemployment-gap and z_t summarizes the set of variables that account for the role of supply shocks, while ε_t is a stochastic white-noise error term.

To estimate the NAIRU, the unemployment-gap $\left(u_t - \bar{u}_t\right)$ is the obvious candidate to play the role of the excess demand variable. In order to guarantee that the above specification is consistent with the existence of a well defined NAIRU, one must assure that $A(1) = 1$. This ensures that in the absence of supply shocks, the inflation rate will converge to a stable level[5]. Therefore, in the long-run, the Phillips curve is vertical and the unemployment rate equals the NAIRU.

3. THE DATASET

This section provides a brief description of the dataset used to estimate the NAIRU for the Portuguese economy. The sample period runs from 1983 up to 2003 — the beginning of the sample period was limited to 1983, in order to allow for a direct comparison with the previous studies on the Portuguese NAIRU — and the data was based on the quarterly series presented in Castro and Esteves (2004).

Chart 1 presents both the unemployment rate and the output-gap — cyclical component of GDP. The output-gap was obtained using the Hodrick-Prescott filter (with $\lambda = 1600$). In order to minimize the end-of-sample bias, the sample was extended using the central projections for 2004-2005 from the Spring 2004 Eurosystem Forecast Exercise while a constant rate of growth — equal to the historical average of the last 10 years — was assumed for 2006-2008.

In Chart 2 the evolution of real wages follows. As an indicator of labour efficiency $\left(\Delta f\right)$ the trend component of year-on-year rates of change of productivity — output per employee— was used[6].

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(2) Where $w - p$ represents the difference between the log of nominal wage rate and the log of price index and Δ stands for the first difference operator as usual.

(3) See, for instance, Blanchard and Katz (1999).

(4) See Ball and Mankiw (2002) for a reconciliation between the theoretical concept of the NAIRU and its empirical implementation considering the Phillips curve approach.

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(5) This Phillips curve formulation ensures that inflation will converge to a stable level, but does not determine its value.

(6) A parameter of $\lambda = 1600$ was considered for the HP filter and the series were previously extended up to 2008 to reduce the end of sample problem.

Chart 1
UNEMPLOYMENT RATE
AND OUTPUT-GAP

Chart 2
WAGES AND PRICES
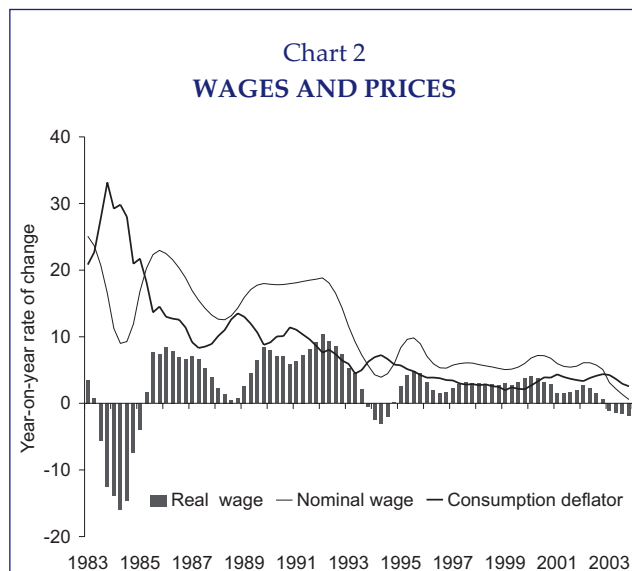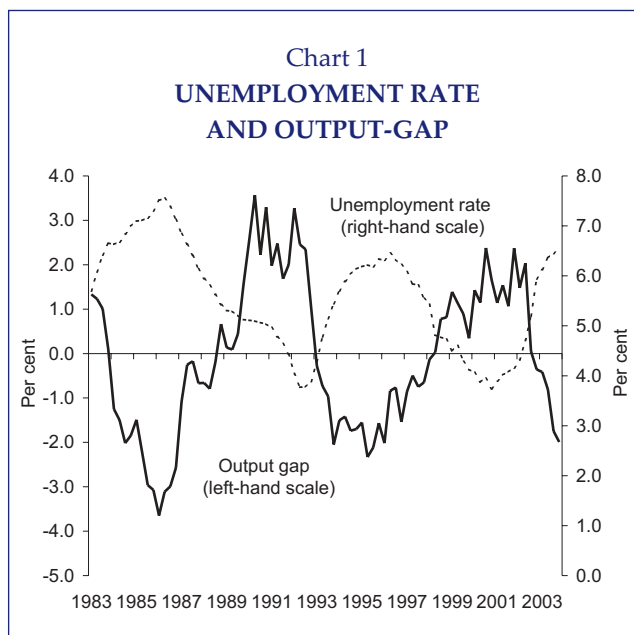
Chart 3 presents this proxy for labour efficiency (Δf) against the observed changes of output per employee $[\Delta(y-l)]$ — where l is the log of the number of employees — and changes in real wages $[\Delta(w-p)]$. This indicator is obviously much less volatile than the observed output per employee, which is traditionally extremely volatile and affected by the economic cyclical movements, and therefore its evolution cannot be directly used as a measure of long-run indicator of labour productivity.
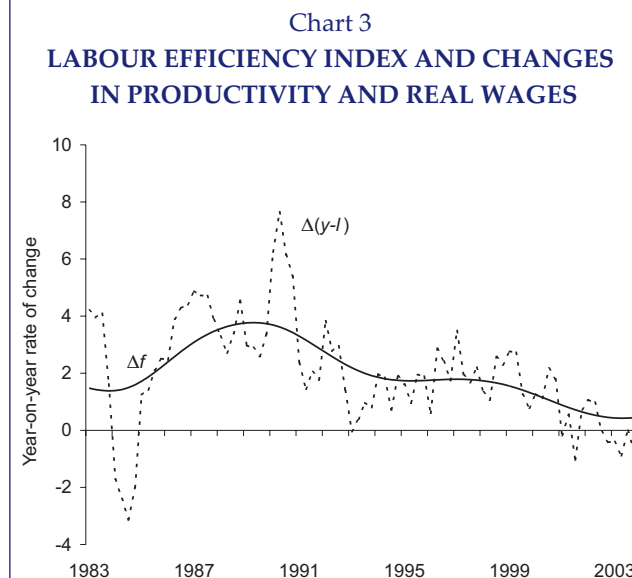
4. EMPIRICAL RESULTS

4.1. Okun's law

4.1.1. Correlations structure

Chart 4 presents the correlation structure of the data, stressing the statistical significance of the relationship between the output-gap and the unemployment rate. The most significant coefficient of correlation between the unemployment rate and the output-gap is approximately the contemporaneous one. Considering alternative economic fluctuation indicators — GDP year-on-year growth rates or GDP chain growth rates — the usual lagged relationship between these output indicators and unemployment emerges. In this case, the correlation coefficients reach a maximum at a 9 quarter lag, in the case of the GDP year-on-year

Chart 3
LABOUR EFFICIENCY INDEX AND CHANGES
IN PRODUCTIVITY AND REAL WAGES
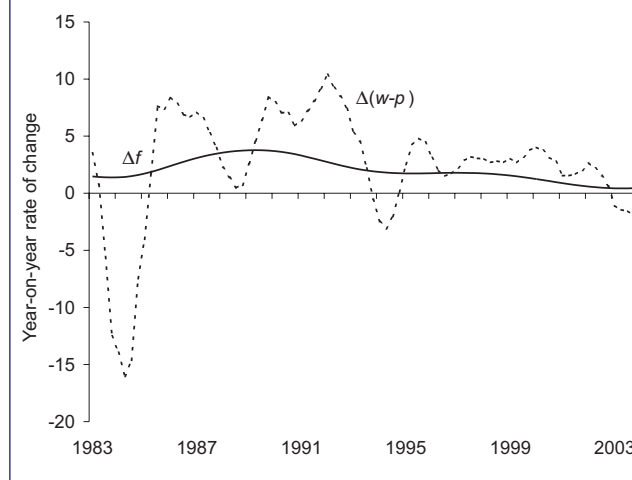
growth rates, and at a 11 quarter lag, in the case of the GDP chain growth rates. These results cling on the fact that the turning point in the output-gap

Chart 4

CORRELATIONS BETWEEN UNEMPLOYMENT RATES $(t+i)$ **AND GDP** (t) **EVOLUTION**

Table 1

NAIRU ESTIMATES USING ALTERNATIVE SAMPLES

1983-1993	1983-2003	1993-2003
5.6	5.4	5.3

0.34 (0.0260/0.0762), while the constant NAIRU implicit in these results is 5.4 per cent (0.0041/0.0762). These results are very similar to the ones reported in Luz and Pinheiro (1993) using a sample from 1983 to 1992 (output-gap coefficient of 0.56 and a NAIRU of 5.5), in Gaspar and Luz (1997) using a sample from 1983 to 1996 (0.56 and 6.0 per cent, respectively) and in Barbosa *et al.* (1998) using a sample from 1985 to 1997 (0.37 and 5.8 per cent, respectively), despite different datasets that were therein used.

Table 1 presents evidence of the robustness of the NAIRU estimates to changes in the sample period. Despite a marginal decrease over the 90's, it is hard to reject that the Portuguese NAIRU remained fairly constant. However, a more flexible estimation technique that is able to deal with time-varying parameters models can be used to reinforce this evidence.

series occurs only when GDP starts to grow at a faster pace than its potential, when the economic turning point measured by GDP growth rates has already been under way several quarters before.

4.1.2. Constant NAIRU estimate

Using an autoregressive distributed lag, the Okun's Law can be specified in the form of an error-correction model, where the evolution of the unemployment rate is determined both by the short-run components and the long-run relationship between the unemployment-gap and the output-gap. In this specification, the NAIRU is restrained to be constant $\left(\bar{u}_t = \bar{u}\right)$ throughout the sample period.

The estimated results for this equation are the following:

$$\Delta u_t = +0.0041 + 0.3666\Delta u_{t-1} + 0.2981\Delta u_{t-2} - 0.0455\Delta\left(y_t - \bar{y}_t\right)$$
$$\quad\quad (2.79) \quad (3.63) \quad\quad (2.97) \quad\quad (1.88)$$

$$-0.0583\Delta\left(y_{t-1} - \bar{y}_{t-1}\right) - 0.0762u_{t-1} - 0.0260\left(y_{t-1} - \bar{y}_{t-1}\right) \quad (4)$$
$$(2.40) \quad\quad\quad\quad (2.83) \quad\quad (1.49)$$

$$R^2 = 0.62; \quad SER = 0.0014; \quad AR(1) = 0.17[0.68]$$

where *SER* is the estimated standard error of the residuals and *AR*(1) stands for the LM statistic for the test of autocorrelation of order 1 in the residuals.

The results point to the existence of a stable long-run relationship between unemployment rate and output-gap with a sensitivity parameter of

4.1.3. Time-varying NAIRU estimates

The estimation of a time-varying NAIRU in the context of the Okun's law is also based on equation (4), where, instead of a constant NAIRU, the possibility of the NAIRU varying over time is considered. This obliges to specify a law of motion for the NAIRU. Following a very common practice used in similar empirical applications, the NAIRU was admitted to follow a random-walk process:

$$\bar{u}_t = \bar{u}_{t-1} + \xi_t \quad\quad (5)$$

where the disturbance error term $\xi_t \cap N\left(0, \sigma_\xi^2\right)$ is assumed to follow a white-noise process uncorrelated with the stochastic errors of the Okun's equation. In this context, the estimates of the parameters of the Okun's equation along with the unobserved NAIRU series can be obtained simultaneously using the Kalman-filtering procedure. This specification encompasses the previous constant NAIRU case, since by pinning down

Chart 5

OKUN LAW TIME-VARYING NAIRU ESTIMATES
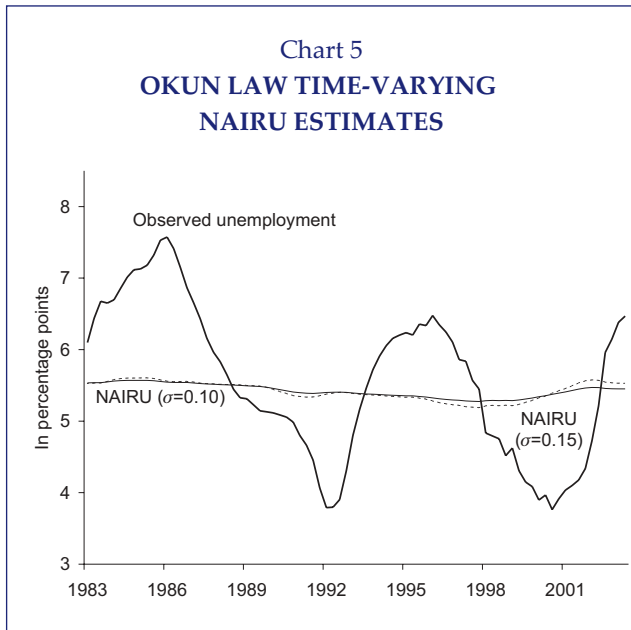
$\sigma_\xi = 0$ we can replicate the results of the constant NAIRU case. However, on estimating the time-varying NAIRU, a constraint has to be imposed on the standard deviation σ_ξ of the stochastic error in the law of motion to prevent a diffuse prior from absorbing entirely the residuals of the Okun's equation, thus delivering a very erratic NAIRU along the sample period. Following a common practice used in similar empirical estimations[7] we used two alternatively values for $\sigma_\xi = 0.10 (0.15)$ to provide an idea of how sensitive the final results are to such parameter changes. This parameter pins down by how much this structural measure of unemployment — NAIRU — can change over two consecutive quarters.

Chart 5 presents the results of this exercise. The overall results show evidence of the NAIRU as having been fairly constant over the sample period presenting an average value of 5.4 per cent and a standard deviation of 0.09 and 0.13, respectively, for $\sigma_\xi = 0.10$ and $\sigma_\xi = 0.15$.

4.2. The wage equation

4.2.1. Constant NAIRU estimate

Considering a dynamic equation defined around a long-run equilibrium relationship between the deviations of real wages from the labour efficiency index (evaluated on year-on-year rates

of change) and the unemployment rate, the results are the following[8]:

$$\Delta\Delta_4 w_t = +0.0093 - 0.0724\left(\Delta_4 w_{t-1} - \Delta_4 p_{t-1} - \Delta_4 f_{t-1}\right) - 0.1734 u_{t-1}$$
$$(2.06)(5.08)(2.15)$$

$$+1.1542\Delta\Delta_4 w_{t-1} - 0.4190\Delta\Delta_4 w_{t-2} + 1.4566\Delta\Delta_4 f_{t-3}$$
$$(15.9)(5.18)(1.69)$$

$$+0.1206\Delta\Delta_4 p_t - 0.2137\Delta\Delta_4 p_{t-1} \qquad\qquad (6)$$
$$(2.47)(5.18)$$

$$R^2 = 0.90; \quad SER = 0.0041; \quad AR(1) = 3.12[0.08]$$

where Δ_4 represents the seasonal difference operator.

The underlying NAIRU estimates, resulting from the ratio of the constant term to the unemployment rate level coefficient, delivers an average value of 5.4 per cent. Considering alternative samples (Table 2), those estimates are once again approximately stable over the sample period, showing, however, a minor increase towards the end of the sample.

The results just presented are very similar to

Table 2

NAIRU ESTIMATES ALTERNATIVE SAMPLES

1983-1993	1983-2003	1993-2003
5.3	5.4	5.7

those in Marques and Botas (1997) that point to a NAIRU estimate of 5.4 per cent and to those of Barbosa *et al.* (1998) that point to an estimate of 5.6 per cent. Luz and Pinheiro (1993) obtained a 6 per cent NAIRU estimate using the same kind of approach.

4.2.2. Time-varying NAIRU estimates

Once again assuming a random-walk specification for the time-varying NAIRU in the wage

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(7) For instance see Gordon (1997).

(8) As is implicit in this analysis, where the constant term is used to estimate the NAIRU, the deviations of real wages from the labour efficiency measure are transformed in order to assure a zero mean in the sample considered.

Chart 6

WAGE EQUATION TIME-VARYING NAIRU

Table 3

**NAIRU ESTIMATE USING
THE PHILLIPS CURVE**

	Lags	Coeffi-cients	p-value
Constant NAIRU estimate		5.30	
Autoregressive component	1-12	1.00	
Unemployment-gap	4	-0.44	0.000
Productivity deviation	2	-0.08	0.168
Relative import prices.	1-4	0.06	0.043
Relative price Food-Energy	0	0.31	0.001
R^2		0.75	
SER		0.006	
AR(1)		3.14	0.081

Table 4

**NAIRU ESTIMATES USING
ALTERNATIVE SAMPLES**

1984-1993	1984-2003	1993-2003
5.8	5.3	5.3

equation we obtain the results presented in Chart 6, which also point to a very stable pattern for the Portuguese NAIRU over the sample period.

4.3. Phillips curve

4.3.1. Constant NAIRU estimate

For the Phillips curve formulation, besides the unemployment rate, a set of supply-shock variables had to be considered. Following Gordon (1997), the variables chosen are: the deviation of the growth of productivity from its trend growth rate; the relative price changes of unprocessed food and energy goods *vis-à-vis* the remaining goods and services; and the relative import prices changes *vis-à-vis* domestic production price changes (to capture terms of trade shocks).

As in Gordon (1997), alternative inflation rate indicators were also considered, but the results obtained using the chain-weighted private consumption deflator (PCD) are the only ones reported (Table 3)[9]. As in the previous approaches, the results present a strong evidence that the Portuguese NAIRU has been slightly below 5.5 per cent.

Considering alternative samples, in spite of some decline of NAIRU estimates from the 80's to the 90's, the results suggest once again a fairly stable NAIRU (Table 4).

4.3.2. Time-varying NAIRU estimates

The time-varying estimates using the Phillips curve approach delivered results that are very similar to the ones presented above in the wage equation case. As shown in Chart 7, the estimates

Chart 7

**PHILLIPS CURVE TIME-VARYING
NAIRU ESTIMATES**

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(9) The results were not significantly different using alternatively the chain-weighted GDP deflator or the consumer price index.
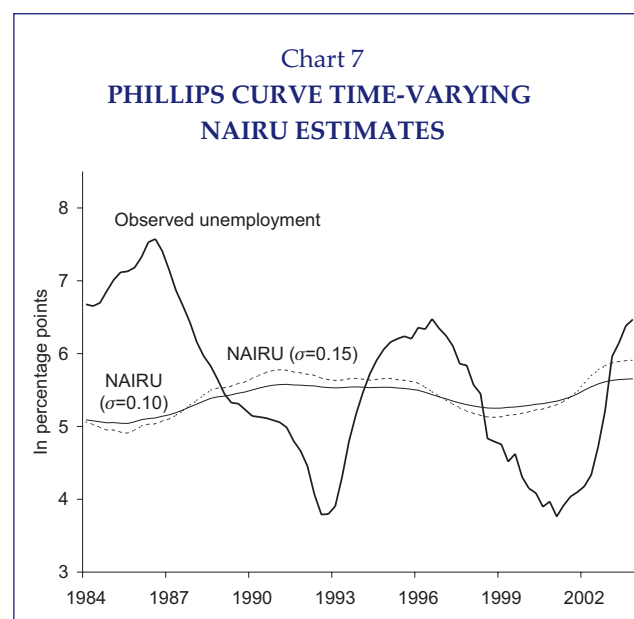
point to the stability of the Portuguese NAIRU, within levels between 5.0 and 5.5 per cent.

5. REAL WAGE FLEXIBILITY

Real wages seem to have been extremely sensitive to labour market conditions, which is commonly pointed as a specific characteristic of the Portuguese economy that accounts for the constancy of the NAIRU. Using equation (7) presented above, the average real wage sensitivity to the unemployment rate in the whole sample is -2.4 (Table 5). However, these estimates also show that a continuous and significant decline of the sensitivity parameter of real wages to the unemployment rate (from a coefficient of -3.6 to -1.7), seems to have taken place along the sample period. In fact, the high average value of this parameter must have been particularly influenced by the wage-inflation behaviour that occurred during the 80's.

The decrease of the sensitivity of real wages to the unemployment rate is easily understood when the two series are confronted (Chart 8). Contrarily to the decline observed in 1984 and 1993, when the unemployment rate was increasing, in the most recent years real wages registered a more stable growth pattern, despite the fluctuations of unemployment rate within levels between 4 and 7 per cent.

Obviously, in general, real wages tend to be more volatile when inflation is higher and more unstable because changes in prices are not immediately transmitted to wages. In the Portuguese economy, a possible explanation for this wage-inflation dynamics is related with the behaviour of the exchange rate, that is strongly and quickly transmitted to prices [see, for instance, Esteves (2003)] and therefore tend to influence real wages. In the two previous episodes of real wage decline, besides the increase of the unemployment rate, the former Portuguese currency registered simultaneously significant and most probably unantici-

Chart 8
REAL WAGES, UNEMPLOYMENT AND EXCHANGE RATE

pated depreciations following the 1984 IMF agreement and the 1993 ERM crisis). Therefore, these past exchange rate effects tend to increase the estimated sensitivity of real wages to labour market conditions.

This point can be illustrated by readdressing equation (7) and considering the Portuguese exchange rate as an additional regressor. To measure

Table 5

REAL WAGE/UNEMPLOYMENT SENSITIVITY

1984-1993	1984-2003	1993-2003
-3.6	-2.4	-1.7

Table 6

EXTENDED WAGE EQUATION

	1984-1993	1984-2003	1993-2003
NAIRU	5.3	5.4	5.7
Real wage/unemployment sensitivity	1.74	1.84	1.62
Number of significant exchange rate lags	5	5	3

their unanticipated changes, the second difference of the exchange rate was considered, and it was assumed that the wage-price dynamics can be influenced by these exchange rate surprises over the previous two years[10]. The results of this exercise are presented in Table 6.

The NAIRU estimates are not very different from the previous ones, but the introduction of the exchange rate effects allows to stabilize the relation between real wages and the unemployment rate, reducing this sensitivity for the sample periods including the eighties.

6. CONCLUSIONS

Using quarterly data from 1983 to 2003 and alternative approaches (Okun´s law, wage equation and Phillips curve), this article presents alternative estimates for the Portuguese NAIRU. As in the previous studies, average estimates around 5.5 per cent are obtained assuming that the NAIRU is constant.

A time-varying NAIRU methodology that follows closely the one presented in Gordon (1997) was also used. The results obtained for a reasonable parameterization confirm that the NAIRU is likely to have been fairly stable over the sample period, thereby proving the robustness of the previous estimates.

This study also analyses the higher sensitivity of real wages in Portugal to the prevailing economic conditions, which is a feature commonly pointed out as an important explanation for the differentiated behaviour of the Portuguese unemployment rate. It is well known that a downward adjustment of the real wage rate is mainly possible when ex-post inflation records above ex-ante expected value, due to the nominal wage rate rigidity. This study presents some evidence that the adjustment of real wages have been intrinsically related with the historical behaviour of the nominal exchange rate, suggesting that sudden devaluations/depreciations generated unexpected inflation and thus allowed for real wage rate adjustment.

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(10) In other words, considering e as the log of the Portuguese effective exchange rate, $\sum \alpha_i \Delta\Delta_4 e_{t-i}$ $(i=0,...,8)$ was initially introduced in equation (7), and then the statistically non-significant lags were sequentially dropped.

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QUARTERLY SERIES FOR THE PORTUGUESE ECONOMY: 1977-2003*

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*Paulo Soares Esteves***

1. INTRODUCTION

There is no consistent quarterly database for the Portuguese economy available for general use and covering a relatively long period. There are Quarterly National Accounts (QNA) and these are produced by the *Instituto Nacional de Estatística* (*INE*), starting in 1977. Moreover, some methodological changes, the last of which stemmed from the introduction of the European System of Accounts (ESA95), do not allow for a reasonably homogenous dataset for the period from 1977 up to the present. Moreover, the QNA do not yet provide information on households' disposable income and on the labour market.

This situation makes it difficult to carry out studies on the Portuguese economy based on quarterly figures, studies such as building quarterly forecast models and producing a more adequate analysis of the Portuguese business cycles.

The database presented in this paper intends to make quarterly figures available for some analysis which Banco de Portugal routinely produces with yearly figures. The publication of this article will enable the available information to be shared encouraging the production of studies which allowed for a deeper understanding of the Portuguese economy. The information presented here should be seen as a first version, to be updated regularly on the Banco de Portugal website. This will reflect not only the more up to date information as it becomes available and the natural statistical revision of more recent data[1], but also the procedure changes that may be deemed important. It should

also be mentioned that the *INE* will be introducing changes to the QNA database, incorporating among other things the results of the 2001 national census (Censos 2001). This could provide an opportunity to re-assess methodologies and retrospective statistical series, both annual and quarterly. It is hoped that the series in this paper can form a cornerstone for that work.

The 1977 to 2003 quarterly series published in this article are consistent with the annual values under review. These essentially consist of the figures for the national accounts from *INE* in ESA95, available between 1995 and 2001[2], updated with the Banco de Portugal estimates for 2002 and 2003 and retropolated back to 1977 using the Historical Series from the Banco de Portugal [(Pinheiro *et al.* (1999)]. This retropolation is based on the use of growth rates for volumes and prices on the elementary items. Considering the different structures for 1995 stemming from the historical series and the *INE* series, the growth rates of the components determined from the aggregated figures may differ slightly from those presented in Pinheiro *at al.* (1999). It is also necessary to operate a few changes

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(1) These revisions may cause additional changes in the series as a result of the sensitivity of the quarterly interpolation procedure relative to the end-of-sample values.

(2) For the unemployment series, for the period following 1995, the results of the *INE* Employment Survey were used. The information in the 1998 Employment Survey is not directly comparable with previous figures, given the important methodological changes which led to a narrower definition of the individual who was unemployed and therefore a lower unemployment rate. Because of this, the series for unemployment rate prior to 1998 was adjusted by -0.9 p.p. — see the article "The Portuguese economy in 1998 and prospects for 1999" in the *Economic Bulletin* of Banco de Portugal, March, 1999.

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

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on the historical series since in some cases the concepts used in these series are not exactly the same as those which are implicit in the National Accounts[3]. Consistency with annual values is ensured by the fact that the series are simultaneously aggregated at nominal terms and at previous year prices for calculation of volumes and related deflators. Thus, the volume-price breakdown reflects the previous year's structure, unlike the QNA series, which reflect the structure of a given base year. This guarantees consistency in the aggregation of the most elementary series for the specific aggregates.

The quarterly series published in this article cover a relatively wide set of variables, distributed in three major blocks: expenditure, income and the labour market. As with the QNA, the series are seasonally adjusted.

This article on the publication of long quarterly series for the Portuguese economy is organised as follows. In the second section there is the presentation of the methodology used, with the description of the processes adopted to ensure a consistent aggregation, both in the quarterly versus annual figures and the elementary components versus their respective aggregates. There is also a presentation of the distribution and interpolation procedures adopted in the transformation of annual into quarterly figures, along with the associated indicators taken into consideration.

The third section contains an analysis of the results. In the first place we present the characteristics of Portugal's economic cycles based on the quarterly figures. The results of various studies using annual figures are used here as a benchmark. This is followed by a comparison with the available quarterly series from other countries, bearing in mind not only the properties of economic cycles but also the short-term irregularity. Finally, there is

a comparison with the QNA series published by *INE*, specifically those for the post-1995 period.

In the Annex, the quarterly series are presented in detail. An electronic version is available at the Banco de Portugal website. (*www.bportugal.pt/publish/bolecon/docs*).

2. METHODOLOGY

2.1. Aggregation consistency

In disaggregating the quarterly series, the aim was to ensure aggregation consistency, both in terms of the quarterly versus the annual figures and the elementary items versus the aggregates. The interpolation procedure was thus brought to bear on the elementary items, i.e. on the variables for which no additional disaggregation was considered, and these were later used to obtain the specific aggregates.

2.1.1. The elementary items

Generally speaking, the consistency between annual and quarterly figures was achieved by transforming the elementary items into quarterly figures with an additive restriction on the flow variables and an averaging restriction on the stock variables. Where the variables were broken down into volume and price, the procedures for disaggregating into quarterly figures were applied directly on the volume and price series. The respective figures assessed at current and previous year prices are obtained by simple algebra on volumes and prices.

Concerning volumes, the disaggregation into quarterly series therefore meant that the sum of the quarterly figures for year t ($q_{t,i}$) was equal to the respective annual volume (Q_t).

$$\sum_{i=1}^{4} q_{t,i} = Q_t, \ \forall t \qquad (1)$$

In turn, the procedure used for quarterly deflator figures meant that the average of the quarterly deflators in year t ($p_{t,i}$), weighted according to the share of the quarterly volume in terms of the annual volume, was equal to the annual deflator (P_t);

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(3) Concerning private consumption, the historical series are based on consumption on the domestic territory, whereas the National Accounts relate to residents. For this reason, the figures for historical series had to be adjusted, and this means that there had to be also an adjustment for the series concerning tourist imports and exports.

It should be also mentioned that the concept implicit in the *INE* Employment Survey (for the series used after 1995) relates to unemployment in the *stricto sensu* while the concept of the historical series is the unemployment in the *lato sensu*. In this case, it was not possible to adjust the historical series due to lack of information.

$$\sum_{i=1}^{4} \frac{q_{t,i}}{Q_t} p_{t,i} = P_t, \ \forall t \qquad (2)$$

The introduction of these restrictions ensures equality between the nominal annual value and the sum of the respective nominal quarterly figures,

$$P_t Q_t = \sum_{i=1}^{4} p_{t,i} q_{t,i}, \ \forall t \qquad (3)$$

and the annual figure evaluated at previous year prices also derives from the sum of the respective quarterly figures. Indeed, considering $y_{t,i}^{(t-1)}$ as an elementary item for quarter i of year t assessed at average prices of year t-1,

$$y_{t,i}^{(t-1)} = P_{t-1} q_{t,i} \qquad (4)$$

the quarterly series ensures the annual aggregation $\left(Y_t^{(t-1)} \right)$ at the previous year prices.

$$Y_t^{(t-1)} = \sum_{i=1}^{4} y_{t,i}^{(t-1)} = P_{t-1} \sum_{i=1}^{4} q_{t,i} = P_{t-1} Q_t \qquad (5)$$

An important feature of the annual figures from the National Accounts stems from the fact that volume growth rates reflect the price structure of the previous year. Where the elementary items are concerned, as the annual volumes (Q_t) result from the quarterly rates of change calculated on the basis of the previous year structure, the rates of change directly defined on the quarterly series for volume $(q_{t,i})$ in fact measure the real growth, reflecting the price structure of the previous year.

2.1.2. Non-elementary items

The non-elementary items are not directly interpolated, resulting from the aggregation of the respective quarterly elementary items. Where there are variables subject to a price/volume breakdown, this aggregation is performed in nominal terms and at previous year prices. Only after that are these figures used in the construction of volumes and prices series.

The alternative would be to aggregate the volume series of elementary items but this would lead to inconsistency in relation to the annual figures for the National Accounts, since the growth rates would no longer reflect the changes on relative

prices. Moreover, for these aggregates the direct disaggregation into quarterly figures would lead to an inconsistency with the quarterly evolution of their respective components.

For the base year (T_0), the aggregation of the components can be done by a direct addition of volumes of the respective elementary variables. For the remaining periods, this volume series results as the accumulation of the growth rates from the base period,

$$q_{T,i} = Q_{T_0} \left(\frac{Y_{T_0+1}^{(T_0)}}{Y_{T_0}^{(T_0)}} \frac{Y_{T_0+2}^{(T_0+1)}}{Y_{T_0+1}^{(T_0+1)}} \right) \cdots \left(\frac{Y_{T-1}^{(T-2)}}{Y_{T-2}^{(T-2)}} \frac{y_{T,i}^{(T-1)}}{Y_{T-1}^{(T-1)}} \right) \qquad (6)$$

on which the rates of change can be calculated reflecting the previous year's structure. As a last point, the deflators are calculated as the quotient between the nominal figures and the volume series,

$$p_{t,i} = \frac{y_{t,i}^{(t)}}{q_{t,i}} \qquad (7)$$

ensuring compatibility between prices, volumes and nominal values.

2.2. Methods of distribution and interpolation

The application of these methods of disaggregating annual into quarterly figures leads to an estimate of quarterly series which, when aggregated, ensure consistency with the respective annual figures[4]. In general, the estimate of this intra-annual picture may be based on: (i) a set of available related quarterly indicators where the evolution is related with the variable for which the quarterly figures are to be found; (ii) univariate methods without recourse to related indicators, where the basic aim is for the quarterly series not to show major irregularities.

In general, the quarterly series were estimated using related indicators. The option involving the application of univariate methods was limited to those cases where the related indicators were not available. The use of univariate methods or related indicators previously corrected for seasonality im-

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(4) For a detailed summary of these methods of time-series disaggregation, see Cardoso (1999).

plies that the final figures are adjusted for seasonal fluctuations.

2.2.1. Methods used

The processes for the disaggregation into quarterly figures based on related indicators assumes that the quarterly variable (z) may be expressed as a linear function of available quarterly time series (x) with the addition of a random element (ε), but which must respect an annual aggregation restriction defined through a matrix C which converts the quarterly figures (z) into annual (Z).

$$z = x\beta + \varepsilon \tag{8}$$

$$Z = Cz \tag{9}$$

This assumes that the vector of quarterly residual figures (of dimension $4T$, T being the number of years analysed) has an expected value equal to zero and a $\sigma^2\Omega$ covariance matrix. The aggregation matrix can be written as $C = [I_T \otimes c']$, where I_T is an identity matrix of order T and c is a column vector of dimension 4.

In practical terms, the process of disaggregating into quarterly figures results in the estimation of the following transformed relation,

$$Z = Cx\beta + C\varepsilon \tag{10}$$

where the results depend on the type of aggregation considered (vector c) and the random process for the residual (ε).

In terms of the type of annual restriction, various alternatives were considered;
$c' = [0.25\ 0.25\ 0.25\ 0.25]$ for stock variables;
$c' = [1\ 1\ 1\ 1]$ for flow variables;
$c' = [\alpha_1\ \alpha_2\ \alpha_3\ \alpha_4]$, with $\sum \alpha = 1$, for the formulation of quarterly deflators, where the coefficients α_i, represent the share of the volume in quarter i in the respective annual figure. They are obtained through the prior disaggregation into quarterly figures for the volume of the same variable — as mentioned above, this kind of restriction ensures that annual nominal figures are the same as the sum of the respective quarterly figures.

In terms of the quarterly residual, an AR(2) procedure with a unit root was assumed [Litterman (1983)]: $\varepsilon = (1+\rho)\varepsilon_{-1} - \rho\varepsilon_{-2} + u$ with u being a

white noise[5]. In the case of the series where the quarterly figures have been disaggregated without recourse to a related indicator, a process was considered where the quarterly figures are obtained by a smoothing process which minimises the sum of the squares of their first differences [Boot, Feibes e Lisman (1967)]. This can be seen as a specific case of the AR(2) procedure, with no related indicators and $\rho = 0$.

2.3. Associated indicators

Tables 1 to 4 provide a detailed illustration of the associated indicators used to estimate the quarterly figures presented in this article. An indication of the variables for which quarterly figures were estimated without recourse to associated indicators is also provided.

2.3.1. Expenditure

The indicators for the elaboration of the quarterly figures for the series on the expenditure side are based by and large on the QNA of *INE*, both for volume and deflators (Tables 1 and 2). The QNA are composed of four sets of overlapping series for the period between 1977 and 2003[6]. The procedure used was to start from the most recent series (1995-2003 in ESA95) and do the retropolation with chain rates of change using the latest available information. The use of this general procedure meant, however, that certain crucial options had to be taken.

i) Different levels of aggregation

For some indicators, it was not possible to find a detailed disaggregation for the earliest part of the

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(5) Comparing with the most usual process, AR(1) [Chow and Lin (1971)], this process is characterised by a greater flexibility in the results relative to the related quarterly indicators. The estimation of ρ was obtained using the maximum likelihood method with a grid search process (ρ from -0.99 to 0.99 with a step of 0.01).

(6) From 1995 on, there is a uniform QNA series in ESA95. For the 1977-1995 period there are three QNA sets in ESA79 for non-disjunct periods (1977-1992, 1986-1995, 1998-1995), reflecting mainly the adoption of difference base years. These sets are not uniform, mainly considering the disaggregation detail. On this issue, it should be referred that the *INE* kindly provided some information not usually disclosed.

Table 1

QUARTERLY ASSOCIATED INDICATORS – EXPENDITURE (VOLUME)

Private consumption	By aggregation
Housing rents.	With no prior associated indicator
Current private consumption (exc. housing rents)	By aggregation
Durables.	By aggregation
Vehicles	Private consumption of vehicles[a]. Before 86, estimates based on sales of vehicles[b] and total consumption[c]
Non-vehicles	Durables consumption excluding vehicles[a]. Before 86, estimates based on sales of vehicles[b] and total consumption[c]
Non-durables excluding housing rents. . .	Non-durables consumption[a]. Before 86, total consumption excluding durables consumption estimates
Public consumption	By aggregation
Compensation of employees	With no prior associated indicator
Fixed capital consumption.	With no prior associated indicator
Other	With no prior associated indicator
Gross Fixed Capital Formation (GFCF)	By aggregation
Public GFCF	By aggregation
Machinery and equipment	GFCF machinery and equipment[c]. Before 86, GFCF equipment and transport material[c]
Transport material	GFCF machinery and equipment[c]. Before 86, GFCF equipment and transport material[c]
Construction	GFCF construction[c]
Other.	GFCF other[c]. Before 95, GFCF equipment and transport material[c]
Private GFCF	By aggregation
Residential.	GFCF construction[c]. Before 95, with no prior associated indicator
Non-residential.	By aggregation
Construction excluding housing.	GFCF construction[c]
Other excluding construction	By aggregation
Machinery and equipment	FBCF machinery and equipment[c]. Before 86, GFCF equipment and transport material[c]
Transport material	GFCF machinery and equipment[c]. Before 86, GFCF equipment and transport material[c]
Other.	GFCF other[c]. Before 95, GFCF equipment and transport material[c]
Change in inventories	With no prior associated indicator (quarterly figures based on the contribution of changes in stocks to the GDP growth)
Exports of goods and services.	By aggregation
Exports of goods	Exports of goods[a]. Before 95, 5 quarter moving average of exports of goods[a]
Export of services	By aggregation
Tourism	Exports of tourism[a]. Before 95, number of nights spent by foreigner in hotels and similar establishments[a]
Services excluding tourism.	Exports of services[a]. Before 88, 5 quarter moving average of imports of goods and services[c] excluding energy[d]
Imports of goods and services	By aggregation
Imports of goods	Imports of goods[a]. Before 95, 5 quarter moving average of imports of goods[a]
Imports of services	Imports of services[a]. Before 88, 5 quarter moving average of imports of goods and services[c] excluding energy[d]
GDP	By aggregation

Sources:

(a) *Instituto Nacional de Estatística* (*INE*).

(b) *Associação do Comércio Automóvel de Portugal*.

(c) Quarterly National Accounts of the *INE*.

(d) *Gabinete de Estratégia e Estudos, Ministério da Economia* (former *Direcção-Geral das Relações Económicas Internacionais*).

Table 2

QUARTERLY ASSOCIATED INDICATORS – EXPENDITURE (DEFLATORS)

Private consumption.	By aggregation
Housing rents.	With no prior associated indicator
Current private consumption (exc. housing rents)	By aggregation
Durables.	By aggregation
Vehicles	Private consumption deflator of vehicles[a]. Before 86, total consumption deflator[b]
Non-vehicles	Durables consumption deflator excluding vehicles[a]. Before 86, total consumption deflator[b]
Non-durables excluding housing rents	Non-durables consumption deflator[a]. Before 86 estimates based on consumer prices of food and beverages and non-durables consumption prices excluding food and beverages[a]
Public consumption	By aggregation
Compensation of employees	With no prior associated indicator
Fixed capital consumption.	With no prior associated indicator
Other	With no prior associated indicator
Gross Fixed Capital Formation (GFCF)	By aggregation
Public GFCF	By aggregation
Machinery and equipment	GFCF in machinery and equipment deflator[b]. Before 86, GFCF in equipment and transport material deflator[b]
Transport material	GFCF in machinery and equipment deflator[b]. Before 86, GFCF on equipment and transport material deflator[b]
Construction	GFCF in construction deflator[b]
Other	GFCF other deflator[b]. Before 95, GFCF in equipment and transport material deflator[b]
Private GFCF	By aggregation
Residential.	GFCF in construction deflator[b]. Before 95, with no prior indicator
Non-residential.	By aggregation
Construction excluding construction	GFCF in construction deflator[b]
Other excluding housing	By aggregation
Machinery and equipment	GFCF in machinery and equipment deflator[b]. Before 86, GFCF in equipment and transport material deflator[b]
Transport material	GFCF in machinery and equipment deflator[b]. Before 86, GFCF in equipment and transport material deflator[b]
Other	GFCF other deflator[b]. Before 95, GFCG in equipment and transport material deflator[b]
Exports of goods and services.	By aggregation
Exports of goods	Exports of goods deflator[a]
Exports of services	By aggregation
Tourism	Consumer Price Index[a]
Services excluding tourism.	Exports of services deflator[a]. Before 88, deflator of total exports[b] excluding energy[c]
Imports of goods and services	By aggregation
Imports of goods	Imports of goods deflator[a]
Imports of services	Imports of services deflator[a]. Before 88, deflator of total imports[b] excluding energy[c]
GDP	By aggregation

Sources:

(a) *Instituto Nacional de Estatística* (*INE*).

(b) Quarterly National Accounts of the *INE*.

(c) *Gabinete de Estratégia e Estudos, Ministério da Economia* (former *Direcção-Geral das Relações Económicas Internacionais*).

series because of the changes introduced into the various QNA series.

Where private consumption is concerned, it was not possible to obtain disaggregated information on durable and non-durables for the period up to 1986. As a result, the indicators used for disaggregating into quarterly figures relating to these two components of private consumption were retropolated for the earlier period using a variety of procedures. In the case of durables, the deflator was retropolated by using the total QNA consumption deflator. In the case of the volume indicator, a relationship was estimated for the 1986-2003 period in which the indicator for the consumption of durables is explained by car sales and by total QNA consumption. This was then retropolated to obtain a related indicator used for disaggregation the volume of durables into quarterly figures. The same kind of procedure was used to retropolate the indicator used in the quarterly deflator figure for the consumption of non-durables. This was through an estimated regression for the period after 1986, where the indicator is explained by the QNA evolution of consumer prices of food and beverage and of non-durable goods excluding food and beverages. The retropolation of the consumption volume indicator for non-durables was based on the QNA figure for total consumption minus the estimates mentioned previously for the evolution of the associated consumption indicator for durables.

As for the Gross Fixed Capital Formation (GFCF) figure, it was not possible to obtain disaggregated figures separating the GFCF for machines and equipment and the GFCF for transport material for the period prior to 1986. So, the indicators used in the disaggregation into quarterly figures for that series were retropoloated for the period before 1986 using the available aggregate series for GFCF in equipment and transport material. In addition, the item "Other" in the GFCF figures for the series in ESA79 is significantly different from the new ESA95 series. As a result, this variable was not used as the related indicator for the period prior to 1995. Instead, it was decided to retropolate the ESA95 series with the GFCF series for equipment and transport material.

In the case of exports of tourism, there is no QNA series for the period prior to 1995. This meant retropolating the indicator by means of the number of nights spent by foreigner in hotels and similar establishments, previously adjusted for seasonal fluctuations. In the case of exports of services excluding tourism and of imports of services, there were no series for the related indicators prior to 1988. This meant that the indicators were retropolated by means of the evolution of the respective trade flows of goods excluding energy.

(ii) Structural breaks in the evolution of certain indicators

The information for the earliest period for external trade in goods was extremely volatile, showing some signs of seasonality. Because of this, it was decided to filter these series, in the period prior to 1995, before their use as related indicators, using a 5 quarters centred moving average[7].

As for investment in housing, a different procedure was also used for the period prior to 1995. The GFCF figure for construction in the QNA (the indicator used after 1995) shows a very weak correlation with the annual series for investment in housing for the earliest period under review. Its use as the related indicator would therefore generate unreliable results[8]. There was also no other indicator with significant correlation for this series, so the decision was to produce a quarterly disaggregation without recourse to a related indicator for the period prior to 1995.

(iii) The absence of indicators

Third, and finally, the procedure without recourse to a related indicator was used when there was difficulty in finding an indicator with a significant correlation with the annual variable. Here the procedure was not based on any related indicator, deriving from a strictly numerical procedure where the quarterly figures result from the minimising process, abovementioned[9]. This was the procedure used for housing rents in private consumption, the variables which make up for public consumption and change in inventories, where the

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(7) If x_t is the non filtrated series, the 5 quarter centred moving average:

$$x_t^* = 1/8\, x_{t-2} + 1/4\, x_{t-1} + 1/4\, x_t + 1/4\, x_{t+1} + 1/8\, x_{t+2}$$

(8) The use of this procedure for the period prior to 1995 implies a negative correlation between the final series and the related indicator.

QUARTERLY ASSOCIATED INDICATORS – LABOUR MARKET

Labour force	By aggregation
Total employment	By aggregation
General government	With no prior associated indicator
Private sector – employees.	Employment Survey[a]
Private sector – other forms of employment	Employment Survey[a]
Unemployment	Employment Survey[a]
Unemployment rate	By aggregation

Source:

(a) *Instituto Nacional de Estatística* (INE).

disaggregation into quarterly figures was applied for its contribution to the GDP volume growth rate series.

2.3.2. The labour market

As to the series relating to the labour market, the indicators used for the disaggregation into quarterly figures for unemployed, total employment and employees were based on the *INE* Employment Survey, previously adjusted for seasonal fluctuations (Table 3).

Since 1977, a number of important methodological changes have been introduced into the Employment Surveys. Therefore a direct comparison between them is not possible. It was necessary to work with a number of hypotheses in order to obtain a single series from 1977 to 2003 which could be used as an indicator for the disaggregation into quarterly figures from the annual series. When putting together the series deriving from the various employment surveys, the point of reference was the annual rate of change implicit in the Banco de Portugal historical series, with the exception of the change from the fourth quarter of 1997 to the first quarter of 1998. In this case, the figures for the number of unemployed in the period prior to 1998 were adjusted so as to obtain a fall in the unemployment rate of around 0.9 p.p. This was the estimate of the impact of the methodological changes

introduced in 1998 in the reduction of the unemployment rate — see the article "The Portuguese economy in 1998 and prospects for 1999" in the Banco de Portugal *Economic Bulletin* for March 1999.

2.3.3. Income

As to the income series, the most frequently used procedure was to disaggregation into quarterly figures without recourse to related indicators (Table 4).

The only exceptions were external transfers, where the indicator was private transfers from the Balance of Payments adjusted for seasonal variations (source: Banco de Portugal) and interest receipts and payments, where the indicators were calculated on the basis of the series relating to deposits, credit and interest rates (source: Banco de Portugal).

3. ANALYSIS OF RESULTS

This section analyses the main results. In the first place, we present the main features of the economic cycles in Portugal apparent in the quarterly series. These results are then compared with those obtained from the available quarterly series from other countries, bearing in mind not only the main properties of the economic cycles but also the level of short-term irregularities. Finally, there is the comparison with the QNA series published by *INE*.

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(9) The use of this procedure is better for those variables which tend to record an evolution characterised by a less irregular short-term pattern.

Table 4

QUARTERLY ASSOCIATED INDICATORS – INCOME

Compensation of employees	By aggregation
General government.	By aggregation
Compensation per employee	With no prior associated indicator
Employees.	With no prior associated indicator
Private sector	By aggregation
Compensation per employee	With no prior associated indicator
Employees.	Employment Survey[a]
Domestic transfers	With no prior associated indicator
External transfers	Private transfers from the Balance of Payments[b]
Corporate and property income	By aggregation
Housing rents.	With no prior associated indicator
Mixed income excluding rents	With no prior associated indicator
Net interest.	By aggregation
from investments	After 95 by aggregation. Before 95, average deposit stock for the different maturities multiplied by the associated interest rates.
deposits	After 1995, interests on deposits
savings certificates	After 1995, interests on saving certificates
emigrants deposits	After 1995, interests on emigrant's deposits
income from bonds, investment funds units and other investments	With no prior associated indicator
from resources	Average credit stock for the different maturities multiplied by the associated interest rates.
Other	With no prior associated indicator
Direct taxes	With no prior associated indicator
Social Security contributions	With no prior associated indicator
Disposable income	By aggregation

Sources:

(a) *Instituto Nacional de Estatística* (*INE*).

(b) Banco de Portugal.

3.1. The main cyclical characteristics

Chart 1 shows the cyclical component of GDP[10], comparing the quarterly and the annual results for the period between 1978 and 2003[11].

The results are similar, as might have been expected, with the last semester of 1980, the second quarter of 1990 and the third quarter of 2000 as the most positive points in the cyclical GDP component. The most negative points were the first two quarters of 1978 and 1986, the second and third quarters of 1995 and the third and fourth quarters of 2003. It should be mentioned that the results for

the most recent period must be treated with special care, given the high sensitivity of the most recent figures on the filtering procedure.

Table 5 shows the main features of the cyclical fluctuations in the series and includes measures of volatility (absolute standard deviation and the relative standard deviation versus GDP) and the persistence (autocorrelation coefficients) for the various components, as well as the correlation structure with the economic cycle[12]. As might have been expected when cyclical components are being considered, all the series under review show a high degree of persistence, with auto-correlation coefficients of the first order generally higher than 0.8,

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(10) In the decomposition of the cyclical component of each variable from its trend, the Hodrick-Prescott filter was used, with a smoothing parameter of 1600 for the quarterly figures and 10 for the annual. This ensured a greater comparability between the results [see, for example, Maravall and del Rio (2001)]

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(11) In the series published here, the volume variables are only defined from 1978 because they were built on the basis of variables expressed in the previous year's prices.

Chart 1
CYCLICAL COMPONENT OF GDP
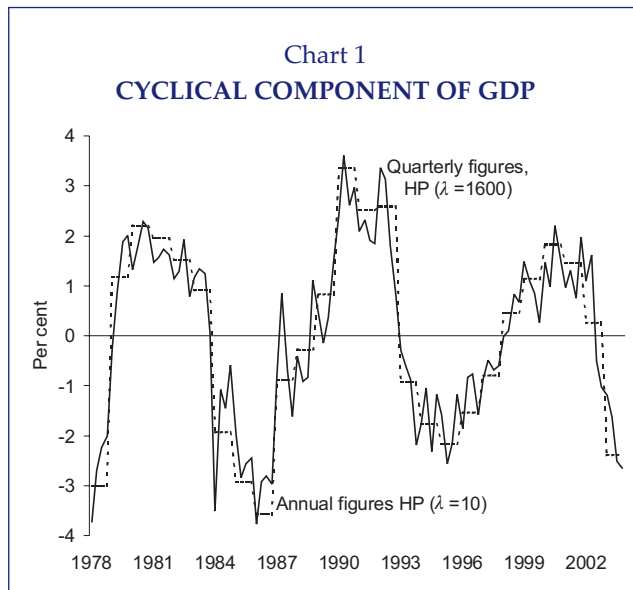
which gradually diminishes as higher lags are considered. By and large, the results are similar to the studies presented with information obtained on a yearly basis[13].

Private consumption is pro-cyclical, with a volatility around 20 per cent higher than GDP, with marked differences between the two components under review. The consumption of non-durables seems react with a lag to the economic cycle, given that the biggest correlations are visible at two and three quarters apart. Its volatility is similar to that of GDP, but less than the cyclical component for disposable income. This is consistent with the smoothness suggested by the theory of life cycle/permanent income. Expenditure on durable goods is highly sensitive to the economic cycle: it reacts contemporaneously to the GDP cycle and records cyclical fluctuations which are around 3.7 times more volatile than GDP.

As expected, the cyclical component in **GFCF** shows a very high volatility (around 3.4 times greater than GDP). This goes for all the components, though with special emphasis on expenditure for transport material (around 7 times higher).

The structure of the correlation coefficients behave in a highly pro-cyclical way with some features that show it leads the GDP cycle (especially for investment in transport material).

The cyclical component in **public consumption** shows a similar volatility to GDP, with the correlation positive but lagging the economic cycle.

The **export** cycle also has a wide range, which probably reflects the volatility of the external demand relevant for the Portuguese economy, bearing in mind by how much this variable is important in the evolution of Portuguese exports. This high variability is mainly visible in the export of tourism, reflecting the high sensitivity to the evolution of the international environment. The structure of the correlation coefficients point to a simultaneous/advanced reaction in exports in relation to the economic cycle. This result is consistent with the fact that the Portuguese economy tends to lag somewhat the fluctuations in the international economy.

The cyclical evolution in **imports** is highly volatile, almost three times as much as GDP volatility. This probably reflects the fact that the components on the demand side with a higher import content are also those that are the most volatile over the economic cycle. At the same time, the structure of correlation suggests that imports may be slightly advanced in relation to the economic cycle. This situation stems from imports of goods, since the import of services somewhat lag the economic cycle. Both imports and exports are pro-cyclical but imports have a higher correlation with GDP. This is the reason why the trade balance is counter-cyclical[14].

As to **labour market** series, the behaviour is strongly pro-cyclical, in total employment, labour force and apparent productivity. The correlation coefficients are 0.80, 0.60 and 0.86 respectively. For employment, this behaviour comes as no surprise where employees are concerned. With other forms of employment there is no significant correlation with the economic cycle. Moreover, the number of unemployed and the unemployment rate are strongly counter-cyclical. Here, we find the highest correlation coefficient with the economic cycle at a one-quarter-year lag[15].

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(12) In this assessment, consideration was only given to the main variables relative to expenditure, employment and income. All the variables are given in real terms and where there is no specific deflator for any series, the deflator for private consumption was used (compensations, disposable income and savings). The volume series are given as logarithms, except for the variables which are in ratio terms (rate of unemployment and savings rate).

(13) See, for example, Correia *et al*. (1992), Dias (1997), Neves and Belo (2002) and Bonfim and Neves (2002).

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(14) The same result was obtained by de la Torre (1997) for a number of developed economies.

Table 5

DESCRIPTIVE STATISTICS OF CYCLICAL COMPONENTS (1978Q1 A 2003Q4)

	Measurement unit[a]	Standard deviation sd(x)	Standard deviation $\frac{sd(x)}{sd(GDP)}$	Autocorrelation coefficients $[Corr(x_t, x_{t-i})]$ i = -1	i = -2	i = -3	i = -4	Correlation coefficients with GDP $[Corr(x_t, GDP_{t+i})]$ i = -4	i = -3	i = -2	i = -1	i = 0	i = 1	i = 2	i = 3	i = 4
GDP	constant prices	0.018	1.00	0.86	0.74	0.64	0.52	0.52	0.64	0.74	0.86	1.00	0.86	0.74	0.64	0.52
Expenditure components																
Private consumption	constant prices	0.022	1.22	0.93	0.83	0.69	0.52	0.67	0.72	0.73	0.74	0.72	0.65	0.57	0.47	0.34
Private consumption of durables.	constant prices	0.066	3.69	0.84	0.71	0.54	0.36	0.50	0.59	0.63	0.69	0.73	0.65	0.56	0.46	0.35
Private consumption of non-durables.	constant prices	0.017	0.97	0.91	0.81	0.68	0.50	0.68	0.70	0.70	0.68	0.63	0.58	0.51	0.41	0.30
Public consumption	constant prices	0.017	0.97	0.94	0.79	0.58	0.37	0.70	0.75	0.76	0.74	0.69	0.63	0.56	0.47	0.36
GFCF	constant prices	0.060	3.37	0.88	0.69	0.46	0.27	0.33	0.44	0.55	0.64	0.73	0.68	0.60	0.52	0.44
GFCF machinery and equipment.	constant prices	0.078	4.35	0.88	0.75	0.62	0.48	0.53	0.59	0.64	0.65	0.70	0.65	0.58	0.53	0.47
GFCF transport material	constant prices	0.126	7.08	0.72	0.66	0.46	0.31	0.22	0.28	0.34	0.35	0.45	0.44	0.43	0.43	0.43
GFCF construction	constant prices	0.069	3.84	0.84	0.47	0.02	-0.32	0.05	0.15	0.30	0.42	0.51	0.46	0.41	0.30	0.21
GFCF other	constant prices	0.092	5.15	0.87	0.71	0.53	0.35	0.37	0.44	0.50	0.51	0.56	0.50	0.44	0.40	0.38
Exports of goods and services	constant prices	0.047	2.63	0.87	0.67	0.40	0.14	-0.20	-0.07	0.11	0.28	0.41	0.40	0.41	0.37	0.31
Exports of goods.	constant prices	0.048	2.68	0.85	0.65	0.37	0.10	-0.30	-0.20	-0.05	0.09	0.22	0.22	0.22	0.19	0.15
Exports of services	constant prices	0.064	3.58	0.85	0.68	0.47	0.24	0.05	0.20	0.35	0.49	0.58	0.56	0.57	0.52	0.45
Imports of goods and services	constant prices	0.054	3.00	0.92	0.79	0.62	0.45	0.34	0.45	0.56	0.64	0.65	0.67	0.65	0.58	0.52
Imports of goods.	constant prices	0.056	3.13	0.92	0.78	0.60	0.42	0.29	0.40	0.52	0.61	0.64	0.66	0.65	0.59	0.52
Imports of services.	constant prices	0.066	3.71	0.76	0.62	0.42	0.23	0.45	0.52	0.55	0.54	0.49	0.45	0.39	0.33	0.28
Employment, unemployment and productivity																
Labour force	thousands	0.007	0.39	0.87	0.68	0.45	0.21	0.30	0.39	0.48	0.56	0.60	0.59	0.57	0.53	0.47
Total employment	thousands	0.010	0.55	0.91	0.77	0.58	0.38	0.54	0.63	0.72	0.78	0.80	0.77	0.71	0.61	0.49
Employees.	thousands	0.013	0.71	0.94	0.85	0.71	0.56	0.65	0.72	0.78	0.81	0.81	0.76	0.69	0.60	0.48
Other forms of employment.	thousands	0.012	0.66	0.78	0.44	0.00	-0.40	-0.36	-0.27	-0.18	-0.06	0.01	0.06	0.07	0.07	0.06
Unemployment.	thousands	0.094	5.23	0.93	0.81	0.63	0.43	-0.56	-0.62	-0.65	-0.67	-0.64	-0.59	-0.50	-0.37	-0.24
Unemployment rate.	percentage	0.005	-	0.94	0.82	0.65	0.47	-0.60	-0.67	-0.71	-0.73	-0.71	-0.66	-0.57	-0.44	-0.31
Apparent labour productivity	constant prices	0.012	0.65	0.64	0.43	0.28	0.14	0.32	0.42	0.52	0.64	0.86	0.66	0.53	0.45	0.37
Wages, disposable income and saving																
Compensation of employees	constant prices	0.035	1.97	0.93	0.78	0.58	0.35	0.55	0.59	0.62	0.61	0.59	0.54	0.46	0.35	0.26
Compensation per employee	constant prices	0.031	1.75	0.91	0.73	0.48	0.20	0.36	0.38	0.39	0.37	0.34	0.30	0.23	0.16	0.10
Disposable income	constant prices	0.026	1.45	0.88	0.74	0.55	0.34	0.52	0.56	0.62	0.64	0.66	0.62	0.54	0.44	0.33
Savings of the private sector.	constant prices	0.101	5.67	0.73	0.44	0.16	-0.10	0.13	0.14	0.19	0.19	0.23	0.23	0.18	0.13	0.10
Savings rate (% of disposable income).	percentage	0.014	-	0.68	0.37	0.05	-0.27	-0.06	-0.05	0.02	0.02	0.08	0.11	0.08	0.07	0.06

Note:
(a) Variables in logs (excluding ratios).

As far as **income** is concerned, compensation per employee and real household disposable income behave in a pro-cyclical fashion, with a correlation structure suggesting a lagging evolution in relation to the economic cycle in the case of compensations. As far as household savings and savings rate are concerned, there are by and large positively correlated though hardly significant statistically (especially for the savings rate).

3.2. International comparison

It is important to compare the results for Portugal with other European economies and a group was chosen for this purpose[16].

Table 6 compares the main features of the economic cycle for the periods 1978 to 2003 and 1990 to 2003. The figures are analysed in a rather more summary fashion than for the quarterly series for the Portuguese economy. In terms of the correlations with the economic cycle, the results for Portugal are by and large similar to other countries, and there is also considerable stability in the two sample periods analysed. However, remarkable difference is related with the pro-cyclical behaviour of public consumption, while in other economies this relationship is weaker or even negative.

As for the standard deviations in the cyclical components, the Portuguese economy is more volatile overall, though this is less evident in external trade in the most recent period (1990 to 2003). The unemployment rate is less volatile in Portugal. In any case, these results are probably not related to the disaggregation into quarterly figures, since the use of annual figures leads to results which are not greatly dissimilar.

Table 7 compares chain rates of change and this provides a way of assessing the level of irregularity in the quarterly evolution of the various series. The correlations with the rate of change in GDP show the expected signs and the magnitudes are not very different from those observed in other countries. The exception is public consumption, the size

of which is only comparable with the figures for Spain and Austria.

In terms of the volatility of the chain rates of change, the results for Portugal are (i) higher for GDP, private consumption and GFCF, (ii) relatively similar for public consumption, exports and imports and (iii) lower for the unemployment rate. The use of annual figures in fact leads to results which are qualitatively similar, along the lines of the cyclical components. The exceptions are public consumption throughout the sample and the information relating to external trade during the first part of the sample. In these cases, the quarterly series show a very similar volatility to those in other countries, while the use of annual values implies a far greater volatility in Portugal. These results stem from the smoothing process underlying the disaggregation into quarterly figures for public consumption and the information for exports and imports in the first part of the sample (see Section 2.3.1).

This comparison between quarterly and annual results is shown in Chart 2, which highlights the figures in the last two columns of Table 7. The greater volatility of the chain rates of change in the quarterly series for the Portuguese economy should not be attributed to the procedures adopted for the disaggregation into quarterly figures. The opposite is in fact true: the relative volatility between the results for Portugal and the selected group of countries diminishes overall when the annual information is switched to quarterly.

3.3. Comparison with the QNA series of *INE*

An important point here relates to the comparison between the quarterly series presented in this article and the QNA series of *INE*. And special attention should be given to the comparison with the most recent version in ESA95. This is now published by *INE*, for the period from 1995, within a maximum of 70-day period after the end of each quarter.

Chart 3 illustrates this comparison for the main components of expenditure, bearing in mind the overlap of various sets of quarterly accounts series in ESA79 for the period prior to 1995.

For the period after 1995, these differences are marginal, reflecting the fact that (i) most of the indicators used for disaggregating into quarterly fig-

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(15) This result is very similar to those for the US economy described in Stock and Watson (1999).

(16) The information was obtained from OECD data. Germany was not included because of the problems handling the statistics relating to reunification.

Table 6

COMPARATIVE STATISTICS OF CYCLICAL COMPONENTS

	Contemporaneous correlations with GDP								Standard deviation									Annual figures
									Quarterly figures									
	Por	Spa	Ita	Fra	UK	Bel	Aus	Net	Por	Spa	Ita	Fra	UK	Bel	Aus	Net	Por./Ext.[a]	Por./Ext.[a]
1978Q1 a 2003Q4																		
GDP	-	-	-	-	-	-	-	-	1.79	1.04	1.02	0.95	1.31	1.11	0.99	1.21	1.64	1.77
Private consumption . .	0.72	0.79	0.76	0.78	0.84	0.68	0.71	0.72	2.18	1.19	1.38	0.86	1.51	0.93	1.00	1.35	1.86	2.00
Public consumption. . .	0.69	0.50	-0.08	-0.30	-0.22	0.12	0.28	0.04	1.74	1.29	0.72	0.76	0.95	1.01	0.91	0.80	1.89	2.03
GFCF	0.73	0.83	0.80	0.88	0.72	0.71	0.59	0.67	6.03	3.91	3.07	2.96	4.06	4.19	2.55	3.49	1.74	1.52
Total exports	0.41	0.05	0.28	0.69	0.53	0.53	0.63	0.60	4.69	2.92	3.87	2.81	2.68	2.63	3.40	2.41	1.59	1.44
Total imports	0.65	0.66	0.68	0.83	0.68	0.61	0.57	0.65	5.36	4.74	4.30	3.06	3.70	2.79	3.60	2.70	1.51	1.74
Unemployment rate. . .	-0.71	-0.83	-0.24	-0.82	-0.73	-0.67	-0.49	-0.66	0.50	0.98	0.45	0.47	0.91	0.60	0.27	0.79	0.78	0.69
1990Q1 a 2003Q4																		
GDP	-	-	-	-	-	-	-	-	1.70	1.18	0.92	1.05	1.01	1.14	0.91	1.14	1.62	1.72
Private consumption . .	0.69	0.84	0.65	0.85	0.82	0.79	0.75	0.88	1.79	1.25	1.31	0.85	1.04	0.86	0.81	1.30	1.68	1.72
Public consumption. . .	0.69	0.56	-0.12	-0.46	-0.32	0.20	0.21	0.05	1.81	1.27	0.72	0.93	0.96	1.00	1.10	0.90	1.85	1.76
GFCF	0.83	0.90	0.80	0.95	0.66	0.63	0.74	0.71	5.13	4.16	3.55	3.24	2.98	3.16	2.32	3.30	1.58	1.61
Total exports	0.57	0.20	0.45	0.81	0.59	0.74	0.75	0.63	3.52	2.68	3.63	3.05	2.56	2.49	3.24	2.40	1.23	1.14
Total imports	0.72	0.81	0.71	0.89	0.58	0.73	0.67	0.72	3.45	4.06	4.35	3.50	2.44	2.37	3.02	2.67	1.08	1.26
Unemployment rate. . .	-0.74	-0.87	-0.37	-0.89	-0.79	-0.67	-0.60	-0.79	0.59	1.14	0.49	0.57	0.82	0.68	0.27	0.66	0.89	0.80

Source: Based on OECD data, excluding Portugal.

Note:

(a) Simple average of remained countries.

Table 7

COMPARATIVE STATISTICS OF CHAIN RATES OF CHANGE

| | Contemporaneous correlations with GDP | | | | | | | | Standard deviation | | | | | | | | | Annual figures |
| | | | | | | | | | Quarterly figures | | | | | | | | | |
	Por	Spa	Ita	Fra	UK	Bel	Aus	Net	Por	Spa	Ita	Fra	UK	Bel	Aus	Net	Por/Ext[a]	Por/Ext[a]
1978Q2 to 2003Q4																		
GDP	-	-	-	-	-	-	-	-	1.08	0.74	0.64	0.50	0.80	0.76	0.69	0.91	1.50	1.69
Private consumption . . .	0.42	0.49	0.54	0.66	0.70	0.50	0.53	0.31	1.05	0.72	0.68	0.65	1.09	0.53	0.99	0.90	1.35	1.94
Public consumption	0.30	0.39	0.07	0.07	0.10	0.02	0.38	0.06	0.77	1.00	0.49	0.45	1.05	0.73	0.58	0.76	1.09	2.03
GFCF	0.61	0.57	0.54	0.74	0.30	0.43	0.50	0.50	3.30	1.95	1.67	1.31	2.72	2.73	2.21	3.87	1.38	1.80
Total exports	0.43	0.11	0.15	0.53	0.55	0.23	0.35	0.21	2.64	3.00	4.14	1.76	2.84	2.10	2.61	2.03	1.02	1.84
Total imports	0.29	0.34	0.22	0.64	0.39	0.21	0.34	0.15	2.62	2.97	3.51	1.65	2.83	2.46	2.51	1.88	1.05	1.64
Unemployment rate . . .	-0.35	-0.46	0.00	-0.42	-0.42	-0.36	-0.28	-0.32	0.21	0.46	0.28	0.21	0.37	0.25	0.15	0.31	0.73	0.71
1990Q1 to 2003Q4																		
GDP	-	-	-	-	-	-	-	-	0.91	0.73	0.61	0.50	0.49	0.73	0.54	0.61	1.52	1.67
Private consumption . . .	0.33	0.39	0.54	0.61	0.59	0.45	0.32	0.40	0.91	0.68	0.61	0.56	0.67	0.48	0.71	0.74	1.46	2.02
Public consumption	0.24	0.47	-0.08	0.00	-0.12	0.07	0.43	-0.03	0.78	0.91	0.45	0.50	0.94	0.78	0.70	0.71	1.12	1.92
GFCF	0.63	0.55	0.52	0.76	0.37	0.22	0.53	0.57	2.96	1.87	1.93	1.33	1.94	2.09	2.21	3.72	1.38	1.71
Total exports	0.53	0.00	0.22	0.64	0.12	0.24	0.54	0.15	2.42	2.58	3.50	1.86	2.04	1.77	2.31	1.51	1.08	1.02
Total imports	0.31	0.22	0.31	0.71	0.36	0.14	0.37	0.27	2.26	2.27	3.23	1.76	1.81	1.89	2.45	1.62	1.05	1.24
Unemployment rate . . .	-0.39	-0.42	-0.03	-0.57	-0.59	-0.33	-0.19	-0.42	0.24	0.46	0.28	0.22	0.30	0.24	0.15	0.27	0.86	0.86

Source: Based on OECD data, excluding Portugal.

Note:

(a) Simple average of remained countries. In the case of quarterly values, the relative standard deviations analysis is based on the annualized rates of change in order to permit comparison with the annual values.

Chart 2

RELATIVE VOLATILITY BETWEEN PORTUGAL AND OTHER EUROPEAN COUNTRIES

Chain rates of change

1978Q2-2003Q4

1990Q1-2003Q4
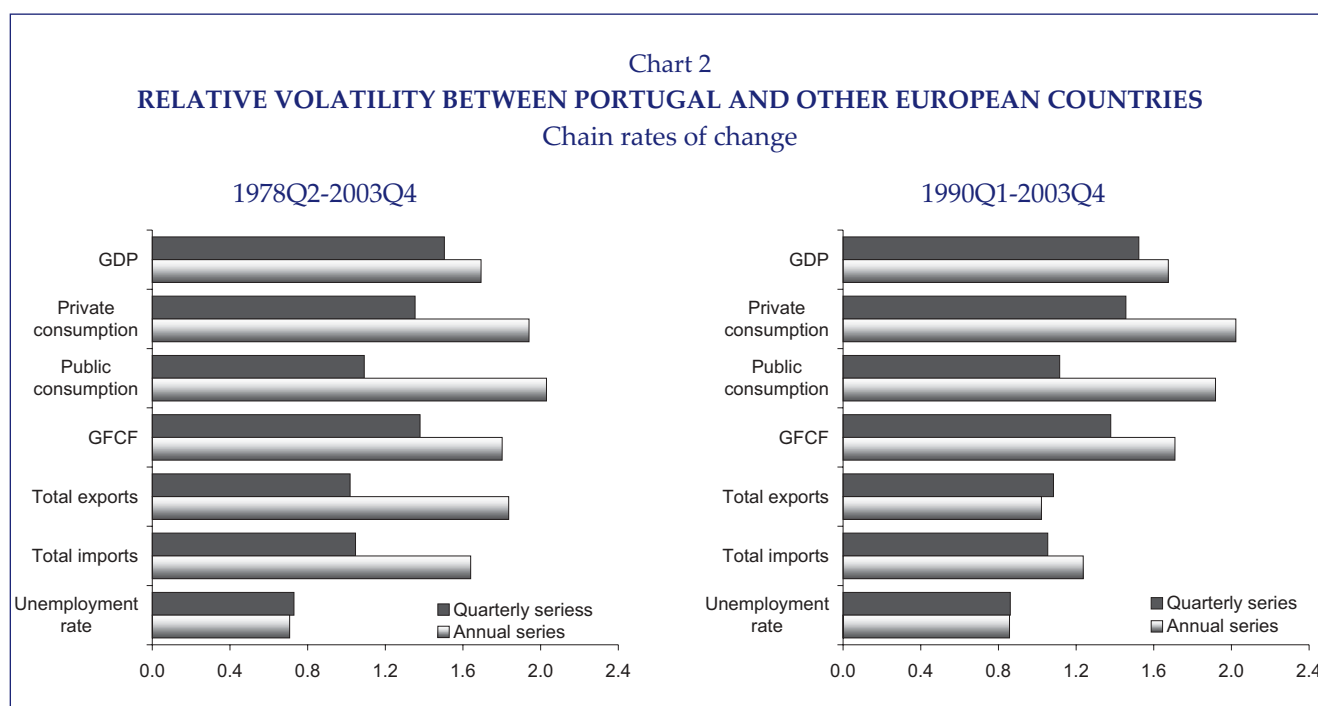
ures are based on the QNA series of *INE* and (ii) the annual figures used as reference points are very close to the annual values implicit in these quarterly accounts. The only exception is public consumption, where the differences between the series herein published and the QNA probably reflect different procedures in disaggregating into quarterly figures.

For the period prior to 1995, the differences are more evident, reflecting first and foremost the dif-

ferences between the respective annual figures. In any case, these differences are especially visible in the information for external trade — in particular for imports. The QNA figures in ESA79 show much higher volatility in chain rates of change. These differences reflect the prior smoothing process already mentioned in the related indicators for exports and imports, therefore being the main justification for the different assessment of the quarterly evolution of GDP.

Chart 3
QUARTERLY SERIES VERSUS QNA SERIES FROM *INE*
1978Q2-2003Q4, chain rates of change

GDP

Private consumption

Public consumption

Gross fixed capital formation

Exports

Imports
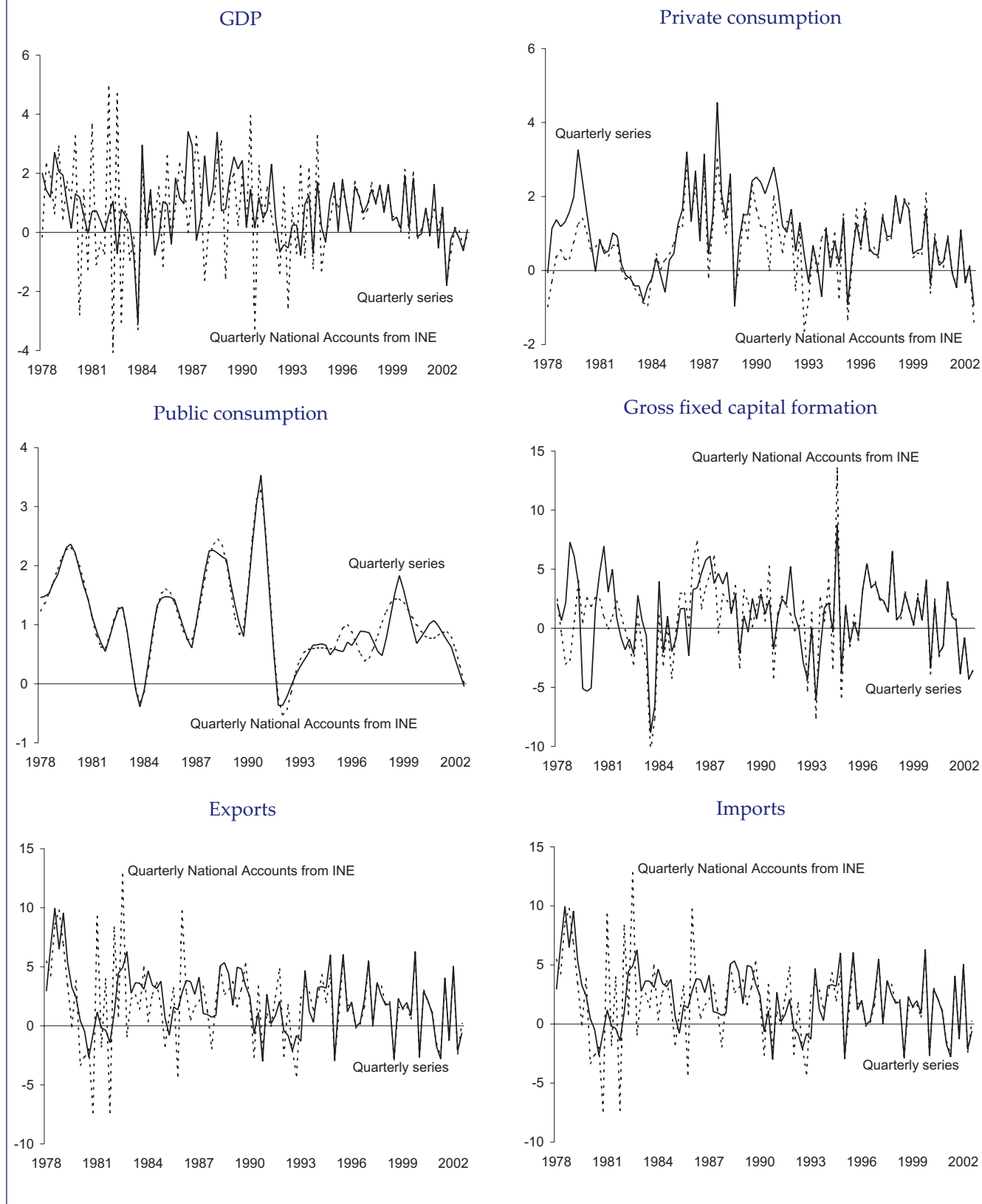
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ANNEX – QUARTERLY SERIES FOR THE PORTUGUESE ECONOMY

MAIN EXPENDITURE COMPONENTS

	1977				1978				1979			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents).	531.6	565.7	598.5	621.4	650.9	677.7	718.8	767.2	792.7	837.2	900.5	981.4
Public consumption	119.9	122.3	127.2	133.9	144.4	153.4	163.1	171.8	181.0	192.0	205.6	222.2
GFCF.	251.7	285.5	293.0	302.0	289.7	311.4	332.6	362.9	412.1	462.3	506.0	509.9
Change in inventories	34.7	34.7	34.7	34.7	54.7	54.6	45.8	28.3	-0.7	2.7	2.5	-1.1
Exports of goods and services.	137.3	150.5	158.1	170.3	182.2	196.5	222.9	259.1	293.3	335.9	379.8	414.2
Goods.	88.0	96.7	100.0	106.3	111.5	123.8	136.0	164.3	182.1	210.8	234.5	260.0
Services	49.3	53.8	58.0	63.9	70.6	72.7	86.9	94.7	111.3	125.2	145.3	154.3
Imports of goods and services	229.3	269.4	278.7	300.4	305.2	308.3	336.5	362.1	387.6	440.1	508.9	567.1
Goods.	203.7	240.6	248.5	267.7	270.8	272.7	297.9	319.7	341.8	389.0	447.0	497.7
Services	25.6	28.8	30.2	32.8	34.4	35.5	38.6	42.4	45.9	51.0	61.9	69.4
GDP.	845.9	889.3	932.7	961.8	1016.8	1085.4	1146.7	1227.0	1290.8	1390.0	1485.5	1559.5
Previous year prices (EUR million)												
Private consumption (residents).					601.4	601.0	607.8	616.2	723.2	732.7	744.3	759.1
Public consumption					129.3	131.2	133.1	135.1	164.5	167.6	171.1	175.0
GFCF.					263.4	268.9	270.7	276.5	356.4	378.1	392.4	372.3
Change in inventories					54.3	54.1	45.4	28.0	3.2	-12.5	-11.9	5.2
Exports of goods and services.					165.0	169.9	181.2	199.2	255.3	279.7	294.7	304.3
Goods.					100.6	105.9	109.3	123.2	156.7	171.6	179.7	185.5
Services					64.4	64.0	71.9	76.1	98.6	108.1	115.0	118.9
Imports of goods and services					276.5	269.2	268.6	274.1	329.2	347.9	369.7	382.9
Goods.					246.2	239.4	238.6	243.4	290.2	306.4	322.5	333.9
Services					30.3	29.7	30.1	30.7	39.0	41.5	47.2	49.0
GDP.					936.9	955.8	969.5	981.0	1173.5	1197.6	1220.9	1233.0
Volume (base year 1995)												
Private consumption (residents).					6216.8	6212.3	6283.2	6369.5	6445.0	6529.3	6632.4	6764.6
Public consumption					1666.4	1690.8	1715.8	1742.1	1771.9	1804.6	1842.4	1884.9
GFCF.					2426.5	2477.0	2493.2	2547.4	2733.3	2899.7	3009.2	2855.3
Exports of goods and services.					1251.2	1287.8	1373.7	1510.6	1608.7	1762.5	1857.1	1917.7
Goods.					698.3	735.1	758.9	855.1	891.6	976.0	1022.0	1054.9
Services					592.6	588.4	661.1	699.5	770.8	845.8	899.8	929.8
Imports of goods and services					1594.8	1552.8	1549.6	1581.3	1575.2	1664.8	1769.0	1832.4
Goods.					1357.4	1320.1	1315.2	1341.9	1333.1	1407.8	1481.6	1534.0
Services					241.9	237.8	240.5	245.6	249.6	265.4	301.9	313.7
GDP.					11193.0	11419.1	11582.7	11719.4	12037.5	12285.2	12523.7	12648.5
Deflator (1995=1)												
Private consumption (residents).					0.1047	0.1091	0.1144	0.1204	0.1230	0.1282	0.1358	0.1451
Public consumption					0.0867	0.0908	0.0951	0.0986	0.1021	0.1064	0.1116	0.1179
GFCF.					0.1194	0.1257	0.1334	0.1424	0.1508	0.1594	0.1682	0.1786
Exports of goods and services.					0.1456	0.1526	0.1623	0.1715	0.1823	0.1906	0.2045	0.2160
Goods.					0.1597	0.1684	0.1792	0.1922	0.2042	0.2160	0.2295	0.2464
Services					0.1192	0.1236	0.1315	0.1354	0.1444	0.1480	0.1614	0.1659
Imports of goods and services					0.1914	0.1985	0.2172	0.2290	0.2461	0.2643	0.2877	0.3095
Goods.					0.1995	0.2066	0.2265	0.2382	0.2564	0.2763	0.3017	0.3244
Services					0.1422	0.1494	0.1606	0.1727	0.1837	0.1923	0.2052	0.2212
GDP.					0.0908	0.0951	0.0990	0.1047	0.1072	0.1131	0.1186	0.1233

MAIN EXPENDITURE COMPONENTS

	1980 Q1	1980 Q2	1980 Q3	1980 Q4	1981 Q1	1981 Q2	1981 Q3	1981 Q4	1982 Q1	1982 Q2	1982 Q3	1982 Q4
Current prices (EUR million)												
Private consumption (residents)....................	1061.6	1132.8	1199.3	1248.7	1328.1	1393.2	1483.9	1560.3	1632.1	1713.1	1779.2	1843.2
Public consumption	240.7	259.5	277.0	293.4	309.1	324.4	340.0	356.4	372.2	392.4	414.8	442.2
GFCF......................................	510.3	518.5	539.2	590.9	675.0	731.4	785.6	798.0	844.7	870.0	895.3	908.4
Change in inventories	68.2	119.7	139.3	127.1	93.4	76.4	75.3	90.0	127.0	137.5	122.7	82.6
Exports of goods and services......................	456.2	467.4	485.8	486.1	506.4	529.2	549.2	555.5	579.3	599.6	684.7	716.0
Goods.......................................	285.8	292.9	294.6	296.5	303.2	318.2	329.9	341.1	360.9	385.2	451.4	477.8
Services	170.3	174.5	191.2	189.6	203.2	211.0	219.3	214.5	218.4	214.4	233.2	238.2
Imports of goods and services	628.4	684.3	729.1	774.4	814.9	932.1	943.8	955.4	1026.0	1101.8	1157.4	1149.7
Goods.......................................	542.9	593.9	627.9	664.9	697.4	806.1	817.6	822.8	896.1	964.7	1019.8	1007.2
Services	85.5	90.3	101.2	109.5	117.5	125.9	126.2	132.7	129.8	137.1	137.7	142.4
GDP..	1708.6	1813.6	1911.5	1971.8	2097.1	2122.7	2290.3	2404.7	2529.3	2610.7	2739.2	2842.7
Previous year prices (EUR million)												
Private consumption (residents)....................	930.2	952.9	967.8	975.0	1182.8	1192.5	1197.9	1204.3	1468.2	1481.8	1484.1	1482.0
Public consumption	211.5	216.2	220.4	224.1	279.0	282.1	284.6	286.6	338.5	341.1	344.7	349.0
GFCF......................................	444.4	421.9	429.3	449.5	594.7	612.9	643.5	649.4	770.7	756.8	749.8	733.5
Change in inventories	34.9	61.2	71.2	65.0	83.3	68.2	67.1	80.3	116.0	125.6	112.1	75.5
Exports of goods and services......................	391.1	392.8	391.0	380.6	460.6	466.0	465.1	463.4	527.1	532.5	556.4	583.7
Goods.......................................	245.3	242.9	238.8	230.1	279.1	279.9	284.6	288.9	333.0	344.2	369.8	393.1
Services	145.9	149.9	152.2	150.6	181.4	186.1	180.5	174.5	194.1	188.3	186.6	190.6
Imports of goods and services	547.0	560.7	577.7	583.6	724.7	732.7	755.7	773.7	972.7	976.4	961.7	955.1
Goods.......................................	472.5	484.2	495.8	500.6	622.8	629.4	654.4	670.8	853.6	857.3	848.7	842.7
Services	74.5	76.5	82.0	83.1	101.9	103.4	101.3	102.9	119.1	119.1	113.0	112.4
GDP..	1465.2	1484.4	1502.1	1510.6	1875.5	1888.9	1902.7	1910.2	2247.7	2261.3	2285.4	2268.7
Volume (base year 1995)												
Private consumption (residents)....................	6985.5	7155.6	7267.9	7321.7	7319.8	7380.0	7413.8	7453.2	7529.0	7598.8	7610.5	7600.2
Public consumption	1929.4	1972.3	2010.6	2044.0	2073.4	2096.7	2115.4	2130.0	2141.7	2158.6	2181.2	2208.7
GFCF......................................	2703.3	2566.2	2611.3	2734.2	2923.9	3013.6	3164.1	3192.7	3168.9	3111.6	3083.1	3016.0
Exports of goods and services......................	1963.7	1972.1	1963.0	1911.0	1897.6	1919.8	1916.3	1909.3	1882.2	1901.5	1986.7	2084.5
Goods.......................................	1090.3	1079.9	1061.6	1022.7	1015.1	1017.9	1035.0	1050.5	1061.1	1097.0	1178.4	1252.9
Services	937.8	963.7	978.5	968.1	962.2	986.8	957.3	925.6	877.2	850.7	843.2	861.3
Imports of goods and services	1965.8	2014.9	2076.3	2097.4	2098.5	2121.7	2188.1	2240.3	2307.2	2316.0	2281.0	2265.5
Goods.......................................	1623.5	1663.6	1703.3	1719.8	1720.2	1738.3	1807.4	1852.7	1932.7	1941.2	1921.6	1908.0
Services	369.0	378.8	406.2	411.4	412.7	418.5	410.0	416.7	393.2	393.2	373.0	371.1
GDP..	12665.5	12830.8	12984.0	13058.0	13052.9	13145.9	13241.8	13294.2	13296.2	13376.9	13519.2	13420.4
Deflator (1995=1)												
Private consumption (residents)....................	0.1520	0.1583	0.1650	0.1706	0.1814	0.1888	0.2002	0.2093	0.2168	0.2254	0.2338	0.2425
Public consumption	0.1248	0.1316	0.1378	0.1435	0.1491	0.1547	0.1607	0.1673	0.1738	0.1818	0.1902	0.2002
GFCF......................................	0.1888	0.2021	0.2065	0.2161	0.2309	0.2427	0.2483	0.2499	0.2665	0.2796	0.2904	0.3012
Exports of goods and services......................	0.2323	0.2370	0.2475	0.2544	0.2669	0.2757	0.2866	0.2910	0.3078	0.3153	0.3446	0.3435
Goods.......................................	0.2622	0.2712	0.2776	0.2899	0.2987	0.3126	0.3187	0.3247	0.3401	0.3512	0.3831	0.3814
Services	0.1816	0.1811	0.1954	0.1959	0.2112	0.2139	0.2291	0.2317	0.2490	0.2520	0.2766	0.2765
Imports of goods and services	0.3197	0.3396	0.3512	0.3692	0.3883	0.4393	0.4313	0.4265	0.4447	0.4757	0.5074	0.5075
Goods.......................................	0.3344	0.3570	0.3686	0.3866	0.4054	0.4638	0.4523	0.4441	0.4637	0.4970	0.5307	0.5279
Services	0.2318	0.2385	0.2492	0.2661	0.2848	0.3008	0.3078	0.3183	0.3301	0.3488	0.3691	0.3838
GDP..	0.1349	0.1413	0.1472	0.1510	0.1607	0.1615	0.1730	0.1809	0.1902	0.1952	0.2026	0.2118

MAIN EXPENDITURE COMPONENTS

	1983				1984				1985			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents).	1986.2	2089.1	2247.1	2408.3	2513.5	2661.0	2843.5	2900.2	3041.2	3142.7	3232.3	3368.2
Public consumption	470.7	499.9	527.7	551.7	578.2	604.0	638.4	675.4	721.5	765.9	811.9	858.0
GFCF.	988.4	1048.7	1136.8	1122.8	1054.6	1152.2	1192.9	1279.3	1286.4	1309.7	1365.3	1443.1
Change in inventories	-28.3	29.5	56.6	52.8	-19.0	-9.3	-3.6	-2.0	27.6	26.5	15.7	-5.0
Exports of goods and services.	804.1	879.9	1013.8	1108.8	1223.8	1331.5	1468.0	1562.6	1719.5	1775.0	1802.7	1850.4
Goods.	531.1	598.0	687.5	762.5	840.3	918.5	1011.8	1082.7	1170.6	1230.4	1235.4	1269.7
Services	273.1	281.9	326.4	346.3	383.5	413.1	456.2	479.8	548.9	544.6	567.3	580.7
Imports of goods and services	1177.1	1227.4	1367.3	1486.4	1539.4	1622.7	1761.0	1829.5	1923.8	1945.6	1910.1	2010.4
Goods.	1026.0	1071.9	1197.7	1306.5	1344.8	1419.2	1539.9	1594.3	1677.2	1687.2	1656.5	1740.3
Services	151.1	155.4	169.6	179.9	194.6	203.5	221.0	235.2	246.6	258.4	253.5	270.1
GDP.	3044.0	3319.7	3614.8	3758.0	3811.7	4116.7	4378.1	4586.0	4872.4	5074.2	5317.8	5504.4
Previous year prices (EUR million)												
Private consumption (residents).	1741.7	1734.4	1727.2	1712.8	2152.9	2148.4	2155.7	2152.8	2714.0	2721.7	2734.1	2768.6
Public consumption	417.5	421.3	423.0	422.7	512.4	511.8	513.8	518.4	637.5	646.8	656.3	666.0
GFCF.	881.0	886.7	881.1	803.1	934.4	971.4	951.2	960.9	1154.3	1144.2	1163.1	1182.7
Change in inventories	23.1	-24.1	-46.1	-43.0	-49.6	-24.2	-9.4	-5.2	-24.8	-23.9	-14.1	4.5
Exports of goods and services.	727.5	747.7	774.9	803.0	1032.2	1080.1	1117.3	1152.6	1524.6	1534.2	1522.3	1546.5
Goods.	491.3	509.5	528.5	550.3	703.7	733.5	762.0	785.4	1042.5	1062.9	1053.4	1067.6
Services	236.2	238.2	246.5	252.7	328.5	346.7	355.3	367.1	482.1	471.4	468.8	479.0
Imports of goods and services	1085.8	1045.8	1032.0	991.7	1263.8	1270.8	1307.7	1308.7	1736.4	1761.2	1755.3	1821.1
Goods.	955.2	919.2	904.6	868.1	1095.8	1102.8	1132.4	1133.7	1515.2	1538.0	1540.4	1600.1
Services	130.6	126.6	127.4	123.7	168.0	168.0	175.3	175.0	221.2	223.3	214.9	221.1
GDP.	2704.9	2720.2	2728.2	2706.8	3318.5	3416.7	3420.9	3470.7	4269.1	4261.8	4306.3	4347.1
Volume (base year 1995)												
Private consumption (residents).	7583.8	7552.1	7520.8	7458.1	7426.0	7410.3	7435.8	7425.6	7382.1	7403.1	7436.8	7530.8
Public consumption	2237.4	2258.0	2267.1	2265.1	2256.3	2253.9	2262.4	2282.7	2313.0	2346.5	2381.2	2416.2
GFCF.	3099.8	3120.0	3100.2	2825.7	2641.2	2745.9	2688.9	2716.2	2662.5	2639.2	2682.7	2727.9
Exports of goods and services.	2215.3	2276.7	2359.7	2445.1	2520.9	2638.0	2728.7	2814.9	2921.0	2939.5	2916.5	2963.1
Goods.	1345.8	1395.6	1447.6	1507.3	1554.2	1620.0	1682.9	1734.8	1783.4	1818.3	1802.0	1826.3
Services	896.6	904.1	935.6	959.4	989.0	1043.7	1069.8	1105.2	1170.7	1144.7	1138.6	1163.2
Imports of goods and services	2245.1	2162.4	2133.8	2050.6	2065.0	2076.5	2136.7	2138.5	2164.3	2195.3	2187.9	2270.0
Goods.	1892.7	1821.4	1792.4	1720.1	1720.7	1731.7	1778.1	1780.2	1800.9	1828.0	1830.9	1901.9
Services	365.4	354.2	356.5	345.9	364.1	364.1	380.0	379.4	385.2	388.8	374.2	384.9
GDP.	13525.4	13601.8	13641.6	13534.6	13118.6	13507.0	13523.7	13720.2	13614.1	13590.6	13732.6	13862.8
Deflator (1995=1)												
Private consumption (residents).	0.2619	0.2766	0.2988	0.3229	0.3385	0.3591	0.3824	0.3906	0.4120	0.4245	0.4346	0.4473
Public consumption	0.2104	0.2214	0.2328	0.2436	0.2563	0.2680	0.2822	0.2959	0.3119	0.3264	0.3410	0.3551
GFCF.	0.3188	0.3361	0.3667	0.3974	0.3993	0.4196	0.4436	0.4710	0.4831	0.4962	0.5089	0.5290
Exports of goods and services.	0.3630	0.3865	0.4296	0.4535	0.4855	0.5048	0.5380	0.5551	0.5887	0.6038	0.6181	0.6245
Goods.	0.3946	0.4285	0.4749	0.5059	0.5407	0.5670	0.6012	0.6241	0.6564	0.6767	0.6856	0.6952
Services	0.3046	0.3117	0.3488	0.3609	0.3878	0.3958	0.4264	0.4342	0.4688	0.4758	0.4983	0.4992
Imports of goods and services	0.5243	0.5676	0.6408	0.7249	0.7455	0.7815	0.8242	0.8555	0.8888	0.8863	0.8730	0.8857
Goods.	0.5421	0.5885	0.6682	0.7596	0.7815	0.8196	0.8661	0.8955	0.9313	0.9229	0.9048	0.9151
Services	0.4136	0.4388	0.4757	0.5200	0.5344	0.5588	0.5817	0.6200	0.6401	0.6647	0.6775	0.7017
GDP.	0.2251	0.2441	0.2650	0.2777	0.2906	0.3048	0.3237	0.3342	0.3579	0.3734	0.3872	0.3971

MAIN EXPENDITURE COMPONENTS

	1986				1987				1988			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents)	3563.4	3780.1	3916.0	4095.2	4210.8	4429.5	4556.8	4728.7	5098.2	5348.7	5635.6	5958.7
Public consumption	902.3	945.1	982.1	1016.7	1045.8	1085.1	1133.1	1192.2	1261.6	1334.6	1409.7	1488.4
GFCF	1416.9	1539.3	1607.4	1758.3	1864.4	2027.1	2115.1	2304.7	2440.9	2621.0	2768.5	2877.5
Change in inventories	17.3	28.7	38.7	47.3	142.7	149.4	144.2	127.1	192.9	153.9	124.4	104.2
Exports of goods and services	1891.6	1961.2	2070.0	2186.9	2295.3	2438.5	2560.1	2652.5	2787.7	2798.9	3027.8	3189.5
Goods	1263.8	1333.8	1379.3	1471.4	1528.0	1613.7	1682.4	1767.9	1850.3	1912.3	2043.0	2152.6
Services	627.8	627.4	690.7	715.4	767.3	824.9	877.7	884.6	937.4	886.6	984.9	1036.9
Imports of goods and services	1999.7	2020.1	2080.7	2345.4	2504.1	2717.6	2968.4	3184.8	3441.1	3550.0	3874.6	3947.3
Goods	1748.5	1746.6	1808.1	2039.9	2192.6	2376.8	2610.7	2794.9	3028.5	3125.3	3419.6	3455.2
Services	251.2	273.5	272.6	305.6	311.5	340.8	357.7	389.9	412.6	424.7	455.1	492.0
GDP	5791.9	6234.4	6533.5	6759.0	7054.9	7412.0	7540.9	7820.5	8340.2	8707.2	9091.4	9671.1
Previous year prices (EUR million)												
Private consumption (residents)	3289.2	3394.7	3439.5	3531.9	4003.2	4129.2	4147.4	4210.5	4785.0	4883.2	4951.9	5081.3
Public consumption	818.2	828.0	836.0	842.3	980.4	990.3	1004.8	1023.9	1166.5	1192.9	1219.2	1245.5
GFCF	1344.0	1388.0	1435.7	1502.8	1772.1	1880.4	1951.9	2042.6	2303.3	2412.3	2442.2	2512.7
Change in inventories	45.8	75.8	102.1	124.9	179.3	187.7	181.2	159.8	170.9	136.3	110.2	92.3
Exports of goods and services	1828.4	1879.9	1952.2	2025.1	2193.8	2284.2	2308.1	2330.2	2561.1	2584.1	2715.0	2860.3
Goods	1247.2	1294.1	1333.2	1381.5	1472.7	1503.3	1520.2	1532.6	1700.2	1761.2	1849.3	1949.9
Services	581.2	585.8	619.0	643.6	721.1	780.9	787.9	797.7	860.9	822.8	865.7	910.4
Imports of goods and services	2092.9	2237.2	2374.2	2583.9	2467.4	2615.3	2755.6	2900.3	3267.6	3421.6	3535.6	3620.7
Goods	1848.8	1979.0	2117.8	2305.6	2167.4	2296.7	2426.8	2550.5	2871.5	3019.9	3113.1	3175.4
Services	244.1	258.2	256.4	278.3	300.0	318.5	328.8	349.9	396.2	401.7	422.5	445.3
GDP	5232.7	5329.2	5391.3	5443.1	6661.4	6856.6	6837.8	6866.5	7719.1	7787.2	7903.0	8171.4
Volume (base year 1995)												
Private consumption (residents)	7654.9	7900.4	8004.6	8219.8	8285.3	8546.2	8583.8	8714.4	9110.3	9297.3	9428.2	9674.5
Public consumption	2450.6	2480.1	2504.0	2522.8	2538.2	2563.8	2601.3	2650.7	2710.3	2771.6	2832.9	2893.8
GFCF	2664.0	2751.2	2845.6	2978.7	3150.5	3343.1	3470.2	3631.4	3767.6	3946.0	3994.9	4110.2
Exports of goods and services	3003.3	3087.8	3206.5	3326.3	3415.0	3555.7	3592.9	3627.3	3654.1	3686.7	3873.6	4080.9
Goods	1838.0	1907.0	1964.7	2036.0	2093.7	2137.2	2161.2	2178.8	2210.7	2290.0	2404.5	2535.3
Services	1197.2	1206.7	1275.0	1325.7	1356.0	1468.4	1481.6	1500.0	1490.1	1424.2	1498.4	1575.8
Imports of goods and services	2369.0	2532.3	2687.3	2924.7	3071.4	3255.5	3430.1	3610.3	3840.0	4020.9	4154.9	4254.9
Goods	2013.0	2154.8	2305.9	2510.4	2651.7	2810.0	2969.1	3120.4	3325.2	3497.1	3605.0	3677.1
Services	363.9	384.8	382.2	414.7	420.5	446.4	460.8	490.3	514.5	521.7	548.7	578.3
GDP	13806.9	14061.5	14225.3	14362.2	14853.6	15288.8	15247.0	15311.1	15708.4	15846.8	16082.4	16628.8
Deflator (1995=1)												
Private consumption (residents)	0.4655	0.4785	0.4892	0.4982	0.5082	0.5183	0.5309	0.5426	0.5596	0.5753	0.5977	0.6159
Public consumption	0.3682	0.3811	0.3922	0.4030	0.4120	0.4232	0.4356	0.4498	0.4655	0.4815	0.4976	0.5143
GFCF	0.5319	0.5595	0.5649	0.5903	0.5918	0.6064	0.6095	0.6347	0.6479	0.6642	0.6930	0.7001
Exports of goods and services	0.6299	0.6352	0.6456	0.6574	0.6721	0.6858	0.7125	0.7313	0.7629	0.7592	0.7817	0.7816
Goods	0.6876	0.6994	0.7020	0.7227	0.7298	0.7550	0.7785	0.8114	0.8370	0.8351	0.8497	0.8491
Services	0.5244	0.5199	0.5417	0.5397	0.5659	0.5617	0.5924	0.5898	0.6291	0.6225	0.6573	0.6580
Imports of goods and services	0.8441	0.7977	0.7743	0.8019	0.8153	0.8348	0.8654	0.8821	0.8961	0.8829	0.9326	0.9277
Goods	0.8686	0.8106	0.7841	0.8125	0.8269	0.8458	0.8793	0.8957	0.9108	0.8937	0.9486	0.9396
Services	0.6903	0.7107	0.7133	0.7368	0.7408	0.7634	0.7764	0.7952	0.8020	0.8142	0.8294	0.8508
GDP	0.4195	0.4434	0.4593	0.4706	0.4750	0.4848	0.4946	0.5108	0.5309	0.5495	0.5653	0.5816

MAIN EXPENDITURE COMPONENTS

	1989				1990				1991			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents).....................	6057.6	6217.5	6481.0	6665.1	7031.0	7402.8	7786.1	8147.9	8567.8	8986.4	9369.0	9636.0
Public consumption	1568.2	1648.1	1727.0	1803.1	1883.3	1979.7	2103.2	2248.8	2420.3	2574.4	2699.0	2807.6
GFCF..	2921.9	3003.5	3104.3	3232.7	3331.6	3469.3	3583.0	3683.8	3724.2	3806.1	3974.0	4106.7
Change in inventories	57.2	66.5	92.1	134.0	319.3	360.0	339.0	256.2	-99.8	-40.2	-15.6	-25.9
Exports of goods and services......................	3470.1	3563.8	3810.7	4028.5	4251.2	4370.0	4421.8	4480.5	4424.4	4502.5	4584.6	4567.4
Goods...	2346.3	2461.0	2591.9	2744.7	2870.5	2946.9	2973.8	2952.9	2920.1	2913.0	2985.5	3031.0
Services	1123.8	1102.8	1218.7	1283.8	1380.8	1423.2	1448.0	1527.6	1504.3	1589.5	1599.1	1536.3
Imports of goods and services	4125.6	4203.3	4437.3	4637.2	5054.1	4977.0	5256.5	5511.7	5482.0	5535.8	5748.6	5772.8
Goods...	3656.7	3673.3	3881.0	4073.4	4424.0	4339.2	4563.1	4824.6	4800.5	4806.5	4951.6	4986.2
Services	468.9	530.0	556.3	563.8	630.1	637.8	693.4	687.1	681.5	729.4	797.0	786.5
GDP	9949.3	10296.1	10777.8	11226.2	11762.3	12604.8	12976.6	13305.6	13555.0	14293.3	14862.4	15319.0
Previous year prices (EUR million)												
Private consumption (residents).....................	5629.5	5672.5	5758.4	5845.1	6644.3	6812.1	6974.4	7119.1	8037.8	8262.6	8438.7	8539.9
Public consumption	1448.4	1473.0	1492.6	1507.7	1731.5	1758.6	1800.0	1855.2	2208.3	2264.9	2299.0	2310.4
GFCF..	2722.2	2750.8	2742.0	2811.4	3150.8	3241.7	3280.9	3359.7	3561.8	3595.5	3683.9	3759.3
Change in inventories	92.8	107.8	149.3	217.3	347.5	391.8	368.9	278.8	199.4	80.4	31.2	51.7
Exports of goods and services......................	3288.3	3345.4	3511.5	3681.3	4093.6	4194.0	4166.1	4213.1	4296.7	4411.7	4420.2	4458.0
Goods...	2247.0	2323.2	2430.5	2536.4	2796.2	2859.9	2873.5	2859.0	2905.1	2934.2	2993.0	3067.2
Services	1041.3	1022.2	1081.0	1144.9	1297.4	1334.1	1292.6	1354.1	1391.6	1477.5	1427.3	1390.8
Imports of goods and services	3848.4	3942.9	4071.7	4235.9	4851.2	5010.0	5184.2	5253.1	5398.7	5556.7	5751.9	5898.8
Goods...	3405.1	3452.9	3566.2	3731.1	4245.0	4404.2	4535.9	4620.0	4741.4	4860.8	4991.9	5148.6
Services	443.2	490.0	505.5	504.8	606.2	605.8	648.2	633.1	657.3	695.8	760.1	750.2
GDP...	9332.8	9406.7	9582.1	9826.9	11116.5	11388.0	11406.1	11572.9	12905.3	13058.4	13121.0	13220.5
Volume (base year 1995)												
Private consumption (residents).....................	9580.5	9653.6	9799.8	9947.3	10188.4	10445.8	10694.6	10916.6	11181.6	11494.2	11739.2	11880.0
Public consumption	2954.8	3004.9	3044.9	3075.9	3100.6	3149.0	3223.2	3322.1	3439.4	3527.6	3580.8	3598.4
GFCF..	4021.4	4063.7	4050.6	4153.3	4185.4	4306.2	4358.2	4462.9	4383.4	4424.9	4533.7	4626.4
Exports of goods and services......................	4260.9	4334.9	4550.2	4770.2	4931.2	5052.1	5018.5	5075.2	4922.8	5054.5	5064.3	5107.6
Goods...	2665.5	2755.8	2883.2	3008.8	3118.5	3189.5	3204.8	3188.6	3141.9	3173.4	3236.9	3317.2
Services	1621.5	1591.8	1683.3	1782.9	1832.5	1884.3	1825.7	1912.6	1795.1	1905.9	1841.0	1794.1
Imports of goods and services	4227.1	4330.9	4472.4	4652.7	4929.1	5090.5	5267.5	5337.5	5353.4	5510.0	5703.7	5849.3
Goods...	3686.4	3738.0	3860.2	4039.2	4256.1	4415.7	4547.8	4632.1	4663.2	4780.7	4909.6	5063.7
Services	537.3	594.0	612.8	612.0	674.1	673.6	720.8	703.9	688.1	728.4	795.6	785.3
GDP...	16749.1	16881.7	17196.5	17636.0	18013.8	18453.8	18483.1	18753.3	18779.6	19002.3	19093.5	19238.2
Deflator (1995=1)												
Private consumption (residents).....................	0.6323	0.6441	0.6613	0.6700	0.6901	0.7087	0.7280	0.7464	0.7662	0.7818	0.7981	0.8111
Public consumption	0.5307	0.5485	0.5672	0.5862	0.6074	0.6287	0.6525	0.6769	0.7037	0.7298	0.7538	0.7802
GFCF..	0.7266	0.7391	0.7664	0.7783	0.7960	0.8056	0.8221	0.8254	0.8496	0.8602	0.8765	0.8877
Exports of goods and services......................	0.8144	0.8221	0.8375	0.8445	0.8621	0.8650	0.8811	0.8828	0.8988	0.8908	0.9053	0.8942
Goods...	0.8803	0.8930	0.8990	0.9122	0.9205	0.9239	0.9279	0.9261	0.9294	0.9180	0.9223	0.9137
Services	0.6931	0.6928	0.7240	0.7201	0.7535	0.7553	0.7931	0.7987	0.8380	0.8340	0.8686	0.8563
Imports of goods and services	0.9760	0.9705	0.9922	0.9966	1.0253	0.9777	0.9979	1.0326	1.0240	1.0047	1.0079	0.9869
Goods...	0.9920	0.9827	1.0052	1.0085	1.0395	0.9827	1.0034	1.0416	1.0294	1.0054	1.0086	0.9847
Services	0.8727	0.8922	0.9079	0.9213	0.9348	0.9469	0.9620	0.9761	0.9904	1.0013	1.0018	1.0015
GDP...	0.5940	0.6099	0.6267	0.6366	0.6530	0.6830	0.7021	0.7095	0.7218	0.7522	0.7784	0.7963

MAIN EXPENDITURE COMPONENTS

	1992				1993				1994			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents).....................	9897.7	10308.0	10512.9	10725.7	10900.6	10977.1	11268.3	11497.6	11626.6	11910.9	12086.4	12321.9
Public consumption	2871.3	2946.1	3013.2	3076.4	3154.2	3208.9	3270.1	3315.2	3362.4	3419.5	3479.2	3571.2
GFCF..	4334.5	4411.9	4448.6	4376.1	4182.5	4258.6	4033.0	4049.5	4135.8	4235.6	4215.2	4650.8
Change in inventories	-24.8	-50.0	-57.8	-48.1	-273.9	-85.6	-54.0	-179.2	139.0	203.3	219.6	187.7
Exports of goods and services.....................	4708.3	4666.0	4603.3	4464.3	4482.5	4443.0	4817.3	4892.2	4969.3	5195.2	5412.0	5630.9
Goods.......................................	3138.8	3162.7	3100.8	3054.6	3056.0	3097.2	3277.9	3400.9	3532.9	3755.8	3985.6	4200.2
Services	1569.5	1503.3	1502.5	1409.7	1426.4	1345.8	1539.4	1491.3	1436.5	1439.5	1426.4	1430.7
Imports of goods and services	5942.6	5961.3	5974.8	5885.3	5884.9	5796.9	5951.2	6225.5	6324.9	6530.2	6821.9	7212.5
Goods.......................................	5164.4	5188.7	5155.3	5087.0	4938.5	4901.7	5033.2	5229.9	5480.8	5674.2	5980.3	6227.1
Services	778.2	772.6	819.5	798.3	946.4	895.2	918.0	995.5	844.1	856.0	841.6	985.4
GDP..	15844.4	16320.7	16545.4	16709.1	16561.0	17005.1	17383.5	17349.8	17908.3	18434.4	18590.3	19149.9
Previous year prices (EUR million)												
Private consumption (residents).....................	9478.6	9635.8	9686.2	9812.3	10577.0	10542.7	10614.2	10625.7	11118.7	11242.4	11251.4	11341.4
Public consumption	2661.5	2651.8	2646.0	2645.1	2974.4	2982.8	2994.8	3010.3	3279.7	3301.4	3323.7	3345.4
GFCF..	4229.8	4276.8	4274.7	4150.1	4120.8	4121.6	3870.8	3800.5	4014.8	4101.4	4088.0	4446.9
Change in inventories	60.2	121.5	140.3	116.8	58.8	18.4	11.6	38.5	78.3	114.5	123.6	105.6
Exports of goods and services.....................	4677.8	4658.1	4620.4	4523.1	4477.6	4419.5	4626.8	4685.1	4809.0	4964.3	5129.6	5293.6
Goods.......................................	3155.9	3202.7	3201.7	3164.0	3094.2	3092.8	3173.8	3276.5	3452.1	3586.5	3800.4	3934.9
Services	1521.9	1455.4	1418.7	1359.1	1383.4	1326.7	1453.0	1408.6	1357.0	1377.8	1329.2	1358.6
Imports of goods and services	6100.8	6265.6	6390.6	6332.0	6026.1	5862.9	5855.1	6025.0	6133.1	6339.8	6657.3	6978.0
Goods.......................................	5314.3	5472.9	5541.6	5492.5	5064.2	4958.2	4955.1	5060.3	5312.9	5511.9	5832.9	6013.8
Services	786.5	792.7	849.0	839.5	961.9	904.7	900.0	964.7	820.2	827.9	824.4	964.3
GDP..	15007.1	15078.3	14977.1	14915.5	16182.5	16222.1	16263.0	16135.1	17167.4	17384.1	17259.0	17554.9
Volume (base year 1995)												
Private consumption (residents).....................	12002.8	12201.9	12265.7	12425.4	12478.7	12438.2	12522.6	12536.2	12446.7	12585.1	12595.3	12696.0
Public consumption	3585.2	3572.2	3564.3	3563.2	3568.4	3578.5	3592.9	3611.5	3635.1	3659.0	3683.8	3707.8
GFCF..	4868.5	4922.7	4920.3	4776.9	4570.5	4571.3	4293.1	4215.1	4288.5	4381.0	4366.7	4750.1
Exports of goods and services.....................	5213.5	5191.5	5149.5	5041.0	5000.4	4935.6	5167.1	5232.2	5247.8	5417.2	5597.6	5776.5
Goods.......................................	3427.5	3478.3	3477.2	3436.3	3432.6	3431.0	3520.9	3634.8	3771.5	3918.3	4152.0	4299.0
Services	1792.3	1713.9	1670.8	1600.6	1566.6	1502.4	1645.4	1595.2	1475.5	1498.1	1445.3	1477.2
Imports of goods and services	6067.5	6231.5	6355.7	6297.5	6327.4	6156.0	6147.9	6326.2	6415.6	6631.8	6963.9	7299.5
Goods.......................................	5279.6	5437.2	5505.4	5456.6	5330.6	5219.0	5215.8	5326.4	5574.1	5782.9	6119.7	6309.5
Services	787.3	793.5	849.9	840.4	993.0	933.9	929.1	995.9	841.3	849.3	845.6	989.1
GDP..	19683.8	19777.2	19644.4	19563.6	19459.9	19507.6	19556.8	19402.9	19587.4	19834.7	19692.0	20029.5
Deflator (1995=1)												
Private consumption (residents).....................	0.8246	0.8448	0.8571	0.8632	0.8735	0.8825	0.8998	0.9172	0.9341	0.9464	0.9596	0.9705
Public consumption	0.8009	0.8247	0.8454	0.8634	0.8839	0.8967	0.9102	0.9180	0.9250	0.9345	0.9445	0.9631
GFCF..	0.8903	0.8962	0.9041	0.9161	0.9151	0.9316	0.9394	0.9607	0.9644	0.9668	0.9653	0.9791
Exports of goods and services.....................	0.9031	0.8988	0.8939	0.8856	0.8964	0.9002	0.9323	0.9350	0.9469	0.9590	0.9668	0.9748
Goods.......................................	0.9158	0.9093	0.8918	0.8889	0.8903	0.9027	0.9310	0.9356	0.9367	0.9585	0.9599	0.9770
Services	0.8757	0.8771	0.8993	0.8807	0.9105	0.8958	0.9356	0.9349	0.9736	0.9608	0.9869	0.9685
Imports of goods and services	0.9794	0.9566	0.9401	0.9345	0.9301	0.9417	0.9680	0.9841	0.9859	0.9847	0.9796	0.9881
Goods.......................................	0.9782	0.9543	0.9364	0.9323	0.9264	0.9392	0.9650	0.9819	0.9833	0.9812	0.9772	0.9869
Services	0.9885	0.9737	0.9643	0.9499	0.9531	0.9585	0.9881	0.9997	1.0033	1.0079	0.9952	0.9963
GDP..	0.8049	0.8252	0.8422	0.8541	0.8510	0.8717	0.8889	0.8942	0.9143	0.9294	0.9441	0.9561

MAIN EXPENDITURE COMPONENTS

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents)...	12559.2	12833.6	12849.9	12984.6	13324.0	13519.4	13865.1	13997.6	14238.2	14349.2	14672.7	14874.5
Public consumption ...	3632.3	3726.3	3805.0	3868.8	3968.0	4031.9	4117.6	4213.8	4291.0	4391.0	4474.6	4547.6
GFCF...	4514.8	4645.9	4600.5	4696.1	4697.1	4874.0	5166.7	5385.2	5679.6	5867.7	6076.5	6147.5
Change in inventories ...	378.8	319.3	321.1	384.4	286.5	311.7	301.8	256.6	207.8	163.6	183.3	266.9
Exports of goods and services...	6079.6	5972.7	6127.4	6427.7	6480.7	6502.1	6391.1	6534.2	6660.9	7108.5	7228.2	7598.0
Goods...	4492.4	4396.8	4493.4	4828.9	4868.7	4932.5	4801.9	4913.4	4982.2	5369.8	5409.2	5786.5
Services ...	1587.2	1575.9	1634.0	1598.8	1612.0	1569.5	1589.1	1620.8	1678.8	1738.7	1819.0	1811.6
Imports of goods and services ...	7461.9	7552.4	7323.2	7563.8	7767.7	7849.3	8059.7	8317.8	8459.4	8779.6	9260.3	9513.8
Goods...	6494.2	6586.2	6344.9	6582.3	6780.6	6828.5	7021.7	7280.1	7423.3	7707.2	8136.1	8360.7
Services ...	967.6	966.2	978.4	981.5	987.1	1020.8	1038.0	1037.7	1036.1	1072.4	1124.2	1153.1
GDP...	19702.8	19945.4	20380.8	20797.8	20988.5	21389.7	21782.5	22069.6	22618.1	23100.4	23374.9	23920.8
Previous year prices (EUR million)												
Private consumption (residents)...	12119.5	12287.6	12174.3	12225.7	12994.7	13081.7	13287.6	13365.2	13927.5	13986.7	14190.0	14320.1
Public consumption ...	3509.5	3530.1	3549.9	3569.3	3816.3	3841.1	3870.5	3905.0	4168.8	4204.9	4234.8	4258.0
GFCF...	4431.5	4513.7	4459.7	4482.8	4590.8	4740.9	5000.7	5173.3	5539.3	5680.6	5811.0	5889.3
Change in inventories ...	152.8	128.7	129.5	155.0	262.1	285.2	276.1	234.8	150.7	118.6	132.9	193.6
Exports of goods and services...	5893.3	5725.4	5853.4	6206.6	6528.9	6660.4	6656.7	6673.6	6661.7	7029.1	7034.2	7292.4
Goods...	4353.0	4171.6	4284.0	4651.2	4925.5	5090.0	5117.5	5079.6	5025.0	5300.7	5262.6	5482.1
Services ...	1540.3	1553.8	1569.5	1555.4	1603.4	1570.3	1539.2	1594.0	1636.7	1728.4	1771.6	1810.2
Imports of goods and services ...	7340.2	7457.2	7230.1	7412.4	7634.7	7681.1	7987.7	8249.7	8366.7	8667.5	8903.8	9241.2
Goods...	6371.3	6486.8	6253.1	6433.0	6660.2	6682.0	6974.6	7231.8	7352.8	7618.9	7810.2	8122.0
Services ...	968.9	970.4	977.0	979.3	974.5	999.1	1013.1	1017.9	1014.0	1048.6	1093.6	1119.2
GDP...	18766.4	18728.3	18936.7	19227.1	20558.0	20928.1	21104.0	21102.2	22081.3	22352.4	22499.2	22712.2
Volume (ano base 1995)												
Private consumption (residents)...	12720.1	12897.8	12778.3	12831.0	12994.7	13081.7	13287.6	13365.2	13424.2	13481.3	13677.3	13802.6
Public consumption ...	3726.0	3748.0	3769.0	3789.5	3816.3	3841.1	3870.5	3905.0	3939.5	3973.6	4001.8	4023.8
GFCF...	4573.3	4658.0	4601.9	4624.2	4590.8	4740.9	5000.7	5173.3	5369.4	5506.3	5632.8	5708.6
Exports of goods and services...	6123.9	5949.6	6082.9	6451.1	6528.9	6660.4	6656.7	6673.6	6818.9	7195.0	7200.2	7464.5
Goods...	4540.4	4351.2	4468.4	4851.4	4925.5	5090.0	5117.5	5079.6	5204.2	5489.8	5450.3	5677.7
Services ...	1583.4	1598.3	1614.4	1599.7	1603.4	1570.3	1539.2	1594.0	1615.1	1705.5	1748.1	1786.3
Imports of goods and services ...	7455.3	7574.4	7343.0	7528.6	7634.7	7681.1	7987.7	8249.7	8251.3	8548.0	8781.0	9113.7
Goods...	6486.9	6604.5	6366.5	6549.7	6660.2	6682.0	6974.6	7231.8	7257.3	7520.0	7708.8	8016.6
Services ...	968.4	969.9	976.5	978.8	974.5	999.1	1013.1	1017.9	994.3	1028.3	1072.4	1097.5
GDP...	20066.9	19998.1	20210.1	20551.6	20558.0	20928.1	21104.0	21102.2	21431.4	21694.5	21837.0	22043.7
Deflator (1995=1)												
Private consumption (residents)...	0.9873	0.9950	1.0056	1.0120	1.0253	1.0335	1.0435	1.0473	1.0606	1.0644	1.0728	1.0777
Public consumption ...	0.9749	0.9942	1.0096	1.0209	1.0397	1.0497	1.0638	1.0791	1.0892	1.1051	1.1181	1.1302
GFCF...	0.9872	0.9974	0.9997	1.0156	1.0231	1.0281	1.0332	1.0410	1.0578	1.0656	1.0788	1.0769
Exports of goods and services...	0.9928	1.0039	1.0073	0.9964	0.9926	0.9762	0.9601	0.9791	0.9768	0.9880	1.0039	1.0179
Goods...	0.9894	1.0105	1.0056	0.9954	0.9885	0.9691	0.9383	0.9673	0.9573	0.9782	0.9925	1.0192
Services ...	1.0024	0.9860	1.0121	0.9994	1.0054	0.9995	1.0324	1.0168	1.0395	1.0195	1.0406	1.0141
Imports of goods and services ...	1.0009	0.9971	0.9973	1.0047	1.0174	1.0219	1.0090	1.0083	1.0252	1.0271	1.0546	1.0439
Goods...	1.0011	0.9972	0.9966	1.0050	1.0181	1.0219	1.0067	1.0067	1.0229	1.0249	1.0554	1.0429
Services ...	0.9992	0.9961	1.0019	1.0027	1.0129	1.0217	1.0246	1.0195	1.0420	1.0429	1.0483	1.0507
GDP...	0.9819	0.9974	1.0084	1.0120	1.0209	1.0221	1.0322	1.0458	1.0554	1.0648	1.0704	1.0852

MAIN EXPENDITURE COMPONENTS

	1998				1999				2000			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents)	15176.5	15562.1	15839.8	16196.1	16564.4	16790.9	16935.6	17082.5	17563.3	17764.5	18079.5	18148.6
Public consumption	4634.3	4715.8	4822.7	4950.8	5082.3	5236.2	5389.4	5546.0	5718.1	5862.8	5998.6	6117.6
GFCF	6581.2	6721.5	6795.6	7027.1	7087.6	7233.4	7493.5	7648.0	8089.5	7963.0	8175.2	8192.0
Change in inventories	250.4	309.6	330.9	314.4	367.5	308.1	262.0	229.2	242.5	228.0	222.3	225.3
Exports of goods and services	7674.6	7888.2	7949.6	7773.1	7793.9	7989.5	8225.9	8535.2	8930.9	8930.9	9399.2	9888.9
Goods	5645.1	5887.1	5748.2	5733.9	5697.9	5879.3	6015.7	6305.2	6583.8	6550.9	6922.0	7299.2
Services	2029.5	2001.0	2201.3	2039.2	2096.0	2110.2	2210.2	2229.9	2347.0	2380.0	2477.2	2589.7
Imports of goods and services	9838.7	10228.7	10232.8	10251.3	10339.7	10629.4	11230.6	11571.5	12464.6	12068.1	12605.1	13054.8
Goods	8612.6	9010.6	9004.4	8960.6	9078.8	9345.9	9926.2	10267.8	11095.1	10594.2	11166.4	11625.2
Services	1226.1	1218.2	1228.4	1290.7	1260.9	1283.5	1304.5	1303.7	1369.4	1473.9	1438.7	1429.7
GDP	24478.2	24968.4	25505.8	26010.1	26555.9	26928.7	27075.8	27469.5	28079.8	28681.1	29269.7	29517.6
Previous year prices (EUR million)												
Private consumption (residents)	14891.4	15194.6	15386.3	15676.2	16363.0	16437.1	16526.6	16622.3	17261.1	17198.7	17346.6	17370.6
Public consumption	4490.8	4525.8	4578.5	4649.4	4962.8	5041.4	5105.8	5155.5	5443.9	5486.7	5536.1	5592.5
GFCF	6504.5	6549.7	6625.5	6816.3	7091.8	7113.3	7302.1	7350.0	7801.9	7536.3	7700.8	7538.1
Change in inventories	297.7	368.1	393.4	373.7	355.0	297.6	253.1	221.4	209.2	196.7	191.7	194.3
Exports of goods and services	7633.1	7768.0	7912.4	7692.6	7942.0	8059.3	8218.0	8291.5	8823.5	8597.3	8849.6	9037.3
Goods	5631.5	5788.6	5819.5	5719.7	5852.1	5946.9	6071.8	6093.9	6505.1	6230.5	6482.3	6565.3
Services	2001.6	1979.3	2092.9	1972.9	2089.8	2112.4	2146.2	2197.6	2318.5	2366.8	2367.3	2472.0
Imports of goods and services	9908.4	10263.8	10366.7	10514.1	10667.2	10798.4	11120.5	11323.9	11893.5	11331.6	11430.5	11577.2
Goods	8696.0	9071.4	9168.6	9253.0	9416.4	9536.7	9836.9	10049.6	10542.8	9894.5	10038.8	10211.1
Services	1212.4	1192.4	1198.1	1261.1	1250.7	1261.7	1283.6	1274.3	1350.7	1437.1	1391.7	1366.2
GDP	23909.1	24142.3	24529.4	24694.1	26047.4	26150.3	26285.2	26316.9	27646.1	27683.9	28194.4	28155.7
Volume (base year 1995)												
Private consumption (residents)	13931.1	14214.7	14394.1	14665.3	14911.3	14978.8	15060.4	15147.6	15397.2	15341.5	15473.4	15494.9
Public consumption	4043.0	4074.4	4121.9	4185.8	4262.5	4330.0	4385.3	4428.0	4458.2	4493.3	4533.8	4579.9
GFCF	6079.2	6121.5	6192.3	6370.6	6474.3	6494.0	6666.3	6710.1	6976.3	6738.8	6885.9	6740.4
Exports of goods and services	7655.2	7790.5	7935.3	7714.9	7893.9	8010.4	8168.3	8241.3	8761.0	8536.3	8786.9	8973.3
Goods	5703.2	5862.3	5893.5	5792.5	5912.4	6008.2	6134.4	6156.7	6590.4	6312.3	6567.4	6651.4
Services	1946.7	1925.1	2035.6	1918.8	1977.5	1998.8	2030.8	2079.4	2168.4	2213.5	2214.0	2311.9
Imports of goods and services	9545.5	9887.8	9987.0	10129.0	10403.5	10531.5	10845.6	11044.1	11636.3	11086.6	11183.3	11326.9
Goods	8386.8	8748.0	8842.6	8924.0	9234.9	9352.9	9647.3	9855.9	10398.7	9759.3	9901.6	10071.5
Services	1159.0	1139.9	1145.3	1205.6	1171.7	1182.0	1202.5	1193.8	1245.2	1324.9	1283.0	1259.4
GDP	22364.8	22582.9	22945.0	23099.1	23475.1	23567.8	23689.4	23718.0	24171.0	24204.0	24650.3	24616.4
Deflator (1995=1)												
Private consumption (residents)	1.0894	1.0948	1.1004	1.1044	1.1109	1.1210	1.1245	1.1277	1.1407	1.1579	1.1684	1.1713
Public consumption	1.1462	1.1574	1.1700	1.1828	1.1923	1.2093	1.2290	1.2525	1.2826	1.3048	1.3231	1.3357
GFCF	1.0826	1.0980	1.0974	1.1030	1.0947	1.1139	1.1241	1.1398	1.1596	1.1817	1.1872	1.2154
Exports of goods and services	1.0025	1.0125	1.0018	1.0075	0.9873	0.9974	1.0071	1.0357	1.0194	1.0462	1.0697	1.1020
Goods	0.9898	1.0042	0.9753	0.9899	0.9637	0.9786	0.9806	1.0241	0.9990	1.0378	1.0540	1.0974
Services	1.0425	1.0394	1.0814	1.0627	1.0599	1.0558	1.0883	1.0724	1.0824	1.0752	1.1189	1.1201
Imports of goods and services	1.0307	1.0345	1.0246	1.0121	0.9939	1.0093	1.0355	1.0478	1.0712	1.0885	1.1271	1.1526
Goods	1.0269	1.0299	1.0183	1.0041	0.9831	0.9993	1.0289	1.0418	1.0670	1.0855	1.1277	1.1543
Services	1.0579	1.0687	1.0726	1.0706	1.0761	1.0859	1.0848	1.0920	1.0998	1.1125	1.1214	1.1351
GDP	1.0945	1.1056	1.1116	1.1260	1.1312	1.1426	1.1430	1.1582	1.1617	1.1850	1.1874	1.1991

MAIN EXPENDITURE COMPONENTS

	2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption (residents)	18490.5	18864.8	18974.2	18895.3	19385.5	19622.2	19834.3	19707.9	19935.7	20119.6	20342.8	20336.5
Public consumption	6218.9	6333.1	6456.3	6588.2	6734.5	6839.8	6909.8	6938.8	6926.1	6915.1	6906.0	6902.2
GFCF	7972.4	8339.0	8399.5	8547.5	8140.0	8182.9	7853.1	7682.5	7299.6	7232.0	7269.5	7217.5
Change in inventories	204.7	216.8	229.7	243.5	257.9	267.2	271.0	269.1	279.3	273.5	269.6	267.7
Exports of goods and services	9705.6	9693.0	9394.5	9843.3	9519.3	10108.6	10057.5	10122.3	10101.8	9993.1	10168.6	10434.7
Goods	7124.1	7148.2	6805.8	7130.3	6899.0	7433.3	7235.8	7424.0	7395.8	7292.2	7372.1	7621.1
Services	2581.5	2544.7	2588.7	2713.0	2620.3	2675.3	2821.7	2698.2	2706.0	2700.9	2796.5	2813.6
Imports of goods and services	12788.9	12957.5	12710.9	12352.6	12217.5	12455.0	12549.6	12144.4	12153.8	11687.6	12293.2	12200.9
Goods	11385.6	11520.4	11336.5	10996.8	10806.2	10980.9	11109.3	10774.5	10766.2	10272.1	10876.7	10803.1
Services	1403.3	1437.1	1374.4	1355.8	1411.3	1474.1	1440.3	1369.9	1387.6	1415.5	1416.5	1397.8
GDP	29803.2	30489.2	30743.4	31765.2	31819.7	32565.8	32376.0	32576.1	32388.8	32845.7	32663.3	32957.7
Previous year prices (EUR million)												
Private consumption (residents)	18012.7	18173.0	18159.7	18076.4	18980.5	18916.0	18937.9	18757.4	19453.0	19443.2	19607.4	19616.2
Public consumption	6072.2	6131.8	6184.5	6230.0	6518.0	6543.7	6554.9	6551.7	6844.6	6829.6	6819.7	6814.8
GFCF	7870.4	8182.3	8266.6	8319.6	8148.1	8084.6	7740.3	7461.5	7243.0	7211.3	7282.8	7080.2
Change in inventories	198.1	209.8	222.3	235.7	260.5	269.9	273.6	271.7	286.0	280.0	276.1	274.1
Exports of goods and services	9608.0	9444.1	9180.1	9553.6	9645.0	10133.8	9915.2	9857.3	10301.1	10250.5	10400.4	10491.8
Goods	7109.0	6991.8	6781.0	6975.6	7016.7	7432.3	7189.3	7214.2	7634.0	7567.8	7688.6	7741.8
Services	2499.0	2452.4	2399.1	2578.0	2628.4	2701.5	2725.9	2643.1	2667.1	2682.7	2711.8	2750.0
Imports of goods and services	12644.6	12783.9	12695.1	12619.3	12603.2	12736.6	12774.4	12324.2	12044.7	11995.4	12567.2	12425.0
Goods	11270.7	11394.9	11376.1	11308.7	11191.4	11262.9	11342.0	10959.5	10658.2	10577.6	11146.2	11021.0
Services	1373.9	1389.0	1319.1	1310.6	1411.8	1473.7	1432.4	1364.7	1386.5	1417.8	1421.0	1404.0
GDP	29116.8	29357.1	29318.1	29796.0	30948.8	31211.4	30647.5	30575.4	32083.0	32019.3	31819.4	31852.1
Volume (base year 1995)												
Private consumption (residents)	15533.4	15671.6	15660.2	15588.4	15758.1	15704.5	15722.7	15572.9	15542.2	15534.3	15665.6	15672.5
Public consumption	4629.1	4674.6	4714.7	4749.4	4779.1	4797.9	4806.2	4803.8	4789.0	4778.5	4771.5	4768.1
GFCF	6637.5	6900.6	6971.7	7016.4	6743.7	6691.1	6406.2	6175.5	5914.8	5889.0	5947.4	5781.9
Exports of goods and services	9066.9	8912.2	8663.0	9015.5	8901.5	9352.6	9150.8	9097.4	9445.8	9399.4	9536.8	9620.6
Goods	6788.2	6676.3	6475.0	6660.8	6616.7	7008.6	6779.4	6802.9	7164.2	7102.0	7215.4	7265.3
Services	2272.9	2230.5	2182.0	2344.7	2276.1	2339.4	2360.6	2288.8	2284.7	2298.1	2323.0	2355.7
Imports of goods and services	11395.1	11520.8	11440.7	11372.3	11342.9	11463.0	11497.0	11091.8	11075.7	11030.3	11556.1	11425.3
Goods	10168.5	10280.6	10263.6	10202.8	10121.8	10186.4	10258.0	9912.0	9879.4	9804.3	10331.3	10215.3
Services	1229.7	1243.3	1180.7	1173.1	1223.3	1276.9	1241.2	1182.5	1198.7	1225.7	1228.5	1213.8
GDP	24604.6	24807.6	24774.6	25178.5	25042.5	25254.9	24798.6	24740.3	24765.0	24715.8	24561.5	24586.8
Deflator (1995=1)												
Private consumption (residents)	1.1904	1.2038	1.2116	1.2121	1.2302	1.2495	1.2615	1.2655	1.2827	1.2952	1.2986	1.2976
Public consumption	1.3434	1.3548	1.3694	1.3872	1.4092	1.4256	1.4377	1.4444	1.4463	1.4471	1.4473	1.4476
GFCF	1.2011	1.2085	1.2048	1.2182	1.2070	1.2229	1.2259	1.2440	1.2341	1.2281	1.2223	1.2483
Exports of goods and services	1.0704	1.0876	1.0844	1.0918	1.0694	1.0808	1.0991	1.1127	1.0695	1.0632	1.0662	1.0846
Goods	1.0495	1.0707	1.0511	1.0705	1.0427	1.0606	1.0673	1.0913	1.0323	1.0268	1.0217	1.0490
Services	1.1358	1.1409	1.1864	1.1571	1.1512	1.1436	1.1954	1.1789	1.1844	1.1753	1.2038	1.1944
Imports of goods and services	1.1223	1.1247	1.1110	1.0862	1.0771	1.0865	1.0916	1.0949	1.0973	1.0596	1.0638	1.0679
Goods	1.1197	1.1206	1.1045	1.0778	1.0676	1.0780	1.0830	1.0870	1.0898	1.0477	1.0528	1.0575
Services	1.1411	1.1558	1.1640	1.1557	1.1536	1.1544	1.1605	1.1585	1.1576	1.1548	1.1531	1.1516
GDP	1.2113	1.2290	1.2409	1.2616	1.2706	1.2895	1.3056	1.3167	1.3078	1.3289	1.3299	1.3405

PRIVATE CONSUMPTION (RESIDENTS)

	1977				1978				1979			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	531.6	565.7	598.5	621.4	650.9	677.7	718.8	767.2	792.7	837.2	900.5	981.4
Durables	62.7	68.8	68.8	68.8	73.4	76.4	81.6	83.8	91.4	93.1	106.8	116.4
Non-durables	468.8	496.9	529.7	552.6	577.6	601.2	637.2	683.4	701.3	744.1	793.7	865.0
Previous year prices (EUR million)												
Private consumption					601.4	601.0	607.8	616.2	723.2	732.7	744.3	759.1
Durables					68.0	68.5	70.5	70.0	86.0	84.4	87.8	92.7
Non-durables					533.4	532.5	537.3	546.1	637.2	648.3	656.5	666.4
Volume (base year 1995)												
Private consumption					6216.8	6212.3	6283.2	6369.5	6445.0	6529.3	6632.4	6764.6
Durables					655.4	660.1	679.7	674.7	728.6	714.7	743.6	785.1
Non-durables					5576.0	5566.5	5616.9	5709.5	5728.4	5828.2	5901.7	5990.8
Deflator (1995=1)												
Private consumption					0.1047	0.1091	0.1144	0.1204	0.1230	0.1282	0.1358	0.1451
Durables					0.1119	0.1158	0.1200	0.1242	0.1255	0.1303	0.1436	0.1483
Non-durables					0.1036	0.1080	0.1134	0.1197	0.1224	0.1277	0.1345	0.1444

GROSS FIXED CAPITAL FORMATION

	1977				1978				1979			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	251.7	285.5	293.0	302.0	289.7	311.4	332.6	362.9	412.1	462.3	506.0	509.9
Machinery and equipment	52.8	69.0	74.5	81.1	79.3	86.8	89.5	86.6	90.4	100.8	113.6	119.5
Transport material	31.8	36.9	37.3	40.1	37.3	41.1	39.5	41.1	39.6	44.4	45.3	47.0
Construction	134.4	140.0	140.4	138.8	132.6	141.1	160.6	193.2	238.3	269.4	294.7	289.8
Other	32.7	39.5	40.8	42.1	40.5	42.4	43.0	42.0	43.7	47.7	52.3	53.5
Previous year prices (EUR million)												
Gross fixed capital formation					263.4	268.9	270.7	276.5	356.4	378.1	392.4	372.3
Machinery and equipment					71.8	75.8	74.5	68.6	80.6	86.8	92.3	89.7
Transport material					31.6	32.2	28.3	27.0	32.1	34.1	33.1	32.6
Construction					124.5	125.7	134.7	150.9	207.0	218.7	226.7	211.2
Other					35.5	35.2	33.1	30.0	36.6	38.5	40.3	38.8
Volume (base year 1995)												
Gross fixed capital formation					2426.5	2477.0	2493.2	2547.4	2733.3	2899.7	3009.2	2855.3
Machinery and equipment					439.3	463.8	455.7	419.8	419.1	451.2	479.9	466.3
Transport material					237.3	242.0	213.0	202.9	180.6	191.9	186.0	183.2
Construction					1520.4	1534.5	1644.1	1842.3	2158.5	2280.5	2363.8	2202.1
Other					336.2	333.4	314.0	284.3	276.6	290.4	303.9	293.1
Deflator (1995=1)												
Gross fixed capital formation					0.1194	0.1257	0.1334	0.1424	0.1508	0.1594	0.1682	0.1786
Machinery and equipment					0.1805	0.1872	0.1964	0.2062	0.2157	0.2234	0.2368	0.2563
Transport material					0.1573	0.1698	0.1857	0.2028	0.2193	0.2314	0.2437	0.2566
Construction					0.0872	0.0919	0.0977	0.1049	0.1104	0.1181	0.1247	0.1316
Other					0.1206	0.1273	0.1369	0.1476	0.1580	0.1642	0.1722	0.1827

PRIVATE CONSUMPTION (RESIDENTS)

	1980				1981				1982			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	1061.6	1132.8	1199.3	1248.7	1328.1	1393.2	1483.9	1560.3	1632.1	1713.1	1779.2	1843.2
Durables	140.8	144.5	168.2	167.1	180.8	184.0	190.0	197.8	196.7	211.8	212.4	215.8
Non-durables	920.8	988.3	1031.1	1081.6	1147.3	1209.2	1293.9	1362.5	1435.4	1501.3	1566.8	1627.4
Previous year (EUR million)												
Private consumption	930.2	952.9	967.8	975.0	1182.8	1192.5	1197.9	1204.3	1468.2	1481.8	1484.1	1482.0
Durables	113.3	116.2	122.1	120.4	157.1	156.2	150.5	152.2	180.1	188.9	179.9	180.2
Non-durables	817.0	836.7	845.8	854.6	1025.6	1036.3	1047.5	1052.1	1288.1	1292.9	1304.2	1301.9
Volume (base year 1995)												
Private consumption	6985.5	7155.6	7267.9	7321.7	7319.8	7380.0	7413.8	7453.2	7529.0	7598.8	7610.5	7600.2
Durables	825.7	846.8	889.8	877.4	870.9	865.6	834.2	843.9	817.2	857.0	816.2	817.6
Non-durables	6171.6	6320.9	6389.3	6456.3	6461.6	6528.8	6599.1	6628.1	6736.5	6761.8	6820.8	6808.6
Deflator (1995=1)												
Private consumption	0.1520	0.1583	0.1650	0.1706	0.1814	0.1888	0.2002	0.2093	0.2168	0.2254	0.2338	0.2425
Durables	0.1705	0.1706	0.1890	0.1905	0.2076	0.2125	0.2277	0.2344	0.2407	0.2471	0.2602	0.2640
Non-durables	0.1492	0.1564	0.1614	0.1675	0.1776	0.1852	0.1961	0.2056	0.2131	0.2220	0.2297	0.2390

GROSS FIXED CAPITAL FORMATION

	1980				1981				1982			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	510.3	518.5	539.2	590.9	675.0	731.4	785.6	798.0	844.7	870.0	895.3	908.4
Machinery and equipment	134.8	146.1	156.2	168.7	185.8	194.2	214.4	213.7	227.5	239.6	243.4	240.5
Transport material	48.9	51.8	58.2	62.7	78.6	82.1	90.1	88.9	84.0	86.1	87.0	86.1
Construction	268.0	257.6	257.7	285.0	325.1	363.2	381.1	398.9	433.6	441.6	459.5	476.9
Other	58.5	63.1	67.0	74.6	85.4	92.0	100.0	96.4	99.6	102.7	105.4	104.9
Previous year prices (EUR million)												
Gross fixed capital formation	444.4	421.9	429.3	449.5	594.7	612.9	643.5	649.4	770.7	756.8	749.8	733.5
Machinery and equipment	115.6	115.5	123.6	130.4	170.6	170.9	186.9	187.6	205.7	203.0	200.0	194.1
Transport material	43.8	43.6	48.1	49.1	68.4	67.6	73.5	74.2	81.2	81.2	81.0	78.6
Construction	232.4	210.2	201.4	210.2	281.3	299.5	302.4	307.3	391.1	382.4	379.0	373.8
Other	52.6	52.6	56.2	59.7	74.4	75.0	80.8	80.2	92.7	90.2	89.8	87.0
Volume (base year 1995)												
Gross fixed capital formation	2703.3	2566.2	2611.3	2734.2	2923.9	3013.6	3164.1	3192.7	3168.9	3111.6	3083.1	3016.0
Machinery and equipment	494.8	494.5	529.2	558.2	584.7	585.7	640.6	642.9	624.7	616.3	607.4	589.5
Transport material	184.4	183.3	202.3	206.7	239.6	237.0	257.5	260.1	237.8	237.8	237.2	230.0
Construction	1915.6	1733.0	1660.0	1733.3	1854.4	1973.9	1993.0	2025.9	2089.9	2043.7	2025.3	1997.7
Other	310.7	310.3	331.9	352.5	368.7	371.9	400.8	398.0	381.6	371.3	369.9	358.2
Deflator (1995=1)												
Gross fixed capital formation	0.1888	0.2021	0.2065	0.2161	0.2309	0.2427	0.2483	0.2499	0.2665	0.2796	0.2904	0.3012
Machinery and equipment	0.2725	0.2954	0.2952	0.3022	0.3178	0.3315	0.3347	0.3324	0.3641	0.3888	0.4007	0.4080
Transport material	0.2654	0.2824	0.2877	0.3034	0.3278	0.3462	0.3498	0.3417	0.3532	0.3621	0.3670	0.3741
Construction	0.1399	0.1487	0.1553	0.1644	0.1753	0.1840	0.1912	0.1969	0.2075	0.2161	0.2269	0.2387
Other	0.1884	0.2032	0.2020	0.2115	0.2317	0.2474	0.2496	0.2422	0.2611	0.2767	0.2849	0.2929

PRIVATE CONSUMPTION (RESIDENTS)

	1983				1984				1985			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	1986.2	2089.1	2247.1	2408.3	2513.5	2661.0	2843.5	2900.2	3041.2	3142.7	3232.3	3368.2
Durables	249.4	251.8	267.7	272.4	271.9	284.0	317.3	316.6	341.4	342.6	364.6	369.1
Non-durables	1736.8	1837.3	1979.4	2135.9	2241.6	2376.9	2526.2	2583.5	2699.8	2800.1	2867.7	2999.1
Previous year prices (EUR million)												
Private consumption	1741.7	1734.4	1727.2	1712.8	2152.9	2148.4	2155.7	2152.8	2714.0	2721.7	2734.1	2768.6
Durables	214.6	210.2	205.2	199.1	241.3	244.5	254.1	251.6	298.4	293.3	299.0	299.1
Non-durables	1527.1	1524.2	1522.1	1513.8	1911.6	1903.8	1901.6	1901.1	2415.5	2428.4	2435.1	2469.5
Volume (base year 1995)												
Private consumption	7583.8	7552.1	7520.8	7458.1	7426.0	7410.3	7435.8	7425.6	7382.1	7403.1	7436.8	7530.8
Durables	848.5	831.0	811.1	787.0	759.5	769.7	799.9	792.0	782.8	769.4	784.2	784.5
Non-durables	6757.0	6744.4	6734.8	6698.1	6695.9	6668.7	6660.9	6659.3	6625.9	6661.1	6679.6	6774.0
Deflator (1995=1)												
Private consumption	0.2619	0.2766	0.2988	0.3229	0.3385	0.3591	0.3824	0.3906	0.4120	0.4245	0.4346	0.4473
Durables	0.2940	0.3030	0.3300	0.3462	0.3580	0.3690	0.3966	0.3998	0.4361	0.4453	0.4649	0.4705
Non-durables	0.2570	0.2724	0.2939	0.3189	0.3348	0.3564	0.3793	0.3880	0.4075	0.4204	0.4293	0.4427

GROSS FIXED CAPITAL FORMATION

	1983				1984				1985			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	988.4	1048.7	1136.8	1122.8	1054.6	1152.2	1192.9	1279.3	1286.4	1309.7	1365.3	1443.1
Machinery and equipment	255.3	267.3	303.1	291.7	266.0	308.0	318.1	351.5	340.8	335.5	348.1	389.9
Transport material	99.3	101.4	111.9	104.1	86.1	91.3	88.5	95.0	94.3	93.6	103.4	113.2
Construction	516.2	556.7	583.4	598.4	598.6	638.2	672.9	705.2	724.0	751.7	775.5	780.9
Other	117.7	123.3	138.4	128.7	103.8	114.8	113.3	127.6	127.3	128.9	138.3	159.2
Previous year prices (EUR million)												
Gross fixed capital formation	881.0	886.7	881.1	803.1	934.4	971.4	951.2	960.9	1154.3	1144.2	1163.1	1182.7
Machinery and equipment	233.7	234.9	237.5	200.9	229.6	254.4	246.8	252.7	309.1	305.1	308.8	326.7
Transport material	91.9	89.7	89.8	75.3	76.3	78.3	72.2	72.8	86.9	86.4	93.3	97.2
Construction	450.4	458.1	451.2	443.5	539.6	543.9	544.1	543.8	642.3	635.1	639.7	630.2
Other	104.9	104.1	102.6	83.3	88.9	94.8	88.1	91.6	116.1	117.5	121.2	128.5
Volume (base year 1995)												
Gross fixed capital formation	3099.8	3120.0	3100.2	2825.7	2641.2	2745.9	2688.9	2716.2	2662.5	2639.2	2682.7	2727.9
Machinery and equipment	599.1	602.1	608.8	515.1	477.8	529.3	513.5	525.9	508.6	502.1	508.2	537.7
Transport material	252.5	246.4	246.6	206.8	174.3	179.0	165.1	166.5	164.9	163.9	177.0	184.5
Construction	2028.1	2062.6	2031.7	1997.1	1943.1	1958.8	1959.5	1958.2	1920.7	1899.3	1912.9	1884.5
Other	376.6	373.4	368.2	299.0	248.0	264.5	245.7	255.5	256.1	259.3	267.5	283.6
Deflator (1995=1)												
Gross fixed capital formation	0.3188	0.3361	0.3667	0.3974	0.3993	0.4196	0.4436	0.4710	0.4831	0.4962	0.5089	0.5290
Machinery and equipment	0.4261	0.4439	0.4979	0.5663	0.5568	0.5818	0.6195	0.6684	0.6700	0.6681	0.6850	0.7251
Transport material	0.3932	0.4115	0.4536	0.5033	0.4942	0.5100	0.5358	0.5707	0.5721	0.5712	0.5839	0.6138
Construction	0.2545	0.2699	0.2872	0.2996	0.3081	0.3258	0.3434	0.3601	0.3769	0.3958	0.4054	0.4144
Other	0.3124	0.3302	0.3759	0.4304	0.4183	0.4339	0.4613	0.4995	0.4970	0.4969	0.5171	0.5613

PRIVATE CONSUMPTION (RESIDENTS)

	1986 Q1	1986 Q2	1986 Q3	1986 Q4	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1988 Q1	1988 Q2	1988 Q3	1988 Q4
Current prices (EUR million)												
Private consumption	3563.4	3780.1	3916.0	4095.2	4210.8	4429.5	4556.8	4728.7	5098.2	5348.7	5635.6	5958.7
Durables	363.7	400.4	438.8	459.6	520.5	568.5	576.7	594.1	719.2	802.5	857.9	943.6
Non-durables	3199.8	3379.7	3477.2	3635.6	3690.3	3861.0	3980.1	4134.6	4379.0	4546.2	4777.7	5015.1
Previous year prices (EUR million)												
Private consumption	3289.2	3394.7	3439.5	3531.9	4003.2	4129.2	4147.4	4210.5	4785.0	4883.2	4951.9	5081.3
Durables	334.8	359.5	375.3	396.4	476.1	510.8	494.5	517.4	655.2	716.3	729.9	788.4
Non-durables	2954.4	3035.2	3064.2	3135.6	3527.1	3618.4	3652.9	3693.0	4129.8	4166.9	4222.0	4292.9
Volume (base year 1995)												
Private consumption	7654.9	7900.4	8004.6	8219.8	8285.3	8546.2	8583.8	8714.4	9110.3	9297.3	9428.2	9674.5
Durables	737.0	791.3	826.1	872.6	924.2	991.6	959.8	1004.4	1124.9	1229.9	1253.3	1353.7
Non-durables	6950.4	7140.5	7208.6	7376.5	7386.8	7578.0	7650.3	7734.4	8000.6	8072.4	8179.2	8316.6
Deflator (1995=1)												
Private consumption	0.4655	0.4785	0.4892	0.4982	0.5082	0.5183	0.5309	0.5426	0.5596	0.5753	0.5977	0.6159
Durables	0.4935	0.5060	0.5311	0.5267	0.5632	0.5733	0.6009	0.5915	0.6394	0.6525	0.6845	0.6971
Non-durables	0.4604	0.4733	0.4824	0.4929	0.4996	0.5095	0.5202	0.5346	0.5473	0.5632	0.5841	0.6030

GROSS FIXED CAPITAL FORMATION

	1986 Q1	1986 Q2	1986 Q3	1986 Q4	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1988 Q1	1988 Q2	1988 Q3	1988 Q4
Current prices (EUR million)												
Gross fixed capital formation	1416.9	1539.3	1607.4	1758.3	1864.4	2027.1	2115.1	2304.7	2440.9	2621.0	2768.5	2877.5
Machinery and equipment	376.0	441.9	461.3	524.6	543.4	605.8	649.4	711.1	761.2	810.0	862.2	866.9
Transport material	121.2	137.6	162.3	178.9	208.0	230.2	210.3	246.7	254.8	272.9	282.0	308.1
Construction	764.1	773.6	785.6	828.1	876.8	924.5	979.7	1034.4	1084.1	1170.3	1230.1	1298.1
Other	155.5	186.3	198.3	226.7	236.3	266.6	275.6	312.4	340.9	367.8	394.2	404.5
Previous year prices (EUR million)												
Gross fixed capital formation	1344.0	1388.0	1435.7	1502.8	1772.1	1880.4	1951.9	2042.6	2303.3	2412.3	2442.2	2512.7
Machinery and equipment	359.6	399.0	417.5	451.4	525.1	577.5	626.5	644.0	719.1	746.6	751.2	761.3
Transport material	116.1	124.4	144.8	149.9	192.8	206.9	188.4	209.2	240.1	254.2	254.3	279.7
Construction	726.9	708.6	709.5	725.4	829.8	846.9	877.1	914.9	1026.8	1077.6	1097.4	1119.2
Other	141.4	156.0	163.8	176.2	224.4	249.0	259.8	274.5	317.3	334.0	339.3	352.5
Volume (base year 1995)												
Gross fixed capital formation	2664.0	2751.2	2845.6	2978.7	3150.5	3343.1	3470.2	3631.4	3767.6	3946.0	3994.9	4110.2
Machinery and equipment	523.0	580.2	607.1	656.4	688.9	757.8	822.0	844.9	892.1	926.2	932.0	944.5
Transport material	198.1	212.3	247.1	255.7	293.5	315.0	286.8	318.4	325.6	344.6	344.8	379.3
Construction	1826.2	1780.3	1782.6	1822.5	1898.9	1937.9	2007.2	2093.6	2136.1	2241.9	2282.9	2328.4
Other	272.3	300.6	315.6	339.4	359.3	398.8	416.0	439.6	469.4	494.0	501.9	521.5
Deflator (1995=1)												
Gross fixed capital formation	0.5319	0.5595	0.5649	0.5903	0.5918	0.6064	0.6095	0.6347	0.6479	0.6642	0.6930	0.7001
Machinery and equipment	0.7190	0.7616	0.7598	0.7992	0.7887	0.7994	0.7900	0.8416	0.8532	0.8745	0.9251	0.9179
Transport material	0.6115	0.6480	0.6567	0.6996	0.7087	0.7307	0.7333	0.7748	0.7826	0.7920	0.8181	0.8123
Construction	0.4184	0.4345	0.4407	0.4544	0.4617	0.4771	0.4881	0.4941	0.5075	0.5220	0.5388	0.5575
Other	0.5711	0.6198	0.6282	0.6681	0.6575	0.6686	0.6626	0.7108	0.7263	0.7445	0.7855	0.7756

PRIVATE CONSUMPTION (RESIDENTS)

	1989				1990				1991			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	6057.6	6217.5	6481.0	6665.1	7031.0	7402.8	7786.1	8147.9	8567.8	8986.4	9369.0	9636.0
Durables	937.2	857.8	892.0	912.3	971.4	1021.7	1092.5	1121.0	1184.5	1242.5	1329.4	1329.8
Non-durables	5120.3	5359.7	5589.0	5752.8	6059.6	6381.1	6693.6	7026.9	7383.3	7743.9	8039.6	8306.1
Previous year prices (EUR million)												
Private consumption	5629.5	5672.5	5758.4	5845.1	6644.3	6812.1	6974.4	7119.1	8037.8	8262.6	8438.7	8539.9
Durables	894.7	823.4	830.6	841.4	941.2	975.5	1013.0	1034.4	1131.3	1185.4	1243.2	1241.7
Non-durables	4734.8	4849.1	4927.8	5003.7	5703.1	5836.6	5961.3	6084.7	6906.5	7077.2	7195.5	7298.3
Volume (base year 1995)												
Private consumption	9580.5	9653.6	9799.8	9947.3	10188.4	10445.8	10694.6	10916.6	11181.6	11494.2	11739.2	11880.0
Durables	1335.9	1229.4	1240.2	1256.2	1323.5	1371.8	1424.6	1454.7	1499.2	1570.8	1647.4	1645.4
Non-durables	8238.5	8437.3	8574.2	8706.4	8874.4	9082.2	9276.2	9468.2	9689.1	9928.4	10094.4	10238.6
Deflator (1995=1)												
Private consumption	0.6323	0.6441	0.6613	0.6700	0.6901	0.7087	0.7280	0.7464	0.7662	0.7818	0.7981	0.8111
Durables	0.7016	0.6977	0.7193	0.7262	0.7340	0.7448	0.7669	0.7706	0.7901	0.7910	0.8070	0.8082
Non-durables	0.6215	0.6352	0.6518	0.6608	0.6828	0.7026	0.7216	0.7422	0.7620	0.7800	0.7964	0.8113

GROSS FIXED CAPITAL FORMATION

	1989				1990				1991			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	2921.9	3003.5	3104.3	3232.7	3331.6	3469.3	3583.0	3683.8	3724.2	3806.1	3974.0	4106.7
Machinery and equipment	856.2	897.5	929.6	985.0	1036.9	1052.7	1123.3	1143.6	1180.0	1176.3	1186.7	1191.4
Transport material	288.1	276.4	298.2	326.4	313.3	334.1	313.3	343.9	316.6	346.7	357.2	364.5
Construction	1381.6	1422.6	1452.1	1468.6	1518.5	1607.1	1651.4	1676.1	1708.3	1749.4	1881.6	1992.3
Other	396.0	407.0	424.5	452.6	462.9	475.3	495.0	520.3	519.4	533.6	548.5	558.5
Previous year prices (EUR million)												
Gross fixed capital formation	2722.2	2750.8	2742.0	2811.4	3150.8	3241.7	3280.9	3359.7	3561.8	3595.5	3683.9	3759.3
Machinery and equipment	803.7	837.4	853.1	912.2	1024.4	1053.4	1112.6	1159.7	1142.1	1146.5	1153.4	1156.8
Transport material	270.7	265.1	262.5	280.8	305.3	323.3	299.1	325.9	327.9	354.3	351.7	358.4
Construction	1276.9	1269.7	1249.1	1222.2	1384.1	1418.1	1411.9	1382.0	1574.5	1556.6	1632.8	1695.6
Other	370.9	378.6	377.2	396.3	437.0	446.9	457.2	492.0	517.3	538.1	545.9	548.4
Volume (base year 1995)												
Gross fixed capital formation	4021.4	4063.7	4050.6	4153.3	4185.4	4306.2	4358.2	4462.9	4383.4	4424.9	4533.7	4626.4
Machinery and equipment	899.8	937.5	955.1	1021.2	1065.0	1095.2	1156.7	1205.7	1185.6	1190.2	1197.4	1200.9
Transport material	337.6	330.6	327.4	350.2	345.6	365.9	338.5	368.8	356.6	385.3	382.5	389.7
Construction	2400.1	2386.6	2347.9	2297.2	2280.2	2336.2	2326.1	2276.9	2249.5	2224.0	2332.8	2422.6
Other	488.8	499.0	497.2	522.4	522.1	534.0	546.3	587.9	580.0	603.4	612.1	614.9
Deflator (1995=1)												
Gross fixed capital formation	0.7266	0.7391	0.7664	0.7783	0.7960	0.8056	0.8221	0.8254	0.8496	0.8602	0.8765	0.8877
Machinery and equipment	0.9515	0.9573	0.9732	0.9646	0.9736	0.9612	0.9711	0.9485	0.9953	0.9883	0.9911	0.9920
Transport material	0.8532	0.8362	0.9109	0.9321	0.9067	0.9132	0.9254	0.9324	0.8878	0.9000	0.9339	0.9353
Construction	0.5757	0.5961	0.6185	0.6393	0.6659	0.6879	0.7100	0.7361	0.7594	0.7866	0.8066	0.8224
Other	0.8101	0.8155	0.8537	0.8665	0.8866	0.8901	0.9062	0.8849	0.8954	0.8844	0.8960	0.9082

PRIVATE CONSUMPTION (RESIDENTS)

	1992				1993				1994			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	9897.7	10308.0	10512.9	10725.7	10900.6	10977.1	11268.3	11497.6	11626.6	11910.9	12086.4	12321.9
Durables	1428.3	1509.3	1484.4	1560.2	1495.5	1438.5	1473.5	1460.1	1500.8	1546.5	1529.5	1622.2
Non-durables	8469.4	8798.7	9028.6	9165.5	9405.1	9538.6	9794.8	10037.6	10125.7	10364.4	10556.9	10699.6
Previous year prices (EUR million)												
Private consumption	9478.6	9635.8	9686.2	9812.3	10577.0	10542.7	10614.2	10625.7	11118.7	11242.4	11251.4	11341.4
Durables	1398.9	1463.4	1400.6	1464.7	1431.9	1366.6	1357.9	1331.8	1434.4	1468.0	1416.7	1491.8
Non-durables	8079.7	8172.4	8285.6	8347.6	9145.2	9176.1	9256.3	9294.0	9684.3	9774.3	9834.7	9849.6
Volume (base year 1995)												
Private consumption	12002.8	12201.9	12265.7	12425.4	12478.7	12438.2	12522.6	12536.2	12446.7	12585.1	12595.3	12696.0
Durables	1750.0	1830.7	1752.1	1832.3	1715.1	1636.9	1626.5	1595.2	1607.0	1644.7	1587.2	1671.3
Non-durables	10256.1	10373.8	10517.4	10596.1	10765.0	10801.4	10895.9	10940.2	10839.7	10940.5	11008.0	11024.7
Deflator (1995=1)												
Private consumption	0.8246	0.8448	0.8571	0.8632	0.8735	0.8825	0.8998	0.9172	0.9341	0.9464	0.9596	0.9705
Durables	0.8162	0.8244	0.8472	0.8515	0.8720	0.8788	0.9059	0.9153	0.9339	0.9403	0.9636	0.9706
Non-durables	0.8258	0.8482	0.8584	0.8650	0.8737	0.8831	0.8989	0.9175	0.9341	0.9473	0.9590	0.9705

GROSS FIXED CAPITAL FORMATION

	1992				1993				1994			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	4334.5	4411.9	4448.6	4376.1	4182.5	4258.6	4033.0	4049.5	4135.8	4235.6	4215.2	4650.8
Machinery and equipment	1178.1	1172.4	1188.5	1166.1	1110.7	1193.8	1116.8	1123.9	1108.0	1061.6	1017.7	1069.6
Transport material	405.1	411.6	403.1	371.1	351.3	357.8	318.1	328.2	346.2	391.6	348.6	525.1
Construction	2166.4	2240.0	2264.0	2277.8	2203.8	2155.9	2083.7	2058.8	2107.4	2191.0	2280.3	2406.6
Other	584.9	587.9	593.1	561.1	516.6	551.1	514.4	538.6	574.2	591.3	568.6	649.5
Previous year prices (EUR million)												
Gross fixed capital formation	4229.8	4276.8	4274.7	4150.1	4120.8	4121.6	3870.8	3800.5	4014.8	4101.4	4088.0	4446.9
Machinery and equipment	1199.2	1220.6	1251.0	1224.6	1145.9	1194.7	1125.4	1091.8	1055.5	1014.2	993.3	1023.7
Transport material	396.5	394.3	382.0	347.9	353.4	362.8	317.6	312.6	350.2	393.1	347.9	514.4
Construction	2061.4	2091.6	2072.9	2048.5	2109.0	2030.5	1929.3	1891.0	2045.9	2109.1	2174.1	2262.0
Other	572.7	570.4	568.8	529.1	512.5	533.6	498.4	505.1	563.2	584.9	572.8	646.8
Volume (base year 1995)												
Gross fixed capital formation	4868.5	4922.7	4920.3	4776.9	4570.5	4571.3	4293.1	4215.1	4288.5	4381.0	4366.7	4750.1
Machinery and equipment	1209.3	1230.8	1261.6	1234.9	1202.3	1253.5	1180.8	1145.6	1110.6	1067.1	1045.1	1077.1
Transport material	433.5	431.0	417.6	380.3	369.3	379.1	331.9	326.6	363.5	408.1	361.2	534.0
Construction	2594.7	2632.8	2609.2	2578.6	2454.8	2363.5	2245.6	2201.0	2229.4	2298.3	2369.1	2464.9
Other	639.1	636.5	634.8	590.5	550.8	573.5	535.6	542.8	584.9	607.5	594.9	671.8
Deflator (1995=1)												
Gross fixed capital formation	0.8903	0.8962	0.9041	0.9161	0.9151	0.9316	0.9394	0.9607	0.9644	0.9668	0.9653	0.9791
Machinery and equipment	0.9742	0.9525	0.9421	0.9443	0.9238	0.9524	0.9458	0.9811	0.9977	0.9949	0.9738	0.9930
Transport material	0.9345	0.9550	0.9652	0.9756	0.9513	0.9436	0.9584	1.0047	0.9522	0.9597	0.9651	0.9832
Construction	0.8349	0.8508	0.8677	0.8834	0.8978	0.9122	0.9279	0.9354	0.9453	0.9533	0.9625	0.9764
Other	0.9152	0.9235	0.9342	0.9503	0.9380	0.9610	0.9604	0.9923	0.9817	0.9733	0.9558	0.9668

PRIVATE CONSUMPTION (RESIDENTS)

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption . . .	12559.2	12833.6	12849.9	12984.6	13324.0	13519.4	13865.1	13997.6	14238.2	14349.2	14672.7	14874.5
Durables . . .	1567.9	1670.3	1637.2	1552.6	1701.4	1683.2	1772.5	1769.0	1856.2	1842.9	1932.9	1931.7
Non-durables . . .	10991.3	11163.3	11212.8	11432.0	11622.6	11836.2	12092.6	12228.6	12382.0	12506.3	12739.7	12942.7
Previous year prices (EUR million)												
Private consumption . . .	12119.5	12287.6	12174.3	12225.7	12994.7	13081.7	13287.6	13365.2	13927.5	13986.7	14190.0	14320.1
Durables . . .	1510.5	1602.2	1542.4	1465.5	1672.7	1662.6	1731.9	1732.7	1815.3	1815.4	1887.9	1896.4
Non-durables . . .	10609.0	10685.4	10631.9	10760.2	11322.0	11419.1	11555.8	11632.5	12112.2	12171.4	12302.1	12423.7
Volume (base year 1995)												
Private consumption . . .	12720.1	12897.8	12778.3	12831.0	12994.7	13081.7	13287.6	13365.2	13424.2	13481.3	13677.3	13802.6
Durables . . .	1586.0	1683.5	1620.2	1538.2	1672.7	1662.6	1731.9	1732.7	1782.2	1782.3	1853.5	1861.8
Non-durables . . .	11134.1	11214.3	11158.1	11292.8	11322.0	11419.1	11555.8	11632.5	11643.1	11699.9	11825.6	11942.5
Deflator (1995=1)												
Private consumption . . .	0.9873	0.9950	1.0056	1.0120	1.0253	1.0335	1.0435	1.0473	1.0606	1.0644	1.0728	1.0777
Durables . . .	0.9886	0.9921	1.0105	1.0093	1.0172	1.0123	1.0235	1.0210	1.0415	1.0340	1.0428	1.0375
Non-durables . . .	0.9872	0.9955	1.0049	1.0123	1.0266	1.0365	1.0465	1.0512	1.0635	1.0689	1.0773	1.0838

GROSS FIXED CAPITAL FORMATION

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation . . .	4514.8	4645.9	4600.5	4696.1	4697.1	4874.0	5166.7	5385.2	5679.6	5867.7	6076.5	6147.5
Machinery and equipment . . .	1107.9	1142.8	1131.6	1211.2	1209.2	1225.8	1261.6	1311.4	1364.7	1413.1	1459.1	1508.1
Transport material . . .	342.0	407.1	389.8	413.0	417.7	443.6	492.4	486.9	547.5	594.9	630.5	660.7
Construction . . .	2478.8	2503.9	2478.1	2459.9	2438.3	2556.9	2747.6	2901.3	3063.8	3129.0	3226.7	3184.8
Other . . .	586.0	592.1	601.0	612.0	631.9	647.6	665.1	685.5	703.5	730.7	760.2	793.9
Previous year prices (EUR million)												
Gross fixed capital formation . . .	4431.5	4513.7	4459.7	4482.8	4590.8	4740.9	5000.7	5173.3	5539.3	5680.6	5811.0	5889.3
Machinery and equipment . . .	1111.8	1125.1	1128.4	1182.4	1174.7	1162.6	1190.2	1237.3	1351.0	1377.0	1396.9	1479.6
Transport material . . .	328.0	399.2	382.0	391.2	403.9	455.3	508.2	484.0	517.4	583.3	617.0	644.7
Construction . . .	2406.4	2411.6	2375.7	2328.3	2386.7	2493.7	2667.5	2798.2	2989.4	3025.0	3088.1	3028.7
Other . . .	585.4	577.8	573.6	580.9	625.6	629.3	634.9	653.8	681.6	695.2	709.1	736.3
Volume (base year 1995)												
Gross fixed capital formation . . .	4573.3	4658.0	4601.9	4624.2	4590.8	4740.9	5000.7	5173.3	5369.4	5506.3	5632.8	5708.6
Machinery and equipment . . .	1122.9	1136.4	1139.8	1194.3	1174.7	1162.6	1190.2	1237.3	1285.4	1310.2	1329.1	1407.8
Transport material . . .	339.3	412.9	395.1	404.7	403.9	455.3	508.2	484.0	520.4	586.7	620.6	648.4
Construction . . .	2507.1	2512.6	2475.2	2425.8	2386.7	2493.7	2667.5	2798.2	2905.7	2940.3	3001.6	2943.9
Other . . .	603.9	596.1	591.8	599.3	625.6	629.3	634.9	653.8	659.1	672.3	685.7	712.0
Deflator (1995=1)												
Gross fixed capital formation . . .	0.9872	0.9974	0.9997	1.0156	1.0231	1.0281	1.0332	1.0410	1.0578	1.0656	1.0788	1.0769
Machinery and equipment . . .	0.9866	1.0056	0.9928	1.0142	1.0294	1.0544	1.0600	1.0599	1.0617	1.0786	1.0978	1.0713
Transport material . . .	1.0082	0.9860	0.9866	1.0205	1.0343	0.9743	0.9688	1.0060	1.0521	1.0140	1.0160	1.0190
Construction . . .	0.9887	0.9965	1.0012	1.0141	1.0216	1.0254	1.0300	1.0369	1.0544	1.0642	1.0750	1.0818
Other . . .	0.9703	0.9933	1.0157	1.0211	1.0102	1.0292	1.0477	1.0486	1.0674	1.0869	1.1087	1.1149

PRIVATE CONSUMPTION (RESIDENTS)

	1998				1999				2000			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	15176.5	15562.1	15839.8	16196.1	16564.4	16790.9	16935.6	17082.5	17563.3	17764.5	18079.5	18148.6
Durables	2063.4	2121.0	2250.4	2336.4	2522.4	2541.5	2505.8	2414.4	2639.0	2496.3	2524.5	2512.7
Non-durables	13113.1	13441.1	13589.4	13859.7	14042.0	14249.4	14429.8	14668.1	14924.4	15268.2	15555.0	15635.9
Previous year prices (EUR million)												
Private consumption	14891.4	15194.6	15386.3	15676.2	16363.0	16437.1	16526.6	16622.3	17261.1	17198.7	17346.6	17370.6
Durables	2039.5	2093.2	2203.6	2298.0	2489.4	2513.2	2481.2	2403.4	2608.0	2474.9	2498.4	2495.5
Non-durables	12852.0	13101.3	13182.7	13378.2	13873.6	13924.0	14045.5	14219.0	14653.2	14723.7	14848.2	14875.2
Volume (base year 1995)												
Private consumption	13931.1	14214.7	14394.1	14665.3	14911.3	14978.8	15060.4	15147.6	15397.2	15341.5	15473.4	15494.9
Durables	1962.9	2014.7	2120.9	2211.7	2358.6	2381.1	2350.8	2277.1	2446.9	2322.1	2344.1	2341.3
Non-durables	11972.8	12205.0	12280.9	12463.0	12568.2	12613.8	12723.8	12881.0	12967.3	13029.8	13140.0	13163.8
Deflator (1995=1)												
Private consumption	1.0894	1.0948	1.1004	1.1044	1.1109	1.1210	1.1245	1.1277	1.1407	1.1579	1.1684	1.1713
Durables	1.0512	1.0528	1.0611	1.0564	1.0695	1.0674	1.0660	1.0603	1.0785	1.0750	1.0770	1.0732
Non-durables	1.0952	1.1013	1.1066	1.1121	1.1173	1.1297	1.1341	1.1387	1.1509	1.1718	1.1838	1.1878

GROSS FIXED CAPITAL FORMATION

	1998				1999				2000			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	6581.2	6721.5	6795.6	7027.1	7087.6	7233.4	7493.5	7648.0	8089.5	7963.0	8175.2	8192.0
Machinery and equipment	1595.0	1731.2	1717.4	1748.0	1734.3	1789.8	1865.9	1930.1	1979.7	2004.5	2058.4	2085.4
Transport material	688.2	715.8	734.0	803.2	784.9	792.3	870.1	871.5	924.2	895.2	915.7	960.2
Construction	3446.7	3388.9	3426.2	3530.7	3545.3	3595.4	3683.7	3754.5	4020.1	3947.5	4065.6	4030.1
Other	851.3	885.6	918.1	945.3	1023.0	1055.8	1073.9	1091.9	1165.6	1115.8	1135.5	1116.3
Previous year prices (EUR million)												
Gross fixed capital formation	6504.5	6549.7	6625.5	6816.3	7091.8	7113.3	7302.1	7350.0	7801.9	7536.3	7700.8	7538.1
Machinery and equipment	1628.6	1690.8	1689.7	1738.5	1809.6	1814.5	1881.6	1943.4	1924.3	1891.2	1936.7	1897.5
Transport material	677.3	717.6	754.5	790.4	757.3	756.3	838.3	832.2	896.0	838.7	879.7	877.2
Construction	3387.7	3315.3	3341.4	3424.1	3549.9	3556.1	3599.9	3595.5	3881.7	3741.6	3817.9	3724.4
Other	810.9	826.1	839.9	863.3	975.0	986.5	982.3	978.9	1100.0	1064.8	1066.5	1039.1
Volume (base year 1995)												
Gross fixed capital formation	6079.2	6121.5	6192.3	6370.6	6474.3	6494.0	6666.3	6710.1	6976.3	6738.8	6885.9	6740.4
Machinery and equipment	1511.6	1569.3	1568.3	1613.6	1668.7	1673.2	1735.1	1792.1	1805.7	1774.6	1817.4	1780.6
Transport material	661.3	700.6	736.6	771.7	739.0	738.1	818.1	812.1	838.9	785.2	823.6	821.2
Construction	3169.2	3101.5	3125.9	3203.3	3243.0	3248.6	3288.6	3284.6	3478.6	3353.1	3421.4	3337.6
Other	740.5	754.4	767.1	788.5	826.1	835.8	832.3	829.4	861.3	833.8	835.1	813.7
Deflator (1995=1)												
Gross fixed capital formation	1.0826	1.0980	1.0974	1.1030	1.0947	1.1139	1.1241	1.1398	1.1596	1.1817	1.1872	1.2154
Machinery and equipment	1.0552	1.1032	1.0951	1.0833	1.0393	1.0697	1.0754	1.0770	1.0963	1.1295	1.1326	1.1712
Transport material	1.0408	1.0216	0.9964	1.0408	1.0622	1.0736	1.0635	1.0731	1.1017	1.1401	1.1118	1.1693
Construction	1.0875	1.0927	1.0961	1.1022	1.0932	1.1067	1.1201	1.1431	1.1556	1.1773	1.1883	1.2075
Other	1.1495	1.1739	1.1968	1.1989	1.2383	1.2632	1.2902	1.3165	1.3533	1.3382	1.3598	1.3720

PRIVATE CONSUMPTION (RESIDENTS)

	2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Private consumption	18490.5	18864.8	18974.2	18895.3	19385.5	19622.2	19834.3	19707.9	19935.7	20119.6	20342.8	20336.5
Durables	2488.3	2496.4	2463.9	2366.2	2440.5	2439.4	2360.5	2233.3	2170.3	2142.3	2206.2	2221.7
Non-durables	16002.2	16368.3	16510.3	16529.1	16945.0	17182.9	17473.8	17474.5	17765.4	17977.3	18136.6	18114.8
Previous year prices (EUR million)												
Private consumption	18012.7	18173.0	18159.7	18076.4	18980.5	18916.0	18937.9	18757.4	19453.0	19443.2	19607.4	19616.2
Durables	2439.5	2456.2	2405.5	2321.0	2402.5	2400.3	2283.7	2153.4	2101.1	2083.3	2127.6	2145.7
Non-durables	15573.2	15716.8	15754.1	15755.4	16578.0	16515.7	16654.2	16603.9	17351.9	17359.9	17479.8	17470.5
Volume (base year 1995)												
Private consumption	15533.4	15671.6	15660.2	15588.4	15758.1	15704.5	15722.7	15572.9	15542.2	15534.3	15665.6	15672.5
Durables	2267.3	2282.8	2235.7	2157.2	2189.1	2187.1	2080.8	1962.1	1867.2	1851.4	1890.8	1906.8
Non-durables	13268.9	13391.2	13423.1	13424.1	13561.3	13510.4	13623.6	13582.5	13634.6	13640.8	13735.1	13727.7
Deflator (1995=1)												
Private consumption	1.1904	1.2038	1.2116	1.2121	1.2302	1.2495	1.2615	1.2655	1.2827	1.2952	1.2986	1.2976
Durables	1.0975	1.0936	1.1021	1.0969	1.1149	1.1154	1.1344	1.1382	1.1623	1.1572	1.1668	1.1651
Non-durables	1.2060	1.2223	1.2300	1.2313	1.2495	1.2718	1.2826	1.2865	1.3030	1.3179	1.3205	1.3196

GROSS FIXED CAPITAL FORMATION

	2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Gross fixed capital formation	7972.4	8339.0	8399.5	8547.5	8140.0	8182.9	7853.1	7682.5	7299.6	7232.0	7269.5	7217.5
Machinery and equipment	2064.7	2052.5	1973.8	2000.6	1886.2	1910.9	1802.3	1831.1	1701.2	1650.7	1663.3	1699.2
Transport material	756.8	844.3	805.2	799.4	632.8	643.5	640.3	605.6	525.2	598.1	631.7	619.9
Construction	3988.8	4258.5	4399.5	4513.6	4376.5	4410.7	4193.8	4060.7	3895.0	3839.7	3816.6	3758.1
Other	1162.0	1183.8	1221.1	1233.8	1244.5	1217.8	1216.7	1185.0	1178.1	1143.4	1157.9	1140.3
Previous year prices (EUR million)												
Gross fixed capital formation	7870.4	8182.3	8266.6	8319.6	8148.1	8084.6	7740.3	7461.5	7243.0	7211.3	7282.8	7080.2
Machinery and equipment	2095.8	2063.6	2049.2	2079.2	1957.4	1921.8	1844.2	1829.7	1752.8	1730.1	1769.4	1723.3
Transport material	755.2	824.5	795.0	742.8	658.1	637.5	609.1	566.2	532.0	578.6	623.5	591.2
Construction	3897.2	4132.5	4235.0	4303.8	4314.0	4309.0	4086.1	3902.2	3799.8	3751.8	3735.9	3641.1
Other	1122.0	1161.7	1187.5	1193.8	1218.6	1216.2	1201.0	1163.4	1158.4	1150.8	1154.0	1124.6
Volume (base year 1995)												
Gross fixed capital formation	6637.5	6900.6	6971.7	7016.4	6743.7	6691.1	6406.2	6175.5	5914.8	5889.0	5947.4	5781.9
Machinery and equipment	1851.0	1822.5	1809.8	1836.3	1770.6	1738.5	1668.2	1655.1	1611.7	1590.9	1627.0	1584.6
Transport material	668.1	729.4	703.3	657.1	566.1	548.4	524.0	487.1	448.4	487.6	525.5	498.2
Construction	3297.3	3496.4	3583.1	3641.3	3524.1	3520.0	3337.9	3187.7	3025.6	2987.4	2974.7	2899.3
Other	827.6	856.9	875.9	880.6	873.5	871.8	860.8	833.9	819.2	813.9	816.2	795.3
Deflator (1995=1)												
Gross fixed capital formation	1.2011	1.2085	1.2048	1.2182	1.2070	1.2229	1.2259	1.2440	1.2341	1.2281	1.2223	1.2483
Machinery and equipment	1.1155	1.1262	1.0906	1.0895	1.0653	1.0992	1.0804	1.1063	1.0555	1.0376	1.0223	1.0723
Transport material	1.1328	1.1576	1.1450	1.2166	1.1178	1.1733	1.2220	1.2433	1.1714	1.2266	1.2023	1.2442
Construction	1.2097	1.2179	1.2278	1.2396	1.2419	1.2530	1.2564	1.2739	1.2874	1.2853	1.2830	1.2962
Other	1.4040	1.3815	1.3941	1.4011	1.4247	1.3970	1.4134	1.4211	1.4380	1.4050	1.4187	1.4338

HOUSEHOLDS' DISPOSABLE INCOME

	1977				1978				1979			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	547.7	554.1	568.1	587.3	620.1	646.4	674.3	700.9	722.3	756.0	797.2	846.3
Domestic transfers.	96.6	98.1	100.9	105.3	111.0	116.2	120.9	125.1	128.7	135.8	146.6	160.9
External transfers.	52.7	57.1	56.2	56.0	65.1	84.8	93.6	118.8	137.4	143.6	165.5	160.5
Corporate and property income	144.1	150.4	164.6	185.8	202.9	225.2	245.3	264.4	276.1	295.7	314.7	337.6
Direct taxes	29.6	30.2	31.3	33.1	35.4	38.1	41.3	44.9	49.0	52.6	55.7	58.2
Social security contributions	92.7	94.3	97.6	102.6	109.2	115.1	120.2	124.7	128.4	135.1	144.9	157.7
Disposable income.	718.8	735.2	760.9	798.7	854.6	919.5	972.5	1039.5	1087.1	1143.4	1223.4	1289.5

LABOUR MARKET

	1977				1978				1979			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	3990.1	3996.8	4016.5	4040.5	4087.7	4117.5	4155.7	4183.8	4201.1	4227.6	4254.8	4279.8
Total employment	3797.2	3801.2	3814.0	3826.1	3873.4	3893.7	3927.0	3952.9	3969.1	3995.6	4022.1	4047.3
Employees.	2899.1	2904.9	2922.2	2937.2	2991.0	3012.2	3041.0	3064.1	3065.2	3088.6	3112.3	3137.0
Other forms of employment	898.1	896.3	891.8	888.9	882.4	881.5	886.0	888.8	903.9	907.0	909.8	910.4
Unemployment.	192.8	195.5	202.5	214.4	214.3	223.7	228.7	230.9	231.9	232.0	232.7	232.4
EUR thousand												
Compensation per employee.	0.189	0.191	0.194	0.200	0.207	0.215	0.222	0.229	0.236	0.245	0.256	0.270
Per cent												
Unemployment rate	4.8	4.9	5.0	5.3	5.2	5.4	5.5	5.5	5.5	5.5	5.5	5.4

HOUSEHOLDS' DISPOSABLE INCOME

	1980				1981				1982			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	907.3	963.6	1021.4	1079.4	1129.0	1189.9	1250.8	1316.5	1396.1	1473.0	1552.8	1637.1
Domestic transfers	178.8	196.1	212.9	229.2	244.9	261.0	277.5	294.3	311.4	330.6	351.9	375.3
External transfers	181.2	182.2	193.4	193.6	205.5	231.5	222.9	229.8	236.6	261.1	274.5	291.2
Corporate and property income	360.7	389.7	421.9	456.9	497.0	537.2	579.7	627.5	672.5	717.7	764.0	810.5
Direct taxes	60.3	63.9	69.1	75.8	84.2	92.2	99.9	107.3	114.3	121.9	130.1	138.9
Social security contributions	173.5	187.8	200.4	211.5	220.9	233.7	249.8	269.3	292.2	315.2	338.4	361.8
Disposable income	1394.2	1480.0	1580.1	1671.8	1771.4	1893.7	1981.2	2091.5	2210.1	2345.2	2474.7	2613.4

LABOUR MARKET

	1980				1981				1982			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4303.7	4307.5	4319.0	4335.4	4319.0	4334.1	4330.3	4323.3	4359.9	4359.5	4337.2	4332.7
Total employment	4075.0	4088.5	4098.0	4111.0	4087.8	4094.3	4091.2	4085.6	4125.9	4123.5	4114.5	4102.2
Employees	3175.8	3192.0	3209.2	3223.0	3209.2	3214.7	3207.2	3200.5	3215.8	3211.4	3202.3	3192.3
Other forms of employment	899.3	896.6	888.8	888.0	878.6	879.5	883.9	885.1	910.1	912.1	912.2	909.9
Unemployment	228.7	219.0	221.0	224.4	231.2	239.8	239.1	237.7	234.0	235.9	222.7	230.5
EUR thousand												
Compensation per employee	0.286	0.302	0.318	0.335	0.352	0.370	0.390	0.411	0.434	0.459	0.485	0.513
Per cent												
Unemployment rate	5.3	5.1	5.1	5.2	5.4	5.5	5.5	5.5	5.4	5.4	5.1	5.3

HOUSEHOLDS' DISPOSABLE INCOME

	1983				1984				1985			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	1711.1	1782.5	1838.5	1879.6	1920.6	1973.2	2048.4	2145.7	2255.9	2374.3	2492.5	2612.2
Domestic transfers	400.8	424.0	444.8	463.2	479.3	502.6	533.2	571.1	616.2	652.3	679.6	697.9
External transfers	287.7	283.8	307.9	315.5	375.1	371.6	403.1	421.8	399.4	420.3	454.8	512.8
Corporate and property income	847.9	927.1	1026.0	1119.7	1210.6	1296.0	1363.6	1437.1	1481.7	1545.2	1624.2	1687.1
Direct taxes	148.2	157.9	167.8	178.1	188.7	202.5	219.4	239.6	262.9	276.6	280.8	275.3
Social security contributions	385.3	406.4	425.1	441.3	455.2	472.5	493.3	517.5	545.2	574.2	604.6	636.2
Disposable income	2714.0	2853.1	3024.3	3158.5	3341.7	3468.5	3635.5	3818.6	3944.9	4141.3	4365.7	4598.4

LABOUR MARKET

	1983				1984				1985			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4283.5	4289.9	4297.4	4310.5	4358.9	4376.1	4399.8	4414.5	4409.4	4406.0	4395.4	4390.9
Total employment	4038.6	4028.3	4020.8	4022.8	4068.9	4083.0	4098.1	4104.9	4095.7	4092.0	4079.8	4069.4
Employees	3154.4	3146.9	3143.9	3145.4	3176.3	3186.1	3193.0	3196.6	3183.7	3180.1	3173.3	3166.1
Other forms of employment	884.2	881.4	876.8	877.4	892.6	896.9	905.1	908.3	912.0	911.9	906.5	903.3
Unemployment	244.9	261.6	276.6	287.8	289.9	293.0	301.7	309.6	313.8	314.1	315.6	321.5
EUR thousand												
Compensation per employee	0.542	0.566	0.585	0.598	0.605	0.619	0.642	0.671	0.709	0.747	0.785	0.825
Per cent												
Unemployment rate	5.7	6.1	6.4	6.7	6.7	6.7	6.9	7.0	7.1	7.1	7.2	7.3

HOUSEHOLDS' DISPOSABLE INCOME

	1986				1987				1988			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	2728.0	2852.5	2983.5	3110.5	3238.6	3371.1	3498.9	3624.4	3751.1	3895.6	4068.7	4268.6
Domestic transfers	707.2	728.8	762.8	808.9	867.4	915.9	954.4	982.9	1001.5	1029.7	1067.7	1115.4
External transfers	489.4	491.1	489.5	503.3	571.5	589.0	609.6	623.8	634.3	644.4	653.6	664.4
Corporate and property income	1768.0	1857.0	1914.1	1988.7	2087.8	2144.2	2214.0	2264.9	2311.2	2390.2	2502.4	2652.6
Direct taxes	260.2	247.6	237.5	229.8	224.7	229.9	245.5	271.5	308.0	349.5	396.1	447.9
Social security contributions	669.1	705.3	744.8	787.6	833.6	874.0	908.8	938.0	961.6	994.0	1035.2	1085.1
Disposable income	4763.2	4976.6	5167.5	5394.0	5707.1	5916.3	6122.7	6286.5	6428.5	6616.5	6861.1	7168.0

LABOUR MARKET

	1986				1987				1988			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4364.7	4368.8	4382.2	4389.5	4422.1	4446.1	4465.9	4478.7	4483.8	4501.3	4521.2	4549.8
Total employment	4036.0	4037.9	4057.4	4075.6	4118.5	4150.2	4178.8	4202.9	4216.4	4238.9	4265.9	4302.0
Employees	3152.0	3153.7	3166.7	3178.9	3195.5	3218.9	3239.9	3260.8	3284.9	3306.7	3335.0	3367.3
Other forms of employment	884.0	884.2	890.7	896.7	922.9	931.3	938.9	942.1	931.4	932.2	930.9	934.8
Unemployment	328.6	330.9	324.8	313.8	303.6	295.9	287.1	275.8	267.4	262.4	255.4	247.8
EUR thousand												
Compensation per employee	0.865	0.905	0.942	0.978	1.013	1.047	1.080	1.112	1.142	1.178	1.220	1.268
Per cent												
Unemployment rate	7.5	7.6	7.4	7.1	6.9	6.7	6.4	6.2	6.0	5.8	5.6	5.4

HOUSEHOLDS' DISPOSABLE INCOME

	1989				1990				1991			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (Eur million)												
Compensation of employees	4512.3	4737.3	4970.4	5190.0	5405.0	5639.5	5889.0	6182.0	6453.2	6752.8	7040.2	7343.2
Domestic transfers................................	1172.7	1232.3	1294.1	1358.2	1424.5	1500.7	1586.8	1682.9	1788.8	1901.3	2020.1	2145.5
External transfers.................................	733.7	728.6	739.2	731.1	728.3	807.4	836.2	812.0	772.3	910.9	809.2	830.6
Corporate and property income	2835.8	2999.7	3136.4	3268.5	3356.8	3451.5	3568.1	3723.3	3868.0	4020.2	4135.3	4255.6
Direct taxes......................................	504.7	549.4	581.9	602.3	610.5	627.2	652.5	686.3	728.6	783.5	851.2	931.6
Social security contributions	1143.9	1202.2	1260.1	1317.4	1374.3	1435.8	1501.7	1572.1	1647.0	1733.4	1831.4	1940.7
Disposable income................................	7605.8	7946.3	8298.1	8628.2	8929.8	9336.1	9726.0	10141.8	10506.7	11068.1	11322.2	11702.4

LABOUR MARKET

	1989				1990				1991			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4607.7	4638.4	4664.3	4672.2	4666.2	4674.1	4684.8	4717.5	4732.3	4738.3	4728.5	4717.1
Total employment...............................	4362.3	4392.0	4420.4	4431.8	4426.8	4435.0	4446.6	4479.0	4496.4	4510.9	4508.0	4507.0
Employees....................................	3416.2	3442.3	3467.9	3477.7	3479.5	3483.9	3487.7	3508.2	3504.8	3510.9	3503.6	3498.9
Other forms of employment....................	946.0	949.7	952.5	954.1	947.3	951.0	958.8	970.7	991.6	1000.0	1004.5	1008.1
Unemployment.................................	245.4	246.4	243.9	240.3	239.4	239.1	238.3	238.5	235.9	227.4	220.5	210.1
EUR thousand												
Compensation per employee.......................	1.321	1.376	1.433	1.492	1.553	1.619	1.688	1.762	1.841	1.923	2.009	2.099
Per cent												
Unemployment rate	5.3	5.3	5.2	5.1	5.1	5.1	5.1	5.1	5.0	4.8	4.7	4.5

HOUSEHOLDS' DISPOSABLE INCOME

	1992				1993				1994			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (Eur million)												
Compensation of employees	7725.3	7987.2	8242.8	8405.8	8497.1	8577.4	8599.9	8655.6	8650.0	8751.2	8915.3	9101.1
Domestic transfers	2277.2	2387.3	2475.6	2542.1	2587.0	2632.9	2680.0	2728.3	2777.7	2838.7	2911.4	2995.7
External transfers.	828.5	790.9	797.2	783.4	852.1	698.1	746.2	771.7	742.2	728.9	638.9	755.2
Corporate and property income	4332.1	4428.2	4489.3	4510.1	4539.0	4591.6	4616.3	4636.0	4695.6	4796.5	4940.6	5063.3
Direct taxes	1024.6	1089.6	1126.4	1135.1	1115.7	1106.0	1105.8	1115.3	1134.4	1151.8	1167.4	1181.2
Social security contributions	2061.6	2168.7	2261.8	2341.2	2406.7	2448.1	2465.4	2458.5	2427.6	2443.6	2506.4	2616.0
Disposable income.	12076.9	12335.4	12616.6	12765.1	12952.7	12946.0	13071.3	13217.7	13303.5	13519.9	13732.3	14117.9

LABOUR MARKET

	1992				1993				1994			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4729.0	4706.3	4716.3	4706.3	4694.2	4699.6	4688.1	4703.2	4713.7	4734.7	4762.6	4767.4
Total employment.	4536.7	4528.0	4537.3	4522.6	4492.1	4474.0	4446.0	4446.2	4444.1	4454.9	4474.2	4473.8
Employees.	3528.5	3517.3	3522.8	3504.1	3472.0	3446.9	3407.9	3394.2	3364.4	3359.2	3359.6	3348.8
Other forms of employment.	1008.3	1010.6	1014.5	1018.5	1020.1	1027.1	1038.1	1052.1	1079.6	1095.7	1114.5	1125.0
Unemployment	192.3	178.4	179.1	183.7	202.1	225.6	242.2	257.0	269.6	279.9	288.4	293.6
EUR thousand												
Compensation per employee	2.189	2.271	2.340	2.399	2.447	2.488	2.524	2.550	2.571	2.605	2.654	2.718
Per cent												
Unemployment rate	4.1	3.8	3.8	3.9	4.3	4.8	5.2	5.5	5.7	5.9	6.1	6.2

HOUSEHOLDS' DISPOSABLE INCOME

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	9348.8	9565.6	9749.7	9955.6	10124.9	10244.2	10434.2	10600.3	10803.6	11047.1	11268.0	11490.8
Domestic transfers.	3091.6	3172.9	3239.5	3291.4	3328.7	3369.4	3413.6	3461.4	3512.6	3574.2	3646.3	3728.8
External transfers.	599.0	620.7	641.7	682.0	698.0	678.3	679.4	668.8	725.9	755.0	760.2	749.3
Corporate and property income	5220.4	5326.8	5428.8	5476.7	5487.2	5470.6	5495.8	5568.2	5662.3	5706.2	5718.4	5697.2
Direct taxes	1193.3	1214.3	1244.0	1282.6	1330.0	1365.0	1387.6	1397.7	1395.5	1399.0	1408.4	1423.6
Social security contributions	2772.6	2892.4	2975.6	3022.1	3032.0	3062.7	3114.2	3186.7	3280.0	3366.4	3446.1	3518.9
Disposable income.	14293.8	14579.1	14840.0	15101.0	15276.8	15334.8	15521.1	15714.2	16028.9	16317.0	16538.5	16723.7

LABOUR MARKET

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4765.3	4773.2	4775.6	4816.4	4850.5	4855.1	4873.5	4875.3	4879.2	4903.9	4928.3	4941.6
Total employment.	4469.7	4475.5	4479.4	4510.2	4543.2	4540.7	4564.2	4570.8	4581.3	4616.5	4640.7	4666.4
Employees.	3343.8	3340.8	3338.8	3357.8	3375.6	3370.7	3387.0	3390.3	3402.5	3429.2	3448.6	3468.9
Other forms of employment.	1126.0	1134.6	1140.6	1152.4	1167.5	1170.0	1177.2	1180.5	1178.8	1187.3	1192.1	1197.4
Unemployment	295.6	297.7	296.2	306.2	307.3	314.4	309.3	304.6	297.9	287.4	287.7	275.2
EUR thousand												
Compensation per employee.	2.796	2.863	2.920	2.965	2.999	3.039	3.081	3.127	3.175	3.221	3.267	3.312
Per cent												
Unemployment rate	6.2	6.2	6.2	6.4	6.3	6.5	6.3	6.2	6.1	5.9	5.8	5.6

HOUSEHOLDS' DISPOSABLE INCOME

	1998				1999				2000			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	11748.6	12006.7	12166.7	12413.1	12633.5	12872.9	13151.0	13462.6	13816.2	14119.3	14438.0	14714.9
Domestic transfers.................................	3821.8	3907.0	3984.4	4054.0	4115.8	4197.3	4298.5	4419.5	4560.2	4691.3	4812.7	4924.6
External transfers..................................	773.4	791.3	785.8	754.7	793.2	783.9	867.0	800.6	840.6	911.5	858.1	992.8
Corporate and property income	5635.9	5595.9	5601.7	5606.6	5661.0	5706.0	5759.3	5878.0	5985.1	6102.0	6166.0	6222.9
Direct taxes.......................................	1444.6	1465.3	1485.8	1506.0	1525.9	1555.5	1594.8	1643.9	1702.7	1753.3	1795.9	1830.4
Social security contributions	3584.9	3640.8	3686.8	3722.8	3748.8	3805.3	3892.3	4009.7	4157.6	4282.1	4383.1	4460.6
Disposable income.................................	16950.2	17194.8	17365.9	17599.6	17928.7	18199.3	18588.7	18907.2	19341.9	19788.6	20095.8	20564.3

LABOUR MARKET

	1998				1999				2000			
	Q1	Q2	Q3	Q4	Q1	Q2	T3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	4983.0	4993.0	4991.4	5025.6	5037.8	5063.2	5065.4	5082.2	5096.6	5105.2	5141.5	5157.1
Total employment..............................	4711.5	4751.7	4752.2	4786.7	4810.3	4829.1	4847.3	4871.3	4888.4	4906.2	4937.5	4963.0
Employees....................................	3501.3	3534.1	3535.3	3565.3	3587.4	3606.8	3629.6	3653.9	3682.0	3700.4	3728.9	3750.7
Other forms of employment....................	1210.2	1217.6	1216.8	1221.4	1222.9	1222.3	1217.7	1217.4	1206.4	1205.8	1208.6	1212.3
Unemployment	271.5	241.4	239.2	238.9	227.6	234.1	218.1	210.8	208.2	198.9	204.0	194.1
EUR thousand												
Compensation per employee.......................	3.355	3.397	3.441	3.482	3.522	3.569	3.623	3.684	3.752	3.816	3.872	3.923
Per cent												
Unemployment rate	5.4	4.8	4.8	4.8	4.5	4.6	4.3	4.1	4.1	3.9	4.0	3.8

HOUSEHOLDS' DISPOSABLE INCOME

	2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices (EUR million)												
Compensation of employees	14947.9	15166.4	15428.8	15756.9	15987.3	16231.2	16348.0	16330.7	16575.9	16568.7	16567.0	16586.2
Domestic transfers................................	5026.9	5125.9	5221.7	5314.3	5403.7	5507.1	5624.4	5755.7	5901.0	6009.9	6082.6	6118.9
External transfers.................................	931.9	975.6	912.6	926.0	786.6	701.2	700.4	653.5	731.6	627.3	616.5	622.0
Corporate and property income	6309.4	6389.5	6471.9	6516.5	6555.8	6571.7	6584.1	6565.6	6544.7	6554.7	6592.1	6569.3
Direct taxes	1856.7	1876.8	1890.6	1898.0	1899.2	1900.7	1902.4	1904.4	1906.7	1908.5	1909.6	1910.2
Social security contributions	4514.7	4584.0	4668.4	4768.1	4882.9	4971.9	5035.1	5072.5	5084.1	5092.8	5098.6	5101.5
Disposable income................................	20844.7	21196.7	21476.0	21847.7	21951.4	22138.6	22319.4	22328.6	22762.3	22759.3	22850.0	22884.7

LABOUR MARKET

	2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Thousands												
Labour force	5193.1	5205.7	5226.3	5261.6	5252.6	5284.4	5295.3	5291.3	5322.0	5317.5	5313.1	5323.1
Total employment...............................	4989.8	4995.6	5012.1	5041.8	5024.8	5034.6	5019.1	4976.0	4994.9	4978.2	4969.4	4971.5
Employees......................................	3765.5	3770.6	3782.3	3806.2	3796.4	3803.4	3788.7	3751.1	3765.6	3748.1	3737.4	3737.1
Other forms of employment.....................	1224.3	1225.1	1229.8	1235.7	1228.4	1231.2	1230.4	1224.8	1229.3	1230.1	1232.0	1234.5
Unemployment.................................	203.3	210.1	214.2	219.8	227.8	249.7	276.2	315.4	327.1	339.3	343.7	351.5
EUR thousand												
Compensation per employee.......................	3.970	4.022	4.079	4.140	4.211	4.268	4.315	4.354	4.402	4.421	4.433	4.438
Per cent												
Unemployment rate	3.9	4.0	4.1	4.2	4.3	4.7	5.2	6.0	6.1	6.4	6.5	6.6

Chronology of major financial policy measures

January

12 January (Regulation no. 12/2003 of the Stock Market Commission 12/2003, Official Gazette no. 9, Series II)

Establishes the rules on the assessment of assets integrating the wealth of risk capital funds, as well as on the data reporting by the latter and risk capital companies to the Stock Market Commission. This regulation enters into force on 1 January 2004.

12 January (Notice of Banco de Portugal no. 14/2003, Official Gazette no. 9, Series I - B)

Defines the new contribution system for the Mutual Agricultural Credit Guarantee Fund by the Central Agricultural Credit Bank and Mutual Agricultural Credit Banks. Revokes Notice no. 4/99, of 5 May.

15 January (Law no. 3/2004, Official Gazette no. 12, Series I - A)

Approves the outline law for public institutions. Establishes principles and rules governing services and funds with legal personality that integrate the indirect administration of the State and Autonomous Regions. It acknowledges the existence of special regimes, given the specificity of the objectives pursued by certain types of public institutions, including, inter alia, the Banco de Portugal and funds operating with it. This law enters into force on the 1st of the month following its publication.

16 January (Regulation no. 13/2003 of the Stock Market Commission, Official Gazette no. 13, Series II)

Establishes, pursuant to the provisions set forth in article 4, 2), (b) of Decree-Law no. 319/2002, of 28 December, the regime governing the accounts of risk capital funds. This regulation enters into force on 1 January 2005.

17 January (Regulation no.14/2003 of the Stock Market Commission, Official Gazette no. 14, Series II)

Defines the contents of the prospectus of issuance and admission to trading of risk capital fund units, in compliance with article 4, 2), (d) of Decree-Law no. 319/2002, of 28 December.

19 January (Decision no. 2097/2004, Official Gazette no. 25, Series II)

Pursuant to the provisions set forth in article 67, 2) of Law no. 107-B/2003, of 31 December, authorises the Portuguese Government Debt Agency to conduct repos based on securities representing the direct public debt quoted in the special public debt market (MEDIP – *mercado especial de dívida pública*) up to 2,500,000,000 euros.

21 January (Regulation no. 15/2003 of the Stock Market Commission, Official Gazette no. 17, Series II)

Regulates several matters laid down in the legal framework of undertakings for collective investment (UCI) approved by Decree-Law no. 252/2003, of 17 October. It standardises and systematises, in a single law, the set of rules applicable to mutual funds and establishes the legal framework of a new type of UCI – the special investment funds (SIF). It also stipulates a transitional regime applicable to UCI previously set up. This law enters into force on 1 January 2004.

26 January (Regulation no. 16/2003 of the Stock Market Commission, Official Gazette no. 21, Series II)

Establishes the regime governing the accounts of undertakings for collective investment (UCI), whose legal framework was approved by Decree Law no. 252/2003, of 17 October. This regulation, apart from the exception envisaged in it, enters into force on 1 January 2004.

27 January (Circular Letter of Banco de Portugal no. 3/2004/DMR)

Provides information on timetables of reserve maintenance periods and on notification dates for 2004 (monthly reporting), following changes in the operational framework of the Eurosystem monetary policy made by Regulations ECB/2003/9, of 12 September, and ECB/2003/10, of 18 September. Revokes Circular Letter no. 31/DMR, of 20 October 2000.

28 January (Circular Letter of Banco de Portugal no. 4/2004/DMR)

Informs that the rate of return of the Certificates of Deposit, Series B, to prevail in the quarter started on 4 February 2004, is set at 2.02%.

February

13 February (Circular-Letter of the Banco de Portugal no. 14/04/DSBDR)

Provides information on the understanding of the Banco de Portugal as to the accounting of autonomous warrants, which are equivalent to derivative financial instruments and should be dealt with similarly to option contracts.

Chronology of major financial policy measures 2004

16 February (Circular-Letter of the Banco de Portugal no. 2/2004/DMR)	Provides information on the reserve maintenance period calendar, as well as on the dates of notification in 2004 (monthly report). Revokes Circular Letter no. 31/2000/DMR, of 20 October 2000.
16 February (Instruction of the Banco de Portugal no. 1/2004)	Determines the terms of access to the information relating to cheques users who may offer risk, for the purposes of credit risk evaluation of natural or legal persons.
16 February (Instruction of the Banco de Portugal no. 2/2004)	Determines the obligations for the collection and/or supply of information to the Banco de Portugal, within the scope of the limitations to credit granting established in Articles 85 and 109 of the Legal Framework of Credit institutions and Financial Companies.
19 February (Circular-Letter of the Banco de Portugal no. 5/DMR)	Informs of the changes introduced in Instruction no. 1/99 (Money Markets - Intervention Operations Market), which is enclosed in attachment in full version with the changes introduced, and will be effective as of 8 March 2004.

March

5 March (Circular-Letter of the Banco de Portugal no. 18/04/DSBDR)	Informs that the Banco de Portugal will raise no objections that institutions, if they so wish, may recognise beforehand as income of the parent undertaking the dividend to be distributed by their subsidiaries during the fiscal year when the profits are generated, provided that certain requirements are fulfilled, according to the International Accounting Standard "IAS18".
10 March (Regulation (EC) no. 501/2004 of the European Parliament and of the Council, OJ L no. 81)	Adopts measures on quarterly financial accounts for general government.
10 March (Decree-Law no. 50/2004, Official Gazette no. 50, Series I, A)	Introduces changes in articles 8 to 11, 53 and 55 of the Organic Law of the Banco de Portugal, approved by Decree-Law no. 5/98, of 31 January.
24 March (Decree-Law no. 66/2004, Official Gazette no. 71, Series I, A)	Introduces changes in the Stock Market Code, approved by Decree-Law no. 486/99, of 13 November.
24 March (Circular-Letter of the Banco de Portugal no. 25/2004/DSB)	Recommends that credit institutions and financial corporations shall examine with particular care the operations contracted with natural or legal persons, resident or established in certain countries and territories, within the scope of money laundering preventive measures. Revokes Circular-Letter no. 70/2003/DSB, of 28 July 2003.
25 March (Decree-Law no. 68/2004, Official Gazette no. 72, Series I, A)	Lays down the requirements governing advertising and information to consumers in the context of house purchase.
25 March (Decree-Law no. 69/2004, Official Gazette no. 72, Series I, A)	Sets forth the rules governing monetary securities known as commercial paper. This Decree-Law enters into force 30 days following its publication.
25 March (Decree-Law no. 70/2004, Official Gazette no. 72, Series I, A)	Introduces changes in the legal system governing autonomous warrants, laid down in Decree-Law no. 172/99, of 20 May, which is published again, in attachment, with the amendments introduced.

April

20 April (Decree-Law no. 88/2004, Official Gazette no. 93, Series I - A)	Transposes into Portuguese law Directive 2001/65/EC of the European Parliament and of the Council of 27 September as regards the valuation rules for the annual and consolidated accounts of certain types of companies as well as of banks and other financial institutions. This Decree-Law shall be applicable to the accounts and management reports of the fiscal years started on or after 1 January 2004.

29 April (Circular Letter of the Banco de Portugal no. 7/04/DMR)	Informs that the rate of return of the Certificates of Deposit, Series B, to prevail in the quarter started on 4 May 2004, is set at 2.00%.
29 April (Resolution of the Assembly of the Republic no. 35/2004, Official Gazette no. 101, Series I - A)	Approves for ratification, the decision of the Council of 21 March 2003, meeting in the composition of Heads of State or Government, as regards an amendment to Article 10.2 of the Statute of the European System of Central Banks and of the European Central Bank.
30 April (Circular Letter of the Banco de Portugal no.38/04/DSB)	Makes known the understanding of the Banco de Portugal as regards the deadlines for the revaluation of real estate acquired in repayment of own claims.
30 April (Circular Letter of the Banco de Portugal no.39/04/DSB)	Clears doubts on the provisioning system of credit default swaps.

May

6 May (Regulation No. 1/2004 of the Stock Market Commission, Official Gazette no. 122, Series II - A)	Implements the legal framework of commercial paper, as amended by Decree-Law No. 69/2004 of 25 March, establishing a simplified treatment of public offers and of the compulsory means used by the issuers in compliance with their duty to disclose information.
8 May (Decree-Law No. 105/2004, Official Gazette no. 108, Series I - A)	Approves the legal framework of financial collateral arrangements and transposes into Portuguese law Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements. This Decree-Law also stipulates that the common or special regimes should be subsidiarily applied to other types of pledge or reporting. This Decree-Law shall enter into force on the 30th day following its publication.
6 May (Regulation No. 2/2004 of the Stock Market Commission, Official Gazette no. 121, Series II)	Fixes the rate to be applicable on the simplified prior registration of the public offer of commercial paper.
12 May (Circular-Letter of the Banco de Portugal No. 41/04/DSBDR)	Informs that according to the understanding of the Banco de Portugal, the risks of *Entidade Gestora de Reservas Estratégicas de Produtos Petrolíferos*, E.P.E. (EGREP) (management entity of strategic oil reserves), may be subject to a 0% weighting, for the purposes of the calculation of the solvency ratio and of the limits to large exposures.
17 May (Instruction of the Banco de Portugal no. 11/2004)	Lays down the rules governing the acquisition of transferable securities by mutual guarantee companies for their own portfolio.

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