



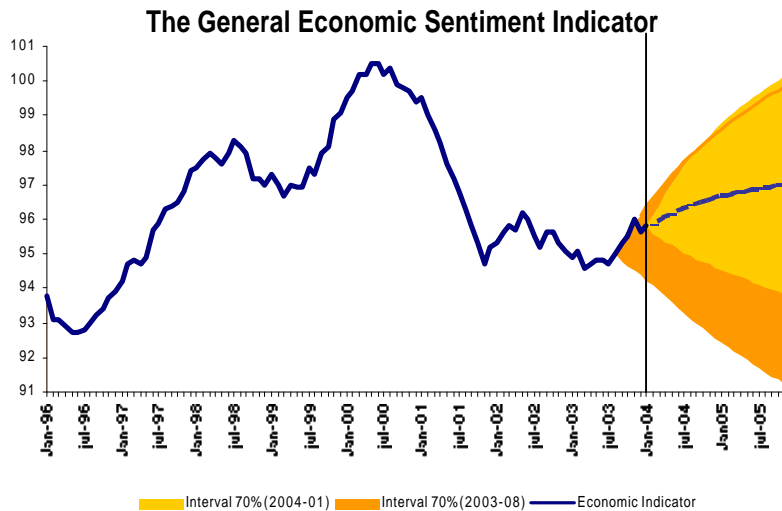
OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS



Universidad Carlos III de Madrid

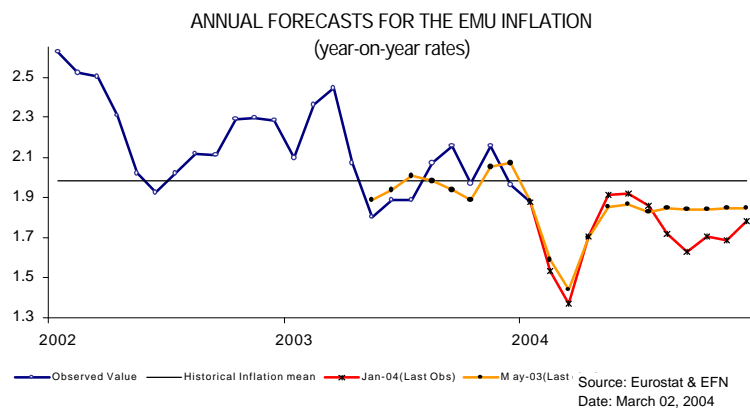
Macroeconomic Forecast and Analysis Laboratory, IFL, N° 113 February, 2004.

The overall economic sentiment indicator in the EMU firmly recovered at the end of 2003, but has been moderated in January, 2004.



Source: Eurostat & IFL Date: March 2, 2004

The fall in the annual inflation rate for February and March, 2004 has been forecast since May, 2003.



Monthly Debate
The Capitalism to come.
HOMO POSTECONOMICUS
 by Juan Urrutia. See Page. 22

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OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS

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TERMINOLOGY USED:

In inflation analysis it is advisable to break down a consumer price index for a country or an economic area in price indexes corresponding to homogenous markets. An initial basic breakdown used in this publication is 1) Non-processed Food price index (ANE) 2) Energy price index (ENE), 3) Processed Food (AE), 4) Other commodities (MAN), 5) Other services (SERV). The first two are more volatile than the others, and in Espasa et al. (1987) a **core inflation** measure exclusively based on the latter ones was proposed; the Spanish Statistical Institute and Eurostat proceed in the same way. Later, in the BULLETIN EU & US INFLATION AND MACROECONOMIC ANALYSIS was proposed to eliminate from components of core inflation those indexes which are excessively volatile.

Thus, the previous basic breakdown has been amplified for Spain in the following manner: a) ANE, b) ENE, c) Tobacco, Oils and Fats, and Tourist Packages, d) Processed Foods excluding Tobacco, Oils and Fats, (AEX).ge) Other Goods (MAN), and f) Other services, excluding Tourist Packages (SERT). The measure of inflation obtained with the AEX, MAN, and SERV indexes we term **trend inflation**, as an alternative indicator similar to core inflation, but termed trend inflation to indicate a slightly different construction. The measure of inflation established with the price indexes excluded from the CPI to calculate trend inflation or core inflation, depending on the case, is termed **residual inflation**.

For the United States the breakdown by markets is principally based on four components: Food, Energy, Services, and Commodities. **Trend inflation** or **core inflation** is based in this case as the aggregation of services and non-energy commodities.

I. MAIN POINTS AND NEW RESULTS

I.1. ECONOMIC AND MONETARY UNION

□ The month-on-month inflation rate in the EMU in February 2004 is forecast at a positive value of 0.1%. The corresponding year-on-year rate will decrease again to 1.5% compared to the 1.9% registered in January. This value has been forecast since May 2003. (graph R1).

□ Total inflation in January 2004 performed slightly worse than expected, with a fall 0.18%, whereas the forecast decrease was 0.27%. Upward innovations have been registered mainly in service prices, and with less repercussion in the aggregate, in all major groups of goods, except tobacco and non-energy industrial goods. There was a downward innovation in these last two groups (see tables 1 in section II.1 and A2 in the appendix).

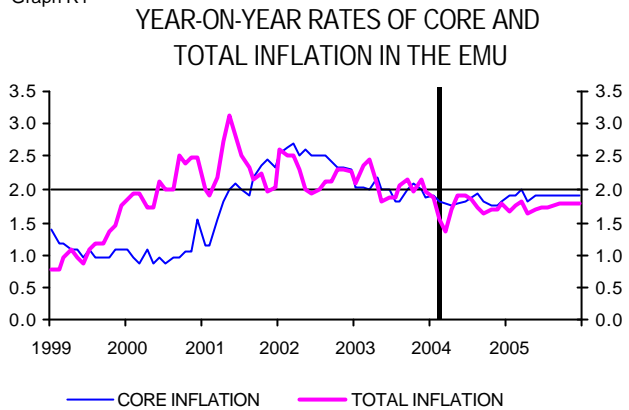
□ The forecast average annual total inflation rates are very similar to those of the previous Bulletin, with 1.7% for 2004 and 2005, compared to the 2.1% observed in 2003 (see table R1).

□ Comparing these forecasts with the estimates published by Consensus Forecasts or made by other institutions, it can be seen that the predictions of this Bulletin show that the average inflation rate in 2005 will be similar to the average inflation rate in 2004.

□ The recent performance of inflation includes a fall of one tenth in average core inflation in the second quarter of 2003 compared with the first; likewise in the aggregate, although with less repercussion. This improvement in core inflation is due to the evolution of service prices, the annual rate of which fell from 2.7% to 2.4% in this period of time. Core inflation in goods remained quite stable at around 1.4%. Core inflation will improve slightly in 2004 to reach an average annual rate of 1.8%. This will be derived from a worse inflation performance in services, which will tend to fluctuate around 2.6%, and better evolution in the inflation of good prices, falling to an average level of around 1.2%.

□ The probability of not reaching 2.0% in the average for 2004 is high. As the fan chart shows, graph R2, at a 95% confidence level a deflation risk in the EMU is practically null in 2004, even less than the forecasts.

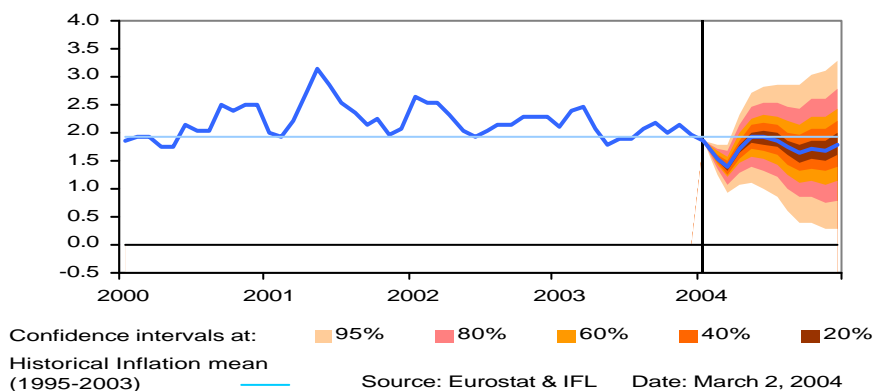
Graph R1



Source: EUROSTAT & UNIVERSIDAD CARLOS III
Date: March 2 / 2004

Graph R2

ANNUAL FORECASTS FOR THE EMU INFLATION
(year-on-year rates)



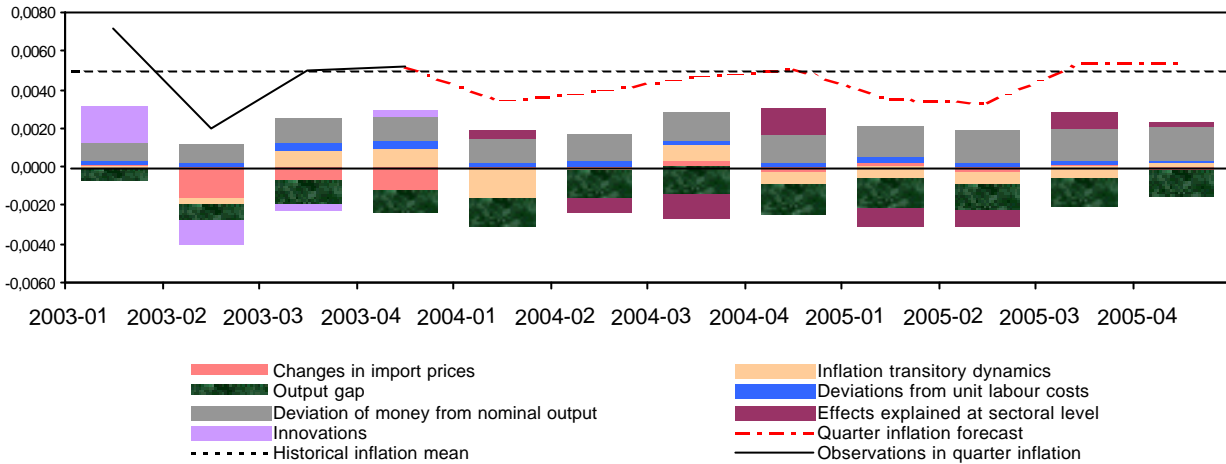
Source: Eurostat & IFL Date: March 2, 2004



□ In order to obtain a causal explanation for the inflation forecasts derived from this Bulletin – see BIMA N° 100 -, a regression between these forecasts and the forecasts resulting from the macroeconomic model shown in Dreger (2002)¹ is performed. With regards to inflation expectations, inflation pressure has been compensated, especially from the second quarter of 2004 onwards, by the increase in the output gap and the favorable behaviour of import prices, confirming comments made in previous bulletins that given the expected evolution of the output gap and other variables affecting inflation, the ECB could go some way further in applying a loose monetary policy. Nevertheless, in the last quarter of 2005, when this compensation will come to an end, the ECB could then change its monetary policy (see the following graph).

Graph R3

CONTRIBUTIONS TO THE SEASONALLY ADJUSTED QUARTER-TO-QUARTER INFLATION RATE IN THE EMU *

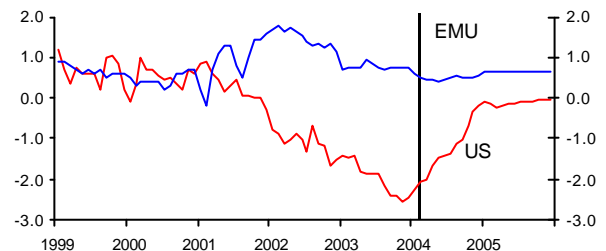


The contributions refer to the deviations of inflation rate from their mean.

□ The inflation differential between the Economic Monetary Union and the United States was systematically a percentage point in favour of the EMU before 2002, as can be observed in graph R3. Nevertheless, this inflation differential is insignificant in the last months. The year-on-year rate of growth in January in the USA stayed at 1.9%, the same value as in the EMU, (graph R4). Inflation in the EMU registered 2.1% in the average for 2003 and 2.2% was registered in the US. Inflation in both geographical areas will converge below 2.0% in 2004 and 2005.

Graph R4

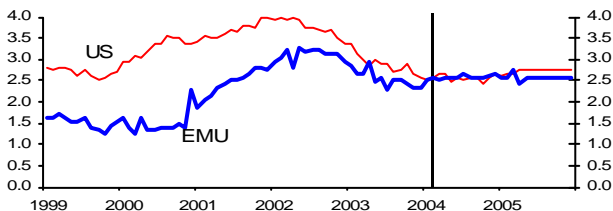
YEAR-ON-YEAR RATES OF NON-ENERGY INDUSTRIAL GOODS INFLATION IN THE EMU AND THE USA



Source: BLS, EUROSTAT, IFL & UC3M
Date: March 2 / 2004

Graph

YEAR-ON-YEAR RATES OF SERVICES INFLATION IN THE EMU AND THE USA



Source: BLS, EUROSTAT, IFL & UC3M
Date: March 2 / 2004

□ Although total inflation in the EMU and the USA will converge, there is an inflation differential favourable for the EMU in services, and for the USA in goods. The expectations of the average annual rate for prices of services excluding owner's equivalent rents in USA are 3.1% in 2004 and 3.1% in 2005, compared to the 3.2% observed in 2003, but in the EMU they are 2.6% in 2004 and 2005, compared to the 2.6% observed in 2003. The performance of non-energy industrial goods prices, excluding tobacco in any case, is noticeably different, with expectations for the average annual rate in the US falling to negative rates of 1.3% in 2004 and 0.1% in 2005;

and positive rates of 0.5% in 2004 and 0.7% in 2005 for the EMU.

¹ Dreger, C. (2002) "A macroeconomic model for the Euro economy". Institute for Economic Research Halle (IWH).



Table R1 FORECASTS FOR THE MEAN ANNUAL RATES IN THE HICP OF THE EMU						
Harmonised Indices of Consumer Prices (HICP)	2000*	2001*	2002*	2003*	Forecasts	
					2004	2005
TOTAL INFLATION (100%)	2,1	2,3	2,3	2,1	1,7	1,7
CORE INFLATION (84,17%)	1,0	1,9	2,5	2,0	1,8	1,9
Non energy processed goods HICP (42,85%)	0,6	1,5	1,9	1,5	1,2	1,3
Services HICP (41,33%)	1,5	2,5	3,1	2,6	2,6	2,6
RESIDUAL INFLATION (15,82%)	7,5	4,4	1,1	2,6	0,1	1,0
Non Processed Food HICP (7,69%)	1,7	7,0	3,1	2,2	1,1	1,8
Energy HICP (8,13%)	13,0	2,3	-0,6	3,0	0,4	-0,2

* Observed Values (revised)
(1) Monthly and annual rates can be found in tables A5A and A5B in the appendix.

Source: Eurostat & UC3M/ Date: March 02, 2004



I.2 MACROECONOMIC TABLE OF EURO-ZONE

	Annual Averages Growths				
	2001	2002	2003	Forecasts BIMA (*)	
				2004	2005
GDP p m	1.6	0.9	0.5	1.8	2.1
Demand					
Final Consumption	2.0	0.8	1.3	1.4	1.7
Capital Investment	-0.1	-2.9	-2.0	-0.4	2.3
Contribution Domestic Demand	1.0	0.2	0.6	1.0	1.7
Exports of Goods and Services	3.3	1.7	1.0	7.7	4.8
Imports of Goods and Services	1.8	0.1	1.4	6.0	4.2
Contribution Foreign Demand	0.6	0.7	-0.1	0.8	0.4
Supply					
Gross Value Added Total (market prices)	1.6	0.9	0.5	1.8	2.1
Net Taxes	-1.2	-3.9	-1.0	-2.0	-0.9
Gross Value Added Total (basic prices)	1.8	1.2	0.6	2.0	2.3
Gross Value Added Agriculture	-1.4	-0.8	-2.6	0.2	0.9
Gross Value Added Industry	0.6	1.0	0.6	2.3	3.5
Gross Value Added Construction	-0.6	-0.9	-1.2	-0.3	0.0
Gross Value Added Services	2,5	1,5	0,9	2,2	2,1
Wholesale and Retail Trade	3,1	1,2	0,8	2,0	2,1
Financial Intermediation	2,7	2,2	0,6	2,1	2,3
Public Administration	1,6	0,8	1,4	2,5	1,8
Prices					
CPI harmonized, annual average	2.3	2.3	2.1	1.7	1.7
CPI harmonized, dec./dec.	2.1	2.3	2.0	1.8	1.8
Employment					
Unemployment rate	8.0	8.4	8.8	8.7	8.4
Others Economic Indicators					
Production Index of Industry (excluding construction)	0.5	-0.5	0.4	2.1	1.8

Source: EUROSTAT & IFL

Date: March 2, 2004.

(*) Bulletin EU & US Inflation and Macroeconomic Analysis.

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I.3. UNITED STATES

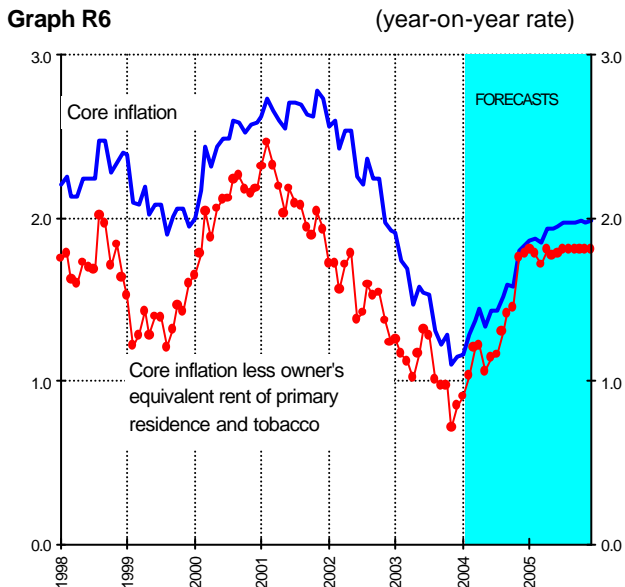
- The general index forecast for **February** is a 0.59% increase, with the annual rate falling two tenths from 1.93% to 1.74%. This expected fall in the annual rate is due to the heavy increases in energy prices last year. We expect core inflation to increase by 0.48%, with the annual rate rising from 1.17% to 1.28% (Chapter II shows the details).

Table R2
OBSERVED VALUES AND FORECAST ON CONSUMER PRICE FIGURES IN US
-January 2004-

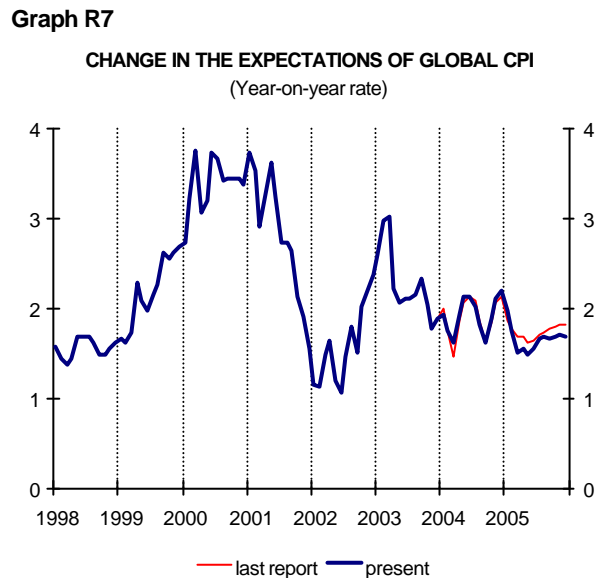
CONSUMER PRICES INDEX (CPI)	Monthly Growth (T ¹)		Confidence Intervals at 80% level (+ -)
	observed (a)	forecasts (b)	
Residual Inflation	1.47	1.43	0.41
Core Inflation	0.23	0.30	0.15
All items	0.49	0.55	0.13

Source: BLS & Universidad Carlos III Madrid
Data: February 26, 2004

- In **January**, the U.S. CPI rose by 0.49% from the previous month's figure, as expected: 0.55%, with the annual rate rising from 1.88 to 1.93% (see **Table R2**²).
- However, there were some forecasting errors. All energy products performed worse than expected. On the other hand, evolution was better than forecast in some food (meats and fruits) and non-durable goods.



Source: Universidad C.III Madrid & BLS / Date: February 26, 2004



Source: Universidad C.III Madrid & BLS / Date: February 26, 2004

- Core inflation rose by 0.23% from the previous month's figure, somewhat less than forecast: 0.30%, with the annual rate increasing slightly from 1.15% to 1.17%. The decrease in commodities less food and energy was 0.39%, similar to the -0.36% forecast, with the annual rate increasing from -2.46% to -2.29%. On the other hand, service prices rose 0.47% instead of the expected 0.56%, and the annual rate falls from 2.59% to 2.52%. Core inflation, not including owner's equivalent rent of primary residence and tobacco, and therefore comparable with the underlying rate in Europe excluding food, rose by 0.24% instead of the 0.37% forecast, with the annual rate growing from 0.85% to 0.90% (Chapter II shows the details) (see **Graph R6**).
- For **2004** and **2005**, we forecast mean total annual inflation rates of 1.9% and 1.7%, respectively; this is the same forecast as last month. We have considered a stable effective exchange rate; a progressive, but slow, increase in the level of use of production capacity, and crude oil prices somewhat worse than in last month's report (see **Table R2** and **Graph R7**).

² The official information provided is with one decimal aggregation error



- Indeed, we expect the annual core rate to grow rapidly this year from today's 1.2% to the 1.8% forecast for December. It should then become stable at a somewhat higher level throughout 2005. This forecast is slightly more moderate than the one provided in last month's report (see **Graph R6**).
- In 2004, when we add food and energy prices to this context of rapid core inflation growth, this generates a general CPI annual mean growth rate of around 1.9%, with the lowest level in March (1.6%) and the highest in June (2.1%). This is explained by the evolution of energy prices in 2003 (see **Graph R7**).

Table R3

AVERAGE ANNUAL RATE OF GROWTH IN US

CONSUMER PRICES INDEX (CPI)	2000	2001	2002	2003	2004 (forecasts)	2005 (forecasts)
Food (1)	2.3	3.1	1.8	2.1	3.0	2.6
Energy (2)	16.9	3.8	-5.9	12.2	4.7	-2.9
Residual Inflation (3=2+1)	6.8	3.3	-0.8	5.3	3.6	0.7
Non-food and non-energy goods (4)	0.5	0.3	-1.1	-2.0	-1.3	-0.1
Less tobacco	-0.1	-0.2	-1.5	-2.1	-1.5	-0.3
-Durable goods	-0.5	-0.6	-2.6	-3.2	-2.5	-0.4
-Nondurable goods	1.4	1.1	0.4	-0.7	0.0	0.2
Non-energy services (5)	3.3	3.7	3.8	2.9	2.6	2.7
-Services less owner's equivalent rent of primary residence (5-a)	3.5	3.6	3.6	3.2	3.1	3.1
-Owner's equivalent rent of primary residence (a)	3.0	3.8	4.1	2.4	1.9	2.2
Core Inflation (6=4+5)	2.4	2.7	2.3	1.5	1.5	1.9
Core inflation less owner's equivalent rent of primary residence (6-a)	2.2	2.3	1.7	1.1	1.3	1.8
Core inflation less owner's equivalent rent of primary residence and tobacco	2.1	2.1	1.5	1.1	1.3	1.8
All items (7=6+3)	3.4	2.8	1.6	2.3	1.9	1.7
All items less owner's equivalent rent of primary residence (7-a)	3.5	2.6	1.0	2.2	2.0	1.5

Source: BLS & Universidad Carlos III Madrid

Data: February 26, 2004

(*) Monthly and annual growth rates can be found in tables A6A and A6B in Appendix



I.4. SPAIN

□ The month-on-month inflation rate in February 2004 is expected to reach a positive value of 0.3%. The year-on-year rate will stay at 2.3%, the same observed in January 2003 (graph R8).

□ The month-on-month rate observed in January, 0.17%, was below our forecast, -0.41%. Core inflation registered a downward innovation derived from non-energy industrial goods. Residual inflation registered an upward innovation.

□ The year-on-year rate of **Core inflation** in January was 2.4%, below the 2.6% observed in December 2003. Most components in services inflation registered year-on-year rates above or around 5%, especially the prices of universities (5.05%) and household services (5.14%).

The year-on-year rate of core inflation (excluding oils, fats and tourist services) was 2.4%, below the 2.6% observed since October 2003. Processed food in January decreased to 2.5%, compared to the 2.8% observed in November, and the 2.7% in December. Taking prices of non-energy industrial goods into consideration, the year-on-year rate fell from the 1.2% observed in December, to the 0.7% observed in January. Meanwhile in the EMU, the year-on-year rate is expected to stay around 0.4% in June and July. Therefore, the expected differential between Spain and the EMU in prices of non-energy industrial goods, is below one percentage point, with annual average rates for the EMU of 0.8% observed in 2003, 0.5% expected in 2004 and 0.7% in 2005; and above all with the USA, with negative annual average rates of 2.0% observed in 2003, and -1.3% and -0.1% in 2004 and 2005, respectively.

Consumer Price Index (CPI)	Observed growth January 2004	Forecast	Confidence interval at 80%
Total Inflation(100%)	-0.71	-0.41	± 0.15
Core inflation (82.28%)	-0.92	-0.62	± 0.13
Residual inflation (17.72%)	0.65	0.30	± 0.22

(*) Al 80% de significación

Source : INE & UC3M / Date: February 13, 2004

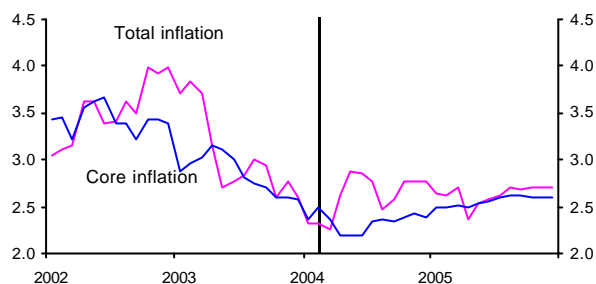
Consumer Prices Index (CPI)	2002	2003	Forecasts	
			2004	2005
TOTAL INFLATION (100%)	3,5	3,0	2,6	2,6
CORE INFLACIÓN (82,28%)	3,7	2,9	2,5	2,6
TREND INFLACIÓN (77,21%)	3,4	2,8	2,3	2,6
Non energy industrial goods (30,05%)	2,5	2,0	1,1	1,3
Services CPI (35,05%)	4,6	3,7	3,7	3,7
Processed food CPI (17,17%)	4,3	2,9	2,4	2,5
RESIDUAL INFLATION (17,72%)	2,6	3,6	4,0	2,9
Non processed food CPI (8,60%)	5,8	6,0	6,6	5,2
Energy CPI (9,12%)	-0,2	1,4	0,1	-0,3

Monthly and annual rates can be found in tables A7A and A7B in the appendix

Source: INE. IFL & UC3M / Date: March 2, 2004



Graph R8 ANNUAL RATES OF TOTAL AND CORE INFLATION IN SPAIN



Source: INE, IFL & UC3M / Date: March 2, 2004

- Core inflation in February 2004 is expected to increase to 2.4%, as the result of the expected year-on-year rate in non-energy processed goods prices, 1.1%, and services, 3.5%. Core inflation is expected to grow 2.5%, higher than 2.4% observed in January 2004. The mean annual core inflation rate will fall to 2.5% in 2004 compared to the 2.9% observed in 2003, and it will increase to 2.6% in 2005 (table R5).

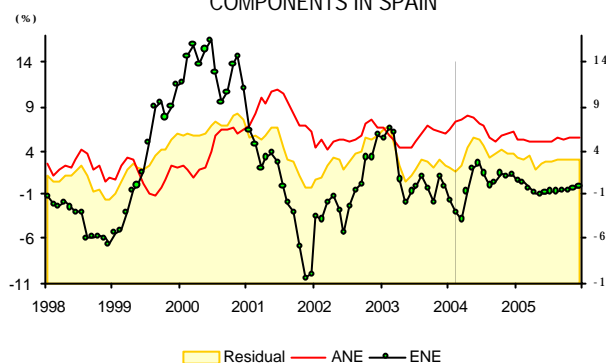
- Core inflation in the EMU in January stayed at 1.9%, the same as the value registered in December 2003. The expectations for the average annual rate are around 1.9% in 2004-2005, so there is fall in the core inflation differential between Spain and the EMU of less than one percentage point.

- With regards to **residual inflation**, the average annual rates of inflation of non-processed food was 6.0% in 2003 and the forecasts are 6.6% in 2004 and 5.2% in 2005. This sector shows the highest inflation rate in Spain.

- Considering the upward new expectations for crude oil prices and the euro/dollar exchange rate, the year-on-year rate of energy prices in February 2004 will reach a negative value of 3.0%, but it will rise to 2.6% in June 2004. Average annual rates of growth are forecast to positive rates of 0.1% in 2004 and a negative value of 0.3% in 2005, both higher than our expectations in the last bulletin (Graph R9).

Graph R7

ANNUAL RATES OF RESIDUAL INFLATION AND ITS COMPONENTS IN SPAIN



Source: INE, IFL & UC3M / Date: March 2, 2004

- Due to energy and non-processed food price fluctuations, a more erratic evolution of commodities prices due to the incorporation of sales prices, and the especially worrisome evolution in services, with a weight of 34.9% and an observed annual rate of growth at the end of 2003 of 3.6% to increase to 3.7% in 2004-2005, the year-on-year rate of growth of **total inflation** fluctuated significantly. From the 3.7% observed in February 2003, it reached 2.7% in May, to increase to 3.0% in August and fall to 2.6% in October and December. Total inflation will stay at around this value in the first quarter of 2004.
- Average annual rates of growth decreased to 3.0% in 2003 compared to the 3.5% observed in 2002. They will fall to 2.6% in 2004 and 2005, compared to the previous forecasts, 2.7% in 2004 and 3.1% in 2005 (table R5 and graph R9).



I.5. MACROECONOMIC TABLE OF SPANISH ECONOMY

MACROECONOMIC TABLE AND INDICATORS (*)					
	Annual Rates				
	2002	2003	Forecasts BIMA(*)		Budget (*)
			2004	2005	2004
Private Final Consumption Expenditure	2.6	3.0	3.3	3.5	3.1
Public Final Consumption Expenditure	4.4	4.6	4.1	3.4	2.9
Gross Fixed Capital Formation	1.0	3.0	3.6	3.9	3.8
Equipment	-5.4	1.9	4.5	5.9	(3)
Building	4.2	3.7	3.2	2.3	3.0
Other products	2.6	2.8	3.3	5.8	(3)
Inventory change (1)	0.0	0.1	0.0	0.0	0.0
Domestic Demand	2.6	3.3	3.5	3.6	3.3
Exports of Goods and Services	0.0	4.0	5.7	7.1	6.3
Imports of Goods and Services	1.8	6.7	6.8	7.4	7.0
Net Exports (1)	-0.6	-1.0	-0.6	-0.4	-0.4
GDP	2.0	2.4	3.0	3.3	3.0
GDP, current prices	6.6	6.7	6.5	6.6	5.9
Prices and Costs					
CPI, annual average	3.5	3.0	2.6	2.6	
CPI, dec./dec.	4.0	2.6	2.7	2.7	
Average earning per worker	3.8	3.9	3.7	3.5	
Unit labour cost	3.1	2.9	2.8	2.7	
Labour Market (Data poll labour force)					
Labour Force (% variation)	3.0	2.6	2.3	2.0	
Employment: Data adjusted from changes in the employment survey					
Annual average variation in %	2.0	2.7	3.0	3.0	
Annual average variation in thousands	312.5	437.0	500.8	515.9	
Unemployment rate	11.4	11.3	10.7	9.9	11.0
Basic balances					
Foreign sector					
Current Account (m. €.)	-18.691	-23.660	-20.247	-19.214	
Net lending or borrowing (% GDP) (2)	-1.6	-2.0	-2.6	-2.3	-2.6
AA.PP. (Total) / Public Administration					
Net lending or borrowing (% GDP) (2)	-0.1	0.0	-0.1	-0.1	
Other Economic Indicators					
Industrial Production Index	0.1	1.6	2.4	2.9	

(1) Contributions to the GDP growth, pp.

(2) In National Account terms. Equipment Goods and other items.

(3) Predicción PGE, 5.0; Predicción BIAM, 4.1.

Source: INE & I. FLORES DE LEMUS

Date: March 02/ 2004

(*) Bulletin EU & US Inflation and Macroeconomic Analysis.

PGE: Presupuestos Generales del Estado.

Section Sponsorship:
Cátedra Fundación Universidad Carlos III de Predicción y Análisis Macroeconómico.



I.6 FORECAST SUMMARY

INFLATION FORECASTS AND EVOLUTION IN THE EMU AND USA (1998-2005)								
	1998	1999	2000	2001	2002	2003	Forecasts	
							2004	2005
TOTAL INFLATION								
Euro-zone (100%).	1.1	1.1	2.1	2.3	2.3	2.1	1.7	1.7
USA (81.5%). ⁽¹⁾	1.1	2.1	3.5	2.6	1.0	2.2	2.0	1.5
A HOMOGENEOUS MEASURE OF CORE INFLATION⁽²⁾								
Services and Non-energy industrial goods excluding food and tobacco.								
Euro-zone (72.34%).	1.4	1.1	1.0	1.8	2.4	1.8	1.7	1.8
USA (55.6%). ⁽¹⁾	1.8	1.4	2.1	2.1	1.5	1.1	1.3	1.8
DIFFERENT COMPONENTS OF THE HOMOGENEOUS MEASURE OF CORE INFLATION								
(1) Services.								
Euro-zone (41.33%).	1.9	1.5	1.5	2.5	3.1	2.6	2.6	2.6
USA (27.4%). ⁽¹⁾	2.9	2.7	3.5	3.6	3.6	3.2	3.1	3.1
(2) Non-energy industrial goods excluding food and tobacco.								
Euro-zone (31.01%).	0.9	0.7	0.4	0.9	1.5	0.8	0.5	0.7
USA (29.0%).	-0.1	-0.5	-0.1	-0.2	-1.5	-2.1	-1.5	-0.3
INFLATION IN EXCLUDED COMPONENTS FROM THE HOMOGENEOUS MEASURE OF CORE INFLATION								
(1) Food.								
Euro-zone (19.53%).	1.6	0.6	1.4	4.5	3.1	2.8	2.3	2.4
USA (14.9%).	2.2	2.1	2.3	3.1	1.8	2.1	3.0	2.6
(2) Energy.								
Euro-zone (8.13%).	-2.6	2.4	13.0	2.3	-0.6	3.0	0.4	-0.2
USA (9.90%).	-7.7	3.6	16.9	3.8	-5.9	12.2	4.7	-2.9

⁽¹⁾ less owner's equivalent rent of primary residence.

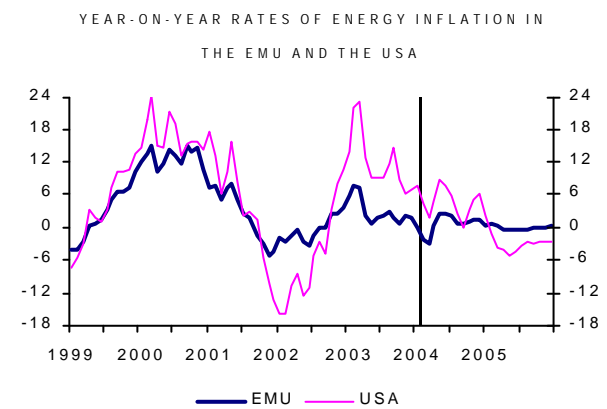
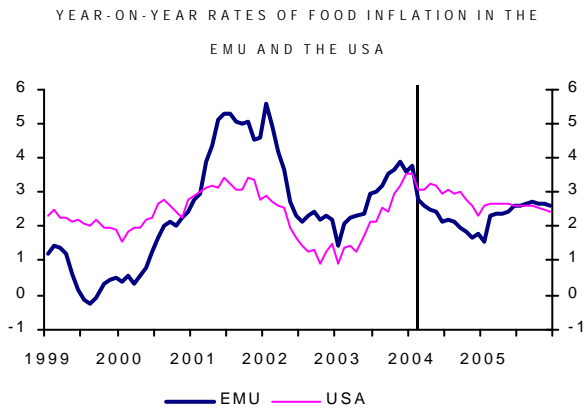
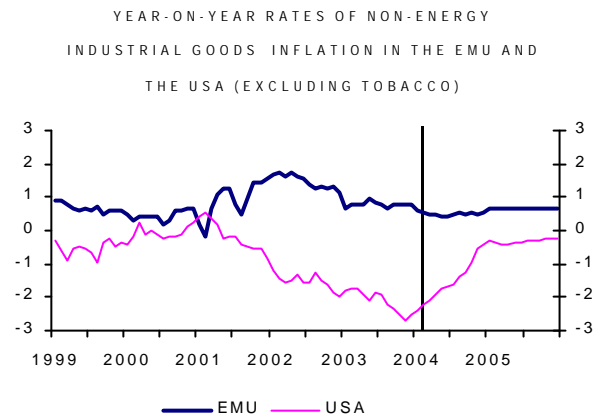
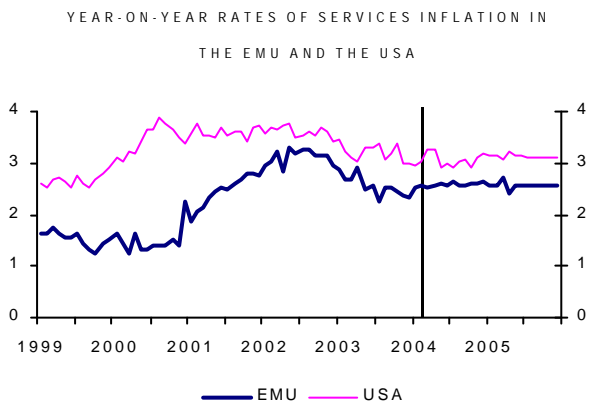
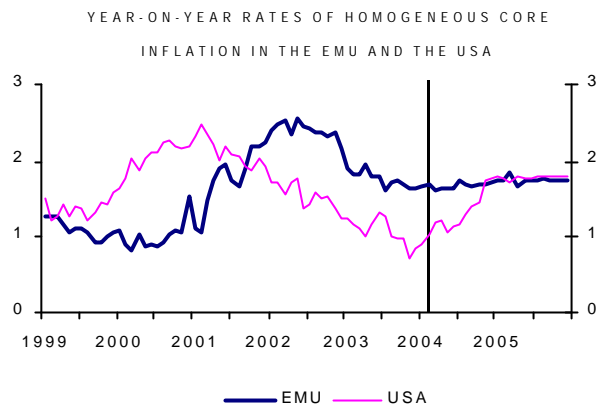
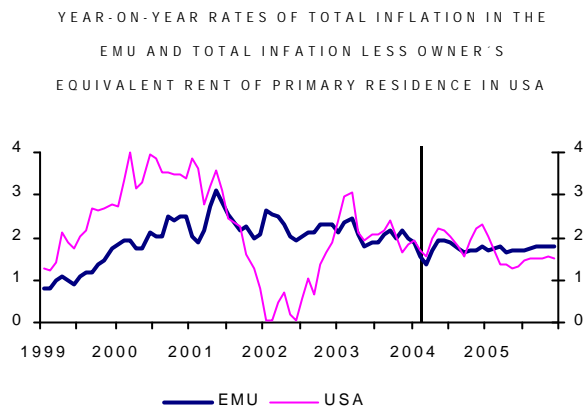
⁽²⁾ This homogeneous measure of underlying inflation does not coincide with the usual measure of core inflation for the EMU nor for the USA. It has been constructed in order to compare the data in the EMU and in the USA.

Source: EUROSTAT, BLS, IFL & UC3M.

Date: March 2/ 2004



YEAR-ON-YEAR RATES OF INFLATION IN THE EMU AND USA



Source: EUROSTAT, BLS, IFL & UC3M
Date: March 2 / 2004



INFLATION FORECASTS AND EVOLUTION IN THE EMU AND SPAIN (1998-2005)								
	1998	1999	2000	2001	2002	2003	Forecasts	
							2004	2005
TOTAL INFLATION								
Spain (100%).	1.8	2.3	3.4	3.6	3.5	3.0	2.6	2.6
Euro-zone (100%).	1.1	1.1	2.1	2.3	2.3	2.1	1.7	1.7
CORE INFLATION								
Services and Non-energy processed goods.								
Spain (81.40%).	2.2	2.2	2.5	3.4	3.8	2.9	2.5	2.6
Euro-zone (84.18%).	1.4	1.1	1.0	1.9	2.5	2.0	1.8	1.9
DIFFERENT COMPONENTS OF CORE INFLATION								
(1) Services.								
Spain (34.87%).	3.6	3.4	3.7	4.2	4.5	3.5	3.5	3.7
Euro-zone (41.33%).	1.9	1.5	1.5	2.5	3.1	2.6	2.6	2.6
(2) Non-energy processed goods.								
Spain (46.53%).	1.4	1.7	1.7	2.9	3.1	2.4	1.7	1.7
Euro-zone (43.26%).	1.1	0.7	0.6	1.5	1.9	1.5	1.2	1.3
INFLATION IN EXCLUDED COMPONENTS FROM CORE INFLATION								
1) Non-processed food.								
Spain (9.40%).	2.1	1.2	4.2	8.7	5.6	5.6	6.6	5.2
Euro-zone (7.69%).	2.0	0.0	1.7	7.0	3.1	2.2	1.1	1.8
(2) Energy.								
Spain (9.14%).	-3.8	3.2	13.3	-1.0	-0.2	1.3	0.1	-0.3
Euro-zone (8.13%).	-2.6	2.4	13.0	2.3	-0.6	3.0	0.4	-0.2

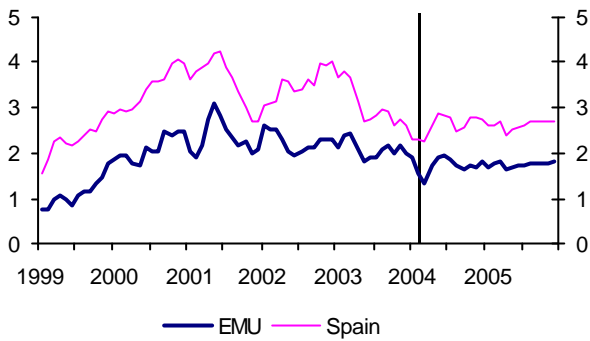
Source: EUROSTAT, BLS, IFL & UC3M.

Date: March 2/ 2004.

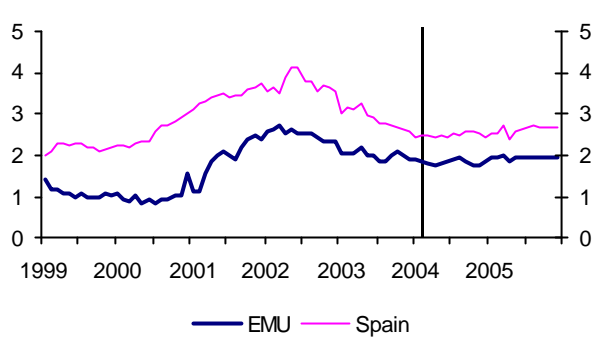


YEAR-ON-YEAR RATES OF INFLATION IN THE EMU AND SPAIN

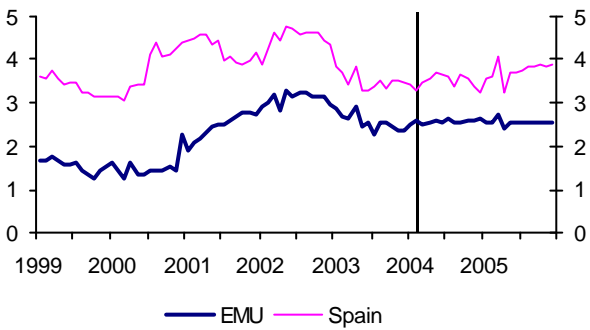
YEAR-ON-YEAR RATES OF TOTAL INFLATION IN THE EMU AND SPAIN



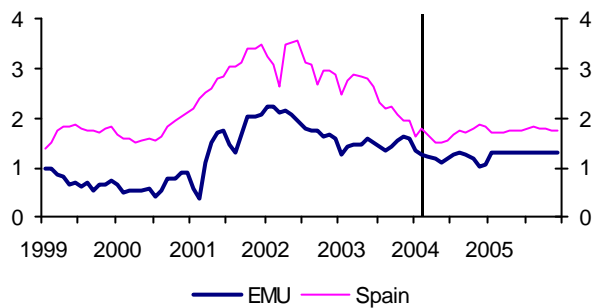
YEAR-ON-YEAR RATES OF SERVICES AND NON-ENERGY PROCESSED GOOS IN THE EMU AND SPAIN



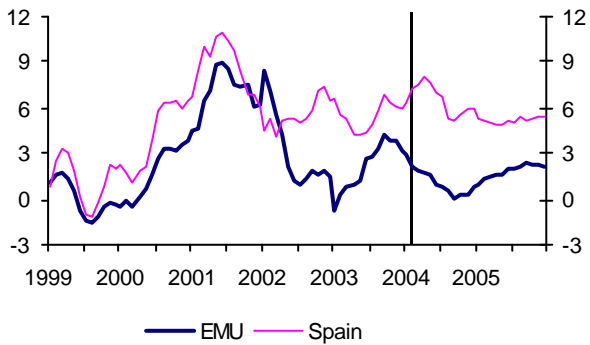
YEAR-ON-YEAR RATES OF SERVICES INFLATION IN THE EMU AND SPAIN



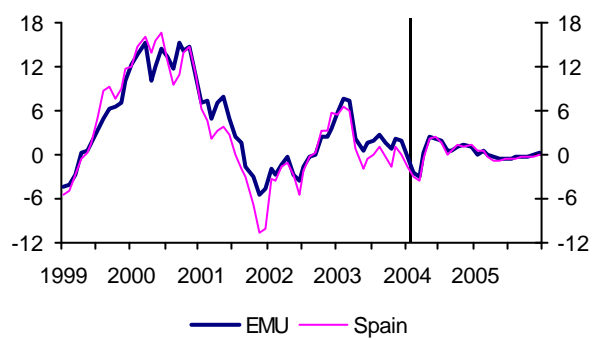
YEAR-ON-YEAR RATES OF NON-ENERGY PROCESSED GOODS INFLATION IN THE EMU AND SPAIN



YEAR-ON-YEAR RATES OF NON-PROCESSED FOOD IN THE EMU AND SPAIN



YEAR-ON-YEAR RATES OF ENERGY INFLATION IN THE EMU AND SPAIN



Source: EUROSTAT, BLS, IFL & UC3M.
Date: March 2 / 2004.



I.7 INFLATION FORECASTS OF DIFFERENT INSTITUTIONS

INFLATION FORECASTS OF DIFFERENT INSTITUTIONS ¹										
	BIAM ²		CONSENSUS FORECASTS ³		IMF ⁴		ECB ⁵		OCDE ⁶	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
EMU	1.7	1.7	1.7	1.7	1.6	-	1.8	1.7	1.5	1.4
USA	1.9	1.7	1.5	1.9	1.3	-	-	-	1.7	1.8
SPAIN	2.6	2.6	2.6	2.6	2.7	-	-	-	2.8	2.9

1 The forecasts are based on CPI in USA and Spain and on HICP in the EMU.

2 Bulletin EU & US Inflation and Macroeconomic Analysis , February 2004

3 February 9, 2004.

4 IMF. World Economic Outlook. October 2003

5 ECB. Monthly Bulletin. Survey of Professional Forecasters. February 2004

6 OECD Economic Outlook. December 2003.

Our forecasts for total inflation in the EMU and Spain are slightly greater than the provisions derived from other institutions because with the methodology applied in our Bulletin, total inflation is breaking down in core and residual inflation. Last one is composed by inflation in non-processed food and energy prices.

The innovations come in different components are transferred in future through different multipliers. The innovations derived from residual inflation are less persistent.

Core inflation in the EMU and Spain is expected to be quite stable, at 1.8% in 2004 and 1.9% in 2005 in the EMU and 2.5% for 2004 and 2.6% in 2005, in the case of Spain. Non-energy industrial goods inflation expectations for 2004 and 2005 for UME and Spain have been revised downward compared with the previous bulletin. Total inflation in 2004 and 2005 will be benefit from an expected lower inflation rate in non-energy industrial goods, but energy prices are expected to increase due to the evolution of crude prices.



II. ANALYSIS OF INFLATION, MONETARY POLICY AND INTERNATIONAL ANALYSIS

II.1 Industrial Production in the EMU and USA.

The Industrial Production Index figure published for December 2003 has behaved as expected in the global index, but it has observed opposite innovations in the different components (upwards in Durable and Non Durable Consumption Goods, downwards in Capital and as expected in Intermediate and Energy), as it can be seen in table 1.

	Forecast for December	Observed in December ⁽¹⁾
Capital	4.4	2.6
Durable	-1.2	0.1
Intermediate	3.0	3.1
Non Durable	-0.1	1.5
Energy	2.5	2.7
Total	2.5	2.3

Working day adjusted data.

Source: Eurostat and UC3M.

Year 2003 has concluded with an average growth rate better than in 2002, but with a similar value to that in 2001 and still far than the previously registered rates. This recovery has been supported mainly by the Energy component and in a more moderated way by Capital and Intermediate sectors. However, Durable and Non Durable Consumption Goods are those who have supported less this recovery. Durable Consumption Goods have registered a negative rate of variation of 4,84% and Non Durable have remained stable.

The average growth expectations for year 2004 and 2005 have changed little with respect to those published in last Bulletin and they are now settled in 2,1 and 1,8% respectively. The biggest contribution is expected from capital and intermediate sectors, while consumption goods will remain in moderated rates of growth and Energy will slow down its growth rates. The expectations of growth for the different sectors are shown in table 2.

	1998	1999	2000	2001	2002	2003	2004	2005
Capital	6.7	2.4	8.1	1.6	-1.5	0.0	3.1	3.1
Durable	4.2	1.3	6.1	-2.1	-5.7	-4.8	0.5	-0.0
Intermediate	3.7	1.9	6.2	-0.5	0.0	0.5	2.7	2.0
Non Durable	2.1	1.2	0.9	0.8	0.5	0.0	0.9	0.8
Energy	1.6	0.8	1.9	1.4	1.0	3.2	0.5	1.3
Total EMU	3.8	1.8	5.2	0.4	-0.5	0.4	2.1	1.8

^(****) Bold figures are forecasts. Working day adjusted data.

Source: Eurostat and UC3M.

Date: February 25th2004



In US, the last published figure corresponds to January 2004 and it has been a slight upwards innovation in the Total index. The sectors have observed upwards innovations in all sectors but Durable Consumption Goods, as it can be seen in table 3.

	Forecast for January	Observed in January
Durable Consumer Goods	0.7	0.3
Non Durable Consumer Goods	-1.3	1.2
Equipment and Supplies	0.9	2.1
Materials	3.3	3.5
TOTAL US	2.2	2.4

Source: Federal Reserve and UC3M

Table 4 shows the updated forecasts. Forecasts for Total IP in 2004 and 2005 have been not modified and remain in 3,1 and 3,2% respectively.

	1998	1999	2000	2001	2002	2003	2004	2005
Durable Consumer goods	7.2	6.9	3.9	-5.8	4.7	2.3	3.9	4.2
Non Durable Consumer Goods	2.3	-0.1	1.7	0.4	-0.6	-1.8	2.2	1.3
Equipment and Supplies	8.1	4.8	5.9	-4.1	-0.6	0.4	3.6	3.0
Materials	5.2	5.7	5.3	-4.5	0.4	0.6	4.4	3.7
TOTAL US	5.6	4.3	4.7	-3.5	-0.6	0.2	3.1	3.2

(1) Bold figures are forecasts.

Source: Federal Reserve and UC3M.

Date: February, 25TH 2004



II.2 United States

In **January**, the U.S. CPI rose by 0.49% from the previous month's figure, as expected: 0.55%, with the annual rate rising from 1.88 to 1.93%.

In **January**, the U.S. CPI rose by 0.49% from the previous month's figure, as expected: 0.55%, with the annual rate rising from 1.88 to 1.93%.

However, there were some forecasting errors. All energy products performed worse than expected. On the other hand, evolution was better than forecast in some food (meats and fruits) and non-durable goods.

Table 5

OBSERVED VALUES AND FORECAST ON CPI IN US January 2004

CONSUMER PRICES INDEX (CPI)	Relative importance Dec. 2003	Annual Growth (T ¹²) observed	Monthly Growth (T ¹)		Confidence Intervals at 80% level (+ -)
			observed (a)	forecasts (b)	
Food (1)	14.4	3.55	0.11	0.67	0.34
Energy (2)	7.1	7.76	4.25	3.07	1.05
Residual Inflation (3=2+1)	21.5	4.94	1.47	1.43	0.41
Non-food and non-energy goods (4)	22.3	-2.29	-0.39	-0.36	0.34
Less tobacco	21.4	-2.39	-0.42	-0.28	0.18
-Durable goods	11.3	-4.00	0.09	0.00	0.28
-Nondurable goods	11.0	-0.51	-0.85	-0.68	0.35
-Non-durable goods less tobacco	10.2	-0.55	-0.96	-0.55	0.22
-Tobacco	0.8	0.13	0.55	-2.01	3.06
Non-energy services (5)	56.3	2.52	0.47	0.56	0.13
-Services less owner's equivalent rent of primary residence (5-a)	32.9	2.95	0.68	0.77	0.18
-Owner's equivalent rent of primary residence (a)	23.4	1.88	0.18	0.24	0.11
Core Inflation (6=4+5)	78.5	1.17	0.23	0.30	0.15
Core inflation less owner's equivalent rent of primary residence (6-a)	55.2	0.89	0.25	0.33	0.16
Core inflation less owner's equivalent rent of primary residence and tobacco	54.3	0.90	0.24	0.37	0.13
All items (7=6+3)	100.0	1.93	0.49	0.55	0.13
All items less owner's equivalent rent of primary residence (7-a)	76.6	1.95	0.58	0.64	0.11

Source: BLS & Universidad Carlos III Madrid

Data: February 26, 2004

Core inflation rose by 0.23% from the previous month's figure, somewhat less than forecast: 0.30%, with the annual rate increasing slightly from 1.15% to 1.17%. The decrease in commodities less food and energy was 0.39%, similar to the -0.36% forecast, with the annual rate increasing from -2.46% to -2.29%. On the other hand, service prices rose 0.47% instead of the expected 0.56%, and the annual rate falls from 2.59% to 2.52%. Core inflation, not including owner's equivalent rent of primary residence and tobacco, and therefore comparable with the underlying rate in Europe excluding food, rose by 0.24% instead of the 0.37% forecast, with the annual rate growing from 0.85% to 0.90%.

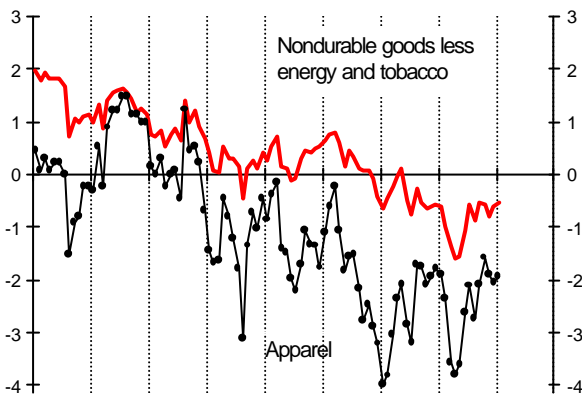


Core inflation rose by 0.23% from the previous month's figure, somewhat less than forecast: 0.30%, with the annual rate increasing slightly from 1.15% to 1.17%.

By components, the index for commodities less food and energy without tobacco decreased by 0.42% instead of the -0.28% expected, with the annual rate going from -2.55% to -2.39%. Durable goods prices increase by 0.09% as opposed to the forecast 0.00%, with the annual rate going from -4.33% to -4.00%. With regards to durable goods, the annual rate of the new car index went from the previous month's -1.85% to -1.22% (see **Graph 2**). Non-durable goods prices, excluding the index for tobacco, decreased by 0.96%, instead of the -0.55% expected, with the annual rate going from -0.60% to -0.55%. Regarding non-durable goods, the annual rate of the apparel index went from -2.06% to -1.95% (see **Graph 1**). And the index for tobacco increased by 0.55% as opposed to the forecast of -2.01%, with the annual rate going from -0.44% to 0.13%.

Graph 1

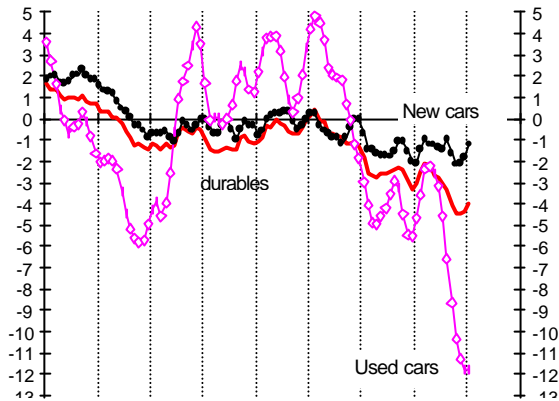
.SOME COMMODITIES.
(YEAR ON YEAR RATES)



Source: Universidad C.III Madrid & BLS / Date: February 26, 2004

Graph 2

.SOMME COMMODITIES.
(YEAR ON YEAR RATES)



Source: Universidad C.III Madrid & BLS / Date: February 26, 2004

The index for services shows an increase of 0.47% instead of the forecast 0.56%. The annual rate decreased from 2.59% to 2.52%. The index for services excluding owner's equivalent rent of primary residence shows an increase of 0.68%, which was less than the expected 0.77%, with the annual rate going from 3.00% to 2.95%. The index for owner's equivalent rent of primary residence increased by 0.18%, instead of the forecast of 0.24%, with the annual rate going from 1.97% to 1.88% (see **Graph 4**).

The difference between the index for services (excluding the index for owner's equivalent rent of primary residence) and the index for commodities less food and energy (excluding tobacco prices) decreased by two tenths to 5.3 points, from the previous month's figure.

Residual inflation increased by 1.47%, as expected, with the annual rate rising from 4.61% to 4.94%. By components, food prices have increased by 0.11%, which was less than expected, as the forecast percentage was 0.67%, decreasing the annual rate from 3.55% to 3.54%. The indexes for meats and fruits explain this deviation in food. The index for energy has performed worse than expected, with an increase of 5.25% as opposed to the forecast 3.07%. Its annual rate has gone from 6.89% to 7.76%.

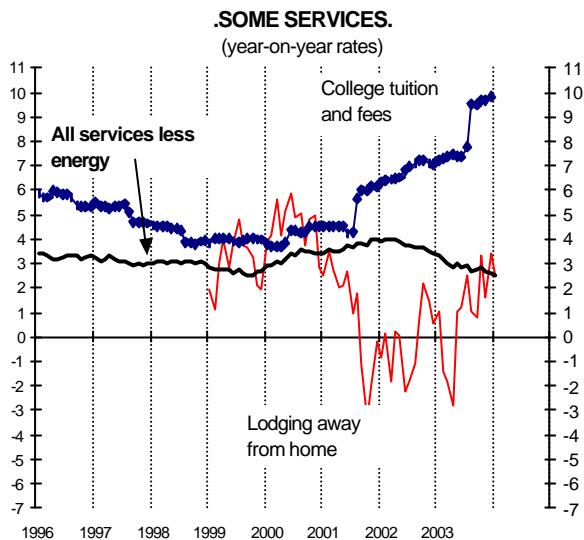
The general index forecast for February is a 0.59% increase, with the annual rate falling two tenths from 1.93% to 1.74%. This expected fall in the annual rate is due to the heavy increases in energy prices last year.

The general index forecast for February is a 0.59% increase, with the annual rate falling two tenths from 1.93% to 1.74%. This expected fall in the annual rate is due to the heavy increases in energy prices last year. We expect core inflation to increase by 0.48%, with the annual rate rising from 1.17% to 1.28%.

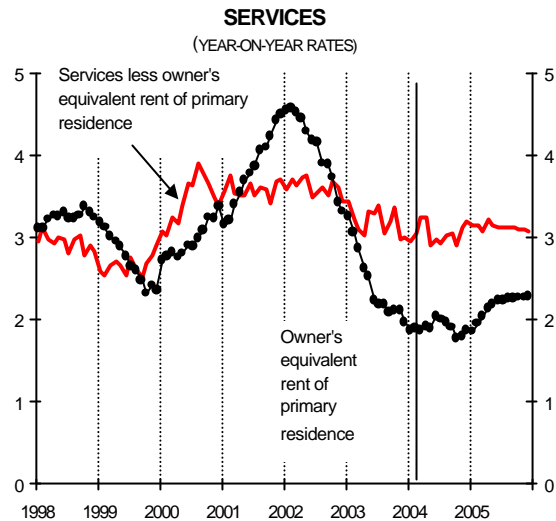
By components, the expected increase in the index for services is 0.46%, 0.11% for the index for owner's equivalent rent of primary residence and 0.70% for the rest. The annual rate of the index for owner's equivalent rent of primary residence will decrease to 1.89%. The year-on-year rate for the index for all other services, on the whole, will increase from 2.95% to 3.04% (see **Graph 4**).



Graph 3



Graph 4



Source: Universidad C.III Madrid & BLS / Date: February 26, 2004

Source: Universidad C.III Madrid & BLS / Date: February 26, 2004

We expect core inflation to increase by 0.48%, with the annual rate rising from 1.17% to 1.28%.

Taking commodities less food and energy into consideration, the expected increase is 0.53%, with the annual rate going from -2.29% to -2.05%. Excluding the index for tobacco, the predicted rise is 0.46%, which would leave the year-on-year rate at -2.23%, as opposed to last month's -2.39%. Durable goods prices are expected to increase 0.02%, leaving the annual rate at -3.82%. Non-durable goods prices are forecast to rise 1.05%, bringing the annual rate from -0.51% to -0.26%. Within the index of non-durable goods, tobacco prices are predicted to increase by 2.33%, which would leave the year-on-year rate at 2.40%.

The expected increase in residual inflation is 0.99%, which would leave the year-on-year rate at 3.59%. With regards to residual inflation, the expected increase for the food index is -0.02%. Energy prices are expected to increase by 2.96%, which would leave the year-on-year rate at 4.48%, as opposed to last month's 7.76%.

For 2004 and 2005, we forecast mean total annual inflation rates of 1.9% and 1.7%, respectively; this is the same forecast as last month. We have considered a stable effective exchange rate; a progressive, but slow, increase in the level of use of production capacity, and crude oil prices somewhat worse than in last month's report.

For 2004 and 2005, we forecast mean total annual inflation rates of 1.9% and 1.7%, respectively; this is the same forecast as last month. We have considered a stable effective exchange rate; a progressive, but slow, increase in the level of use of production capacity, and crude oil prices somewhat worse than in last month's report (see **Graph 6**).

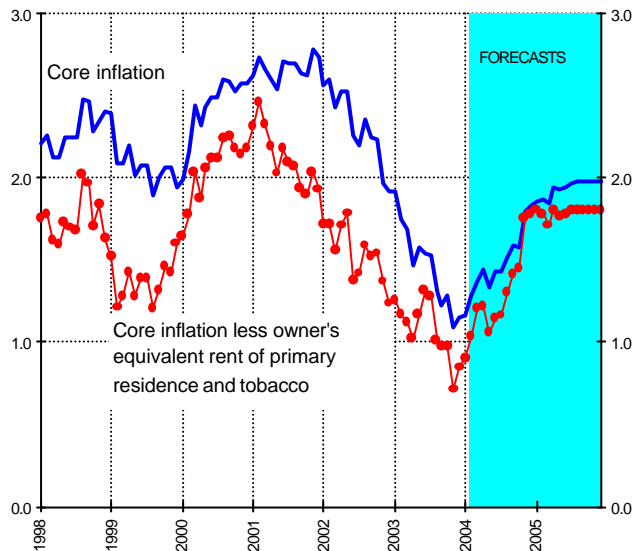
Indeed, we expect the annual core rate to grow rapidly this year from today's 1.2% to the 1.8% forecast for December. It should then become stable at a somewhat higher level throughout 2005. This forecast is slightly more moderate than the one provided in last month's report (see **Graph 5**).

In 2004, when we add food and energy prices to this context of rapid core inflation growth, this generates a general CPI annual mean growth rate of around 1.9%, with the lowest level in March (1.6%) and the highest in June (2.1%). This is explained by the evolution of energy prices in 2003 (see **Graph 6**).

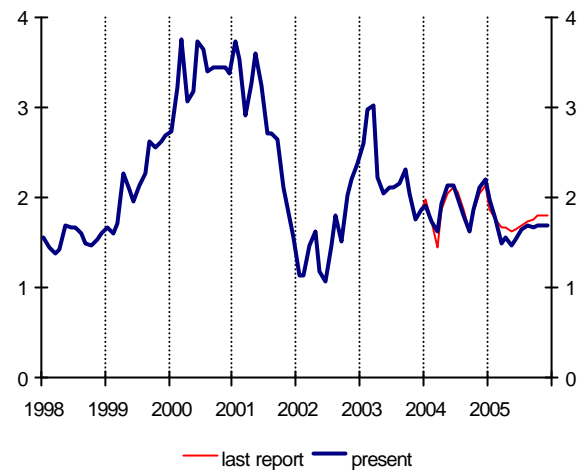


Graph 5

(year-on-year rate)



Graph 6

CHANGE IN THE EXPECTATIONS OF GLOBAL CPI
(Year-on-year rate)

Source: Universidad C.III Madrid & BLS / Date: February 26, 2004 Source: Universidad C.III Madrid & BLS / Date: February 26, 2004

Table 6 shows the average annual growth rate forecasts for 2004 and 2005 for the different components of the US Consumer Price Index (monthly and annual rates can be found in **Tables A6A and A6B** in the Appendix).

Table 6

AVERAGE ANNUAL RATE OF GROWTH IN US (*)

CONSUMER PRICES INDEX (CPI)	2000	2001	2002	2003	2004 (forecasts)	2005 (forecasts)
Food (1)	2.3	3.1	1.8	2.1	3.0	2.6
Energy (2)	16.9	3.8	-5.9	12.2	4.7	-2.9
Residual Inflation (3=2+1)	6.8	3.3	-0.8	5.3	3.6	0.7
Non-food and non-energy goods (4)	0.5	0.3	-1.1	-2.0	-1.3	-0.1
Less tobacco	-0.1	-0.2	-1.5	-2.1	-1.5	-0.3
-Durable goods	-0.5	-0.6	-2.6	-3.2	-2.5	-0.4
-Nondurable goods	1.4	1.1	0.4	-0.7	0.0	0.2
Non-energy services (5)	3.3	3.7	3.8	2.9	2.6	2.7
-Services less owner's equivalent rent of primary residence (5-a)	3.5	3.6	3.6	3.2	3.1	3.1
-Owner's equivalent rent of primary residence (a)	3.0	3.8	4.1	2.4	1.9	2.2
Core Inflation (6=4+5)	2.4	2.7	2.3	1.5	1.5	1.9
Core inflation less owner's equivalent rent of primary residence (6-a)	2.2	2.3	1.7	1.1	1.3	1.8
Core inflation less owner's equivalent rent of primary residence and tobacco	2.1	2.1	1.5	1.1	1.3	1.8
All items (7=6+3)	3.4	2.8	1.6	2.3	1.9	1.7
All items less owner's equivalent rent of primary residence (7-a)	3.5	2.6	1.0	2.2	2.0	1.5

(*) Monthly and annual growth rates can be found in tables A6A and A6B in Appendix

Source: BLS & Universidad Carlos III Madrid
Data: February 26, 2004

THE CAPITALISM TO COME:

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PART I : HOMO POSTECONOMICUS

INTRODUCTION

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Summary

SUMMARY

THE CAPITALISM TO COME aims at exploring how three key signs of the times – the growing importance of knowledge as a production factor, the gradual globalisation of markets and other forms of social contact, and the development of information and communication technologies – will influence the profiles of key institutions in the capitalist system – private ownership of productive means, generalisation of markets as distribution instruments, State control and free enterprise- in the light of more or less recent developments in economic theory. As a fundamental part of the capitalist system, homo economicus is the natural place to start the exploration, and this is the subject of Part I which, in three chapters, will show how homo posteconomicus is psychologically denser, rationally more complex and socially less individualistic than his predecessor.



The first chapter of Part I is introductory and also partially panoramic. As an introduction, it describes some essential and well-known tools taken from Decision Theory and Game Theory, adds some elements of cognitive psychology which have even more recently been added to the economic theory toolbox and emphasises their bi-directional nature, with psychological facts helping to explain some economic phenomena and economic concepts helping us to fully understand the psychological facts. This interaction, together with more complex notions of rationality than the usual instrumental rationality, helps us to consider a broad range of new features appearing in the immediate future of the capitalist system.

The first feature to be emphasised is the significant appearance of altruism, solidarity and fairness. This type of conduct, observed in the laboratory, which may possibly arise as a consequence of economic recovery, are starting to fit into the conceptual framework of the Economy and could mitigate the problems that the State is beginning to suffer as the provider of a certain safety net, as we shall see in chapters 9 and 11 and the Epilogue. We have used a specific cognitive dissonance known as confirmatory bias to introduce what is known as postmodernism, very probably the cultural attitude underlying the capitalism that is being formed. In the modern world, the symbol of knowledge and power is the tree; in the post-modern age, knowledge and power are represented by a climbing plant with multiple forms of intellectual authority and political power. This fundamental break will be like an underground current fertilising the land through which the following chapters will lead us, and it will be expressly manifest when, in chapter 8, we talk about the market as the emblem of post-modernism, as such only comparable with the Internet. Other features of post-modern capitalism that will appear later either have to do with a certain psychological feature called procrastination or the fact that it is technically impossible to accept an ultimate commitment, either due to procrastination itself or to the lack of specific social institutions. This leads us to all the aspects related to the idea of mutual trust as a possible substitute for the impossibility of having any confidence in apparently firm promises or commitments when the situation does not allow for a "self-enforcing" solution.

The chapter thus goes from the psychological and rational aspects of an isolated individual, to the more social aspects related to expressive rationality. The first suggestion to be considered here is that mutual trust (together with the subsequent decrease in transaction costs) will more easily arise in small communities (we will return to this in chapter 6, where we will emphasise that they can be sustained by ICTs) than in large communities which will have to achieve mutual trust by other means which, like delegating, will act as substitutes of trust and partially solve the technical impossibility of commitment. In small communities, the identity that holds them together is a factor to be considered when explaining a large number of phenomena. According to the analysis performed in this chapter, to which we will be returning in chapter 6, identity-based communities can be either stable or volatile. In the first case, we would expect rules of thumb facilitating interaction and saving transaction costs to flourish. In the case of volatile identity-based communities – precisely because of the potential of ICTs – the convenience of establishing rules of this kind will give rise to multiple business opportunities related to such rules, possibly disguised as lifestyles, requiring unusual management methods.

These new businesses and these new management methods, due to the existence and volatility of identity-based communities, will introduce the last features that I wish to emphasise. Different languages will arise for each community as signs of their identity, and linguistic meanings will be as volatile as the markets, giving rise to new ways of advertising products in a Babel in which debates will proliferate as a way of reaching collective decisions or consensus in specific forums, of which the Social Forum arising from Porto Alegre or the Economic Forum created in Davos are just two examples that will rapidly be copied.

Finally, the capitalism to come will demand specific political forms. So far, we can expect an increase in the number of political organisations and a reduction in their size, more involvement in these organisations and the need to strengthen the impunity of individual ideas.



INTRODUCTION

Homo economicus is possibly, or certainly, the best articulated part of the conceptual framework sustaining capitalism as an economic system. Man, as a synonym of human being, inasmuch as he operates in an economic scenario – that is, as an initial approximation, in a world related to the production, distribution and consumption of goods and services – is not as simple as to merely pursue his own benefit or act as a rapid calculator of costs and profits. Man is also concerned for those who are close to him, for those he deems worthy of sacrifice. His relationship to the work from which he obtains his income is more complex than the mere provision of well-defined services in exchange for a salary on which to live and occasionally, if he is a scientist for instance, his conduct appears to deviate from the mere sale of his abilities. Not only does he consume and produce, but he is also constantly generating intangible assets such as language, a sense of community or signs of identity, and what distinguishes him most from the traditional caricature of an economic agent is not only the maximisation of expected utility subject to budgetary restrictions, but he is also conditioned by certain psychological restraints, so that his decisions in certain fields and circumstances can only be explained by notions of rationality other than the instrumental one which has identified homo economicus to date. Homo posteconomicus is psychologically denser, rationally more complex and socially, less individualistic.

It is easy to argue that man has always been closer to this post-economic figure than the caricature used by theoretical economists; but theory was busy enough concentrating on the implications of functional or instrumental rationality for the capitalist market system, and its research programme therefore exhibited a wise parsimony, postponing the relevant complications for later when, on the one hand, the system revealed phenomena of major importance which could not be explained by routine tools and, on the other, the conceptual framework was ready for new tools to be designed. That moment arrived not too long ago, and we can now use these new tools to provide a better explanation of important observed phenomena. We are also capable of deducing implications from the new ideas, revealing what we believe will be highly important phenomena.

This first part of THE CAPITALISM TO COME aims at exploring some of the characteristics of this post-modern man who, from an economic perspective, we will be calling homo posteconomicus, whose characteristics reveal profound social changes, helping to solve a number of intellectual puzzles. This part consists of three chapters contemplating individual economic agents as consumers, producers and intermediaries, respectively. To call a consumer of goods or services a user is far from a surprise and breaks with no tradition. Faced with the decision to consume, individual agents appear to act as passive users of the system who, in view of the prices generated by this system, decide how to spend their income. Indeed, the word user denotes a certain passive nature; although we will see how, even in consumption, users are not so passive. It is much more surprising to suggest, in the titles of chapters 2 and 3, that these more or less passive users can be producers, agents using the system (a notion of which we are not yet sure) not only to obtain income, but also to explore its dark side, revealing hidden “truths” through scientific methods and helping to identify previously unknown ways of creating wealth, and also intermediaries putting certain agents in contact with others, using them to produce the languages, the rules and the customs that define a community, and to benefit from knowing that this community is structured in a certain fashion.

The word user is not therefore used as a synonym of individual agent in a routine or innocent manner; it is intended to shock and transmit a message: individuals continue to be the yardsticks of how an economic system such as capitalism works, and their behaviour is what, in the aggregate, defines the system to which it also adapts. But this behaviour is not as simple and passive as before, and it extends to fields which did not previously seem to be subject to individual choice, such as the creation of language, rules, networks or science.



CHAPTER I.1. USERS AS CONSUMERS

It is clear in the Introduction to this PART I of THE CAPITALISM TO COME that I will be considering individual agents as users of the economic system, in this case capitalism. And these users are not only consumers, but also producers who make use of the creative opportunities provided by the system, and intermediaries who make use of the system's social interaction to create rules of conduct, norms, values and culture. But it is as consumers that the rationality problems underlying the decisions that necessarily affect these users' beliefs, the action they decide to take and the results of this action in their own context, are revealed in a way better fitted to academic custom. Therefore, this first introductory chapter will be structured along the general lines of rationality, introducing notions that will be used in later chapters, thus gaining in clarity what may be lost in length. However, this more or less theoretical order will not prevent me from introducing many new phenomena and characteristic features of capitalism in this first chapter, phenomena and features that will be studied in more depth in later chapters. This first chapter, therefore, is not only introductory but also partly panoramic.

I.1.0 Introduction

When we narrowly conceive Economics as solely centred on the allocative aspect of the system, the question of rationality is nearly always approached until very recently as a problem of choice of the means available for a certain purpose, since it is not classified as a problem, thus eliminating any possible psychological density in individual agents or users. The first section of this chapter is concerned with this instrumental or functional rationality, for which we will not only have to take uncertainty into consideration, but go one step further from what is called Decision Theory, and include the considerations that necessarily arise when the environment is not inert, but consists of other users with whom there is a state of mutual dependence, as characterised and contemplated by Game Theory. In the context of this study of instrumental rationality, we must contemplate the attempt, recent in spite of certain precedents, to integrate Economics and Psychology, both considering the impact of certain well-documented psychological tendencies in economic decisions, and attempting to explain these tendencies in typically economic terms. In this first section, therefore, we will not only be introducing very useful basic notions, but we will also be referring to a constellation of ideas concerning the phenomenon of altruism and the difficulty of commitment as two features that cannot be ignored if we are attempting to imagine the drift of the economic system in which we live.

However, if we enlarge the scope of Economics to include more than mere allocative aspects and consider other issues configuring the system's social setting, we will find social institutions, norms, rules of thumb and cultures requiring our attention both when attempting to explain them and when suggesting economic explanations for phenomena such as the family, the use of a medium of exchange, economic development or other macroeconomic issues. In this second direction, we will realise that we have to explore not only the suitability of the means to certain ends, but also the determination of such ends, and for this we will have to go further than instrumental rationality, as we do in the second section of this chapter, where we explore procedural rationality, expressive rationality and communicative rationality. This exploration will give rise – besides studying "rules of thumb" as an expression of procedural rationality – to considering, in the first section, the role of identity (group identity, for instance), mutual trust in decision-making and the emergence and maintenance of behavioural patterns and, in the second section, the origin and role of language in the emergence and maintenance of these patterns, and the "logic" of the debates between individuals which are present in all social decisions.

Throughout the chapter, I attempt to provide reasons, tentative for now, to justify my belief that altruism, the substitutes of impossible commitment, patterns of behaviour, the conditioning factors emerging from identity, the proliferation of languages and the specific design of the debates are features that are already starting to become clear. We can only hope that they become firmer and defined with some degree of precision in the capitalism to come.



I.1.1. Instrumental rationality

Homo economicus is the caricature of man which, in the throes of instrumental rationality, maximises his utility function by choosing from the different combinations of goods he can purchase with his income. This utility function is a function which assigns a real number to each consumption combination so that this real number is higher the more the agent appreciates the consumption combination in question.

Identifying a human being with a mathematical function is no doubt reductionist, but it is analytically fruitful, and we can find some consolation for the continuous use of the caricature in the knowledge that there are very simple axioms guaranteeing the existence of this utility function. Although I have no intention of including well-established analytical results here, it would be a good idea to mention some of them when they can be used to lead us elsewhere. As we will see, from the theory of individual choice we will go to the theory of expected utility, and this will lead us to the possibilities and challenges of a field of Economics that we could call Psychoeconomics.

Let us start by admitting the axiom that users are capable of comparing pairs of combinations of goods and deciding which of the two is preferable. If this pre-order is complete, reflexive and transitive, and a given technical condition is satisfiedⁱ, we know that it can be represented by a continuous utility function that assigns greater real values to better preferred consumptions. We now find it easy to understand the idea of the instrumental rationality of a consumer in conditions of certainty. It consists of choosing the affordable (considering income and prices) combinations or combination of goods which maximises the utility function.

What we will attempt to discover in this first section is how altruism and the difficulty of acquiring commitments (or, better still, its substitutes) are two aspects that will very possibly characterise and condition the capitalist system and are perfectly coherent with instrumental rationality. There is nothing in this rationality to hinder the practice of altruism, which appears to be promising; but this instrumental rationality makes it very difficult to adopt firm and credible commitments, which is not so promising unless we find reasonable substitutes for this capacity for commitment without which the capitalist system finds itself in difficulties.

I.1.1.A. Altruism

There is a series of increasingly familiar phenomena which I believe will persist and condition the development of the capitalist economic system. They could all possibly be grouped together under the label of altruism, but we can be more specific. The activities of many young people who regularly care for the sick or elderly or spend their vacations helping the dying and alone in hospices, in a totally disinterested manner, are examples of what is indeed altruism, and is also known as solidarity. People who use part of their wealth to fund foundations aimed at the common interest can also be called altruists, even when the purpose of the foundation in question can not be classified as solidarity. There are also many examples of people who are in a position to obtain other people's property (for whatever reason, from debts or even by force) and refrain from doing so because of what they see as fairness, justice or other similar concepts. This altruistic or equitable conduct has to be explained if we are to understand how it arises and therefore be in a position to express an opinion on how valid it will be in the futureⁱⁱ.

With regards to the coherence of such conduct with instrumental rationality, it is sufficient to assume that the utility of others is an argument of one's own utility, something very close to the origin of the word altruism; but if we wish to be more specific, distinguishing between different types of altruism, we have to extend the theory of rational choice to situations of uncertainty. To do so, we have to consider objects of choice as lotteries or distributions of probability allocating a certain probability to obtaining a certain cash prize within the distribution support. If we now add two more specific axioms to those characterising the continuous utility function, we can construct what is understood as the



standard formalisation of instrumental rationality. We first add the axiom guaranteeing continuity in this case of uncertainty. For any three lotteries ordered by prize, there is always a probability according to which a convex combination of the best and the worst is indifferent to the intermediate one. We then add the well-known and controversial axiom of independence. According to this axiom, if lottery 1 is preferred to lottery 2, any convex combination of lottery 1 and any third lottery is preferable to the same convex combination of the second with the third (the same applies to indifference). It seems reasonable, but the Allais paradox gives us examples which are apparently not pathological but nevertheless violate the axiomⁱⁱⁱ. But if all these axioms are given, von Neuman and Morgenstern showed that there is a utility function (amounts of money, for instance) which orders lotteries according to the mathematical expected value of that function. To be rational from an instrumental perspective is to comply with these axioms, and the conduct of all individual agents (or users) is governed by maximising Von Neuman and Morgenstern's expected utility function^{iv}.

Once again, altruism could be conceived as the inclusion of another's rewards in one's von Neuman and Morgenstern's utility function; but, because of the same considerations as before, we have to transcend the Decision Theory in which we have been operating and consider Game Theory, to which we will often need to refer.

Although the following could be described in a more general and detailed way, we will use a simple case for descriptive purposes. Let us suppose that there are two players, each of whom is equipped with von Neuman and Morgenstern's utility function and a set of strategies from which to choose. What each of them wins with a certain strategy depends on the strategy of the other. The combination of strategies is a pay-off matrix indicating what each of them wins in terms of von Neuman and Morgenstern's utility with each strategy, given the strategy of the other. The following examples will be of help.

The first three examples are described in the so-called normal form. In the game of coordination there are two Nash equilibria, (LL) and (RR)^v, in which the first entry of each pair refers to the first player's (or row player) strategy and the second to the second player's (or column player) strategy, since in each of these equilibria each player is doing what gives him the greatest possible return, given what the other is doing. Note that only (L L) is Pareto optimal since, for any other pair of strategies, both players would prefer to be in another cell.

	L	R
L	10.10	0.5
R	5.0	1.1

In the game of the prisoner's dilemma, the two players have a dominant strategy, R, so that the only Nash equilibrium is (R,R), less desirable for both of them than the Pareto optimum (L, L)

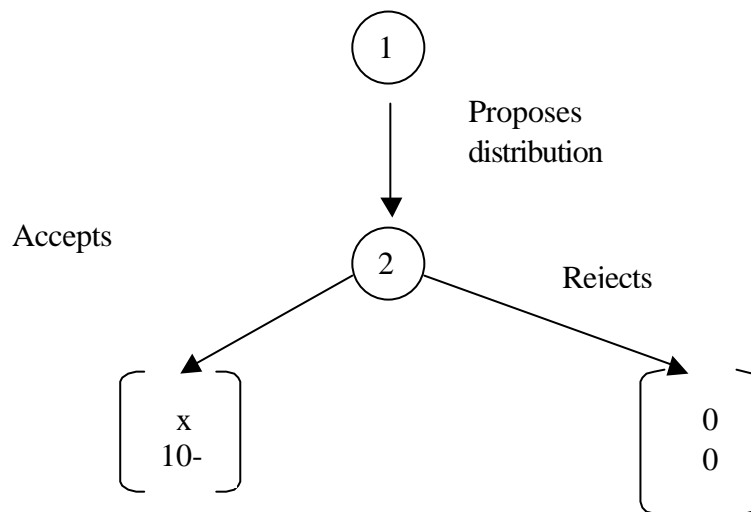
	L	R
L	10.10	0.15
R	15.0	1.1

In the game called the battle of the sexes, both players prefer their strategies to coincide, so that both (L L) and (R R) are Pareto optimal; but they each prefer one of the optimums over the other. Player number one – row player- prefers (L L) to (R R), exactly the opposite to what player number 2 – column player - prefers.



	L	R
L	3.1	0.0
R	0.0	1.3

The third example is described in the so-called extensive form which takes into account the order in which the individual agents involved in the relevant strategic situation act or play. The figure shows the ultimatum game, a game in which player 1 offers player 2 a certain distribution of 10 euros (for instance) between himself (x) and the other ($10-x$). If player 2 accepts this distribution, they win x and $10-x$, respectively, and if player 2 rejects it, neither of them wins anything. It is apparently obvious that if player 2 is offered any positive amount, however small, he will accept player 1's proposal (or ultimatum).



Laboratory experiments, however, show that player 1 usually proposes distributions close to or around $x = 60$. As the work of Fehr and his different co-authors has repeatedly shown, this type of fair conduct is quite widespread.

One of the reasons why these games have been introduced is because we will be needing them later. Another is to use them as examples of what I have been calling altruism. Strictly speaking, altruism is the dependence of the value of one player's utility on the other's utility. An example of this can be obtained by comparing two alternative matrices of the battle of the sexes, differentiated by the pay-off matrix.

	L	R
L	3.1	0.0
R	0.0	1.3

	L	R
L	2.0	0.0
R	0.0	1.2

If the left-hand matrix merely reveals that each player's pay-off, as in all games, depends on the other player's strategy, and we postulate that there is no altruism, altruism has then arisen on the right-hand matrix, because player 1's (2) von Neuman and Moregenstern's utility has diminished because he is forcing 2 (1) to do something that he likes less than the alternative. What we call solidarity, as a specific form of altruism, can be similarly explained,



although it is clearer if we understand it as the decision not to use a dominant strategy in the prisoner's dilemma. Finally, fairness, as another specific form of altruism, is understood as player number 1's decision, in the ultimatum game, not to exploit player number 2, offering for example, $x = 99$.

This not very orthodox way of presenting altruism in an overall sense has the advantage that it shows that the natural limits of solidarity and fairness appear to be this side of innate. Can we speak of rational solidarity if failing to use my dominant strategy destroys me? Can we speak of rational fairness if not offering $x = 99$ is not due to the threat of a suicidal vengeance of player number 2, breaking the deck and rejecting the offer, but to some innate sense? These rhetorical questions are leading us where I want to go now, not so much to how altruism influences allocation but rather how it arises and persists.

There are several possible explanations, each of them risky and based on speculation. They are now described briefly but we will be returning to them later. The first is that altruism, solidarity and fairness are innate psychological features the rationality of which should not be questioned and the implications of which should be pursued. This attitude is becoming stronger as Psychoeconomics becomes consolidated, and if these psychological features had not previously been used as raw data in economic analysis it was because they did not appear to be sufficiently widespread, or simply because they did not fit in with the way we see things. It is perfectly natural to think that, with new glasses, we will be able to contemplate phenomena that are currently seen as abnormal, but could be classified as significant features of our economic system in the future. We will be taking another look at this in the following section.

The second, and risky, explanation of the existence of altruism, solidarity and fairness is that they are examples of endogenous conduct which only evolve over time for certain size pay-offs. We could argue, then, that unlike the first explanation, these type of conduct have not always existed, half hidden, but that they are starting to appear now in a much more decentralised world, not subject to an absolute authority and in which interpersonal relationships are starting to transcend our most immediate environment. The third explanation is complementary to the second, and it would emphasise, in a speculative manner that will be further developed in later chapters, that these phenomena arise and persist because they are replacing other more centralised types of social organisation, such as the State, for instance, and to mitigate the effects of the latter's progressive diffumination.

I.1.1.B. Impossible commitment and its substitutes

The axiomatic characterisation of utility functions give instrumental rationality a certain depth; but Decision Theory or Game Theory, as expressions of this rationality, are so general that they can aspire to explaining practically anything, in the worst case with the help of some additional hypotheses. We have already seen in the previous section that, although altruism as such can easily be accommodated in the usual conceptual framework, so-called solidarity and fairness require changes in the framework, just like many other more resistant anomalies that will be appearing and have already been mentioned. They include the Allais paradox. Allais, based on psychological experiments conducted by Kahneman and Tverski, questioned whether the axiom of independence could act as the basis for a theory of choice in conditions of uncertainty. In the seventies, these two psychologists published the results of many more psychological experiments which they later used to define their own psychological decision theory. At the end of the eighties, Rubinstein made an attempt to explain the Allais paradox based precisely on the psychological fact that, in practice, the human mind is unable to distinguish between small differences in rewards or probabilities. The principle of independence can be re-formulated for elements from different classes of equivalence, within which the elements are similar in the sense that they are indistinguishable. For economists, this promises a new line of economic analysis, with some precedents, that we could call Psychoeconomics, which would naturally also aim at using the aforementioned economic tools to explain specific psychological phenomena such as these "similarities" of perception.

If we now concentrate on Psychoeconomics, we find that there are two investigative strategies for each detected and documented psychological feature. We can apply



psychology by including this feature in economic analysis, giving rise to new theories and defining the notion of homo posteconomicus. Or we can attempt to explain this feature using economic theory tools, in order to preserve the notion of homo economicus. In this section, I will attempt to examine these strategies in the context of two psychological features that I believe are important: procrastination and confirmatory bias. An examination of the former will help us to detect the difficulty of commitment and the lack of suitability of its substitutes. An examination of the confirmatory bias will bring us face to face with a defining feature of postmodernism. And I will thus attempt to continue to catalogue the features of the capitalism to come.

I will start by examining confirmatory bias. Rabin has enlightened us about this type of bias by summarising many of the psychological experiments carried out. Briefly, it consists of the tendency to disregard evidence that contradicts our prior hypotheses, incorrectly interpreting evidence by making it say what we believe it should. I am unaware of attempts to explain this phenomenon based on economic ideas, although there are certainly suggestive strategies, from the use of the previously mentioned similarities idea to the application of results explaining why information is rationally rejected and in which circumstances. There are, however, surprising applications of this confirmatory bias to the economic analysis of some phenomena; for example, the work in which Rabin and Schrag have introduced confirmatory bias into Agent/Principal Theory. When the Agent suffers from confirmatory bias and the Principal knows that he does, the latter has to take it into consideration when drafting the optimal contract with the Agent. One of the most curious characteristics of this new optimal contract discovered by these authors, which we can easily imagine, is that the contract will not be between the Principal and the Agent but between the Principal and several Agents, the more the better, and regardless of their ability to do the job. The Principal will thus end up adopting what we could call an "average" of what these Agents recommend. This is very like the postmodernist "everything goes", a useful slogan for understanding a world in which power has been relieved of authority and in which we would expect to find it in many fields, from financial consultancy or the selection of scientific results (with amazing consequences) to the field of discussions concerning party politics. We are therefore led to suspect that this postmodernism would be a feature (potentially dangerous and threatening, I believe) of the capitalism to come. On the one hand, no-one in today's knowledge society is unaware of the existence of cognitive bias and dissonance, and specifically confirmatory bias. On the other, the widespread use of ICTs provides access to the opinion of a large number of agents in practically any field, including medicine, where it is increasingly true that patients visiting their doctors are better informed about their possible complaints than the doctors themselves.

Let us set this postmodernism on one side for a moment, and examine procrastination. This phenomenon is evidence of the impossibility of adopting commitments. This "leave for tomorrow what you can do today" is usually explained with an example related to addiction. I cannot undertake to stop smoking tomorrow, which is what I really want to do, because when tomorrow comes it will be today and what I will want to do is to stop smoking....tomorrow. This phenomenon receives several names, depending on the context: we are referring to the lack of credibility of a promise or a threat; to violation of Bellman's Principle in a dynamic programming problem or to games in which equilibriums are not perfect in sub-games. In all these cases, the key factor is the consistency of the conduct in question over time. We can, as always, attempt either to explain or apply this psychological feature known as procrastination.

As for the explanation, it has been attempted by postulating intertemporal hyperbolic discount, which indeed produce time-inconsistency and, therefore, procrastination. Because of this type of discount, the marginal rate of substitution between consumption on two consecutive days, for instance, is not always the same: I may rather see a film today than see one tomorrow with popcorn, whereas today I may rather see a film on 30.XII.04 with popcorn than see one without popcorn on 29.XII.04^{VI}. It does not appear to be extremely irrational, but it is a little ad hoc. Alternatively, Rubinstein, based on experiments conducted in Tel Aviv and Princeton, has effectively attempted to show, once more, that time-inconsistency can be explained by the cognitive dissonance known as "similarity", without having to resort to an ad hoc form of the utility function.



The most suitable application of procrastination or time-inconsistency for our purpose is the use of this feature to explain inflationary bias. Consider the prisoner's dilemma, now applied to a game between a government (player 2) and a union (player 1), with the same pay-off matrix as before, which now has a specific interpretation.

	L	R
L	10.10	0.15
R	15.0	1.1

The union controls nominal wages and can maintain (L) or increase them (R). The government controls prices, and can maintain (L) or increase (R) them. The pay-off matrix shows each player's preferences. For example, the government would like to increase prices while the union maintains nominal wages in order to increase employment when real wages fall, but the union would like (RL) with an actual wage increase. These preferences are such that a government announcement of steady prices is understood as a wish to deceive the union into maintaining salaries, before prices are actually increased. The equilibrium result is naturally (RR), where both salaries and prices increase. This is an inflationary bias that cannot be avoided because the government does not have the technical ability to commit to play L. Heuristically, this result appears to justify delegating control over prices to an independent Central Bank with preferences avoiding time-inconsistency, or any other of the continuous appeals for the State to be substituted by independent regulatory agencies.

What I would like to know is whether these substitutes of the capacity of commitment will be a feature of the capitalism to come or not. To further complicate the matter for a moment, I suggest that there are other ways of solving time-inconsistency, or the problems of credibility associated to it, other than delegating in independent agencies (including a Central bank), and that the tension between them is related to the doubtful pre-eminence of the State, which we will be studying in a later chapter.

Indeed, following Auman, I have elsewhere suggested and often repeated^{vii}, that it is possible that, if time-inconsistency is not common knowledge but only mutual knowledge of order of N,N finite, we can achieve the desired equilibrium. Of course, there are other ways, besides this suggestion, of avoiding harmful bias due to time-inconsistency and the need to delegate in independent agencies; for example, when a government or State obtains a reputation, at a price, by repeating the game. In our game, if the Government is willing to maintain prices even if the union increases salaries, the system will suffer from unemployment again and again, but this "price" may be sufficient for the union to admit that it is faced with a hard government and maintain nominal salaries, thus ending up with (L,L). If my suggestion is of interest it is because it leads me to speculate about the conflictive features of the capitalism to come, which have to do with mutual trust and the State. Indeed, this suggestion is interesting because in small communities, we could imagine, regardless of whether time-inconsistency is common knowledge or not, players acting as if they did not know what it was, just as we act in small lifts as if we were unaware that the discomfort of the sexes is common knowledge. This pretended ignorance could be called mutual trust, and we expect to see it in small communities. As we will see in later chapters, we can only hope that the impossibility of commitment and its consequences only arises in large communities, such as the European Union, for instance. Therefore, if mutual trust conditions the size of transaction costs, there is a limit to the size of political jurisdictions which will have to be added to those we discover later.

1.1. 2. Other types of rationality

As we have seen, the belt of instrumental rationality is not so tight as not to permit altruism, in this case without the need to appeal to psychological evidence, or mutual trust in small communities or other substitutes of the impossible capacity for commitment in larger



communities. However, there are other features of the capitalism to come that require contemplating other types of rationality in order to be understood. As I mentioned earlier, I will be referring to identity and language as expressions of expressive and communicative rationality, respectively, but I will first briefly consider procedural rationality as a means of understanding the existence of rules of thumb.

In many individual decisions, it is very difficult to make all the calculations required to identify the means to the desired end. For example, it is probably psychologically costly to discover the combination of consumer goods that really maximises my utility function, given my income and market prices. If we admit realistic limitations to man's computational capacity, we are immediately faced with the problem of how to be rational in situations where instrumental rationality cannot be expected to run at full power. H. Simon's procedural rationality consists of acting in an accessible manner, using a possible rule of thumb, which although it will not be always on target, will be more successful than others in the medium and long terms. Since Keynes, this is what is known as rules of thumb, which were associated "avant la lettre" to the macroeconomic theory of consumption according to which, in the aggregate, an economy consumes a fixed proportion of its disposable income. According to other more sophisticated theories of the macroeconomic consumer function, derived, for instance, from Modigliani et al and Friedman, this proportion is not fixed, but depends on the point in the life cycle at which consumers are, or on expectations about temporary shocks affecting permanent income. Calculating the optimal path of the values of this proportion demands instrumental rationality, which would consist now of the maximisation of a functional integrating the consumer path on a given vital horizon, an operation that can be considered to be outside a consumer's normal ability.

If we stop to think about the validity of these rules of thumb in our lives, we could prepare a long list. I move about the supermarket with my trolley in a way that systematically ignores certain product lines; I never search for the best price and I decide who I want to work for before meeting my possible employers. More complex are the rules that I follow to limit my debts to what I can repay with x months of my current salary, or the financial rules I follow to divide my portfolio between fixed and variable income, or between different productive sectors, or to support a loss without expecting to recover the portfolio's value. Each of us can make a list, according to our own experience, and we will find rules for which we have no explanation, others well-rooted in tradition (which, in this sense, could be the result of some kind of evolutive adaptation), others that have remained unaltered over time and others that have suffered changes that we still remember. For the time being, and even though we may return to the subject in a later chapter, I will merely point out the relationship that appears to exist between this practice of limited rationality and what occurs with information and communication technologies (ICT) in the information society. Indeed, information is increasingly in demand as a production factor and there is a growing supply of information accessible through ICTs. However, the use of this supply is limited by the inability to obtain all of it and the restrictions derived from the time required to process it. In these conditions, it is procedurally rational to use a more or less specialised search engine which, in turn, is nothing more than an arbitrary rule of thumb used to order the information in a better way.

This last remark leads us to affirm that this procedural rationality is nothing more than a rough version of instrumental rationality. Indeed, a search engine is only a rule of thumb which can be improved upon in terms of efficacy if we apply another rule of thumb to it. I believe that this continuous, and successful, refinement of these rules would bring us close to what we would obtain by total deployment of instrumental rationality. A rule of the percentage of salary to be saved, whatever happens, becomes transformed and refined into a rule on how to vary that percentage at different times, and the rule concerning how much to save during retirement is made to depend on the average temperature of the place of retirement, etc. As a circumference can come as close as we wish by a combination of circumscribed squares of different sizes, an analytical function can come as close as we wish by means of a computational procedure^{viii}. Well, if we accept this approach, what can we expect? It would seem logical that in a world with a great deal of information available, we will be seeing more and more areas and economic sectors in which rules of thumb flourish, confirming the accuracy of the saying that the best (instrumental rationality) is the



enemy of the good (procedural rationality). However, since the result of applying these rules is not optimal, there is always the possibility of making use of an opportunity for improvement, refining a sub-optimal rule with another rule, likewise sub-optimal but better than the first.

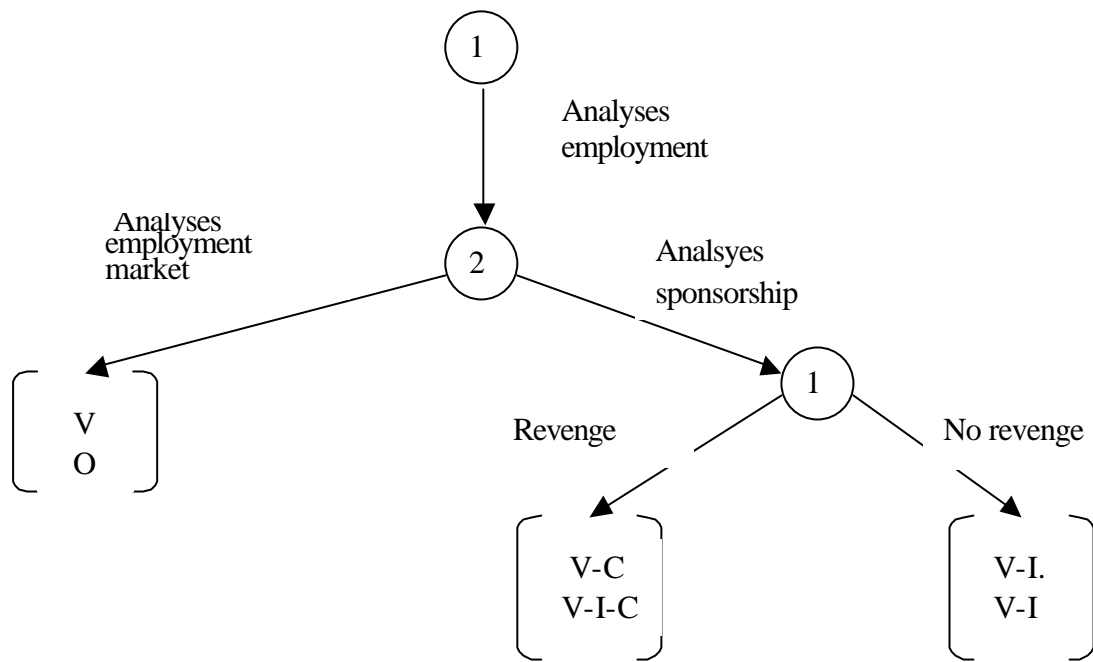
1.2.2.A IDENTITY

Before we discuss the possible notions of rationality in relation not to the means, but to the ends of human activity, we can study another type of rationality which has to do with what actions express. The acquisition and use of a certain type of clothing, possibly identified with a brand, may not be justified by how it suits me (if this is my criterion expressed as a utility function), but because it reveals that I belong to a certain community, even though I have had to visit several retail outlets instead of one department store. These actions may not be instrumentally or procedurally rational, but they involve what Hargreaves Heap would call expressive rationality. There may be people without a great taste for art or music who, nevertheless, make major donations to museums or opera houses, to buy a painting, or for the production of a specific opera. What seems to motivate them is the desire to belong to a community made up of a few chosen individuals who obtain great pleasure from mutual recognition. Or, in more juvenile terms, I may be interested in being taken for a Bourgeois Bohemian (Bobo) who has the best of everything, but without the brands that give me away to those who are not in on the secret of how to be a Bobo.

This would seem a good time to mention that the globalisation of the economy involves, on the one hand, the homogenisation of some aspects of lifestyles, but, on the other, the desire to belong to small groups with specific identities, which are seen as different. It is therefore not difficult to predict the eclosion of a plethora of identity-based communities satisfying the need, if not for individual, for tribal singularisation. It is therefore reasonable to ask how this proliferation will occur, in an ordered fashion with just a few new identities arising, with little movement between them, or as a continuous construction and deconstruction of precarious communities. This distinction is important if we want to obtain an idea of the direction in which capitalism will evolve, both from the specific perspective of organising marketing and customer loyalty programmes, and from a much more abstract, general and philosophical perspective related to personal fulfilment. Leaving this aside for the moment, I will now attempt to further analyse this issue by considering how ICTs can influence the creation and maintenance of identity-based communities, with a brief summary of an article by Akerlof and Kranton^{ix}

Let us consider, in simplistic terms, that an identity-based community consists of a set of individuals (users in our terminology) sharing some attributes. We could be thinking of the community of neoclassical economists, economists of the Austrian school, white females or black females, among many others. Part of the identity of these communities is in their typical activity. Neoclassical economists, be they male or female, make use of instrumental rationality, Austrian economists, males and females, study expressive rationality, white females receive ballet lessons and black females sing in gospel choirs. Now imagine a community of two economists from the Department of Economics of the Universidad Carlos III, which is famous for its neoclassical approach. Juan attempts to explore how instrumental rationality and neoclassical tradition explain how reserve salaries work, and María attempts to understand how art markets work based on her own ideas of belonging to a community, based on expressive rationality. The problem is that if María continues to explore artistic patronage based on Austrian ideas, Juan's identity as a member of a department renowned for its neoclassical approach will be undermined, and he can either take his revenge on María or fail to do so. If he does (paying to ridicule the Economics of Culture), he is applying a cost L to Carmen in addition to l_s , that is what her identity is also suffering because she knows that what she is doing does not fit in her group's identity. If Juan does not take revenge, his identity, l_o , suffers from having such a poorly matched member of the community as María and, as before, María suffers l_s but not L . It is now very easy to describe and analyse this identity game, with the simplifying assumption that $l_s = l_o = l$. The following figure is an extensive form representation of the game, and it includes the pay-off received by each player, Juan (1) or María (2):





There are four equilibria, two related to identity and two unrelated to it. In the identity-based equilibria, the Economics Department of the Universidad Carlos III maintains its identity as a seriously neoclassical department because both Juan and María end up analysing the employment market. When $I > V$, the cost suffered by María for her treason (I) is so high that she gives up studying artistic patronage even though she is not going to be caught and there will be no revenge. When $I \leq V$, $C < I$ and $I+L > V$, Juan's threat of revenge is credible, and María gives up what she is doing in case she is caught. But there are also two equilibria not based on identity in which Juan studies the employment market and María concentrates on artistic patronage. If $I \leq V$, $C < I$ and $I+L > V$, María will study artistic patronage even though Juan's revenge is credible. If $I \leq V$ and $C > I$, Juan's threat is not credible and María will concentrate her academic activities on artistic patronage.

With regards to this simplified way of contemplating identity, there are a number of considerations shedding some light on the proliferation and nature of identities. First of all, when c is relatively small and L relatively large, identity will be preserved; however, it is to be expected that if the opposite is true. With c being relatively large and L relatively small, identity will, after all, be betrayed, and, incidentally, instrumental rationality will win the battle against expressive rationality. Our second consideration is that L/c is an indicator of the cohesion of an identity-based community. The larger L/c is, the more difficult it is to betray the factors defining the identity of the community in question. Thirdly, since cohesion and mutual trust are directly related, L/c is also a measurement of the degree of mutual trust. The fourth consideration is the most interesting in relation to the future of the community of individuals who, as users, form the basis of the capitalist system. I mentioned earlier that globalisation will give rise to the need for small identity-based communities where mutual trust can flourish. Since ICTs reduce L and c , anything could happen. On the one hand, L , the cost that may be imposed on the dissident, is reduced because when all the communities are established (by means of ICTs), there will always be a community (the group of white females, for example) that will welcome María. On the other hand, ICTs also reduce c , because Juan can expel María, revealing her unfortunate penchant for questionably serious issues to the scientific community with a single click. Statically, therefore, a final conclusion cannot be reached; but dynamically, as the power of ICTs grows, we would expect identity-based communities to have a changing nature and to be tightly knit as long as they last. We could even go one step further and suggest that identity as an economic variable of interest in today's capitalism, albeit only for marketing purposes, will drive businesses towards the Inditex (proprietor of the Zara retail outlets) model, with well identified and rapidly obsolete clothing collections. In general, we would even expect to see a similar trend in the durable goods sector, conditioning production systems. We could hardly discover a more obvious reason for expecting the capitalism to come not to fit in too well with conservative tastes.

I.1.2.B. Language and Debates

Habermas approaches his Theory of Communicative Action as a criticism of the Theory of Instrumental Action. Since the latter can be summarised as defining instrumental action as decided by an individual agent equipped with instrumental rationality, we could expect communicative action to be driven by communicative rationality. This communicative rationality would include both the fact that language is part of decision making, changing things in game situations, and the assumption that there could be a debate between individual agents attempting to convince others or themselves not only about means but also about ends. This is thus the first time that we enter the field of another rationality, much more ambitious than instrumental and procedural rationality, which only contemplate alternative means aimed at a given end, and even expressive rationality, which is concerned with more than the means, but only aims at revealing an identity, without actually discussing the pertinence of one end or another.

In a way, when we go from means to ends we are moving out of the field of economics into the huge field of Politics, and the question of what a "good life" is in this interrelated world; in other words, what we have to do for the only life that we have to be classified as fulfilled. This would take us at least as far back as Kant, and that is not my intention here. Suffice it to say that it is sufficient (although possibly not necessary, unfortunately), for capitalism to work now and in the future, for the society underlying the



economic system, in which we have to live, to be a liberal society in which we can not only say what we will but also do what we will, providing we respect the freedom of others. We are aware that, in these circumstances, human interaction is the only known way that we can expect to discover epistemic, moral and political "truth". Contradicting ideas and practices are what finally lead to the social objectives and common practices that may be able to discover these truths. Participation, therefore, is the key to the virtues of a liberalism that probably prefers a sub-optimal life decided by all to a more optimal life imposed by someone else, for the simple reason that this life would not be our own^x. This participation, however, sufficient as it is to create the conditions for the liberalism in which capitalism can work, could become increasingly difficult as small, differentiated and possible secessionist communities increase their demands for freedom, because such participation could be life threatening for them. In the capitalism of the future, then, we can expect liberalism not to be enough, and consequently a request not to risk one's life for one's ideas, and also that society will be organised in such a way that no-one will be able to bring pressure to bear on one's opinions or actions, other than reasonable law enforcement measures to repress violence, etc. In other words, we can expect the development of what politologists call republicanism, a kind of belligerent liberalism well described by Pettit.

If this is where we are going, we must be aware that public debate is an essential part of the establishment of objectives not only of a social nature (which cannot be determined in any other way) but also personal, in as much as the definition of "good life" that will guide us in relation to our activities derived from different instrumental rationalities, is inevitably a social one. Neither can we ignore that these and all public debates are based on a shared language, the semantics of which are crucial for coordination purposes, and the pragmatics of which condition the debates themselves.

For an economist, the best way of understanding the importance of language, its semantics and the communicative rationality that drives it, is to consider the importance of cheap-talk in determining the equilibrium of a strategic game. Back we go to the prisoner's dilemma and coordination games presented in section A in relation to instrumental rationality (altruism).

	L	R
L	10.10	0.15
R	15.0	1.1

	L	R
L	10.10	0.5
R	5.0	1.1

Note that in the prisoner's dilemma in which (LL) is the Pareto optimum, R is the dominant strategy for each player, so that (RR) is the only Nash equilibrium. This is not the case in the coordination game, in which neither of the players has a dominant strategy, where both (LL) and (RR) are Nash equilibriums and where (LL) continues to be the Pareto optimum. Suppose that cheap-talk is possible before either of the games starts, and that we begin with a situation in which each player is using a double strategy (verbal announcement and action) corresponding to "I announce R and do R". Note that language has been created in this situation in the sense that the sound "R" signifies action R. How can we use cheap-talk to go from here to the Pareto optimum in which each player will be using the double strategy of "I announce L and do L"?

Cheap-talk is good for nothing in the case of the prisoner's dilemma. The double strategy "I announce L and do L" does not lead to the optimum merely because the announcement is not credible, since L is always a strategy dominated by R. There are of course other ways in which to sustain the optimum in this prisoner's dilemma^{x1}; but what we



are interested in here is that language, in this case in the form of cheap-talk, does not lead us in a coordinated manner out of a sub-optimal situation and that an attempt to use "I announce L and do L" does not create language, because since the result is actually "do R", the sound "L" does not mean anything that is recognised as being different to R.

In the coordination game, however, we have a very different situation. Consider the following two conditional double strategies: "I announce L and do L if the other announces L, or I do R if the other announces R"^{xii}. Firstly, we see that this strategy is better than the original one for both players. Each agent wins 10 if the other agrees to announce L, and he wins 1 (as before) if the other does not agree. We also see that the conditional double strategy proposed works better for both of them than the strategy based on lies ("I announce L and do R, whatever the other does") since this maintains the initial situation.

Once we have understood the role that language can play, and therefore the power of communicative rationality, it is easy to prove, although we will have to make do with intuition, that if the two players were to play the game repeatedly, and the adaptive strategy consisted simply and plausibly of imitating the best strategy, any "mutation" introduced by the conditional double strategy that we have analysed will end up with both players adopting action L^{xiii}. Moreover, in this situation, the sound "L" will end up signifying action L, thus enriching the language.

But semantics is not the only aspect of language in which we are interested. Once the language has been defined, not only in relation to its syntax but also to its semantics, it can be used to socially argue and debate in an attempt to establish the ends pursued by collective action. In other words, we are interested in the pragmatic aspect of language. Consider the relationship between two identity-based communities arguing amongst themselves in an attempt to discover the best of two given ends. To end this section on communicative rationality, a recent event such as the war in Iraq is a good occasion to discuss what we could call the "Logic" of Debates. Globalisation will provide us with many opportunities to observe this type of debate, which, as we have seen in Cancun on the occasion of a Doha round meeting, does not always end in agreement.

Let us consider a debate as a specific way of solving conflicts in which two more or less well-informed contenders attempt to persuade a third of the convenience of making one decision or the other, of giving one goal priority over another. One possible debate model is, then, like an extended game with incomplete information. Imagine that player 1 plays (argues, provides information) first, followed by player 2, whereas the third, who has to be persuaded, decides on one or the other decision, on one or the other goal, depending on what each player has played (argued, informed) and fully aware that neither of the two will either lie or provide false information, but that both may not have time to explain all their arguments or may have additional information, so that their conduct is opportunistic. What is of interest is of course what will happen at the game's equilibrium. The appropriate solution for this type of game is Kreps and Wilson's sequential equilibrium, consisting of (i) best response strategies, given beliefs, and (ii) beliefs coherent with what has been observed in the game (in other words, a Bayesian adaptation of each player's a priori beliefs).

Let us apply this to a debate between "USA" and "France". They both try to persuade a third (the Security Council) to make one of the following decisions: declare war on Iraq immediately or give the UN inspectors more time, two strategies that could be identified with two different goals, to conquer or to persuade. Each player has more or less accurate information on several relevant aspects (technically, each of the two contenders has a different partition of the set of possible states) which is unknown to the Security Council, and they each tell the truth, but not necessarily all the complete truth. What does Economic Theory (through Game Theory) tell us about such a situation? What can we learn about the logic of debates? This is not a good question, because there is no general theory on debates understood as extensive games with incomplete information, but, as usual, what we do have are specific results, examples with concrete details which, although they may not prove anything, will at least make us think. Let's consider two of these results, although without doing full justice to them.

The first of the results of interest here is due to Jacob Glazer and Ariel Rubinstein,



and it refers to the pragmatics of the language of debates, the possibility of the same true argument having different persuasive powers depending on the context. These two authors consider a scenario like the Security Council, with "USA" and "France" debating in a context in which not all the arguments can be presented and in which the Security Council applies a specific self-persuasion rule making the example they consider an optimal debate, in the sense that it reduces the possible errors to a minimum (understood as the errors that would lead to making a decision that is not backed by most of all the arguments). In this optimally designed debate, the same linguistic proposition (referring to a true argument) is not treated the same (does not have the same power of persuasion) if it is used as an argument that if it is used as a counter-argument. To be specific, it is perfectly possible that, for the Security Council or public opinion, "USA" will win the debate if it argues the existence of chemical weapons and "France" counter-argues that they are inoperative, and, contradictorily, "France" will win the debate arguing that the chemical weapons are inoperative even if "USA" counter-argues that they exist. This breaks the logical consistency of language, but such consistency is only operative in the syntactic and not in the pragmatic aspect. Can there be any question that pragmatism is more important than syntax in the Security Council? We should not get too angry with the Security Council or demand its modification. If it is to be a debate forum, there will always be a pragmatic aspect of language and we will always have the opportunity to detect incoherences. But this should not alter our goal of designing an optimal form of debate, since any other would be even worse.

The second result I want to mention is due to Hyun Song Shin and refers, if I am allowed to use a less than rigorous interpretation far from the one he intended, to the dilemma of who the Security Council should pay more attention to, "France" or "USA", if this attention depends on who has the most accurate information (see above) on the actual state of affairs. In a scenario similar to the previous one, but without linguistic intentions and regardless of a rule of self-persuasion, the idea is that the Security Council must learn the truth from the information revealed by "USA" and "France", aware of the fact that neither will lie, although they may not reveal all they know, and also aware that "USA" has better or more accurate information. Since the Security Council knows this, and assumes that each contender will only reveal information in favour of its own position, it would not be surprising if the Security Council gives less weight to the information revealed by "USA" precisely because its better information makes it easier to manage the information it reveals. If this is so, it would not be surprising if "France" was to win. And one ingenuously wonders whether, above and beyond the pressure brought to bear by the two powers on the non-permanent and apparently useless members of the Council, this could not be what explains why "USA" decides to launch the attack without the backing of the UN Security Council.

Little more do we know about the logic of debates. But I do believe that, in the capitalism to come, we can expect to see an increase in their number, both because there is a growing number of global problems (climate change and terrorism are two good examples), and because there is also a growing number of identity-based communities with different objectives for these problems.

NOTES

ⁱ The condition is that the sets of consumption bundles at least as preferred as a given set, and the sets of consumption bundles not preferred to a given set, are closed for that given set.

ⁱⁱ I do not refer here to non-governmental organisation (NGOs) and that may be surprising, but they will be considered in a later chapter.

ⁱⁱⁱ Consider two lotteries. The first offers 10,000 euros with a probability of 0.1 (and zero euros with a probability of 0.9). The second lottery offers 15,000 euros with a probability of 0.09 (and zero with a probability of 0.91). It would seem reasonable to prefer the second lottery to the first. Now consider another two lotteries. The third lottery offers 10,000 euros with certainty



and the fourth, 15,000 euros with near certainty (a probability of 0.9) and zero with a probability of 0.1. It would seem reasonable to prefer the third to the fourth, but this contradicts a preference for the second over the first.

^{iv} If we were in a non-probabilistic world, it would be rational to comply with Savage's axioms and maximise the mathematical expectancy of a Savage's utility function calculated with subjective probabilities. Of course, according to Bayes' theorem, instrumental rationality also demands that probability or beliefs adapt to experience.

^v In a Nash equilibrium, each player does what is best for himself, given what the other does.

^{vi} I could have invented an example, but I have used this one, due to Juan Carrillo, because it is particularly easy to understand.

^{vii} See Urrutia

^{viii} This is what Stephen Wolfram appears to be saying in his "little book" of more of one thousand pages.

^{ix} The authors wish to show an example of how the consideration of identity can explain observed phenomena such as, for instance, sexual discrimination in employment or how household work is divided between men and women.

^x For Sen, a notorious anti-utilitarianist, lack of participation would also be the specific cause of observed famines.

^{xi} Such as, for instance, assuming that a player's rationality is not common knowledge but only mutual knowledge of the order of N , N finite.

^{xii} It is up to the reader to come to the conclusion that this double conditional strategy would not have worked in the prisoner's dilemma.

^{xiii} This is not the case however many times the prisoner game is repeated.

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TABLES & PLOTS

TABLES:

- A1A: Spanish CPI disaggregation.
- A1B: EMU HICP disaggregation.
- A1C: USA HICP disaggregation
- A2: Europe forecast errors for euro-zone and Monetary Union countries.
- A3: HICP Europe forecast errors by sectors in Monetary Union.
- A4A: Harmonized Consumer Price Index (HICP) Annual Growth Rates for 2003,2004, and 2005 for EMU countries.
- A4B: Harmonized Consumer Price Index (HICP) Annual Growth Rates for 2003,2004, and 2005 for EMU countries.
- A4C: Harmonized Consumer Price Index (HICP) Monthly Growth Rates for 2003,2004, and 2005 for EMU countries.
- A4D: Harmonized Consumer Price Index (HICP) Monthly Growth Rates for 2003,2004, and 2005 for EMU countries.
- A5A: Harmonized Consumer Price Index (HICP) Annual Growth Rates by sectors for 2003,2004, and 2005 for EMU.
- A5B: Harmonized Consumer Price Index (HICP) Monthly Growth Rates for 2003,2004, and 2005 for EMU.
- A6A: US CPI Annual Growth Rates for 2003,2004, and 2005.
- A6B: US CPI Monthly Growth Rates for 2003,2004, and 2005.
- A7A: Spanish CPI Annual Growth rates for 2003,2004, and 2005.
- A7B: Spanish CPI Monthly Growth rates for 2003,2004, and 2005.

PLOTS:

- A1A: HICP monthly growth rates in EMU.
- A1B: CPI monthly growth rates in US.
- A1C: CPI monthly growth rates in Spain
- A2A: Annual Forecast For The EMU Inflation
- A2B: Annual Forecast For The USA Inflation
- A2C: Annual Forecast For The Spanish Inflation

METHODOLOGY: ANALYSIS OF SPANISH INFLATION BY SECTORS

BASIC COMPONENTS AGGREGATES	BASIC COMPONENTES	BASIC COMPONENTS AGGREGATES
<p>IPSEBENE 81.401% 1 + 2 + 3 + 4 + 5</p> <p>BENE 46.527% 1 + 2 + 4</p> <p>AE 16.376% 1 + 4</p> <p>CORE INFLATION IT IS CALCULATED ON THE IPSEBENE INDEX</p>	<p>(1) AE-X 13.331% processed food excluding fats and tobacco CPI.</p> <p>(2) MAN 30.150% non-energy industrial goods CPI</p> <p>(3) SERV-T 33.725% services excluding packages tourist CPI</p> <p>(4) X 3.046% fats and tobacco CPI</p> <p>(5) T 1.149% tourist packages CPI</p> <p>(6) ANE 9.398% non-processed food CPI</p> <p>(7) ENE 9.142% energy CPI</p>	<p>BENE-X 44.481% 1 + 2</p> <p>IPSEBENE-X-T 77.206% 1 + 2 + 3</p> <p>R 22.735% 4 + 5 + 6 + 7</p> <p>RESIDUAL INFLATION IT IS CALCULATED ON THE R INDEX</p> <p>TREND INFLATION IT IS CALCULATED ON THE IPSEBENE-X-T INDEX</p> <p>GLOBAL INFLATION IT IS CALCULATED ON THE IPC INDEX</p> <p>IPC 1 + 2 + 3 + 4 + 5 + 6 + 7</p>
<p>IPC = 0.13331 AE-X + 0.3150 MAN + 0.3715 SERV-T + 0.03046 X + 0.01149 T + 0.09398 ANE + 0.09142 ENE</p>		<p>(weights 03)</p>

Source: INE & Instituto Flores de Lemus, Universidad Carlos III

Methodology: Analysis of EMU inflation by SECTORS

<i>BASIC COMPONENTS AGGREGATES</i>	<i>BASIC COMPONENTS</i>
<p>IPSEBENE 84.178% 1 + 2 + 3 + 4</p> <p>BENE 42.845% 1 + 2 + 3</p> <p>RESIDUAL INFLATION 15.822% 5 + 6</p> <p><i>CORE INFLATION (IT IS CALCULATED ON THE IPSEBENE INDEX)</i></p>	<p>(1) AE ^(a) 9.463% <i>HICP Processed Food</i></p> <p>(2) TOBACCO 2.373% <i>HICP Tobacco</i></p> <p>(3) MAN 31.009% <i>HICP Non Energy Industrial Goods</i></p> <p>(4) SERV 41.334% <i>HICP Services</i></p> <p>(5) ANE 7.689% <i>HICP Non processed Food</i></p> <p>(6) ENE 8.133% <i>HICP Energy</i></p>
<p>IPCA = 0.09463 AE + 0.02373 TOBACCO + 0.31009 MAN + 0.41334 SERV + 0.07689 ANE + 0.08133 ENE</p>	

(a) To date the aggregate AE, following Eurostat methodology, included tobacco prices. From now on, our definition of AE, processed food, is more accurate and does therefore not include tobacco prices.

Methodology: Analysis of USA inflation by SECTORS

BASIC COMPONENTS AGGREGATES		BASICS COMPONENTS	
CORE CPI 78.54% 1 + 2 + 3 + 4 + 5	SERVICES LESS ENERGY 56.28% 1+2	(1) OWNERS' EQUIVALENT RENT OF PRIMARY RESIDENCE 23.38% (2) SERVICES LESS OWNER' EQUIVALENT RENT OF PRIMARY RESIDENCE 32.90% (3) TOBACCO 0.81% (4) NON DURABLES LESS TOBACCO 10.17% (5) DURABLES 11.28%	(6) FOOD 14.38% (7) GAS 1.17% (8) ELECTRICITY 2.43% (9) MOTOR FUEL AND FUEL OIL 3.48%
	COMMODITIES LESS FOOD AND ENERGY 22.25% 3+4+5		
RESIDUAL CPI 21.46% 6 + 7 + 8 + 9	ENERGY 7.08% 7 + 8 + 9		
$\text{HIPC} = 0.5628(\text{SERV.} - \text{ENERGY}) + 0.2225(\text{COMM.} - \text{FOOD AND ENERGY}) + 0.1438\text{FOOD} + 0.0708\text{ENERGY}$			

Source: EUROSTAT & Instituto Flores de Lemus, Universidad Carlos III

Table A2

FORECAST ERRORS IN THE MONTHLY INFLATION RATE FOR JANUARY IN THE EUROPEAN UNION

	<i>Weights 2003 MU</i>	<i>Weights 2004 MU</i>	<i>Weights 2003 EU</i>	<i>Weights 2004 EU</i>	<i>Observed Monthly Rate</i>	<i>Forecast</i>	<i>Observed Annual Rate</i>	<i>Confidence Intervals at 80%</i>
Spain	108,72	111,07			-0,82	-0,31	2,28	± 0,15
Germany	298,68	292,58			0,09	-0,36	1,29	± 0,29
Austria	31,52	31,43			0,09	0,13	1,19	± 0,37
Belgium	33,47	33,18			-1,33	-1,09	1,36	± 0,32
Finland	15,66	15,65			-0,26	0,16	0,80	± 0,37
France	204,58	206,97			0,09	0,35	2,20	± 0,20
Greece	25,66	26,55			-0,84	-0,78	3,09	± 0,78
Netherlands	53,70	52,90			0,50	0,58	1,51	± 0,33
Ireland	12,71	12,86			-0,63	-0,19	2,26	± 0,30
Italy	191,62	192,65			-0,59	-0,13	2,62	± 0,23
Luxembourg	2,60	2,73			-0,34	-0,02	2,30	± 0,32
Portugal	21,07	21,43			0,00	0,09	2,24	± 0,66
Denmark			13,08	11,78	-0,09	-0,04	0,96	± 0,27
United Kingdom			167,61	181,92	-0,54	-0,62	1,38	± 0,33
Sweden			17,82	18,65	-0,27	0,02	1,26	± 0,50

Source: EUROSTAT, IFL & UC3M

Date: February 27, 2004

FORECAST ERRORS IN THE MONTHLY INFLATION RATE FOR JANUARY 2004 BY SECTORS IN THE EMU						
	<i>Weights 2003</i>	<i>Weights 2004</i>	<i>Observed Monthly Growth</i>	<i>Forecast</i>	<i>Annual Growth Observed</i>	<i>Confidence interval at 80%</i>
HICP Processed Food	117,14	118,36	0,51	0,94	3,35	± 0.14
HICP Processed Food excluding tobacco	94,32	94,63	0,23	0,16	1,95	± 0.09
HICP Tobacco	22,82	23,73	1,65	4,17	9,00	± 0.13
HICP Non Energy Industrial Goods	315,50	310,09	-1,59	-1,27	0,57	± 0.10
HICP Non Energy Processed Goods	432,64	428,45	-1,01	-0,67	1,34	± 0.09
HICP Services	409,09	413,34	0,00	-0,21	2,52	± 0.14
CORE INFLATION ⁽¹⁾	841,73	841,78	-0,53	-0,45	1,90	± 0.08
HICP Unprocessed Food	75,77	76,89	1,09	0,79	2,91	± 0.46
HICP Energy ⁽²⁾	82,49	81,33	1,00	0,65	-0,33	± 0.60
RESIDUAL INFLATION ⁽³⁾	158,27	158,22	1,00	0,72	1,17	± 0.39
GLOBAL INFLATION ⁽⁴⁾	1000	1000	-0,18	-0,27	1,88	± 0.09
(1) aggregation error 0.02%						
(2) aggregation error -0.03%						
(3) aggregation error 0.04%						
(4) aggregation error -0.09%						

Source: EUROSTAT, IFL & UC3M

Date: February 27, 2004

HARMONIZED CPI (HICP) ANNUAL GROWTH FOR EMU COUNTRIES (1)															Table A4A			
	Weight		Rates	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average Rates (2)		
	EMU12	EU15														03/02	04/03	05/04
Spain HICP	11.11%		2003	3.8	3.8	3.7	3.2	2.7	2.8	2.9	3.1	3.0	2.7	2.9	2.7	3.1		
			2004	2.3	1.4	0.8	0.6	1.9	2.0	2.6	1.4	1.3	1.1	1.6	1.8		1.6	
			2005	2.8	2.8	2.8	2.8	2.5	2.6	2.7	2.7	2.8	2.8	2.8	2.8			2.8
Germany HICP	29.26%		2003	0.9	1.2	1.2	1.0	0.6	0.9	0.8	1.1	1.1	1.1	1.3	1.1	1.0		
			2004	1.3	1.0	0.9	1.3	1.6	1.5	1.5	1.3	1.4	1.4	1.4	1.5		1.3	
			2005	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9			0.9
Austria HICP	3.14%		2003	1.7	1.8	1.8	1.3	0.9	1.0	1.0	1.0	1.4	1.1	1.3	1.3	1.3		
			2004	1.2	1.2	1.2	1.3	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.3		1.3	
			2005	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3			1.3
Belgium HICP	3.32%		2003	1.2	1.6	1.7	1.4	0.9	1.5	1.4	1.6	1.7	1.4	1.8	1.7	1.5		
			2004	1.4	0.6	0.7	0.9	1.3	1.1	1.2	0.9	0.9	1.0	0.8	0.8		1.0	
			2005	1.0	1.2	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3			1.2
Finland HICP	1.57%		2003	1.4	2.1	1.9	1.3	1.1	1.2	1.0	1.2	1.2	0.9	1.2	1.2	1.3		
			2004	0.8	0.5	0.4	0.5	0.6	0.6	0.9	0.9	0.7	0.8	0.9	0.9		0.7	
			2005	1.0	0.9	0.8	0.9	0.9	0.9	1.1	1.1	1.0	1.0	1.1	1.1			1.0
France HICP	20.70%		2003	1.9	2.5	2.6	1.9	1.8	1.9	1.9	2.0	2.3	2.3	2.5	2.4	2.2		
			2004	2.2	1.8	1.7	2.2	2.5	2.5	2.4	2.3	2.1	2.1	2.0	2.1		2.2	
			2005	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8			1.8
Netherlands HICP	5.29%		2003	2.7	2.9	2.8	2.2	2.3	2.1	2.1	2.2	2.0	1.9	2.0	1.6	2.2		
			2004	1.5	1.4	1.5	1.8	1.9	2.0	1.9	2.0	2.0	2.2	2.3	2.5		1.9	
			2005	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5			2.5
Ireland HICP	1.29%		2003	4.7	5.1	4.9	4.6	3.9	3.8	3.9	3.9	3.8	3.3	3.3	2.9	4.0		
			2004	2.3	2.1	2.1	2.2	2.5	2.6	2.6	2.5	2.6	2.7	2.7	2.8		2.5	
			2005	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1			3.1
Italy HICP	19.26%		2003	2.9	2.6	2.9	3.0	2.9	2.9	2.9	2.7	3.0	2.8	2.8	2.5	2.8		
			2004	2.2	2.1	1.7	1.6	1.7	1.8	1.8	1.9	1.6	1.8	1.8	1.9		1.8	
			2005	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6			2.5
Luxembourg HICP	0.27%		2003	3.3	3.2	3.7	3.0	2.3	2.0	1.9	2.3	2.7	1.8	2.0	2.4	2.5		
			2004	2.3	1.6	1.5	1.6	1.8	1.9	2.5	1.8	1.5	1.8	1.6	1.7		1.8	
			2005	2.1	1.8	1.6	1.8	1.9	2.1	2.4	2.1	1.9	2.2	2.1	2.1			2.0
Portugal HICP	2.14%		2003	4.0	4.1	3.8	3.7	3.7	3.4	2.9	2.9	3.2	2.8	2.3	2.3	3.3		
			2004	2.2	2.1	2.3	2.3	2.3	2.5	2.7	2.7	2.5	2.6	2.9	2.9		2.5	
			2005	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0
Greece HICP	2.65%		2003	3.3	4.2	3.9	3.3	3.5	3.6	3.5	3.3	3.3	3.2	3.5	3.1	3.5		
			2004	3.1	3.1	2.8	2.8	2.8	2.8	3.0	3.0	2.8	2.7	2.7	2.7		2.9	
			2005	2.8	2.8	2.5	2.5	2.5	2.5	2.7	2.7	2.5	2.5	2.4	2.4			2.6

* The annual rate of growth reflects fundamental changes in prices with respect to monthly growth rates

(1) Figures in bold type are forecasted values.

(2) Annual average rate of growth.

Source: EUROSTAT, IFL & UC3M

Date: March 4, 2004

Table A4B

HARMONIZED CPI (HICP) ANNUAL GROWTH FOR EU COUNTRIES (1)

	Weight		Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average Rates (2)		
	EMU12	EU15														03/02	04/03	05/04
Denmark HICP	1.18%		2003	2.6	2.9	2.8	2.5	2.1	2.0	1.8	1.5	1.7	1.1	1.4	1.2	2.0	1.3	2.0
			2004	1.0	0.8	0.6	0.8	1.3	1.4	1.6	1.7	1.5	1.8	1.7	1.8			
			2005	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			
UK HICP	18.19%		2003	1.4	1.6	1.6	1.5	1.2	1.1	1.3	1.4	1.4	1.4	1.3	1.3	1.4	1.6	1.4
			2004	1.4	1.4	1.4	1.5	1.8	1.9	1.6	1.6	1.5	1.6	1.5	1.5			
			2005	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4			
Sweden HICP	1.87%		2003	2.6	3.3	2.9	2.3	2.0	2.0	2.4	2.2	2.3	2.0	2.0	1.8	2.3	1.3	1.6
			2004	1.3	0.8	0.8	1.1	1.3	1.4	1.4	1.5	1.3	1.4	1.5	1.5			
			2005	1.7	1.6	1.5	1.5	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6			

* The annual rate of growth reflects fundamental changes in prices with 6 months lags with respect to monthly growth rates.

(1) Figures in bold type are forecasted values.

(2) Annual average rate of growth.

Source: EUROSTAT, IFL & UC3M

Date: March 4, 2004

Table A4C

HARMONIZED CPI (HICP) MONTHLY GROWTH FOR EMU COUNTRIES ⁽¹⁾																		
	Weight		Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual Rates ⁽²⁾		
	MU	ES15														D03/D02	D04/D03	D05/D04
Spain HICP	11,11%		2003	-0.4	0.2	0.8	0.8	-0.1	0.1	-0.6	0.5	0.2	0.7	0.3	0.2	2.7	1.8	2.8
			2004	-0.8	-0.7	0.2	0.7	1.2	0.2	0.0	-0.7	0.2	0.5	0.8	0.3			
			2005	0.2	-0.8	0.2	0.8	0.8	0.3	0.1	-0.6	0.2	0.5	0.9	0.3			
Germany HICP	29.26%		2003	-0.1	0.6	0.2	-0.3	-0.3	0.2	0.3	0.1	-0.2	-0.1	-0.2	0.9	1.1	1.5	0.9
			2004	0.1	0.3	0.1	0.1	0.0	0.2	0.3	-0.1	-0.1	-0.1	-0.1	0.9			
			2005	-0.4	0.3	0.0	0.0	0.0	0.1	0.3	-0.1	-0.1	-0.1	-0.1	1.0			
Austria HICP	3.14%		2003	0.2	0.2	0.3	-0.1	-0.2	0.0	-0.1	0.3	0.3	0.0	0.2	0.3	1.3	1.3	1.3
			2004	0.1	0.2	0.2	0.0	-0.1	0.0	-0.1	0.2	0.2	0.1	0.1	0.3			
			2005	0.1	0.2	0.2	0.0	-0.1	0.0	-0.1	0.2	0.2	0.1	0.1	0.3			
Belgium HICP	3.32%		2003	-1.0	2.1	0.3	-0.2	-0.4	0.4	-1.2	1.7	0.2	-0.4	0.2	0.0	1.7	0.8	1.3
			2004	-1.3	1.3	0.3	0.0	0.1	0.1	-1.0	1.3	0.2	-0.3	0.0	0.0			
			2005	-1.1	1.5	0.3	0.1	0.1	0.1	-1.0	1.3	0.2	-0.2	0.0	0.0			
Finland HICP	1.57%		2003	0.2	0.9	0.4	-0.1	-0.1	-0.1	-0.5	0.2	0.5	-0.1	-0.1	0.1	1.2	0.9	1.1
			2004	-0.3	0.6	0.3	0.0	0.0	0.0	-0.3	0.2	0.4	0.0	0.0	0.1			
			2005	-0.1	0.4	0.2	0.0	0.0	0.0	-0.1	0.1	0.3	0.0	0.0	0.1			
France HICP	20.70%		2003	0.3	0.7	0.5	-0.2	-0.1	0.2	-0.1	0.3	0.5	0.2	0.1	0.1	2.4	2.1	1.8
			2004	0.1	0.4	0.4	0.3	0.2	0.1	-0.2	0.1	0.2	0.2	0.0	0.2			
			2005	-0.2	0.4	0.4	0.2	0.2	0.1	-0.1	0.2	0.3	0.2	0.0	0.2			
Netherlands HICP	5.29%		2003	0.6	0.8	0.9	0.1	-0.1	-0.5	-0.1	0.2	0.8	-0.2	-0.4	-0.6	1.6	2.5	2.5
			2004	0.5	0.7	1.0	0.4	0.0	-0.4	-0.1	0.3	0.9	0.0	-0.3	-0.4			
			2005	0.5	0.7	1.0	0.4	0.0	-0.4	-0.1	0.3	0.9	0.0	-0.3	-0.4			
Ireland HICP	1.29%		2003	0.0	1.0	0.7	0.5	-0.2	0.1	-0.4	0.6	0.2	0.0	0.0	0.4	2.9	2.8	3.1
			2004	-0.6	0.8	0.7	0.6	0.1	0.2	-0.4	0.6	0.2	0.2	0.0	0.5			
			2005	-0.5	0.8	0.8	0.6	0.1	0.2	-0.4	0.6	0.2	0.2	0.0	0.5			
Italy HICP	19.27%		2003	-0.3	-0.4	1.2	0.8	0.2	0.1	-0.1	-0.3	0.8	0.3	0.3	0.0	2.5	1.9	2.6
			2004	-0.6	-0.5	0.8	0.7	0.3	0.1	-0.1	-0.2	0.5	0.5	0.3	0.1			
			2005	-0.1	-0.5	0.9	0.7	0.3	0.1	-0.1	-0.2	0.5	0.5	0.3	0.1			
Luxembourg HICP	0.27%		2003	-0.3	1.1	0.5	-0.2	-0.2	0.0	-0.8	1.2	0.7	-0.4	0.4	0.2	2.4	1.7	2.1
			2004	-0.3	0.5	0.4	0.0	0.1	0.1	-0.2	0.5	0.4	-0.1	0.3	0.2			
			2005	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2			
Portugal HICP	2.14%		2003	0.1	0.0	0.1	0.8	0.7	0.0	-0.2	0.1	0.2	0.2	0.1	0.1	2.3	2.9	3.0
			2004	0.0	-0.1	0.3	0.8	0.7	0.2	0.1	0.1	0.1	0.3	0.4	0.1			
			2005	0.1	-0.1	0.3	0.8	0.7	0.2	0.1	0.1	0.1	0.3	0.4	0.1			
Greece HICP	2.67%		2003	-0.8	-0.2	2.5	0.2	0.5	-0.2	-2.1	0.0	2.0	0.4	0.4	0.4	3.1	2.7	2.4
			2004	-0.8	-0.2	2.3	0.2	0.4	-0.1	-1.9	0.0	1.8	0.3	0.3	0.3			
			2005	-0.8	-0.2	2.0	0.2	0.4	-0.1	-1.7	0.0	1.6	0.3	0.3	0.3			

(1) Figures in bold type are forecasted values.

(2) December over December rate of growth.

Source:

EUROSTAT, IFL & UC3M

Date: March 4, 2004

HARMONIZED CPI (HICP) MONTHLY GROWTH FOR EU COUNTRIES (1)															Table A4D			
	Weight		Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual Rates (2)		
	MU	EU15														D03/D02	D04/D03	D05/D04
Denmark HICP	1.18%		2003	0.2	0.7	0.8	0.0	-0.3	0.0	-0.6	-0.1	0.8	-0.3	0.2	-0.2	1.2	1.8	2.0
			2004	-0.1	0.5	0.6	0.2	0.2	0.1	-0.4	0.0	0.6	0.1	0.1	-0.1			
			2005	0.0	0.5	0.6	0.2	0.2	0.1	-0.4	0.0	0.6	0.1	0.1	-0.1			
UK HICP	18.19%		2003	-0.6	0.4	0.4	0.3	0.0	-0.1	-0.1	0.4	0.3	0.2	-0.1	0.4	1.3	1.5	1.4
			2004	-0.5	0.3	0.4	0.4	0.3	0.0	-0.3	0.3	0.3	0.1	0.0	0.3			
			2005	-0.6	0.3	0.4	0.4	0.3	0.0	-0.3	0.3	0.3	0.1	0.0	0.3			
Sweden HICP	1.87%		2003	0.3	1.0	0.6	-0.4	-0.1	-0.2	-0.2	-0.1	0.8	0.1	-0.3	0.2	1.8	1.5	1.6
			2004	-0.3	0.6	0.6	0.0	0.1	-0.1	-0.2	0.0	0.6	0.1	-0.1	0.2			
			2005	-0.1	0.5	0.5	0.0	0.1	-0.1	-0.1	0.0	0.5	0.1	-0.1	0.2			

(1) Figures in bold type are forecasted values.
(2) Annual average rate of growth.

Source:

EUROSTAT, IFL & UC3M

Date: March 4, 2004

	Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average rates(b)		
														03/02	04/03	05/04
(1) AE (9.463%) ^(c)	2003	1.9	2.1	2.2	2.1	2.1	2.2	2.0	2.0	2.0	2.2	2.1	1.9	2.1	2.1	2.3
	2004	1.9	1.9	1.9	2.0	2.0	2.0	2.2	2.2	2.2	2.2	2.3	2.4			
	2005	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3			
(2) TOBACCO (2.373%)	2003	6.7	7.7	7.5	7.9	7.9	7.6	7.7	7.5	7.8	9.3	11.7	11.7	8.4	6.4	5.3
	2004	9.0	8.1	8.0	6.9	6.9	6.9	6.9	6.9	6.7	5.3	3.0	2.8			
	2005	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3			
(3) MAN (31.009%)	2003	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.5	0.7
	2004	0.6	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.5			
	2005	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7			
BENE [(1)+(2)+(3)] (42.845%)	2003	1.3	1.4	1.4	1.4	1.6	1.5	1.4	1.3	1.4	1.5	1.6	1.6	1.5	1.2	1.3
	2004	1.3	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.2	1.2	1.0	1.1			
	2005	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3			
(4) SERV (41.334%)	2003	2.9	2.7	2.7	2.9	2.5	2.6	2.3	2.5	2.5	2.5	2.4	2.3	2.6	2.6	2.6
	2004	2.5	2.6	2.5	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6			
	2005	2.6	2.6	2.7	2.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6			
IPSEBENE [(1)+(2)+(3)+(4)] (84.178%)	2003	2.0	2.0	2.0	2.2	2.0	2.0	1.8	1.8	2.0	2.1	2.0	1.9	2.0	1.8	1.9
	2004	1.9	1.8	1.8	1.7	1.8	1.8	1.9	1.9	1.8	1.7	1.8	1.8			
	2005	1.9	1.9	2.0	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9			
(5) ANE (7.689%)	2003	-0.7	0.3	0.8	0.9	1.1	2.6	2.8	3.3	4.2	3.8	3.8	3.2	2.2	1.1	1.8
	2004	2.9	2.1	1.8	1.7	1.5	0.8	0.7	0.5	0.1	0.3	0.4	0.7			
	2005	0.9	1.3	1.4	1.5	1.6	2.0	2.0	2.1	2.3	2.2	2.2	2.1			
(6) ENE (8.133%)	2003	5.9	7.6	7.5	2.2	0.6	1.6	2.0	2.7	1.6	0.8	2.2	1.8	3.0	0.4	-0.2
	2004	-0.3	-2.5	-3.1	0.3	2.4	2.3	1.9	0.5	0.5	0.9	1.2	1.2			
	2005	0.0	0.5	0.1	-0.4	-0.6	-0.6	-0.7	-0.4	-0.2	-0.2	-0.2	0.1			
HICP (100%)	2003	2.1	2.4	2.4	2.1	1.8	1.9	1.9	2.1	2.2	2.0	2.2	2.0	2.1	1.7	1.7
	2004	1.9	1.5	1.4	1.7	1.9	1.9	1.9	1.7	1.6	1.7	1.7	1.8			
	2005	1.7	1.7	1.8	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8			

* T1,12 growth rate lags fundamental changes in prices 6 months with respect to monthly growth rates. It is necessary to evaluate forecasts to analyze current situation.
** Weights on Global HICP are shown in brackets
(a) Figures in bold type are forecasts
(b) Annual average rate of growth
(c) To date the aggregate AE, following Eurostat methodology, included tobacco prices. From now on, our definition of AE, processed food, is more accurate and does therefore not include tobacco prices.

Source: EUROSTAT, IFL & UC3M

Date: March 02, 2004

Table A5B																
HARMONIZED CPI (HICP) MONTHLY GROWTH RATES BY SECTORS IN THE EMU 2003-2004-2005 (a)																
	Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual Rates (b)		
														D03/D02	D04/D03	D05/D04
(1) AE (9.463%) ^(c)	2003	0.2	0.3	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.0	1.9		
	2004	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1		2.4	
	2005	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1		
(2) TOBACCO (2.373%)	2003	4.2	1.0	0.1	1.2	0.1	0.1	0.1	0.1	0.3	1.4	2.3	0.3	11.7		
	2004	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		2.8	
	2005	4.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			5.3
(3) MAN (31.009%)	2003	-1.4	0.0	1.1	0.6	0.3	-0.2	-1.4	-0.1	1.1	0.6	0.3	-0.1	0.8		
	2004	-1.6	-0.1	1.1	0.6	0.2	-0.1	-1.3	-0.1	1.1	0.6	0.3	-0.1		0.5	
	2005	-1.5	-0.1	1.1	0.6	0.2	-0.1	-1.3	-0.1	1.1	0.6	0.3	-0.1			0.7
BENE [(1)+(2)+(3)] (42.845%)	2003	-0.8	0.1	0.9	0.5	0.3	-0.1	-1.0	0.0	0.9	0.5	0.3	0.0	1.6		
	2004	-1.0	0.0	0.8	0.5	0.2	-0.1	-0.9	0.0	0.8	0.5	0.2	0.0		1.1	
	2005	-0.8	0.0	0.9	0.5	0.2	-0.1	-0.9	0.0	0.8	0.5	0.2	0.0			1.3
(4) SERV (41.334%)	2003	-0.2	0.3	0.2	0.3	0.0	0.3	0.6	0.3	-0.3	-0.1	-0.1	0.9	2.3		
	2004	0.0	0.4	0.1	0.4	0.0	0.3	0.7	0.2	-0.3	-0.1	-0.1	0.9		2.6	
	2005	-0.1	0.4	0.3	0.1	0.2	0.3	0.7	0.2	-0.3	-0.1	-0.1	0.9			2.6
IPSEBENE [(1)+(2)+(3)+(4)] (84.178%)	2003	-0.5	0.3	0.5	0.4	0.1	0.1	-0.2	0.1	0.4	0.3	0.1	0.4	1.9		
	2004	-0.5	0.2	0.5	0.4	0.1	0.1	-0.1	0.1	0.2	0.2	0.1	0.4		1.8	
	2005	-0.4	0.2	0.6	0.3	0.2	0.1	-0.1	0.1	0.2	0.2	0.1	0.4			1.9
(5) ANE (7.689%)	2003	1.4	0.3	0.5	0.4	0.3	0.6	-0.6	-0.4	1.2	-0.3	-0.2	0.0	3.2		
	2004	1.1	-0.4	0.2	0.3	0.1	-0.1	-0.7	-0.7	0.8	-0.1	-0.1	0.3		0.7	
	2005	1.3	0.0	0.4	0.4	0.2	0.2	-0.6	-0.5	1.0	-0.2	-0.2	0.2			2.1
(6) ENE (8.133%)	2003	3.1	1.9	1.0	-2.9	-2.1	0.0	0.5	1.1	-0.1	-0.3	-0.2	-0.2	1.8		
	2004	1.0	-0.4	0.5	0.5	0.0	-0.1	0.1	-0.2	-0.1	0.1	0.0	-0.2		1.2	
	2005	-0.1	0.1	0.0	0.1	-0.2	-0.1	0.1	0.0	0.1	0.1	0.1	0.1			0.1
HICP (100%)	2003	-0.1	0.4	0.6	0.1	-0.1	0.1	-0.1	0.2	0.4	0.1	0.1	0.3	2.0		
	2004	-0.2	0.1	0.5	0.4	0.1	0.1	-0.1	0.0	0.3	0.2	0.1	0.4		1.8	
	2005	-0.3	0.2	0.5	0.3	0.2	0.1	-0.1	0.1	0.3	0.2	0.1	0.4			1.8

** Weights on Global HICP are shown in brackets

(a) Figures in bold type are forecasts

(b) December over December rate of growth

(c) To date the aggregate AE, following Eurostat methodology, included tobacco prices. From now on, our definition of AE, processed food, is more accurate and does therefore not include tobacco prices.

Table A6A

US ANNUAL RATES OF GROWTH ON CPI AND ITS COMPONENTS⁽¹⁾

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avrg 03/ 02 (2)	Avrg 04/ 03 (3)	Avrg 05/ 04 (4)
Non energy commodities less food (1)	2003	-1.4	-1.5	-1.4	-1.8	-1.9	-1.8	-1.8	-2.2	-2.4	-2.4	-2.6	-2.5	-2.0		
	2004	-2.3	-2.0	-2.0	-1.7	-1.5	-1.4	-1.4	-1.1	-1.0	-0.7	-0.4	-0.2		-1.3	
	2005	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0		
Non energy services (2)	2003	3.4	3.2	3.0	2.9	3.0	2.9	2.9	2.7	2.8	2.9	2.6	2.6	2.9		
	2004	2.5	2.6	2.7	2.7	2.5	2.6	2.5	2.6	2.6	2.4	2.6	2.6		2.6	
	2005	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8			
Core inflation (3=1+2)	2003	1.9	1.7	1.7	1.5	1.6	1.5	1.5	1.3	1.2	1.3	1.1	1.1	1.5		
	2004	1.2	1.3	1.4	1.4	1.3	1.4	1.4	1.5	1.6	1.6	1.8	1.8		1.5	
	2005	1.9	1.9	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0			
Core inflation less owner's equivalent rent of primary residence	2003	1.4	1.2	1.2	1.0	1.2	1.3	1.3	1.0	0.9	1.0	0.7	0.8	1.1		
	2004	0.9	1.1	1.2	1.3	1.1	1.2	1.2	1.4	1.5	1.5	1.8	1.8		1.3	
	2005	1.9	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9			
Food (4)	2003	1.0	1.4	1.4	1.2	1.7	2.1	2.1	2.5	2.4	2.9	3.2	3.6	2.1		
	2004	3.5	3.1	3.0	3.3	3.2	2.9	3.1	3.0	3.0	2.8	2.6	2.3		3.0	
	2005	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.4			
Energy (5)	2003	14.1	22.0	23.4	13.0	9.0	9.3	9.1	11.8	14.7	8.8	6.2	6.9	12.2		
	2004	7.8	4.5	1.7	4.7	8.7	7.7	5.9	2.5	-0.2	3.3	4.9	6.2		4.7	
	2005	2.1	-1.2	-4.0	-4.4	-5.3	-4.5	-3.3	-2.9	-3.1	-2.9	-2.6	-2.9			
All items (6=3+4+5)	2003	2.6	3.0	3.0	2.2	2.1	2.1	2.1	2.2	2.3	2.0	1.8	1.9	2.3		
	2004	1.9	1.7	1.6	1.9	2.1	2.1	2.0	1.8	1.6	1.9	2.1	2.2		1.9	
	2005	2.0	1.8	1.5	1.6	1.5	1.5	1.7	1.7	1.7	1.7	1.7	1.7			
All items less owner's equivalent rent of primary residence	2003	2.4	3.0	3.1	2.1	1.9	2.1	2.1	2.2	2.4	2.0	1.7	1.9	2.2		
	2004	1.9	1.7	1.6	2.0	2.2	2.2	2.0	1.8	1.6	1.9	2.2	2.3		2.0	
	2005	2.0	1.7	1.3	1.4	1.3	1.3	1.5	1.5	1.5	1.5	1.5	1.5			

(1) Figures in bold type are forecasted values.

(2) Mean level of 2003 over 2002 growth rate.

(3) Mean level of 2004 over 2003 growth rate.

(4) Mean level of 2005 over 2004 growth rate.

Table A6B

US MONTHLY RATES OF GROWTH ON CPI AND ITS COMPONENTS ⁽¹⁾

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	03(XII)/ 02(XII) (*)	04(XII)/ 03(XII) (*)	05(XII)/ 04(XII) (*)
Non energy commodities less food (1)	2003	-0.6	0.3	0.4	-0.1	-0.6	-0.7	-0.6	-0.1	0.4	0.1	-0.4	-0.6	-2.5		
	2004	-0.4	0.5	0.4	0.3	-0.4	-0.6	-0.6	0.1	0.5	0.5	0.0	-0.5		-0.2	
	2005	-0.3	0.5	0.3	0.3	-0.4	-0.6	-0.5	0.1	0.5	0.5	0.0	-0.5			0.0
Non energy services (2)	2003	0.5	0.4	0.2	0.0	0.3	0.2	0.4	0.3	0.0	0.4	-0.1	0.0	2.6		
	2004	0.5	0.5	0.3	0.1	0.1	0.3	0.3	0.3	0.0	0.3	0.1	0.0		2.6	
	2005	0.4	0.5	0.3	0.2	0.0	0.3	0.3	0.3	0.0	0.3	0.0	0.0			2.8
Core inflation (3=1+2)	2003	0.2	0.4	0.3	0.1	0.1	-0.1	0.1	0.2	0.1	0.3	-0.2	-0.2	1.1		
	2004	0.2	0.5	0.3	0.1	-0.1	0.0	0.1	0.2	0.1	0.3	0.0	-0.1		1.8	
	2005	0.2	0.5	0.3	0.2	-0.1	0.0	0.1	0.2	0.1	0.3	0.0	-0.1			2.0
Core inflation less owner's equivalent rent of primary residence	2003	0.2	0.5	0.3	0.1	0.0	-0.1	0.0	0.1	0.0	0.3	-0.3	-0.3	0.8		
	2004	0.2	0.6	0.5	0.2	-0.1	0.0	0.0	0.3	0.1	0.4	-0.1	-0.3		1.8	
	2005	0.3	0.6	0.4	0.3	-0.2	0.0	0.1	0.3	0.1	0.4	-0.1	-0.2			1.9
Food (4)	2003	0.1	0.5	0.2	-0.1	0.2	0.4	0.1	0.4	0.2	0.6	0.4	0.7	3.6		
	2004	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.4	0.2	0.4		2.3	
	2005	0.4	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.1	0.3			2.4
Energy (5)	2003	3.4	6.2	5.3	-3.2	-3.0	1.9	0.3	2.7	2.8	-5.3	-2.8	-1.0	6.9		
	2004	4.2	3.0	2.5	-0.3	0.7	0.9	-1.3	-0.6	0.2	-2.0	-1.3	0.2		6.2	
	2005	0.3	-0.4	-0.4	-0.7	-0.2	1.7	-0.1	-0.2	0.0	-1.8	-1.1	0.0			-2.9
All items (6=3+4+5)	2003	0.4	0.8	0.6	-0.2	-0.2	0.1	0.1	0.4	0.3	-0.1	-0.3	-0.1	1.9		
	2004	0.5	0.6	0.5	0.1	0.0	0.1	0.0	0.2	0.1	0.1	0.0	0.0		2.2	
	2005	0.3	0.4	0.2	0.1	0.0	0.2	0.1	0.2	0.1	0.2	0.0	0.0			1.7
All items less owner's equivalent rent of primary residence	2003	0.5	1.0	0.7	-0.3	-0.2	0.1	0.1	0.4	0.3	-0.2	-0.4	-0.2	1.9		
	2004	0.6	0.7	0.6	0.1	0.0	0.1	-0.1	0.2	0.1	0.1	-0.1	-0.1		2.3	
	2005	0.3	0.4	0.3	0.1	-0.1	0.2	0.1	0.2	0.1	0.1	-0.1	-0.1			1.5

(1) Figures in bold type are forecasted values.

(2) December 2003 over December 2002 growth rate.

(3) December 2004 over December 2003 growth rate.

(4) December 2005 over December 2004 growth rate.

Table A7A																
"CONSUMER PRICE INDEX, ANNUAL GROWTH RATES IN SPAIN 2003-2004-2005 (a)																
(**) Concept	Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avr 03/02(b)	Avr 04/03(c)	Avr 05/04(d)
(1) AE 17.17%	2003	3.7	4.1	4.1	3.0	2.7	2.5	2.5	2.5	2.5	2.6	2.8	2.7	2.9		
	2004	2.5	2.2	2.3	2.4	2.5	2.6	2.5	2.6	2.6	2.4	2.4	2.3		2.4	
	2005	2.4	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.5	2.5		2.5
(2) MAN 30.05%	2003	1.9	2.2	2.3	2.6	2.6	2.5	2.2	2.1	2.1	1.4	1.2	1.2	2.0		
	2004	0.7	1.1	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.5	1.7	1.6		1.1	
	2005	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3			1.3
(3) SER 35.05%	2003	4.0	3.8	3.7	3.9	3.5	3.4	3.6	3.7	3.5	3.7	3.7	3.6	3.7		
	2004	3.6	3.5	3.6	3.8	3.9	3.8	3.8	3.6	3.9	3.7	3.5	3.4		3.7	
	2005	3.6	3.6	4.1	3.3	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.9		3.7
IPSEBENE [(1)+(2)+(3)] 82.28%	2003	3.1	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.8	2.7	2.6	2.5	2.9		
	2004	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6		2.5	
	2005	2.5	2.5	2.7	2.4	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7			2.6
IPSEBENE-XT 77.21%	2003	2.9	3.0	3.0	3.2	3.1	3.0	2.8	2.7	2.7	2.6	2.6	2.6	2.8		
	2004	2.4	2.5	2.4	2.2	2.2	2.2	2.3	2.4	2.3	2.4	2.4	2.4		2.3	
	2005	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6			2.6
(5) ANE 8.60%	2003	7.2	5.9	5.6	4.5	4.6	4.8	5.5	6.5	7.7	6.9	6.6	6.4	6.0		
	2004	6.5	7.7	7.9	8.3	8.0	7.3	6.8	5.2	4.7	5.4	5.8	5.9		6.6	
	2005	5.3	5.2	5.0	4.9	4.9	5.1	5.0	5.4	5.2	5.3	5.5	5.5			5.2
(6) ENE 9.12%	2003	5.5	6.7	6.2	0.8	-1.9	-0.6	0.0	1.1	-0.1	-1.8	1.2	0.0	1.4		
	2004	-1.7	-3.0	-3.7	-0.5	2.1	2.6	1.5	0.0	0.4	1.4	1.0	1.2		0.1	
	2005	0.5	0.4	-0.2	-0.8	-0.9	-0.7	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2			-0.3
IPC 100%	2003	3.7	3.7	3.7	3.1	2.7	2.7	2.8	3.0	2.9	2.7	2.8	2.6	3.0		
	2004	2.3	2.3	2.2	2.6	2.9	2.8	2.8	2.4	2.6	2.7	2.8	2.7		2.6	
	2005	2.6	2.6	2.7	2.4	2.5	2.6	2.6	2.7	2.7	2.7	2.7	2.7			2.6

* T1,12 growth rate lags fundamental changes in prices 6 months with respect to monthly growth rates. It is necessary to evaluate forecast in order to analyze current situation.

** Weights on General CPI are shown in brackets.

(a) Figures in bold type are forecasted values

(b) 2003 over 2002 mean growth

(c) 2004 over 2003 mean growth

(d) 2005 over 2004 mean growth

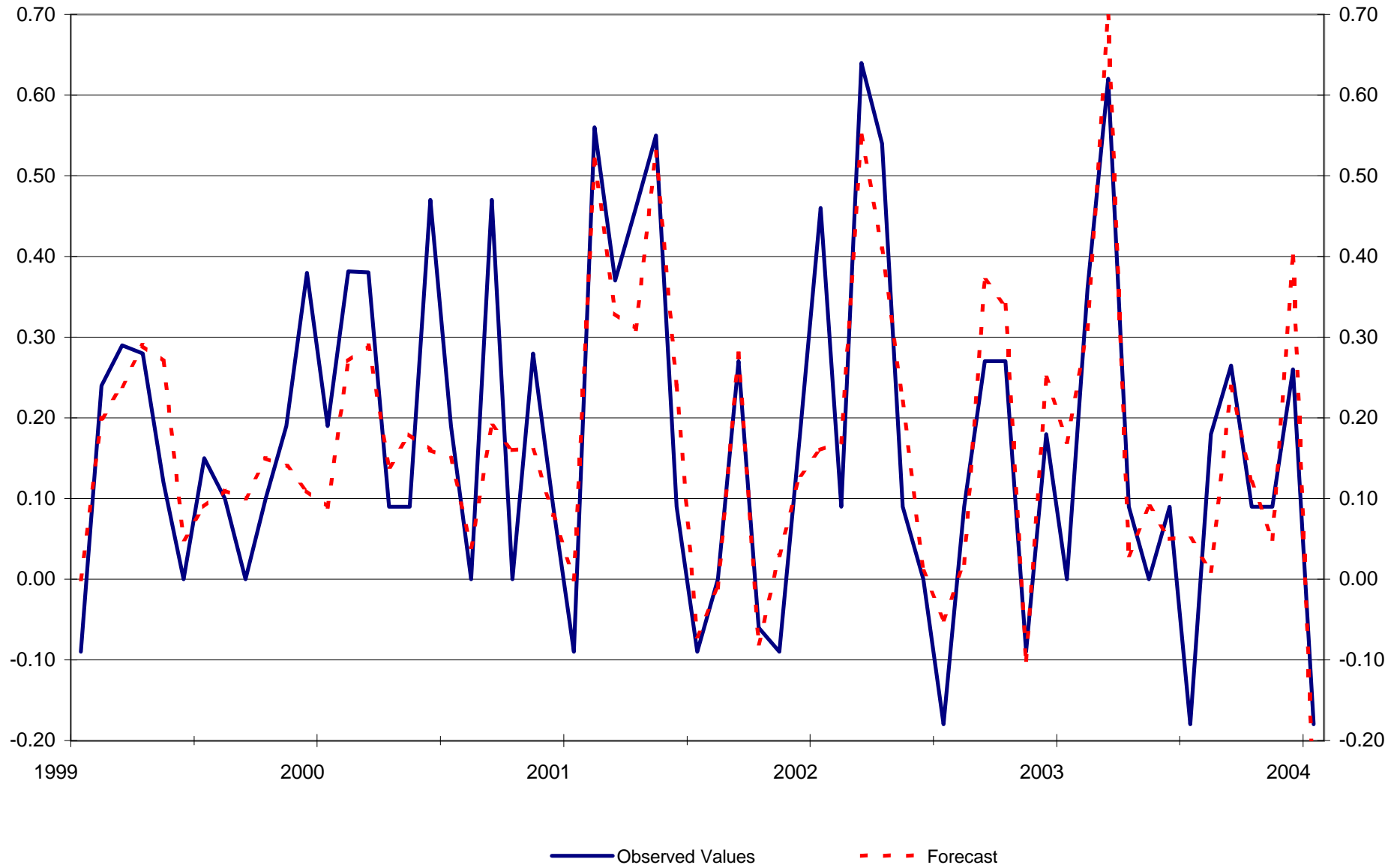
Source:

(*) Concept	Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D03/ D02(b)	D04/ D03(c)	D05/ D04(d)
(1) AE 17.17%	2003	0.5	0.6	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.2	2.7	2.3	2.5
	2004	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.1			
	2005	0.4	0.2	0.4	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1			
(2) MAN 30.05%	2003	-3.1	0.0	1.0	2.7	0.5	-0.2	-3.5	-0.3	1.0	2.3	1.1	-0.1	1.2	1.6	1.3
	2004	-3.6	0.4	0.9	2.7	0.5	-0.2	-3.5	-0.2	1.1	2.8	1.3	-0.2			
	2005	-4.0	0.4	0.9	2.7	0.4	-0.2	-3.5	-0.2	1.0	2.8	1.3	-0.2			
(3) SER 35.05%	2003	0.7	0.3	0.6	0.7	-0.2	0.4	0.6	0.6	-0.5	0.2	-0.2	0.4	3.6	3.4	3.9
	2004	0.6	0.2	0.7	0.8	-0.1	0.3	0.6	0.4	-0.2	0.1	-0.4	0.3			
	2005	0.8	0.3	1.1	0.0	0.4	0.3	0.7	0.5	-0.2	0.1	-0.4	0.3			
IPSEBENE [(1)+(2)+(3)] 82.28%	2003	-0.9	0.3	0.7	1.2	0.2	0.1	-1.0	0.2	0.2	1.0	0.4	0.1	2.5	2.6	2.7
	2004	-0.9	0.3	0.7	1.3	0.2	0.1	-1.0	0.2	0.3	1.0	0.4	0.1			
	2005	-1.0	0.3	0.9	1.0	0.4	0.1	-0.9	0.2	0.3	1.0	0.3	0.1			
IPSEBENE-XT 77.21%	2003	-0.9	0.2	0.7	1.3	0.3	0.1	-1.3	0.1	0.4	1.1	0.5	0.1	2.6	2.4	2.6
	2004	-1.1	0.3	0.6	1.2	0.3	0.1	-1.2	0.1	0.4	1.2	0.6	0.0			
	2005	-1.0	0.3	0.6	1.2	0.3	0.1	-1.1	0.1	0.4	1.2	0.5	0.0			
(5) ANE 8.60%	2003	0.5	-1.5	0.5	0.0	0.6	0.3	1.5	1.9	2.2	-0.4	0.0	0.9	6.4	5.9	5.5
	2004	0.6	-0.4	0.6	0.4	0.3	-0.4	1.0	0.3	1.8	0.2	0.4	1.0			
	2005	0.1	-0.5	0.4	0.3	0.3	-0.1	0.9	0.7	1.6	0.3	0.5	1.0			
(6) ENE 9.12%	2003	2.3	1.4	1.4	-2.7	-2.4	-0.6	0.9	1.4	-0.4	-1.1	0.3	-0.3	0.0	1.2	-0.2
	2004	0.6	0.0	0.6	0.5	0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1			
	2005	-0.1	-0.1	0.0	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0			
IPC 100%	2003	-0.5	0.2	0.8	0.8	-0.1	0.1	-0.7	0.5	0.3	0.7	0.3	0.2	2.6	2.7	2.7
	2004	-0.7	0.2	0.7	1.2	0.2	0.0	-0.7	0.1	0.4	0.9	0.3	0.2			
	2005	-0.8	0.2	0.7	0.8	0.3	0.1	-0.7	0.2	0.4	0.9	0.3	0.2			

** Weights on General CPI are shown in brackets.
(a) Figures in bold type are forecasted values
(b) December 2003 over December 2002.
(c) December 2004 over December 2003.
(d) December 2005 over December 2004.

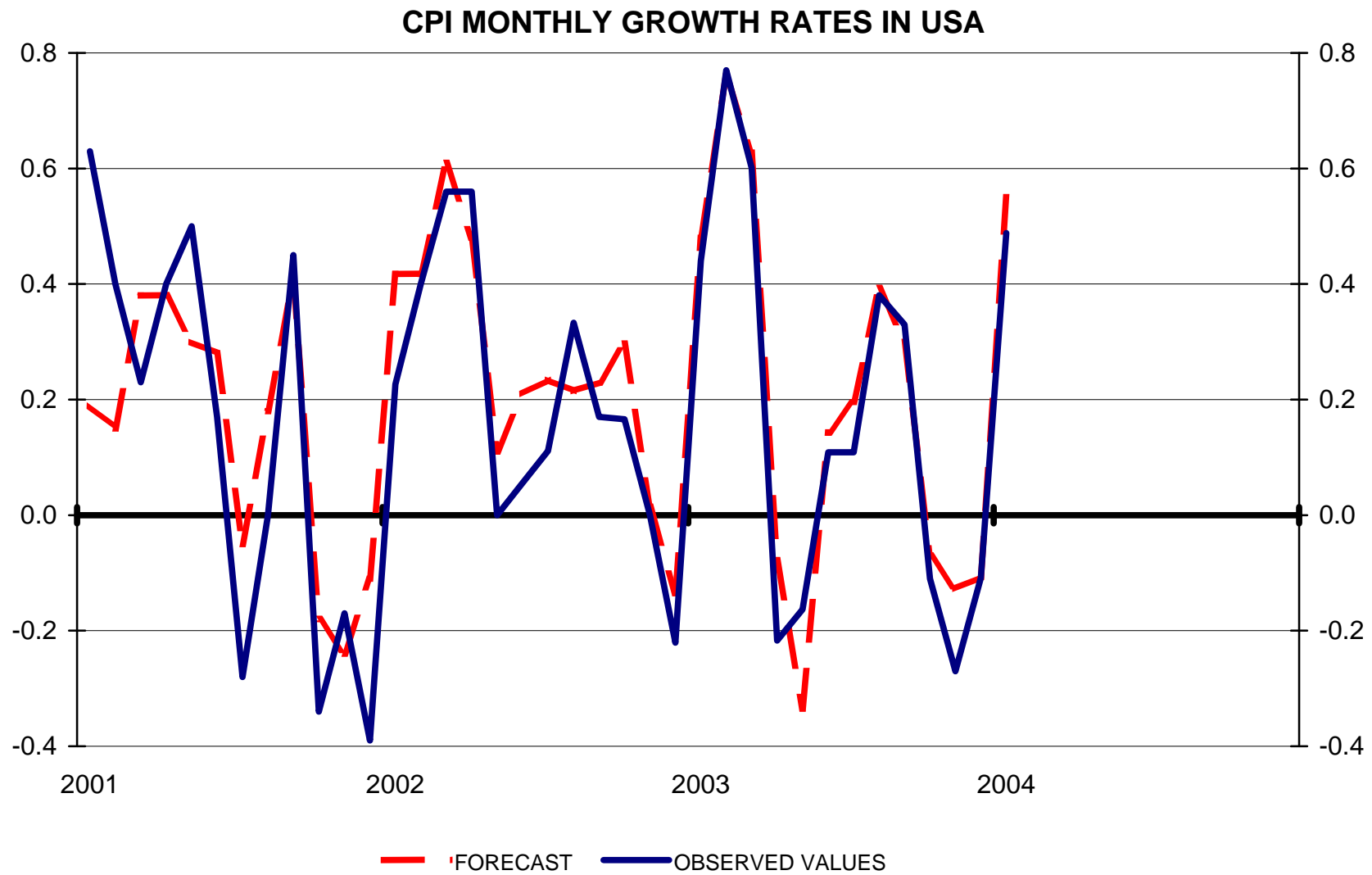
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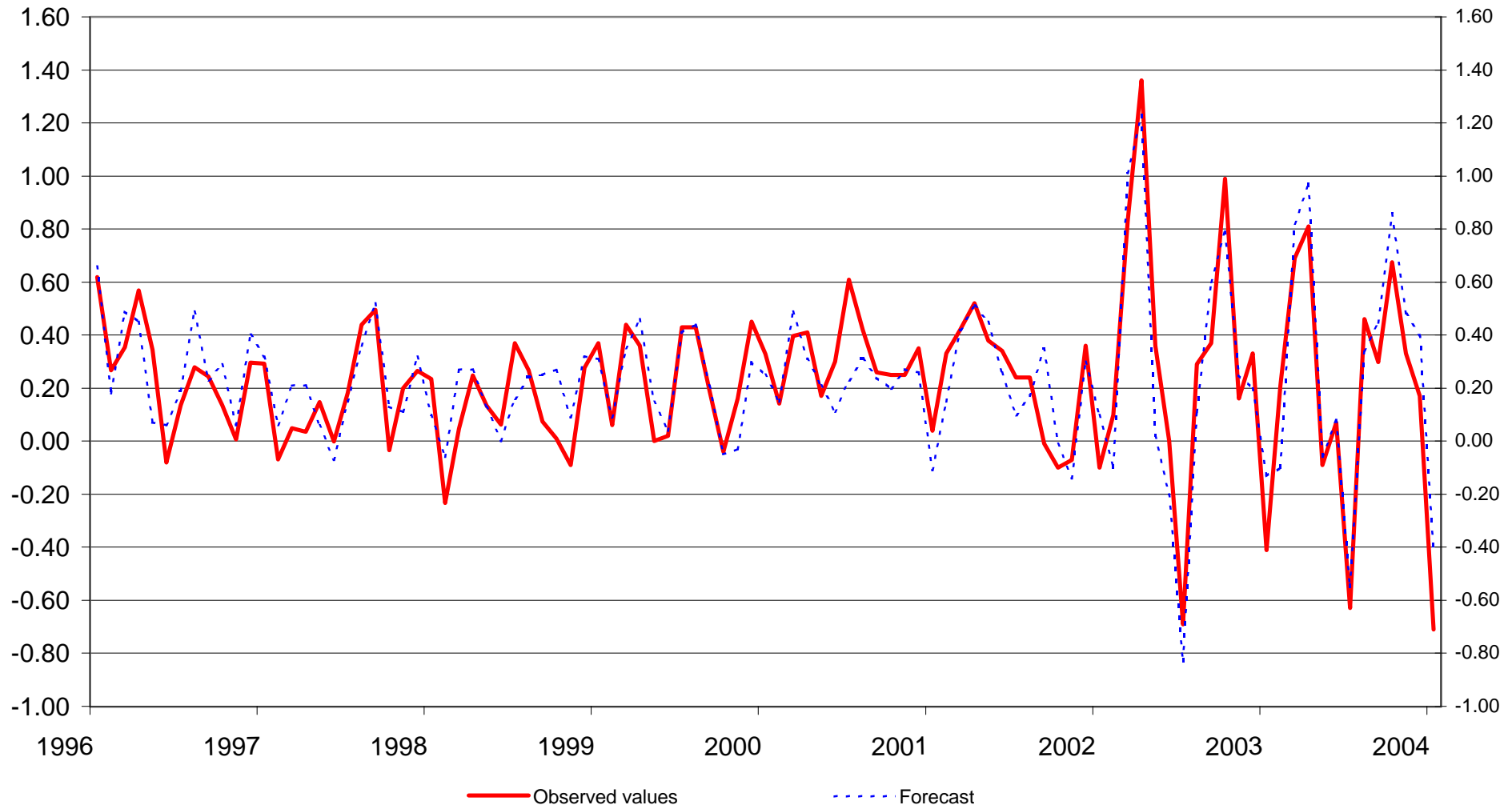
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Graph A1B

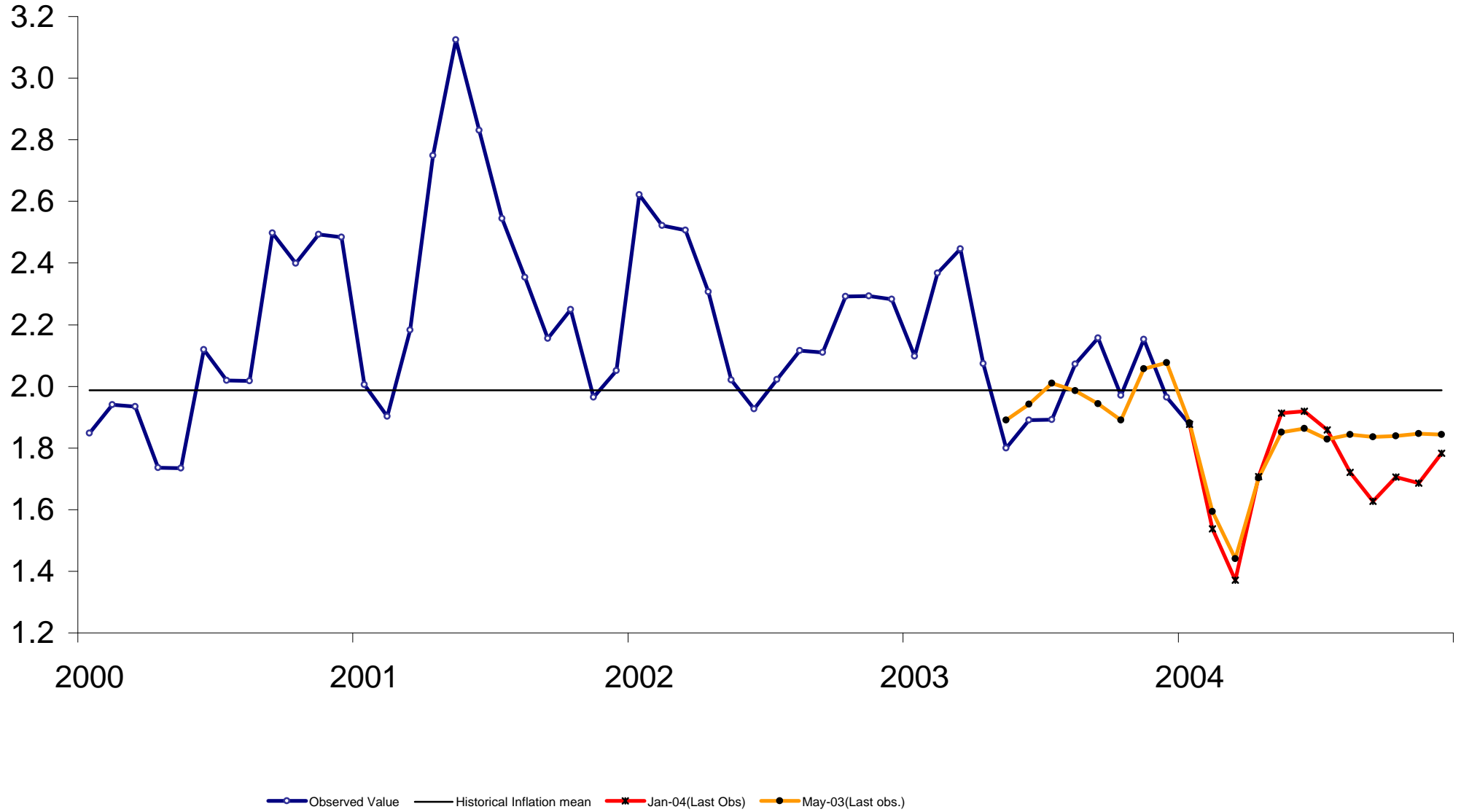


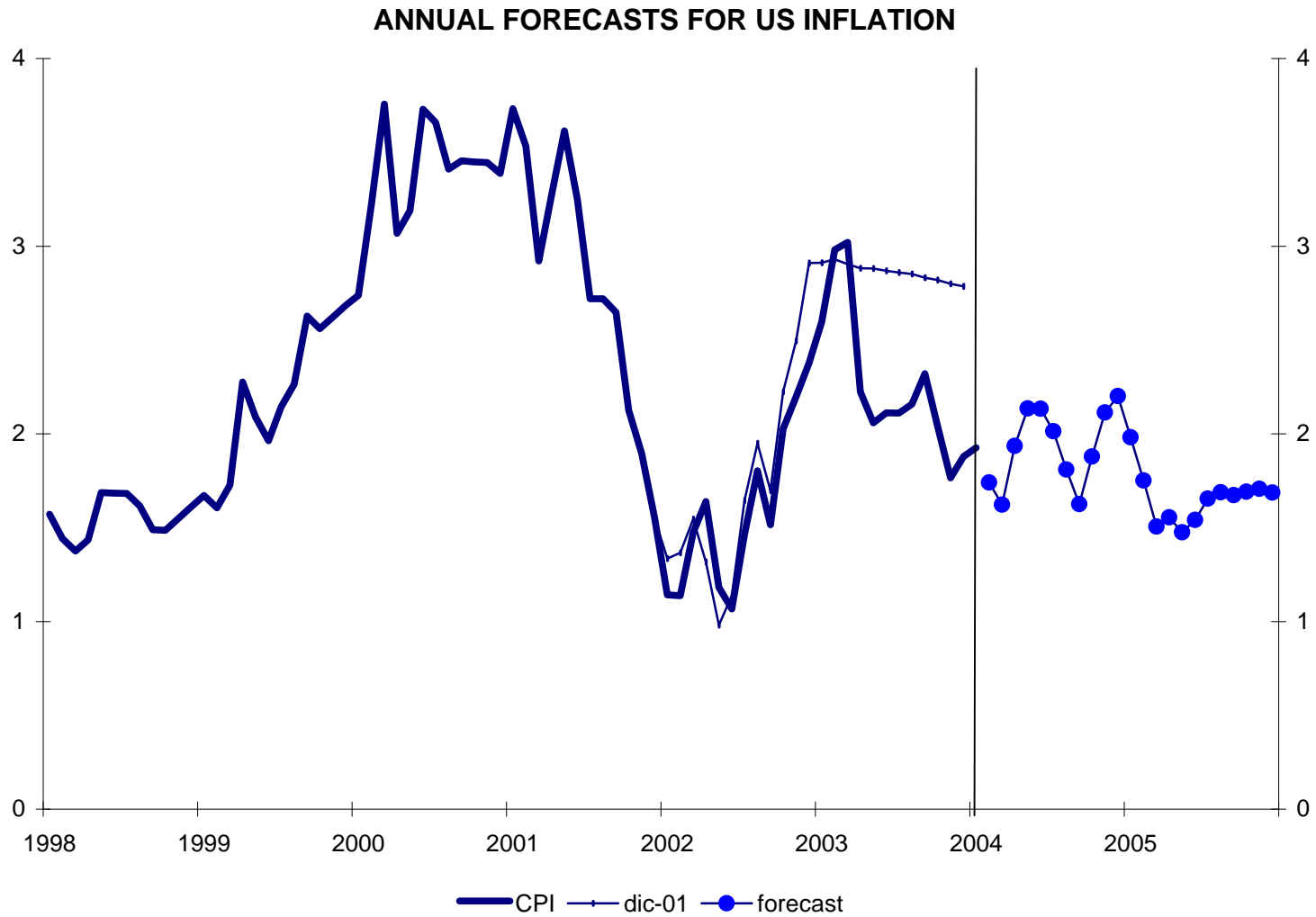
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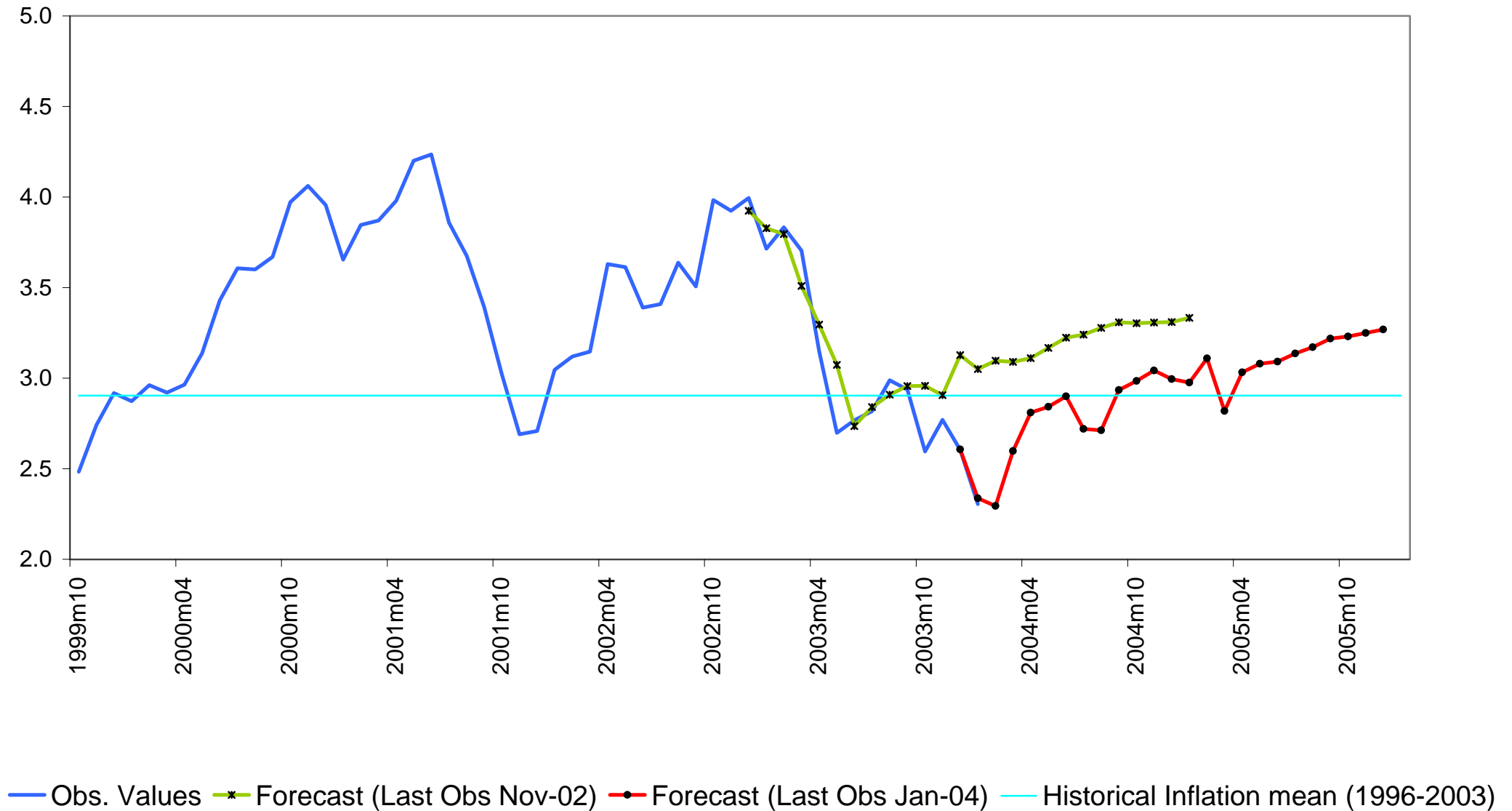
ANNUAL FORECASTS FOR THE EMU INFLATION (year-on-year rates)





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ANNUAL FORECASTS FOR TOTAL INFLATION IN SPAIN (year-on-year rates)



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INTERNATIONAL INFLATION FORECASTS

	FEBRUARY 2004		AVERAGE ANNUAL RATES				
	Monthly Rate	Annual Rate	2001*	2002*	2003*	2004	2005
ECONOMIC MONETARY UNION							
Total Inflation	0.1	1.5	2.3	2.3	2.1	1.7	1.7
Core Inflation	0.2	1.8	1.9	2.5	2.0	1.8	1.9
Goods	0.0	1.2	1.5	1.9	1.5	1.2	1.3
Services	0.4	2.6	2.5	3.1	2.6	2.6	2.6
GDP							
Private Final Consumption Expenditure			2.0	0.8	1.3	1.4	1.7
Gross Fixed Capital Formation			-0.1	-2.9	-2.0	-0.4	2.3
Exports of Goods and Services			3.3	1.7	1.0	7.7	4.8
Imports of Goods and Services			1.8	0.1	1.4	6.0	4.2
Gross Value Added Total			1.8	1.2	0.6	2.0	2.3
Gross Value Added Agriculture			-1.4	-0.8	-2.6	0.2	0.9
Gross Value Added Industry			0.6	1.0	0.6	2.3	2.5
Gross Value Added Construction			-0.6	-0.9	-1.2	-0.3	0.0
Gross Value Added Services			2.5	1.5	0.9	2.2	2.1
OTHER ECONOMIC INDICATOR							
Industrial Production Index (excluding construction)			0.5	-0.5	0.4	2.1	1.8
UNITED STATES							
Total Inflation	0.6	1.7	2.8	1.6	2.3	1.9	1.7
Core Inflation	0.5	1.3	2.7	2.3	1.5	1.5	1.9
Goods	0.5	-2.0	0.3	-1.1	-2.0	-1.3	-0.1
Services	0.5	2.6	3.7	3.8	2.9	2.6	2.7

*Observed values.

SPANISH ECONOMY FORECASTS

	FEBRUARY 2004		AVERAGE ANNUAL RATES				
	Monthly Rate	Annual Rate	2001*	2002*	2003*	2004	2005
Total Inflation	0.2	2.3	3.6	3.5	3.0	2.6	2.6
Trend Inflation	0.3	2.5	3.5	3.4	2.8	2.3	2.6
Goods	0.4	1.6	3.1	2.6	2.3	1.6	1.7
Services	0.3	3.4	4.1	4.3	3.5	3.2	3.6

*Observed values.

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