



OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS

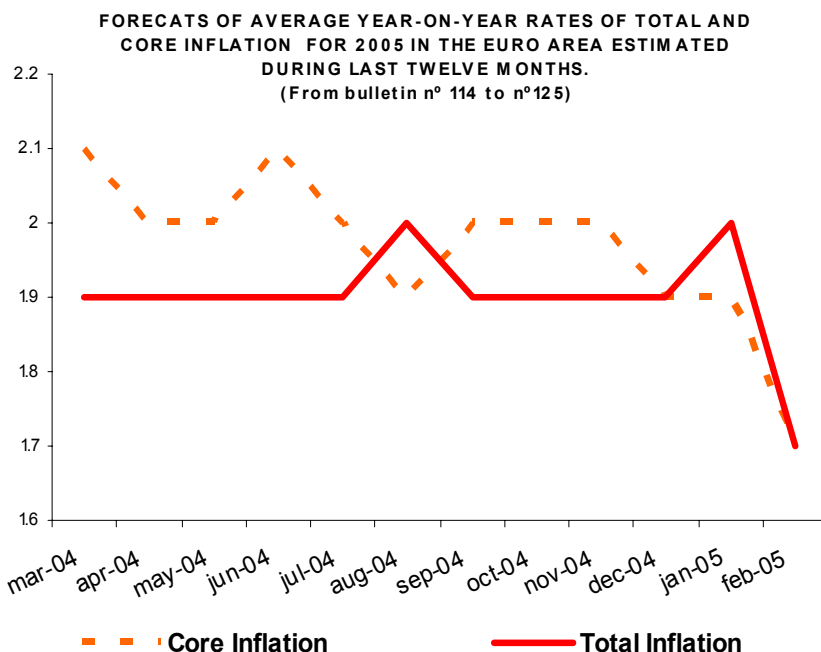


Universidad Carlos III de Madrid

Instituto Flores de Lemus

Nº 125, February 2005

With the last observed figure, the forecasts for total and core inflation for 2005 fall considerably.



Note: The forecast in each case are estimated with information until last month

Source: Eurostat & IFL (UC3M)

Date: February 2, 2005

Monthly Debate

Econometric modelling for short-term inflation forecasting and diagnosis in the euro area.

Economic agents require frequent updates to a path of inflation forecasts providing the probability of different value ranges occurring at each point of the path and including an explanation of the factors by which they are determined. The author's thesis studies how to approach this need, developing a method for analysing inflation in the euro area, aimed at providing a reliable forecast and obtaining an explanation of the factors on which it depends.

by Rebeca Albacete Sánchez-Mateos

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Monthly Debate

The Capitalism to Come.

PART III: FIRM, MARKET AND STATE

III.3.3 THE SIZE OF THE STATE AND THE NUMBERS OF STATE

by Juan Urrutia Elejalde. University professor in Economics See Page. 49

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The Capitalism to Come
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Nº125



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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. EURO AREA AND EUROPEAN UNION

I.1. INFLATION

I.1.1 MAIN POINTS AND NEW RESULTS

A 0.3% increase is expected in the euro area's HCPI in February, with February's annual inflation increasing to 2.0% from the 1.9% observed in January 2005 (see Table I.1.1.1).

The monthly rate of inflation in the euro area in January (-0.6%) was significantly below our forecast (-0.41%). These downwards surprises have occurred in all components less energy. This shows that factors with certain common characteristics must have affected different HCPI components to induce this significant moderating impact on prices.

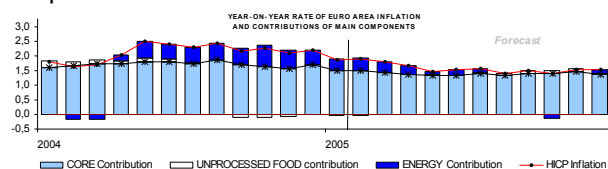
Table I.1.1.1.

ANNUAL AVERAGE RATES OF GROWTH						
Inflation	Observed values			Forecasts		
	Ave ⁽²⁾ 2003 ¹	Ave ⁽²⁾ 2004	2005 Jan ⁽¹⁾	2005 Feb ⁽¹⁾	Ave ⁽²⁾ 2005	Ave ⁽²⁾ 2006
CORE (83,83%)	2.0	2.0	2.0	2.0	1.9	1.9
TOTAL (100%)	2.4	2.1	2.1	2.1	2.0	1.8

Source: EUROSTAT & IFL (UC3M)¹⁾ Growth of the month over the same month of the previous year

⁽²⁾ Growth of the average of the reference year over previous average of the

Graph I.1.1.1.

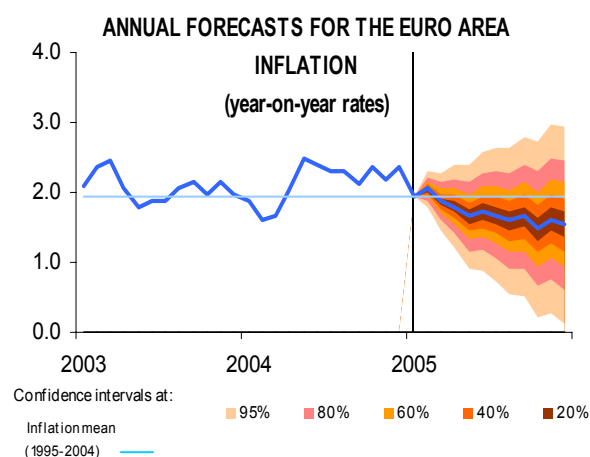


Source : Eurostat & IFL(UC3M)
Date: March 2, 2005

For 2005, we expect total inflation to fall progressively up to May and become stable from June until the end of the year, due to the evolution of energy prices. The heavy downwards innovation in core inflation in January led to a reduction in our forecasts, with an annual core inflation rate of 1.8% expected for February, representing two tenths less than the mean value for 2004. This reduces the mean annual total inflation rate for 2005 by two tenths of a percentage point. The evolution of energy prices will generate a specific monthly profile for the annual total inflation rate, which is forecast as follows. From May on, the rate will decrease for three consecutive months, stabilising at around 1.6% from June to December, with the mean annual rate for 2005 forecast at 1.7%.

With these forecasts, the likelihood of compliance with the ECB inflation target from April on is over 50% and it is therefore very likely that the ECB will not alter its reference interest rate in their next meetings. For 2006, the forecast for average total inflation falls to 1.7%.

Graph I.1.1.2



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005

This decrease in European inflation in January, and its consequences on inflation forecasts, increases the differential between the US and the euro area. Using a homogeneous measurement for the two areas, this differential will grow to one percentage point over the next three months, when it will return to approximately half that value for the rest of 2005.

Table I.1.1.2.

HICP	ANNUAL AVERAGE RATES OF GROWTH				
	Observed			Forecasts	
	2002	2003	2004	2005	2006
SPAIN (11.11%)*	3.6	3.1	3.1	2.8	2.8
GERMANY (29.26%)	1.3	1.0	1.8	1.4	1.2
FRANCE (20.70%)	1.9	2.2	2.3	1.4	1.8
ITALY (19.26%)	2.6	2.8	2.3	1.8	2.8
SPAIN (100%)	2.3	2.1	2.1	1.7	1.7
UNITED KINGDOM	1.3	1.4	1.3	1.8	1.5

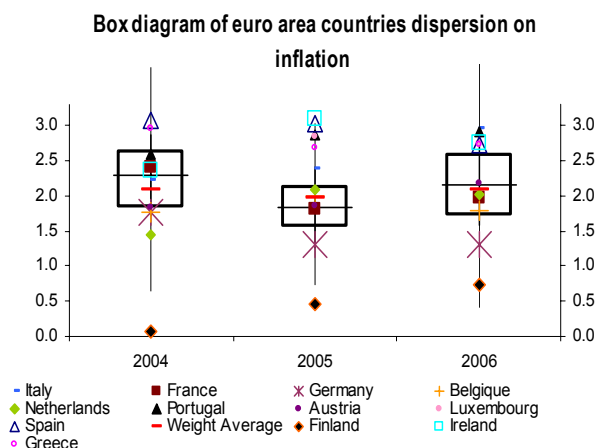
Source : Eurostat & IFL(UC3M)
Date: March 2, 2005

By country, the annual rates of total inflation expected in February are 1.7% in Germany, Italy and France, and 3.4% in Spain. In France, Italy, Germany and Belgium there has been a fall in our inflation forecasts due to important downwards innovations. However, in countries like Spain,



Greece, Ireland, Luxembourg or Portugal these innovations have not occurred, leading to slight increases in forecast average inflation (see Table I.1.1.2). Forecast median inflation for the countries in the euro area has fallen to 1.8% for 2005, with an important dispersion (from 0.5% to 3.0% between countries (see Graph I.1.1.3).

Graph I.1.1.3.



Source : Eurostat & IFL(UC3M)
Date: March , 2005

Consequently, the real interest rates calculated with these inflation forecasts show differences of up to 2.5 percentage points. However, half the countries show interest rates quite close to zero on both sides. The ECB interest rate policy thus continues to operate in favour of growth in demand which, in view of the above, does not seem likely to have short-term inflationist effects, precisely due to the downwards effect on inflation produced by debt.

Table I.1.1.3.

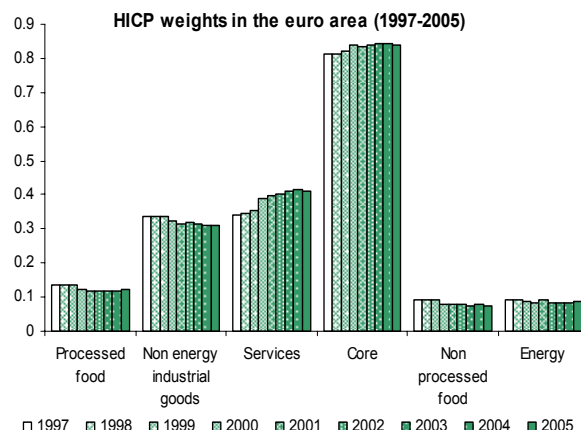
	INFLATION EXPECTATIONS		ACTUAL REAL INTEREST RATES	
	Three Months	One Year	Three Months	One Year
Greece	4.06	3.74	-1.92	-1.40
Italy	2.20	2.81	-0.06	-0.47
Spain	2.72	2.78	-0.58	-0.44
Portugal	2.04	2.54	0.10	-0.20
Ireland	2.12	2.35	0.02	-0.01
Luxembourg	2.27	2.16	-0.13	0.18
Austria	2.11	2.09	0.03	0.25
Netherlands	1.84	2.03	0.30	0.31
France	1.44	1.77	0.70	0.57
Belgium	1.49	1.58	0.65	0.76
Finland	0.64	1.28	1.50	1.06
Germany	1.29	1.21	0.85	1.13

Source : Eurostat & IFL(UC3M)
Date: March 02, 2005

With the January figures, Eurostat has updated the weightings of the different components of the HCPI

in the euro area. These weightings depend on the relative importance of consumer spending on the different components. Graph I.1.1.4 shows how services have grown in importance over this period, unlike the other components, especially non-energy industrial goods.

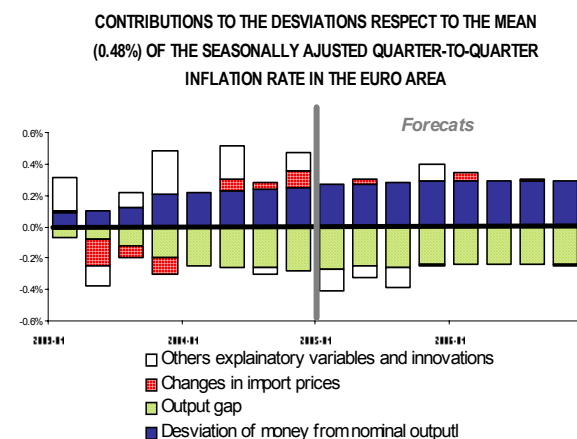
Graph I.1.1.4.



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005

As we have mentioned, the inflationist effects of monetary policy are being compensated by the opposite effects caused by the pressure of demand, so – as we have been saying for quite a few months – the ECB can be expected to maintain its reference interest rate throughout 2005.

Graph I.1.1.5.



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005



I.1.2. TABLES AND PLOTS

Tables:

- Euro area Harmonized Index of Consumer Price (HICP) disaggregation.
- Europe Forecast errors by sectors for euro area.
- Europe Forecast errors by countries for EU.
- Harmonized Index of Consumer Price (HICP) Annual Growth Rates by sectors in the euro area.
- Harmonized Index of Consumer Price (HICP) Monthly Growth Rates by sectors in the euro area.
- Harmonized Index of Consumer Price (HICP) Annual Growth Rates by countries in the euro area and EU.
- Harmonized Index of Consumer Price (HICP) Monthly Growth Rates by countries in the euro area and EU.

Plots:

- HCPI monthly growth rates in the euro area.
- Annual forecast for the euro area Inflation.
- Fan chart of annual forecast for the euro area Inflation.
- Year-on-year rate of euro area inflation and contributions of main components.
- Year-on-year rate of euro area inflation and contributions of main explanatory variables.
- Box diagram of the euro area countries annual average rates of growth.



METHODOLOGY: ANALYSIS OF EURO AREA INFLATION BY SECTORS

BASIC COMPONENTS AGGREGATES			BASIC COMPONENTS
HICP TOTAL	IPSEBENE 83.834% 1 + 2 + 3 + 4	BENE 42.822% 1 + 2 + 3	(1) AE (a) 9.394 Processed Food
			(2) TOBACCO 2.625% HICP Tobacco
	CORE INFLATION (IT IS CALCULATED ON THE IPSEBENE INDEX)	RESIDUAL INFLACION 16.166% 5 + 6 RESIDUAL INFLATION (IT IS CALCULATED ON THE RESIDUAL INDEX)	(3) MAN 30.803% HICP Non Energy Industrial Goods
			(4) SER 41.011% HICP Services
			(5) ANE 7.618% HICP Non processed Food
			(6) ENE 8.548% HICP Energy
$IPCA = 0.09349 \text{ AE} + 0.02265 \text{ TABACCO} + 0.30803 \text{ MAN} + 0.41011 \text{ SER} + 0.07618 \text{ ANE} + 0.08548 \text{ ENE}$			

(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.

Source: Eurostat & IFL (UC3M)

FORECAST ERRORS IN THE MONTHLY INFLATION RATE BY SECTORS IN THE EURO AREA					
	Weights 2005	Observed Monthly Growth	Forecast	Annual Growth Observed	Confidence interval at 80%
HICP Processed Food	120,19	0,17	0,32	2,82	± 0.14
HICP Processed Food excluding tobacco	93,94	0,15	0,15	0,43	± 0.09
HICP Tobacco	26,25	0,24	1,00	12,19	± 0.13
HICP Non Energy Industrial Goods	308,03	-1,86	-1,50	0,48	± 0.10
HICP Non Energy Processed Goods	428,22	-1,29	-1,00	1,13	± 0.09
HICP Services	410,11	-0,33	-0,07	2,37	± 0.14
CORE INFLATION (1)	838,34	-0,78	-0,54	1,78	± 0.08
HICP Unprocessed Food	76,18	0,42	1,95	-0,67	± 0.46
HICP Energy (2)	85,48	0,23	-1,23	6,18	± 0.60
RESIDUAL INFLATION (3)	161,66	0,40	0,32	2,90	± 0.39
GLOBAL INFLATION (4)	1000	-0,60	-0,41	1,93	± 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 28, 2005



FORECAST ERRORS IN THE MONTHLY INFLATION RATE IN THE EURO AREA AND EUROPEAN UNION						
	Weights 2005 euro area	Weights 2005 EU	Observed Monthly Rate	Forecast	Observed Annual Rate	Confidence Intervals at 80%
Spain	114,39		-0,95	-0,89	3,14	± 0,15
Germany	289,56		-0,54	-0,45	1,64	± 0,29
Austria	31,11		0,00	0,15	2,43	± 0,37
Belgium	33,40		-1,30	-1,11	1,97	∓ 0,32
Finland	15,89		-0,53	-0,11	-0,18	± 0,37
France	206,96		-0,61	0,08	1,61	∓ 0,20
Greece	27,45		0,22	-0,70	4,22	± 0,78
Netherlands	51,53		0,57	0,54	1,32	± 0,33
Ireland	13,21		-1,00	-0,53	2,05	± 0,30
Italy	192,41		-0,99	-0,11	1,95	± 0,23
Luxembourg	2,79		-1,00	0,11	2,85	± 0,32
Portugal	21,29		-0,55	0,08	2,03	± 0,66
Denmark		11,43	-0,26	0,06	0,78	± 0,27
United Kingdom		184,47	-0,53	-0,50	1,63	± 0,33
Sweden		18,63	-0,62	-0,09	0,53	± 0,50
(1) aggregation error -0.03%						
(2) aggregation error -0.08%						

Source : Eurostat & IFL(UC3M)
Date: February 28, 2005



HICP ANNUAL GROWTH BY SECTORS IN THE EURO AREA											
		Harmonized Consumer Prices Index									
		Core					Residual			TOTAL	
		Processed food excluding tobacco	Tobacco	Non energy industrial goods	Services	TOTAL	Non processed food	Energy	TOTAL		
Weights 2005		9,4%	2,6%	30,8%	41,0%	83,8%	7,6%	8,5%	16,2%	100%	
ANNUAL AVERAGE RATE	1997	0,6	5,6	0,6	2,4	1,5	1,3	2,7	2,0	1,6	
	1998	0,9	4,0	0,9	1,9	1,4	2,0	-2,6	-0,3	1,1	
	1999	0,5	3,1	0,7	1,5	1,1	0,0	2,4	1,2	1,1	
	2000	0,6	3,4	0,4	1,5	1,0	1,7	13,0	7,5	2,1	
	2001	2,7	3,8	0,9	2,5	1,9	7,0	2,3	4,4	2,3	
	2002	2,4	5,9	1,5	3,1	2,5	3,1	-0,6	1,1	2,3	
	2003	2,1	8,4	0,8	2,6	2,0	2,2	3,0	2,6	2,1	
	2004	1,3	12,2	0,8	2,6	2,0	0,6	4,5	2,6	2,1	
	2005	1,0	7,5	0,4	2,4	1,7	0,3	2,8	1,7	1,7	
	2006	1,8	6,0	0,7	2,4	1,8	1,7	0,7	1,2	1,7	
ANNUAL RATES (growth of the month over the same month of the previous year)	2004	January	1,9	9,0	0,6	2,5	1,9	2,9	-0,3	1,2	1,9
		February	1,9	8,3	0,9	2,7	2,0	1,9	-2,3	-0,2	1,6
		March	1,7	13,9	0,8	2,5	2,1	1,7	-2,0	-0,2	1,7
		April	1,7	13,1	1,0	2,5	2,1	1,6	2,0	1,8	2,0
		May	1,5	13,8	0,8	2,6	2,1	1,8	6,7	4,2	2,5
		June	1,4	13,8	0,8	2,6	2,1	1,3	5,9	3,6	2,4
		July	1,4	13,7	0,7	2,7	2,1	0,7	6,0	3,4	2,3
		August	1,2	13,5	0,9	2,6	2,2	-0,3	6,4	3,2	2,3
		September	0,9	13,2	0,8	2,6	2,0	-1,5	6,4	2,6	2,1
		October	0,6	11,7	0,8	2,6	2,0	-1,3	9,8	4,4	2,4
		November	0,6	9,2	0,8	2,7	1,9	-1,0	8,6	4,0	2,2
		December	0,5	13,8	0,7	2,7	2,0	0,0	7,0	3,5	2,4
	2005	January	0,4	12,2	0,5	2,4	1,8	-0,7	6,2	2,9	1,9
		February	0,4	12,0	0,5	2,3	1,8	-0,4	6,3	3,0	2,0
		March	0,5	7,5	0,5	2,5	1,7	-0,2	5,5	2,8	1,9
		April	0,6	7,2	0,5	2,2	1,6	0,1	4,7	2,5	1,8
		May	0,7	6,7	0,5	2,4	1,6	0,2	2,5	1,5	1,7
		June	0,8	6,7	0,4	2,4	1,6	0,0	3,3	1,8	1,7
		July	0,9	6,8	0,4	2,3	1,7	0,4	2,8	1,7	1,7
		August	1,1	7,0	0,4	2,3	1,6	0,8	1,3	1,1	1,6
		September	1,4	7,1	0,4	2,3	1,7	1,1	1,5	1,3	1,7
		October	1,5	7,3	0,4	2,3	1,7	1,4	-1,3	-0,1	1,5
		November	1,6	7,4	0,4	2,4	1,8	1,1	-0,1	0,4	1,6
		December	1,7	2,8	0,4	2,3	1,6	0,4	1,7	1,1	1,5
	2006	January	1,8	6,9	0,6	2,4	1,8	1,4	1,4	1,4	1,8
		February	1,8	6,9	0,6	2,4	1,8	1,7	1,5	1,6	1,8
		March	1,8	5,8	0,6	2,4	1,8	1,7	0,9	1,3	1,7
		April	1,8	5,8	0,6	2,4	1,8	1,7	0,7	1,2	1,7
		May	1,8	5,8	0,7	2,4	1,8	1,7	0,4	1,0	1,7
		June	1,8	5,8	0,7	2,4	1,8	1,7	0,4	1,0	1,7
		July	1,8	5,8	0,7	2,4	1,8	1,7	0,4	1,0	1,7
		August	1,8	5,8	0,7	2,4	1,8	1,7	0,5	1,1	1,7
		September	1,8	5,8	0,7	2,4	1,8	1,7	0,6	1,1	1,7
		October	1,8	5,8	0,7	2,4	1,8	1,7	0,6	1,1	1,7
		November	1,8	5,8	0,7	2,4	1,8	1,7	0,7	1,2	1,7
		December	1,8	5,8	0,7	2,4	1,8	1,7	0,8	1,2	1,7

Source : Eurostat & IFL(UC3M)

Date: March 2, 2005



HICP MONTHLY GROWTH BY SECTORS IN THE EURO AREA											
		Harmonized Consumer Prices Index									
		Core					Residual			TOTAL	
		Processed food excluding tobacco	Tobacco	Non energy industrial goods	Services	TOTAL	Non processed food	Energy	TOTAL		
Weights 2005		9,4%	2,6%	30,8%	41,0%	83,8%	7,6%	8,5%	16,2%	100%	
MONTHLY RATES (Growth of the month over the previous month)	January	2003	0,2	4,2	-1,4	-0,2	-0,5	1,4	3,1	2,3	-0,1
		2004	0,2	1,7	-1,6	0,0	-0,5	1,1	1,0	1,0	-0,2
		2005	0,1	0,2	-1,9	-0,3	-0,8	0,4	0,2	0,4	-0,6
		2006	0,2	4,2	-1,7	-0,2	-0,6	1,5	0,0	0,7	-0,4
	February	2003	0,3	1,0	0,0	0,3	0,3	0,3	1,9	1,1	0,4
		2004	0,2	0,3	0,3	0,5	0,4	-0,7	-0,1	-0,3	0,2
		2005	0,2	0,1	0,4	0,5	0,4	-0,4	0,0	-0,2	0,3
		2006	0,2	0,1	0,4	0,5	0,4	-0,2	0,0	-0,1	0,3
	March	2003	0,2	0,1	1,1	0,2	0,5	0,5	1,0	0,8	0,6
		2004	0,0	5,3	1,0	0,0	0,6	0,3	1,3	0,8	0,7
		2005	0,1	1,2	1,0	0,2	0,5	0,6	0,6	0,6	0,5
		2006	0,1	0,1	1,0	0,2	0,5	0,6	0,0	0,3	0,5
	April	2003	0,1	1,2	0,6	0,3	0,4	0,4	-2,9	-1,3	0,1
		2004	0,1	0,4	0,8	0,3	0,4	0,3	1,1	0,7	0,4
		2005	0,2	0,1	0,8	0,1	0,3	0,7	0,3	0,5	0,4
		2006	0,2	0,1	0,8	0,1	0,4	0,7	0,1	0,4	0,4
	May	2003	0,2	0,1	0,3	0,0	0,1	0,3	-2,1	-0,9	-0,1
		2004	0,0	0,6	0,1	0,1	0,2	0,4	2,5	1,4	0,3
		2005	0,2	0,1	0,1	0,2	0,2	0,5	0,4	0,4	0,2
		2006	0,2	0,1	0,1	0,2	0,2	0,5	0,1	0,3	0,2
	June	2003	0,2	0,1	-0,2	0,3	0,1	0,6	0,0	0,3	0,1
		2004	0,1	0,1	-0,2	0,3	0,1	0,1	-0,8	-0,3	0,0
		2005	0,2	0,1	-0,2	0,3	0,1	-0,2	0,0	-0,1	0,1
		2006	0,2	0,1	-0,2	0,3	0,1	-0,2	0,1	0,0	0,1
	July	2003	0,1	0,1	-1,4	0,6	-0,2	-0,6	0,5	0,0	-0,1
		2004	0,1	0,0	-1,6	0,8	-0,3	-1,2	0,6	-0,2	-0,2
		2005	0,2	0,1	-1,6	0,7	-0,2	-0,8	0,1	-0,3	-0,2
		2006	0,2	0,1	-1,6	0,7	-0,2	-0,8	0,1	-0,3	-0,2
	August	2003	0,2	0,1	-0,1	0,3	0,1	-0,4	1,1	0,3	0,2
		2004	0,0	0,0	0,1	0,2	0,3	-1,3	1,5	0,2	0,2
		2005	0,2	0,1	0,1	0,2	0,2	-0,9	0,0	-0,4	0,1
		2006	0,2	0,1	0,1	0,2	0,2	-0,9	0,1	-0,4	0,1
	September	2003	0,1	0,3	1,1	-0,3	0,4	1,2	-0,1	0,5	0,4
		2004	-0,2	0,0	1,1	-0,3	0,2	-0,1	-0,2	-0,1	0,2
		2005	0,1	0,1	1,1	-0,3	0,3	0,2	0,0	0,1	0,2
		2006	0,1	0,1	1,1	-0,3	0,3	0,2	0,1	0,1	0,2
	October	2003	0,2	1,4	0,6	-0,1	0,3	-0,3	-0,3	-0,3	0,1
		2004	0,0	0,0	0,6	-0,1	0,2	-0,1	2,9	1,5	0,3
		2005	0,1	0,1	0,6	-0,1	0,2	0,2	0,0	0,1	0,2
		2006	0,1	0,1	0,6	-0,1	0,2	0,2	0,1	0,1	0,2
	November	2003	0,1	2,3	0,3	-0,1	0,1	-0,2	-0,2	-0,2	0,1
		2004	0,0	0,1	0,3	-0,1	0,0	0,1	-1,2	-0,6	-0,1
		2005	0,1	0,1	0,3	-0,1	0,1	-0,2	0,0	-0,1	0,1
		2006	0,1	0,1	0,3	-0,1	0,1	-0,2	0,1	0,0	0,1
	December	2003	0,0	0,3	-0,1	0,9	0,4	0,0	-0,2	-0,1	0,3
		2004	-0,1	4,6	-0,2	0,9	0,5	1,0	-1,8	-0,6	0,4
		2005	0,0	0,1	-0,2	0,9	0,4	0,3	0,0	0,2	0,3
		2006	0,0	0,1	-0,2	0,9	0,4	0,3	0,1	0,2	0,4

Source : Eurostat & IFL(UC3M)

Date: March 2, 2005



HICP ANNUAL GROWTH BY COUNTRIES IN THE EURO AREA AND EU																	
		European Monetary Union															
		Euro Area															
		Germany	France	Italy	Spain	Netherlands	Belgium	Austria	Greece	Portugal	Finland	Ireland	Luxembourg				
Weights 2005		29,0%	20,7%	19,2%	11,4%	5,2%	3,3%	3,1%	2,7%	2,1%	1,6%	1,3%	0,3%	18,4%	1,9%	1,1%	
ANNUAL AVERAGE RATE	1997	1,5	1,3	2,0	1,9	1,9	1,5	1,2	5,4	1,9	1,2	1,2	1,4	5,4	1,8	1,9	
	1998	0,6	0,7	1,9	1,8	1,8	0,9	0,8	4,5	2,2	1,4	2,1	1,0	4,5	1,0	1,3	
	1999	0,6	0,6	1,7	2,2	2,0	1,1	0,5	2,1	2,2	1,3	2,5	1,0	2,1	0,6	2,1	
	2000	1,4	1,8	2,6	3,5	2,3	2,7	2,0	2,9	2,8	3,0	5,3	3,8	0,8	1,3	2,7	
	2001	1,9	1,8	2,3	2,8	5,1	2,4	2,3	3,7	4,4	2,7	4,0	2,4	1,2	2,7	2,3	
	2002	1,3	1,9	2,6	3,6	3,9	1,6	1,7	3,9	3,7	2,0	4,7	2,1	1,3	2,0	2,4	
	2003	1,0	2,2	2,8	3,1	2,2	1,5	1,3	3,5	3,3	1,3	4,0	2,5	1,4	2,3	2,0	
	2004	1,8	2,3	2,3	3,1	1,4	1,9	2,0	3,0	2,5	0,1	2,3	3,2	1,3	1,0	0,9	
	2005	1,4	1,4	1,8	2,8	1,6	1,6	2,2	4,2	1,8	0,2	2,0	2,1	1,8	0,6	1,0	
	2006	1,2	1,8	2,8	2,8	2,0	1,6	2,1	3,8	2,5	1,3	2,3	2,2	1,5	1,1	1,6	
ANNUAL RATES (growth of the month over the same month of the previous year)	2004	January	1,2	2,2	2,2	2,3	1,5	1,4	1,2	3,1	2,2	0,8	2,3	2,3	1,4	1,3	1,0
		February	0,8	1,9	2,4	2,2	1,3	1,2	1,5	2,6	2,1	0,4	2,2	2,4	1,3	0,2	0,7
		March	1,1	1,9	2,3	2,2	1,2	1,0	1,5	2,9	2,2	-0,4	1,8	2,0	0,9	0,4	0,0
		April	1,7	2,4	2,3	2,7	1,5	1,7	1,5	3,1	2,4	-0,4	1,7	2,7	1,2	1,1	0,5
		May	2,1	2,8	2,3	3,4	1,7	2,4	2,1	3,1	2,4	-0,1	2,1	3,4	1,5	1,5	1,1
		June	1,9	2,7	2,4	3,5	1,5	2,0	2,3	3,0	3,7	-0,1	2,5	3,8	1,6	1,2	0,9
		July	2,0	2,6	2,2	3,3	1,2	2,1	2,1	3,1	2,9	0,2	2,5	3,8	1,4	1,2	1,1
		August	2,1	2,5	2,4	3,3	1,2	2,0	2,2	2,8	2,4	0,3	2,5	3,6	1,3	1,3	0,9
		September	1,9	2,2	2,1	3,2	1,1	1,8	1,8	2,9	2,1	0,2	2,4	3,1	1,1	1,2	0,9
		October	2,2	2,3	2,1	3,6	1,5	2,7	2,4	3,3	2,4	0,6	2,5	4,1	1,2	1,4	1,6
		November	2,0	2,2	2,0	3,5	1,5	2,3	2,4	3,0	2,6	0,2	2,8	4,0	1,5	1,1	1,0
		December	2,2	2,3	2,4	3,3	1,2	1,9	2,5	3,1	2,6	0,1	2,4	3,5	1,6	0,9	1,0
	2005	January	1,6	1,6	2,0	3,1	1,3	2,0	2,4	4,2	2,0	-0,2	2,1	2,8	1,6	0,5	0,8
		February	1,7	1,7	1,7	3,4	1,4	2,1	2,3	4,5	1,9	-0,5	1,9	1,9	1,7	0,8	0,7
		March	1,7	1,6	1,6	3,3	1,5	2,0	2,2	4,2	1,9	0,0	2,1	2,1	1,9	0,6	1,1
		April	1,5	1,6	1,6	2,9	1,5	1,7	2,2	4,2	1,8	0,1	2,2	1,9	1,8	0,4	0,8
		May	1,3	1,3	1,7	2,6	1,4	1,5	2,2	4,1	1,7	0,1	2,1	1,8	1,8	0,3	0,7
		June	1,5	1,4	1,7	2,6	1,6	1,5	2,1	4,1	1,1	0,3	2,0	1,7	1,9	0,6	1,0
		July	1,4	1,4	1,9	2,7	1,7	1,8	2,2	4,3	1,7	0,6	2,0	2,8	1,8	0,6	0,9
		August	1,2	1,3	1,8	2,6	1,8	1,5	2,1	4,4	2,0	0,5	2,0	2,1	1,9	0,7	1,2
		September	1,3	1,4	1,9	2,7	1,8	1,6	2,2	4,2	2,0	0,2	2,0	2,0	2,0	0,5	1,1
		October	1,0	1,1	2,0	2,5	1,7	1,1	2,1	4,1	2,0	0,0	2,0	2,0	1,9	0,4	0,8
		November	1,3	1,2	2,1	2,6	1,8	1,3	2,1	4,1	2,0	0,5	2,0	1,9	1,8	0,7	1,1
		December	1,5	1,3	1,9	2,9	2,0	1,5	2,0	4,0	2,0	0,7	2,1	2,1	1,6	0,8	1,3
	2006	January	1,4	1,8	2,9	3,2	2,0	1,6	2,1	4,0	2,4	1,2	2,3	2,9	1,6	1,1	1,5
		February	1,4	1,7	2,8	2,9	2,0	1,4	2,1	4,0	2,5	1,2	2,3	2,8	1,5	1,1	1,6
		March	1,2	1,7	2,9	2,8	2,0	1,5	2,1	3,8	2,5	1,3	2,3	2,7	1,5	1,0	1,6
		April	1,2	1,7	2,8	2,8	2,0	1,6	2,1	3,7	2,5	1,3	2,3	2,5	1,5	1,0	1,6
		May	1,2	1,7	2,8	2,7	2,0	1,6	2,1	3,7	2,5	1,3	2,3	2,3	1,5	1,0	1,7
		June	1,2	1,8	2,8	2,8	2,0	1,6	2,1	3,7	2,5	1,3	2,3	2,1	1,5	1,1	1,7
		July	1,2	1,8	2,8	2,8	2,0	1,5	2,1	3,9	2,5	1,3	2,4	2,1	1,5	1,1	1,7
		August	1,2	1,8	2,8	2,8	2,0	1,6	2,1	3,9	2,5	1,3	2,4	1,9	1,5	1,1	1,7
		September	1,2	1,9	2,8	2,7	2,0	1,6	2,1	3,7	2,5	1,3	2,4	2,0	1,5	1,1	1,7
		October	1,2	1,9	2,8	2,7	2,0	1,6	2,1	3,7	2,5	1,2	2,4	1,7	1,5	1,1	1,7
		November	1,2	1,8	2,8	2,7	2,0	1,6	2,1	3,6	2,5	1,3	2,4	1,7	1,5	1,1	1,7
		December	1,2	1,8	2,8	2,7	2,0	1,6	2,1	3,6	2,5	1,3	2,4	1,9	1,5	1,1	1,7

Source : Eurostat & IFL(UC3M)

Date: March 2, 2005



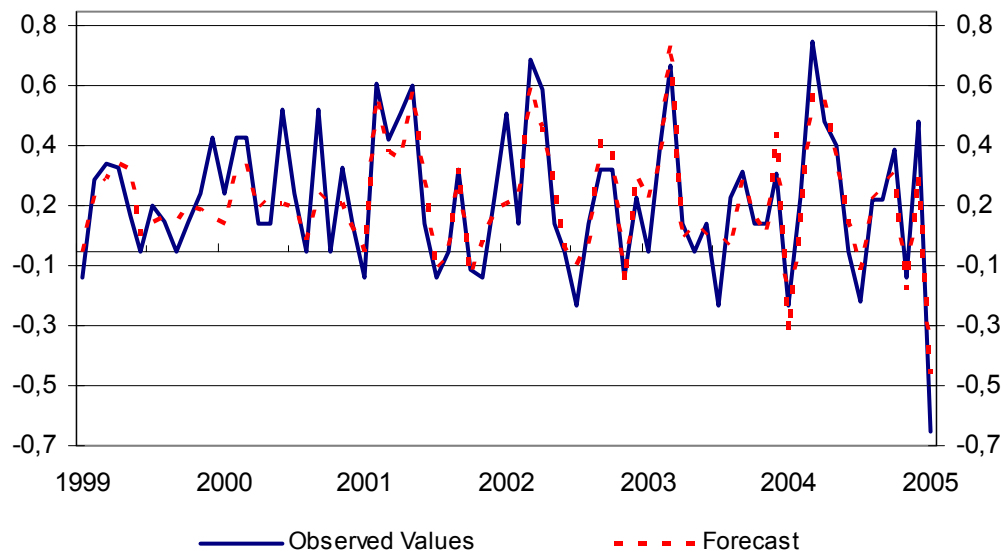
HICP MONTHLY GROWTH BY COUNTRIES IN THE EURO AREA AND EU																	
			European Monetary Union														
			Euro Area														
			Germany	France	Italy	Spain	Netherlands	Belgium	Austria	Greece	Portugal	Finland	Ireland	Luxembourg	United Kingdom	Sweden	Denmark
Weights 2005			29,0%	20,7%	19,2%	11,4%	5,2%	3,3%	3,1%	2,7%	2,1%	1,6%	1,3%	0,3%	18,4%	1,9%	1,1%
MONTHLY RATES (Growth of the month over the previous month)	January	2003	-0,1	0,3	-0,3	-0,4	0,6	-1,0	0,2	-0,8	0,1	0,2	0,0	-0,3	-0,6	0,3	0,2
		2004	0,0	0,1	-0,6	-0,8	0,5	-1,3	0,1	-0,8	0,0	-0,3	-0,6	-0,3	-0,5	-0,3	-0,1
		2005	-0,5	-0,6	-1,0	-1,0	0,6	-1,3	0,0	0,2	-0,6	-0,5	-1,0	-1,0	-0,5	-0,6	-0,3
		2006	-0,6	-0,1	-0,1	-0,7	0,6	-1,2	0,0	0,2	-0,2	0,1	-0,8	-0,2	-0,6	-0,3	0,0
	February	2003	0,6	0,7	-0,4	0,2	0,8	2,1	0,2	-0,2	0,0	0,9	1,0	1,1	0,4	1,0	0,7
		2004	0,2	0,4	-0,2	0,1	0,6	1,9	0,5	-0,7	-0,2	0,4	0,9	1,3	0,3	-0,1	0,4
		2005	0,2	0,5	-0,4	0,3	0,6	2,0	0,3	-0,4	-0,3	0,1	0,8	0,4	0,3	0,2	0,4
		2006	0,2	0,4	-0,4	0,1	0,6	1,8	0,3	-0,4	-0,2	0,1	0,8	0,2	0,3	0,2	0,5
	March	2003	0,2	0,5	1,2	0,8	0,9	0,3	0,3	2,5	0,1	0,4	0,7	0,5	0,4	0,6	0,8
		2004	0,5	0,4	1,1	0,7	0,8	0,1	0,4	2,9	0,2	-0,4	0,4	0,1	0,0	0,9	0,1
		2005	0,4	0,4	1,0	0,6	0,9	0,0	0,3	2,6	0,3	0,1	0,5	0,3	0,2	0,6	0,5
		2006	0,3	0,4	1,0	0,6	0,9	0,1	0,3	2,3	0,3	0,1	0,5	0,2	0,2	0,5	0,5
	April	2003	-0,3	-0,2	0,8	0,8	0,1	-0,2	-0,1	0,2	0,8	-0,1	0,5	-0,2	0,3	-0,4	0,0
		2004	0,3	0,3	0,8	1,4	0,3	0,5	-0,1	0,4	1,0	0,0	0,3	0,5	0,5	0,3	0,5
		2005	0,1	0,2	0,8	1,1	0,4	0,2	-0,1	0,3	0,8	0,1	0,4	0,4	0,4	0,1	0,3
		2006	0,1	0,3	0,7	1,0	0,4	0,3	-0,1	0,3	0,9	0,1	0,4	0,2	0,4	0,1	0,3
	May	2003	-0,3	-0,1	0,2	-0,1	-0,1	-0,4	-0,2	0,5	0,7	-0,1	-0,2	-0,2	0,0	-0,1	-0,3
		2004	0,2	0,4	0,2	0,6	0,2	0,3	0,4	0,4	0,8	0,2	0,2	0,5	0,4	0,4	0,3
		2005	0,0	0,1	0,3	0,2	0,1	0,2	0,3	0,4	0,8	0,1	0,2	0,4	0,3	0,2	0,2
		2006	0,0	0,2	0,3	0,2	0,1	0,2	0,3	0,4	0,7	0,1	0,2	0,2	0,3	0,2	0,2
	June	2003	0,2	0,2	0,1	0,1	-0,5	0,4	0,0	-0,2	0,0	-0,1	0,1	0,0	-0,1	-0,2	0,0
		2004	0,0	0,1	0,2	0,2	-0,7	-0,1	0,2	-0,2	1,2	-0,1	0,5	0,4	-0,1	-0,5	-0,3
		2005	0,2	0,1	0,2	0,1	-0,5	0,0	0,1	-0,2	0,6	0,1	0,4	0,3	0,0	-0,3	0,0
		2006	0,2	0,1	0,1	0,2	-0,5	0,0	0,1	-0,2	0,6	0,1	0,4	0,2	0,0	-0,2	0,0
	July	2003	0,3	-0,1	-0,1	-0,6	-0,1	-1,2	-0,1	-2,1	-0,2	-0,5	-0,4	-0,8	-0,1	-0,2	-0,6
		2004	0,4	-0,2	-0,2	-0,7	-0,3	-1,0	-0,3	-1,9	-0,9	-0,3	-0,4	-0,8	-0,3	-0,2	-0,3
		2005	0,3	-0,1	-0,1	-0,6	-0,2	-0,8	-0,2	-1,7	-0,3	0,1	-0,4	0,2	-0,3	-0,1	-0,4
		2006	0,3	-0,1	-0,1	-0,6	-0,2	-0,9	-0,2	-1,6	-0,3	0,1	-0,4	0,2	-0,3	-0,1	-0,4
	August	2003	0,1	0,3	-0,3	0,5	0,2	1,7	0,3	0,0	0,1	0,2	0,6	1,2	0,4	-0,1	-0,1
		2004	0,2	0,2	-0,2	0,5	0,2	1,7	0,4	-0,3	-0,4	0,3	0,6	1,1	0,3	0,0	-0,3
		2005	0,0	0,1	-0,2	0,4	0,2	1,4	0,3	-0,3	-0,1	0,1	0,6	0,4	0,3	0,0	-0,1
		2006	0,0	0,1	-0,2	0,4	0,2	1,4	0,3	-0,2	-0,1	0,1	0,6	0,2	0,3	0,0	-0,1
	September	2003	-0,2	0,5	0,8	0,2	0,8	0,2	0,3	2,0	0,2	0,5	0,2	0,7	0,3	0,8	0,8
		2004	-0,4	0,1	0,5	0,2	0,8	-0,1	-0,1	2,1	-0,1	0,4	0,1	0,2	0,1	0,7	0,8
		2005	-0,3	0,1	0,6	0,3	0,9	0,0	0,0	1,9	0,0	0,1	0,1	0,1	0,2	0,6	0,6
		2006	-0,3	0,2	0,6	0,3	0,9	0,1	0,0	1,7	0,0	0,1	0,1	0,2	0,2	0,5	0,6
	October	2003	-0,1	0,2	0,3	0,7	-0,2	-0,4	0,0	0,4	0,2	-0,1	0,0	-0,4	0,2	0,1	-0,3
		2004	0,2	0,4	0,3	1,0	0,2	0,5	0,5	0,7	0,5	0,4	0,1	0,5	0,3	0,4	0,4
		2005	-0,1	0,1	0,4	0,8	0,1	0,0	0,4	0,7	0,4	0,1	0,1	0,4	0,1	0,2	0,1
		2006	-0,1	0,1	0,4	0,8	0,1	0,1	0,4	0,6	0,4	0,1	0,1	0,2	0,1	0,2	0,1
	November	2003	-0,2	0,1	0,3	0,3	-0,4	0,2	0,2	0,4	0,1	-0,1	0,0	0,4	-0,1	-0,3	0,2
		2004	-0,4	0,0	0,2	0,2	-0,4	-0,2	0,2	0,1	0,3	-0,5	0,2	0,3	0,2	-0,6	-0,3
		2005	-0,2	0,1	0,3	0,4	-0,4	0,0	0,2	0,1	0,4	0,1	0,2	0,2	0,1	-0,3	0,0
		2006	-0,1	0,0	0,3	0,3	-0,4	0,0	0,2	0,1	0,4	0,1	0,2	0,2	0,1	-0,2	0,0
	December	2003	0,9	0,1	0,0	0,2	-0,6	0,0	0,3	0,4	0,1	0,1	0,4	0,2	0,4	0,2	-0,2
		2004	1,1	0,2	0,3	-0,1	-0,8	-0,3	0,4	0,5	0,1	0,0	0,1	-0,2	0,5	0,0	-0,3
		2005	1,3	0,2	0,2	0,3	-0,6	-0,2	0,4	0,5	0,1	0,1	0,2	0,0	0,4	0,1	-0,1
		2006	1,3	0,2	0,2	0,3	-0,6	-0,1	0,4	0,4	0,1	0,1	0,2	0,2	0,4	0,1	-0,1

Source : Eurostat & IFL(UC3M)

Date: March 2, 2005

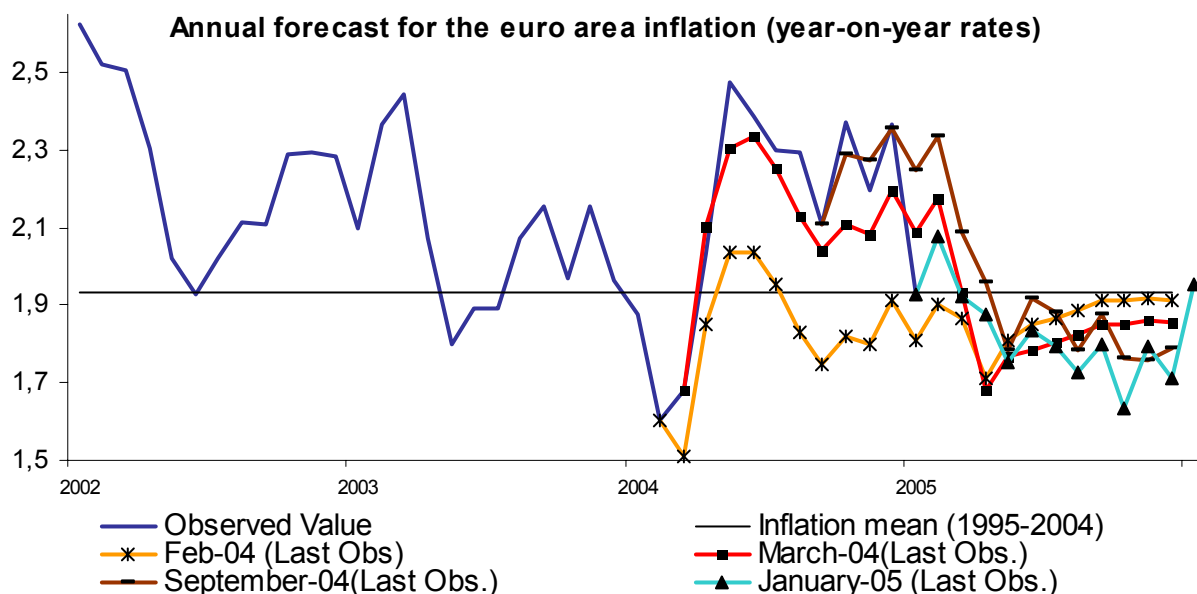


HICP MONTH-ON-MONTH RATES OF GROWTH IN THE EURO AREA



Source: EUROSTAT, IFL & UC3M Date: December 16, 2004

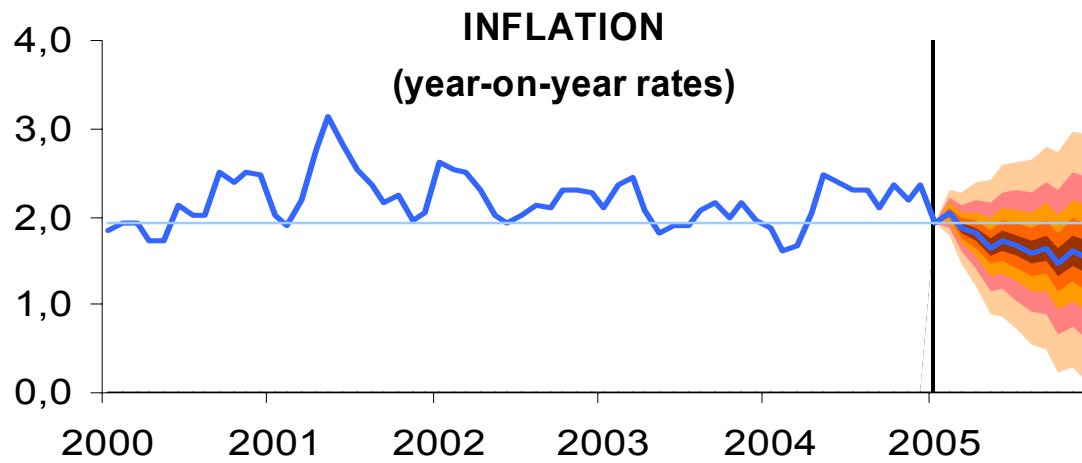
Source : Eurostat & IFL(UC3M)
Date: February 28, 2005



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005



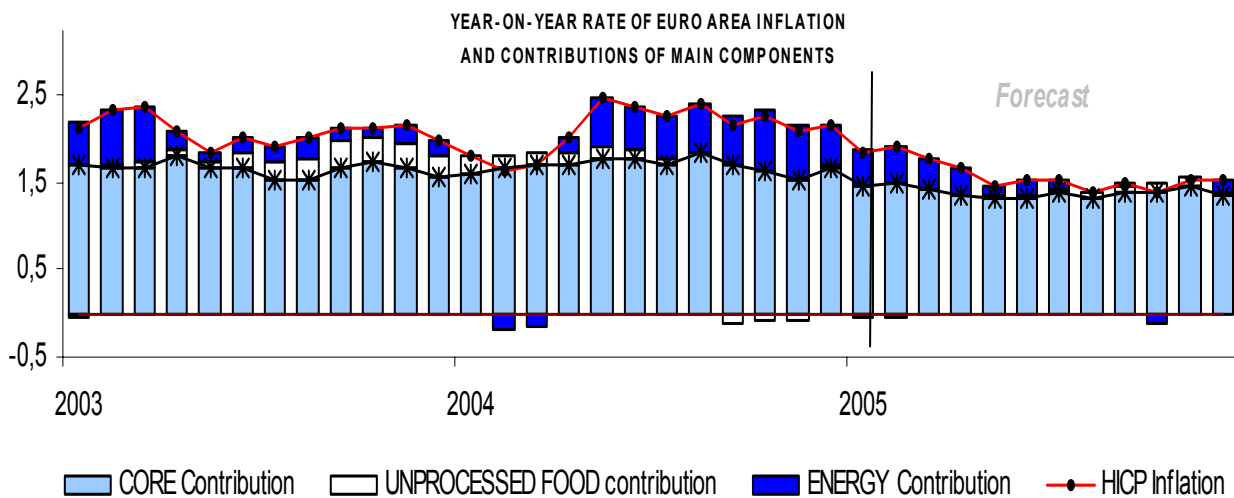
ANNUAL FORECASTS FOR THE EURO AREA



Confidence intervals at: 95% 80% 60% 40% 20%

Inflation mean (1995-2004)

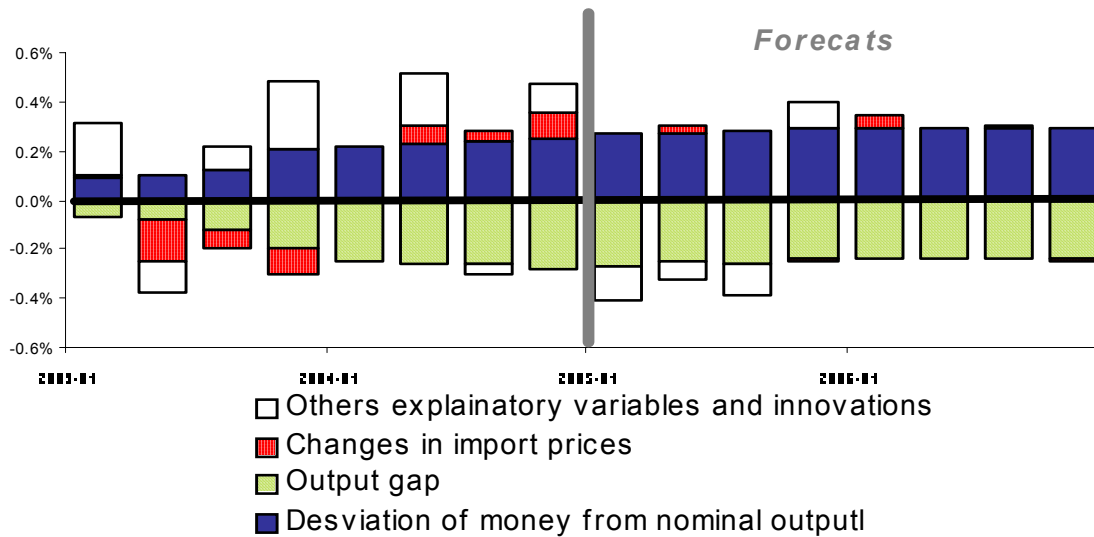
Source : Eurostat & IFL(UC3M)
Date: March 2, 2005



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005

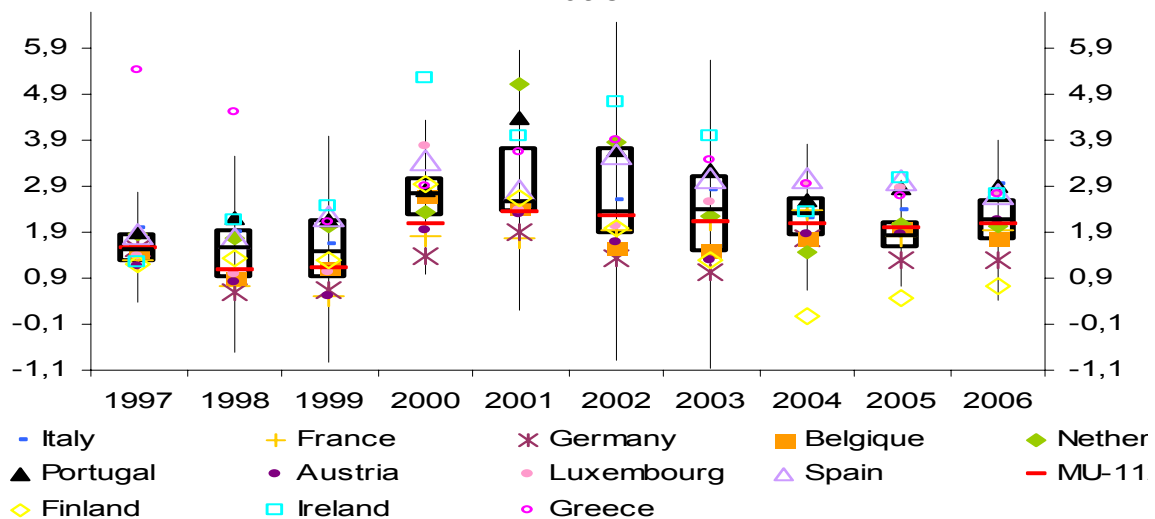


**CONTRIBUTIONS TO THE DESVIATIONS RESPECT TO THE MEAN
(0.48%) OF THE SEASONALLY AJUSTED QUARTER-TO-QUARTER
INFLATION RATE IN THE EURO AREA**



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005

**Box diagram of euro area countries dispersion on
inflation**



Source : Eurostat & IFL(UC3M)
Date: March 2, 2005



I.2 MACROECONOMIC TABLE OF EURO-AREA

	Annual Averages Growths				
	2002	2003	2004	Forecasts BIMA (*)	
				2005	2006
GDP p m	0.9	0.5	1.9	2.0	2.2
Demand					
Final Consumption	1.3	1.1	1.4	2.2	2.2
Capital Investment	-2.7	-0.5	1.4	2.3	2.0
Contribution Domestic Demand	0.3	1.1	1.9	2.0	2.0
Exports of Goods and Services	1.9	0.2	6.1	5.4	5.4
Imports of Goods and Services	0.5	2.0	6.6	5.8	5.2
Contribution Foreign Demand	0.6	-0.6	0.0	0.0	0.2
Supply					
Gross Value Added Total (market prices)	0.9	0.5	1.9	2.0	2.2
Net Taxes	-0.5	0.2	0.9	-1.0	0.5
Gross Value Added Total (basic prices)	1.0	0.5	2.0	2.2	2.3
Gross Value Added Agriculture	0.8	-3.9	3.4	-0.4	0.5
Gross Value Added Industry	0.2	0.0	2.5	2.6	2.4
Gross Value Added Construction	-0.6	-0.6	0.5	-0.7	-0.1
Gross Value Added Services	1.3	1.0	1.9	2.4	2.4
Private	1.0	0.9	2.1	2.7	2.8
Public	2.2	1.0	1.4	1.6	1.7
Prices					
CPI harmonized, annual average	2.3	2.1	2.1	1.7	1.7
CPI harmonized, dec./dec.	2.3	2.0	2.4	1.5	1.7
Employment					
Unemployment rate	8.4	8.9	8.9	8.8	8.7
Others Economic Indicators					
Production Index of Industry (excluding construction)	-0.5	0.2	1.9	1.1	1.7

Source: EUROSTAT & IFL

Date: March 2, 2005

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

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



I.3. INDUSTRIAL PRODUCTION IN THE EURO AREA

UIT the observed figure for December ends the year 2004 that has ended with an average rate of growth close to 2%. Regarding the different sectors, all of them have recovered with respect to 2003 with the only exception of energy. However it is worth highlighting that Non Durable Consumer Goods have registered negative variation rates since August and have ended the year with an average of -0.2%. With respect to December observation it has been a downwards innovation in the global index and in Capital, Durable and Energy goods. This information is shown in table I.3.1.

Table I.3.1

FORECASTS AND OBSERVED DATA IN THE ANNUAL RATE OF GROWTH OF THE DIFFERENT EMU IPI COMPONENTS CORRESPONDING TO DECEMBER		
	Forecast for December	Observed in December ^(*)
Capital	2.87	-0.73
Durable	-2.05	-3.80
Intermediate	1.27	2.33
Non Durable	0.59	1.77
Energy	3.72	3.25
Total	1.82	1.01

Source: Eurostat & IFL(UC3M) * Working day adjusted data.
Date: February, 2005.

With this information, the year 2004 ends with an average rate of growth of 1.92%. The expectations for 2005 and 2006 have been slightly modified from 1.18% to 1.11% and from 1.77 to 1.74% respectively. The expectations of growth for the different sectors are shown in table I.3.2.

Table I.3.2

ANNUAL AVERAGE RATES FOR INDUSTRIAL PRODUCTION IN EMU ^(****)						
	2001	2002	2003	2004	2005	2006
Capital	1.6	-1.6	-0.1	3.0	0.3	2.7
Durable	-2.1	-5.6	-4.3	-0.2	-3.0	-0.4
Intermediate	-0.6	0.2	0.2	2.0	2.6	1.9
Non Durable	0.8	0.6	0.2	0.7	0.8	0.8
Energy	1.3	1.1	3.0	2.1	0.3	1.4
Total EMU	0.4	-0.5	0.2	1.9	1.1	1.7

Source: Eurostat & IFL(UC3M) ^(****)Bold figures are forecasts.
Date: February, 22nd, 2005 Working day adjusted data.

In US, the last published data corresponds to January 2005 and it has been a downwards innovation with respect to the forecast given in the last Bulletin (4.20% instead of 4.7% in annual rates). However this innovation is practically almost due to Non Durable Consumer Goods, that grew by 2.7% instead of the 3.2% expected. In the rest of the components the difference between the observed and the forecasted values has been quite small. This information is shown in table I.1.3.

Table I.3.3

FORECASTS AND OBSERVED DATA IN THE ANNUAL RATE OF GROWTH OF THE DIFFERENT EMU IPI COMPONENTS CORRESPONDING TO JANUARY		
	Forecast for January	Observed in January
Durable Consumer Goods	2.2	2.4
Non Durable Consumer Goods	3.2	2.7
Equipment and Supplies	5.0	5.0
Materials	3.9	3.7
TOTAL US	4.7	4.2

Source: Federal Reserve & IFL(UC3M)
Date: February, 2005

Table I.3.4. shows the updated forecasts. The average rate of growth for IP in 2005 has been revised from 3.2 to 3% and for 2006 from 3.2 to 3.3%.

Table I.3.4.

ANNUAL AVERAGE RATES FOR INDUSTRIAL PRODUCTION IN US ⁽¹⁾						
	2001	2002	2003	2004	2005	2006
Durable	-5.8	4.7	4.9	2.9	3.3	4.1
Non Durable	0.4	-0.6	-	2.7	1.9	1.6
Equipment & Supplies	-4.1	-0.6	0.7	5.0	3.9	3.2
Materiales	-4.5	0.4	-0.5	3.7	3.7	3.7
TOTAL US	-3.5	-0.6	0.05	4.1	3.0	3.3

Source: Federal Reserve & IFL(UC3M). ⁽¹⁾Bold figures are forecasts.
Date: February 22nd, 2005





II. UNITED STATES

II.1. INFLATION

II.1.1. MAIN POINTS AND NEW RESULTS

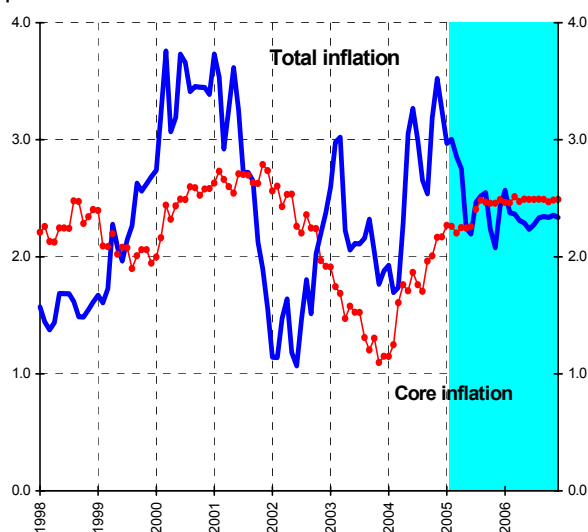
The January figure was practically as expected in aggregate terms and by group. However, there was a surprising increase in housing prices and the January wholesale price index (production price index) registered an upwards innovation. Therefore, and also considering a somewhat higher crude oil price, we forecast a slight worsening of expectations, increasing by one tenth for 2005 and 2006. In all, our forecast for the core PCE¹ index is within the FED forecast range (Graph II.1.1.5).

For February, the forecast for the total rate is an 0.57% increase, with the annual rate remaining at the present level (3.00%). Core inflation is expected to maintain its annual rate of 2.27%.

For 2005 and 2006, we forecast mean annual rates of total inflation of 2.5% and 2.3%, respectively; one tenth more than last month (see Table II.1.1.1).

The core PCE index, a FED objective, is expected to have annual rates of 1.6% and 1.8% respectively, for 2005 and 2006.

Graph II.1.1.1.



Source: BLS & IFL (UC3M)
Date: February 23, 2005

The U.S. CPI in January performed much as expected, increasing by 0.21% over the previous month's figure, compared with the forecast 0.18%, with its annual rate falling from the 3.26% observed in December to 2.97%.

¹ PCE: chain-type price index for personal consumption expenditures

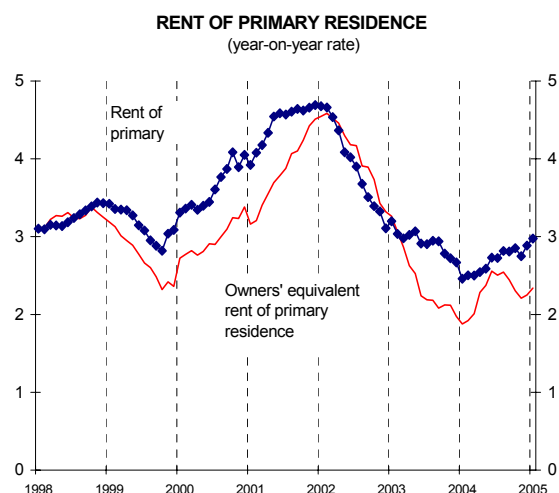
Core inflation also increased in line with the forecast, 0.30% compared with our predicted 0.27%.

Indeed, there has been a fall of 0.07%, similar to our forecast (0.15%), in non-energy industrial goods, with the annual rate increasing from 0.58% to 0.87%. Likewise, the service prices increasing by 0.43% over the previous month's figure, compared with the forecast 0.43%, with its annual rate falling from the 2.84% observed in December to 2.78%.

Nevertheless, there have been upwards innovations in housing rental. Everything appears to indicate that housing rental was abnormal in November (see Graph II.1.1.2.). Other services performed in line with our forecasts.

In greater detail, durable good prices increased by 0.43%, more than expected, with the annual rate going from 0.43% to 0.78%. Non-durable good prices, excluding tobacco, fell by 0.81% exactly as expected, with the annual rate increasing from 0.45% to 0.60%.

Graph II.1.1.2.



Source: BLS & IFL (UC3M)
Date: February 23, 2005

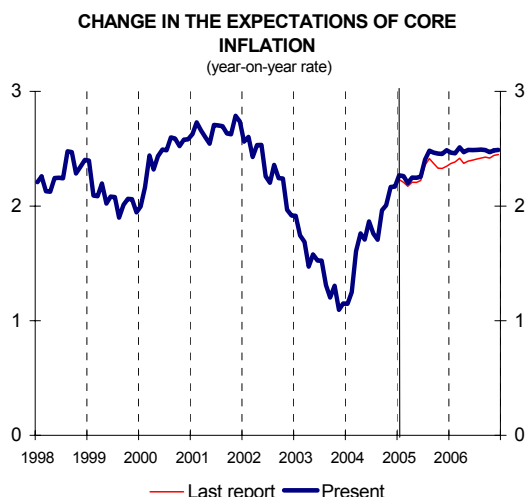
The services index –not including owner's equivalent rent of primary residence- rose 0.55%, less than the 0.61% forecast, and the annual rate rose from 3.26% to 3.09%. Real rental prices grew more than expected, 0.28% instead of 0.20%, taking the annual rate up from 2.89% to 2.98%. On the other hand, owner's equivalent rent of primary residence increased by 0.26%, more than



expected, 0.17%, with the annual rate going from 2.25% of 2.34%.

As this report shows, recent data identifies two trends with regards to core inflation: on the one hand, the present and future impact of the depreciation of the \$ on non-energy industrial goods, on the other, the contained evolution of the service sector.

Graph II.1.1.3.

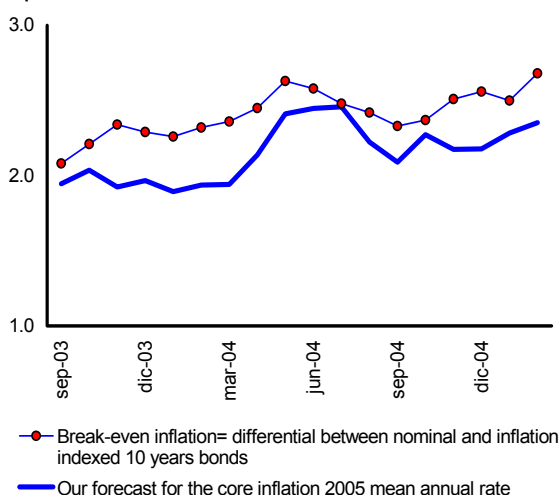


Source: BLS & IFL (UC3M)
Date: February 23, 2005

The forecast evolution of crude oil prices has worsened somewhat since our last report, although it is highly volatile.

To sum up, both the CPI and its core have suffered a slight detreatment in inflation forecasts (see Graph II.1.1.3).

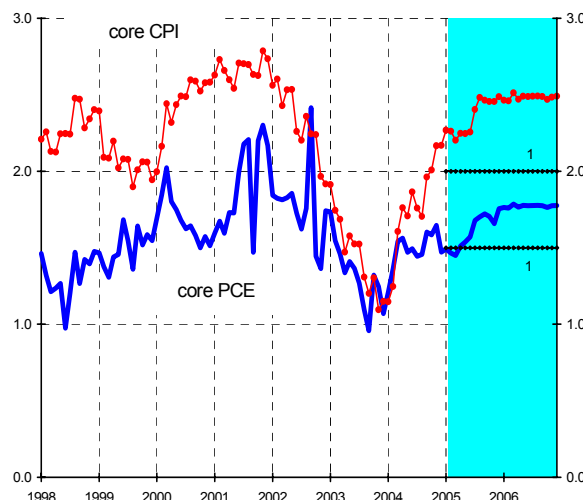
Graph II.1.1.4.



Source: BLS & IFL (UC3M)
Date: February 23, 2005

Break-even inflation, a term used to refer to the 10-year return differential between nominal and inflation indexed bonds, which represents an approximation of market expectations, has increased slightly in recent weeks to 2.66%. Comparing this indicator to our CPI core inflation annual average rate forecast, a strong correlation is shown (see Graph II.1.1.4).

Graph II.1.1.5.



Source: BLS & IFL (UC3M)
Date: February 23, 2005

Table II.1.1.1.

	CPI		PCE ¹		MBPCE ²	
	Total	Core	Core	Core	Core	Core
	% annual	% annual	% annual	% annual	% annual	% annual
October	3.19	2.01	1.58	1.49		
November	3.5	2.2	1.6	1.7		
December	3.3	2.2	1.5	1.7		
2005 January	3.0	2.3	1.5	1.7		
February	3.0	2.3	1.5	1.7		
March	2.9	2.2	1.4	1.6		
April	2.8	2.2	1.5	1.6		
May	2.2	2.2	1.5	1.6		
June	2.2	2.3	1.6	1.6		
July	2.5	2.4	1.7	1.7		
August	2.5	2.5	1.7	1.7		
September	2.5	2.5	1.7	1.7		
October	2.2	2.5	1.7	1.7		
November	2.1	2.5	1.7	1.6		
December	2.4	2.5	1.8	1.7		
average annual						
2002	1.6	2.3	1.8	1.5		
2003	2.3	1.5	1.3	1.2		
2004	2.7	1.8	1.5	1.5		
2005	2.5	2.4	1.6	1.7		
2006	2.3	2.5	1.8	1.6		

Source: BLS & IFL (UC3M)
Date: February 23, 2005



II.1.2. TABLES AND PLOTS ABOUT USA INFLATION

Tables:

- Index of Consumer Price (ICP) desagregation.
- Forecast errors by sectors.
- Index of Consumer Price (ICP) Annual Growth Rates by sectors.
- Index of Consumer Price (ICP) Monthly Growth Rates by sectors.

Plots:

- CPI monthly growth rates.
- Annual Forecast for the USA Inflation.
- Annual rates of different components for the USA inflation.



METHODOLOGY: ANALYSIS OF USA INFLATION BY SECTORS

BASIC COMPONENTS AGGREGATES		BASICS COMPONENTS	
TOTAL CPI	CORE CPI 77.71% (1+2+3+4+5)	SERVICES LESS ENERGY 56.04% (1+2)	(1) OWNERS' EQUIVALENT RENT OF PRIMARY RESIDENCE 23.16%
			(2) SERVICES LESS OWNER' EQUIVALENT RENT OF PRIMARY RESIDENCE 32.88%
	COMMODITIES LESS FOOD AND ENERGY 21.67% (3+4+5)		(3) TOBACCO 0.80%
			(4) NON DURABLES LESS TOBACCO 9.90%
			(5) DURABLES 10.97%
			(6) FOOD 14.30%
			(7) GAS 1.30%
			(8) ELECTRICITY 2.42%
			(9) MOTOR FUEL AND FUEL OIL 3.97%
	RESIDUAL CPI 22.29% (6+7+8+9)	ENERGY 7.99% (7+8+9)	

Source: BLS & IFL (UC3M)

OBSERVED VALUES AND FORECAST ON CPI IN US January 2005

CONSUMER PRICES INDEX (CPI)	Relative Importance Dec. 2004	Annual Growth (T ¹ ₁₂) observed	Monthly Growth (T ¹ ₁)		Confidence Intervals at 80% level (+ -)
			observed (a)	forecasts (b)	
Food (1)	14.3	2.88	0.32	0.39	0.37
Energy (2)	8.0	10.55	-1.17	-1.02	1.14
Residual Inflation (3=2+1)	22.3	5.48	-0.22	-0.11	0.43
Non-food and non-energy goods (4)	21.7	0.87	-0.07	-0.15	0.29
Less tobacco	20.9	0.73	-0.15	-0.17	0.24
-Durable goods	11.0	0.78	0.43	0.32	0.33
-Nondurable goods	10.7	0.88	-0.61	-0.63	0.41
-Non-durable goods less tobacco	9.9	0.60	-0.81	-0.80	0.31
Non-energy services (5)	56.0	2.78	0.43	0.43	0.15
-Services less owner's equivalent rent of primary residence (5-a)	32.9	3.09	0.55	0.61	0.22
(a) -Owner's equivalent rent of primary residence	23.2	2.34	0.26	0.17	0.13
Core Inflation (6=4+5)	77.7	2.27	0.30	0.27	0.15
Core inflation less owner's equivalent rent of primary residence (6-a)	54.6	2.24	0.32	0.31	0.19
Core inflation less owner's equivalent rent of primary residence and tobacco	53.8	2.21	0.30	0.31	0.17
Total Inflation (7=6+3)	100.0	2.97	0.21	0.18	0.13
All items less owner's equivalent rent of primary residence (7-a)	76.8	3.16	0.19	0.19	0.17

Source: BLS IFL (UC3M)
Date: February 23, 2005



USA ANNUAL RATES OF GROWTH ON CPI AND ITS COMPONENTS												
		CONSUMER PRICE INDEX										
		CORE INFLATION							RESIDUAL INFLATION			ALL
		Non energy commodities less food			Non energy services			ALL	Food	Energy	ALL	
		durables	non durables less energy	ALL	Owner's equivalent rent of primary residence	Other services	ALL					
IR December 2004		11.0%	10.7%	21.7%	23.2%	32.9%	56.0%	77.7%	14.3%	8.0%	22.3%	100.0%
AVERAGE ANNUAL	1997	-0.5	1.7	0.7	2.9	3.2	3.1	2.4	2.6	1.3	2.1	2.3
	1998	-0.9	2.3	0.6	3.2	2.9	3.1	2.3	2.2	-7.7	0.1	1.6
	1999	-1.2	2.4	0.7	2.7	2.7	2.7	2.1	2.1	3.6	0.8	2.2
	2000	-0.5	1.4	0.5	3.0	3.5	3.3	2.4	2.3	16.9	6.8	3.4
	2001	-0.6	1.1	0.3	3.8	3.6	3.7	2.7	3.1	3.8	3.3	2.8
	2002	-2.6	0.4	-1.1	4.1	3.6	3.8	2.3	1.8	-5.9	-0.8	1.6
	2003	-3.2	-0.7	-2.0	2.4	3.2	2.9	1.5	2.1	12.2	5.3	2.3
	2004	-2.3	0.5	-0.9	2.3	3.3	2.9	1.8	3.4	10.9	6.0	2.7
	2005	1.0	0.7	0.9	2.5	3.2	2.9	2.4	2.5	4.1	3.1	2.5
2006	1.3	0.5	0.9	2.9	3.2	3.1	2.5	2.5	0.6	1.9	2.3	
2004	January	-4.0	-0.5	-2.3	1.9	3.0	2.5	1.1	3.5	7.8	4.9	1.9
	February	-3.7	-0.3	-2.0	1.9	2.9	2.5	1.2	3.3	3.8	3.5	1.7
	March	-3.7	0.5	-1.6	2.0	3.6	2.9	1.6	3.2	0.4	2.3	1.7
	April	-3.5	0.8	-1.4	2.3	3.7	3.1	1.8	3.4	5.6	4.2	2.3
	May	-3.1	1.0	-1.1	2.4	3.3	2.9	1.7	4.1	15.0	7.8	3.1
	June	-3.0	0.9	-1.0	2.6	3.3	3.0	1.9	3.7	17.0	8.3	3.3
	July	-2.8	0.3	-1.2	2.5	3.4	3.0	1.8	4.0	14.2	7.5	3.0
	August	-2.6	0.1	-1.1	2.5	3.2	2.9	1.7	3.5	10.5	6.0	2.7
	September	-1.4	0.4	-0.6	2.4	3.4	3.0	2.0	3.3	6.7	4.6	2.5
	October	-0.4	0.7	0.1	2.3	3.2	2.8	2.0	3.4	15.2	7.5	3.2
	November	0.2	0.9	0.5	2.2	3.2	2.8	2.2	3.2	19.2	8.5	3.5
	December	0.4	0.6	0.6	2.3	3.3	2.8	2.2	2.7	16.6	7.3	3.3
2005	January	0.8	0.9	0.9	2.3	3.1	2.8	2.3	2.9	10.6	5.5	3.0
	February	0.6	1.0	0.8	2.4	3.1	2.8	2.3	2.9	10.6	5.6	3.0
	March	0.7	0.5	0.7	2.4	3.0	2.7	2.2	2.8	9.5	5.1	2.9
	April	0.6	0.8	0.8	2.3	3.1	2.8	2.2	2.9	7.5	4.5	2.8
	May	0.8	0.5	0.7	2.3	3.1	2.8	2.2	2.2	2.5	2.3	2.2
	June	1.1	0.5	0.8	2.3	3.2	2.8	2.3	2.3	1.4	1.9	2.2
	July	1.4	0.8	1.1	2.4	3.2	2.9	2.4	2.3	3.0	2.5	2.5
	August	1.7	0.8	1.2	2.4	3.3	2.9	2.5	2.4	2.9	2.6	2.5
	September	1.3	0.7	1.0	2.5	3.3	3.0	2.5	2.6	3.6	3.0	2.5
	October	1.2	0.5	0.8	2.6	3.4	3.1	2.5	2.2	-0.2	1.3	2.2
	November	1.0	0.5	0.8	2.7	3.3	3.1	2.5	2.2	-1.7	0.7	2.1
	December	1.1	0.7	0.9	2.8	3.3	3.1	2.5	2.3	1.8	2.1	2.4
2006	January	0.9	0.7	0.8	2.8	3.3	3.1	2.5	2.4	3.8	2.9	2.6
	February	1.0	0.5	0.8	2.9	3.3	3.1	2.5	2.4	1.5	2.1	2.4
	March	1.1	0.7	0.9	2.9	3.3	3.1	2.5	2.5	0.7	1.9	2.4
	April	1.4	0.4	0.9	2.9	3.2	3.1	2.5	2.5	0.4	1.7	2.3
	May	1.3	0.5	0.9	2.9	3.2	3.1	2.5	2.6	-0.2	1.6	2.3
	June	1.3	0.5	0.9	2.9	3.2	3.1	2.5	2.6	-0.8	1.3	2.2
	July	1.4	0.5	1.0	2.9	3.2	3.1	2.5	2.6	-0.3	1.5	2.3
	August	1.4	0.5	1.0	2.9	3.2	3.1	2.5	2.6	0.4	1.8	2.3
	September	1.4	0.5	1.0	2.9	3.2	3.1	2.5	2.6	0.6	1.8	2.3
	October	1.4	0.5	0.9	2.9	3.2	3.0	2.5	2.6	0.6	1.9	2.3
	November	1.4	0.5	1.0	2.9	3.2	3.1	2.5	2.6	0.6	1.9	2.4
	December	1.4	0.5	1.0	2.9	3.2	3.1	2.5	2.6	0.4	1.8	2.3

Source: BLS IFL (UC3M)
Date: February 23, 2005

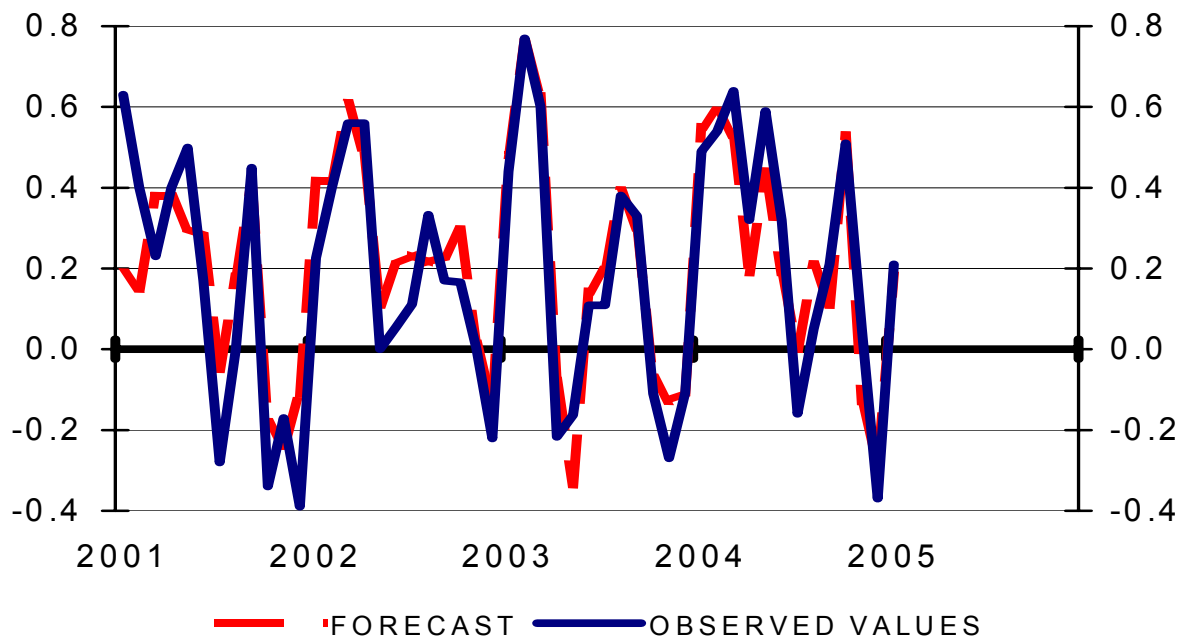


USA MONTHLY RATES OF GROWTH ON CPI AND ITS COMPONENTS												
CONSUMER PRICE INDEX												
CORE INFLATION												
RESIDUAL INFLATION												
ALL												
Non energy commodities less food												
Non energy services												
durables non durables less energy ALL												
Owner's equivalent rent of primary residence Other services ALL												
Food Energy ALL												
IR December 2004												
11.0% 10.7% 21.7% 23.2% 32.9% 56.0% 77.7% 14.3% 8.0% 22.3% 100.0%												
January	2003	-0.2	-0.9	-0.6	0.3	0.7	0.5	0.2	0.1	3.4	1.2	0.4
	2004	0.1	-0.8	-0.4	0.2	0.7	0.5	0.2	0.1	4.2	1.5	0.5
	2005	0.4	-0.6	-0.1	0.3	0.5	0.4	0.3	0.3	-1.2	-0.2	0.2
	2006	0.2	-0.6	-0.2	0.3	0.6	0.5	0.3	0.5	0.8	0.6	0.3
February	2003	-0.2	0.8	0.3	0.1	0.6	0.4	0.4	0.5	6.2	2.3	0.8
	2004	0.2	1.0	0.6	0.1	0.6	0.4	0.5	0.2	2.3	0.9	0.5
	2005	0.0	1.1	0.6	0.2	0.6	0.4	0.5	0.2	2.4	1.0	0.6
	2006	0.1	1.0	0.5	0.2	0.6	0.4	0.5	0.1	0.1	0.1	0.4
March	2003	-0.2	0.9	0.4	0.1	0.3	0.2	0.3	0.2	5.3	1.9	0.6
	2004	-0.2	1.7	0.7	0.2	0.9	0.6	0.6	0.2	1.8	0.7	0.6
	2005	-0.1	1.2	0.6	0.2	0.8	0.6	0.6	0.0	0.8	0.3	0.5
	2006	0.0	1.4	0.7	0.2	0.9	0.6	0.6	0.2	-0.1	0.1	0.5
April	2003	-0.3	0.1	-0.1	0.0	0.1	0.0	0.1	-0.1	-3.2	-1.2	-0.2
	2004	-0.1	0.4	0.1	0.3	0.2	0.2	0.2	0.1	2.0	0.7	0.3
	2005	-0.2	0.7	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.2
	2006	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.1	-0.2	0.0	0.2
May	2003	-0.6	-0.5	-0.6	0.1	0.4	0.3	0.1	0.2	-3.0	-0.9	-0.2
	2004	-0.2	-0.3	-0.2	0.2	0.0	0.1	0.0	0.9	5.6	2.5	0.6
	2005	0.0	-0.6	-0.3	0.2	0.1	0.1	0.0	0.2	0.7	0.4	0.1
	2006	0.0	-0.5	-0.2	0.2	0.1	0.1	0.0	0.3	0.1	0.2	0.1
June	2003	-0.4	-0.9	-0.6	0.0	0.3	0.2	-0.1	0.4	1.9	0.9	0.1
	2004	-0.3	-1.0	-0.6	0.2	0.3	0.3	0.1	0.1	3.6	1.4	0.3
	2005	0.0	-1.0	-0.5	0.2	0.3	0.3	0.1	0.1	2.5	1.0	0.3
	2006	0.0	-1.0	-0.5	0.2	0.3	0.3	0.1	0.2	1.9	0.8	0.2
July	2003	-0.5	-0.7	-0.6	0.2	0.4	0.4	0.1	0.1	0.3	0.1	0.1
	2004	-0.3	-1.3	-0.9	0.2	0.5	0.3	0.0	0.3	-2.1	-0.6	-0.2
	2005	0.0	-1.0	-0.5	0.2	0.5	0.4	0.1	0.3	-0.6	0.0	0.1
	2006	0.0	-1.0	-0.5	0.2	0.5	0.4	0.1	0.3	0.0	0.2	0.1
August	2003	-0.6	0.3	-0.1	0.2	0.3	0.3	0.2	0.4	2.7	1.2	0.4
	2004	-0.4	0.1	-0.1	0.3	0.1	0.2	0.1	0.0	-0.6	-0.2	0.1
	2005	0.0	0.1	0.0	0.3	0.2	0.2	0.2	0.2	-0.7	-0.1	0.1
	2006	0.0	0.1	0.0	0.3	0.2	0.2	0.2	0.2	-0.1	0.1	0.2
September	2003	-0.9	1.4	0.4	0.3	-0.2	0.0	0.1	0.2	2.8	1.1	0.3
	2004	0.4	1.6	0.9	0.2	0.0	0.1	0.3	-0.1	-0.6	-0.3	0.2
	2005	-0.1	1.5	0.7	0.3	0.0	0.1	0.3	0.1	-0.1	0.1	0.2
	2006	0.0	1.5	0.7	0.3	0.0	0.1	0.3	0.1	0.1	0.1	0.3
October	2003	-0.4	0.7	0.1	0.3	0.5	0.4	0.4	0.6	-5.3	-1.5	-0.1
	2004	0.5	1.0	0.8	0.2	0.2	0.2	0.4	0.6	2.2	1.2	0.5
	2005	0.4	0.9	0.6	0.3	0.3	0.3	0.4	0.2	-1.5	-0.4	0.2
	2006	0.4	0.8	0.6	0.3	0.3	0.3	0.4	0.2	-1.5	-0.4	0.2
November	2003	-0.1	-0.6	-0.4	0.2	-0.3	-0.1	-0.2	0.4	-2.8	-0.7	-0.3
	2004	0.5	-0.4	0.1	0.1	-0.2	-0.1	-0.1	0.2	0.6	0.3	0.1
	2005	0.4	-0.4	0.0	0.2	-0.3	-0.1	-0.1	0.1	-0.9	-0.3	-0.1
	2006	0.4	-0.3	0.0	0.2	-0.3	-0.1	0.0	0.1	-0.8	-0.2	-0.1
December	2003	-0.1	-1.1	-0.6	0.1	-0.2	0.0	-0.2	0.7	-1.0	0.1	-0.1
	2004	0.2	-1.4	-0.6	0.2	-0.1	0.0	-0.2	0.2	-3.1	-1.0	-0.4
	2005	0.3	-1.2	-0.4	0.2	-0.2	0.0	-0.1	0.3	0.4	0.3	0.0
	2006	0.3	-1.2	-0.4	0.2	-0.2	0.0	-0.1	0.3	0.1	0.2	0.0

Source: BLS IFL (UC3M)
Date: February 23, 2005

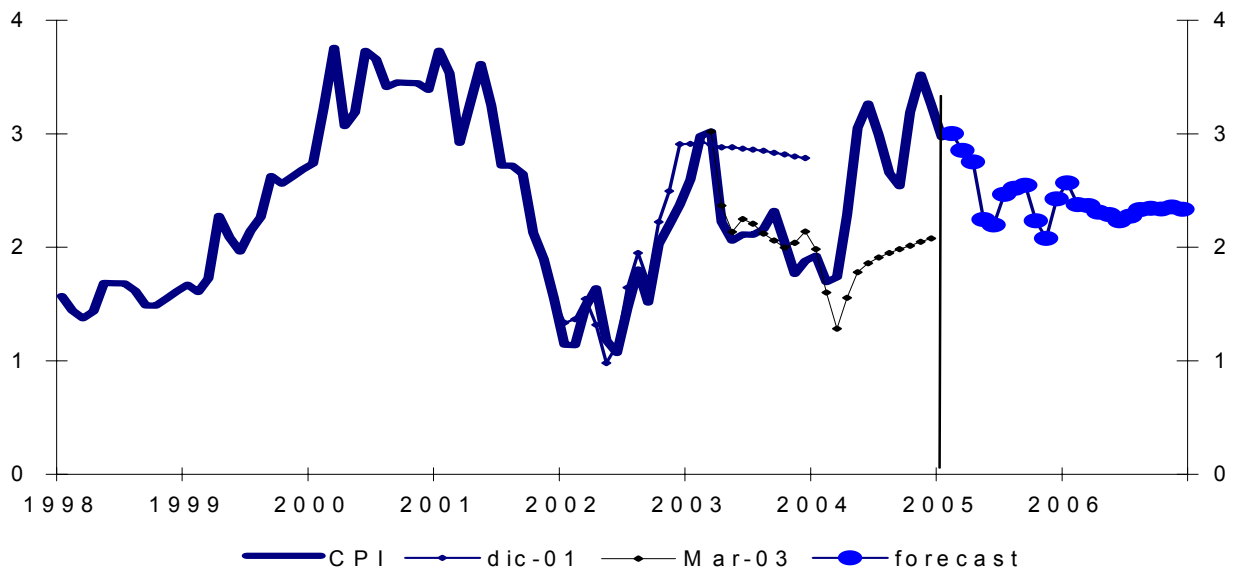


CPI MONTHLY GROWTH RATES IN USA



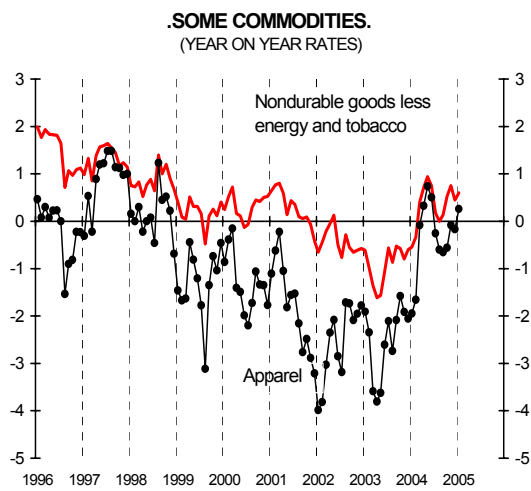
Source :BLS & IFL (UC3M)
Date: February 23, 2005

ANNUAL FORECASTS FOR US INFLATION

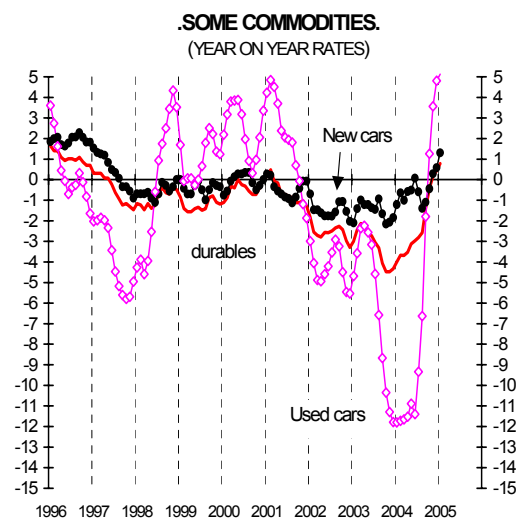


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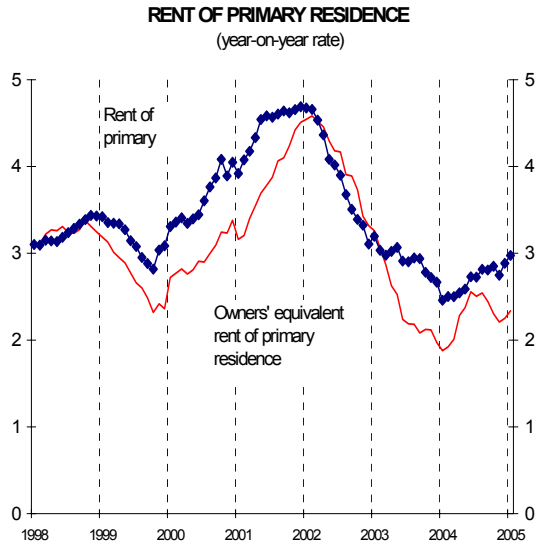




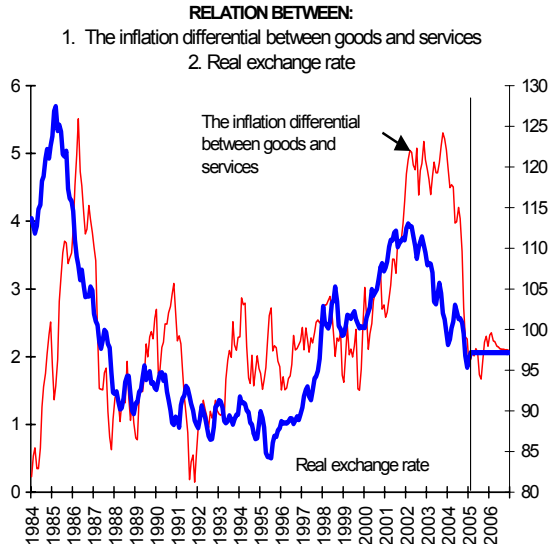
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Date: February 23, 2005



Source: BLS IFL (UC3M)
Date: February 23, 2005

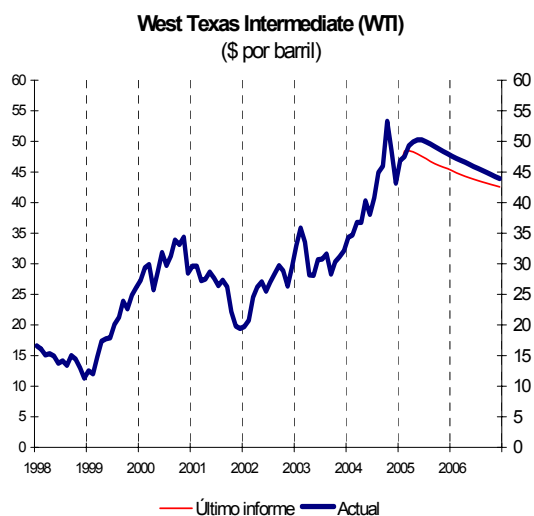


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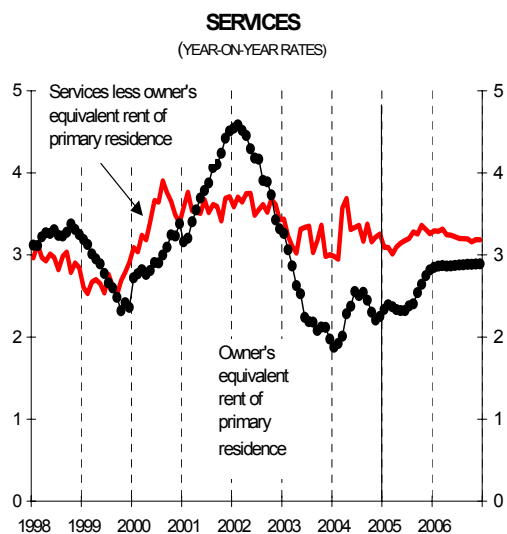


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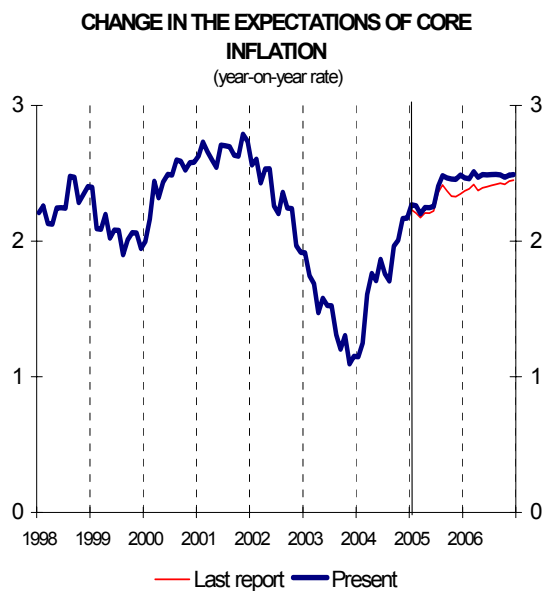




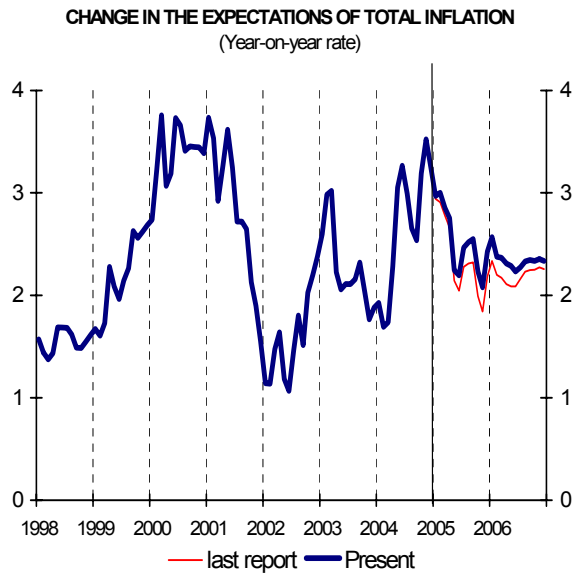
Source: BLS IFL (UC3M)
Date: February 23, 2005



Source: BLS IFL (UC3M)
Date: February 23, 2005



Source: BLS IFL (UC3M)
Date: February 23, 2005



Source: BLS IFL (UC3M)
Date: February 23, 2005





III. MAIN POINTS AND NEW RESULTS

III.1. SPAIN

III.1.1 SPAIN INFLATION

For February 2005 we are forecasting a total monthly inflation rate in Spain of 0.3%. The total annual inflation rate will increase to 3.4% from the 3.1% registered in January (Table III.1.1.2).

The monthly rate of total inflation in January 2005 performed worse than expected, registering a fall of 0.84% instead of the 0.90% expected (Table III.1.1.1). This upwards innovation was due to the worse performance of residual inflation, especially unprocessed food, where the weather effects at the end of 2004 and in early 2005 caused a greater increase than expected in the monthly inflation rate, 1.02% instead of the forecast 0.13%. With unprocessed food, the greatest rates were registered for fish (3.99% observed vs. 2.90% forecast) and pulse vegetables (0.77% observed vs. a negative forecast value of 0.23%). The other component in residual inflation, energy products, also performed worse than expected with a 0.81% fall in their monthly rate instead of the forecast 1.19%. The reason was largely that fuel prices fell less than expected, with a negative monthly rate of 1.84% instead of the expected fall of 2.37%.

Table III.1.1.1

OBSERVED AND FORECAST VALUES ON CPI COMPONENTS				
CPI Inflation	Weights 2005 (%)	Monthly Observed Rates	Monthly Forecast Rates	Confidence Interval 80%
Total	100	-0.84	-0.90	± 0.15
Core	82,28	-1.04	-0.97	± 0.13
Residual	17,72	0.08	-0.55	± 0.22

Source: INE & IFL (UC3M)

Date: February 16, 2005

Core inflation registered a slight downwards innovation largely caused by the prices of non-energy industrial goods, with a fall in their monthly rate of 3.78% whereas we had forecast 3.57%. This was because the price of apparel fell much more than expected during the sales, registering a negative monthly rate of 12.32% instead of the forecast 11.69%. In processed food there was also a slight downwards innovation, with a monthly rate of 0.43% instead of the forecast 0.50%, whereas services performed practically as expected.

For February, we expect the annual total inflation rate to rise to 3.4% (Table III.1.1.2 and Graph III.1.1.1). The annual rate of core inflation in February will return to the 2.9% observed from August to December, 2004. As for residual inflation, more moderate expectations are maintained in all its components, particularly in energy, where the mean rate forecast for 2005 is lower than the rate observed in 2004 (4.8% instead of the 2.8% expected for 2005), with the forecast for the mean annual total inflation rate at 2.8%, less than the 3.0% observed in 2004 (Graph III.1.1.2).

Table III.1.1.2

ANNUAL AVERAGE RATES OF GROWTH						
CPI Inflation	Observed values			Forecasts		
	Ave ⁽²⁾ 2003	Ave ⁽²⁾ 2004	2005 Jan ⁽¹⁾	2005 Feb ⁽¹⁾	Med ⁽²⁾ 2005	Med ⁽²⁾ 2006
Core (82,28%)	2.9	2.7	2.8	2.9	2.7	2.7
Total (100%)	3.0	3.0	3.1	3.4	2.8	2.6

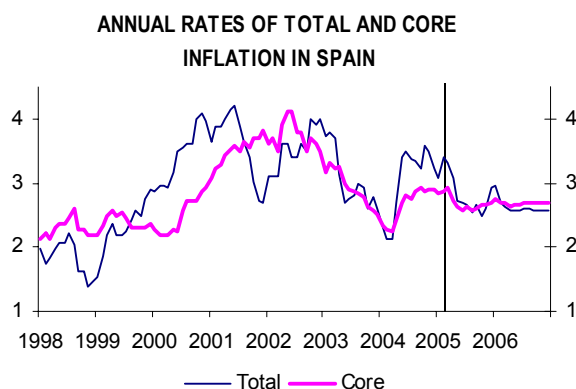
Source: INE & IFL (UC3M)

Date: February 16, 2005

⁽¹⁾ Growth of the month over the same month of the previous year

⁽²⁾ Growth of the average of the reference year over previous average of the

Graph III.1.1.1



Source : INE & IFL

Date: February 16, 2005

Table III.1.1.3 shows the mean annual rates of total inflation and its main components. As for core inflation, we expect a moderate increase in the prices of non-energy industrial goods and services in 2005, but a lower mean annual rate for processed foods, so that mean core inflation will remain at the 2.7% observed in 2004 for both 2005 and 2006 (Graph III.1.1.2). As for residual inflation, unprocessed food and energy are expected to significantly fall in their forecast values in relation to 2004.

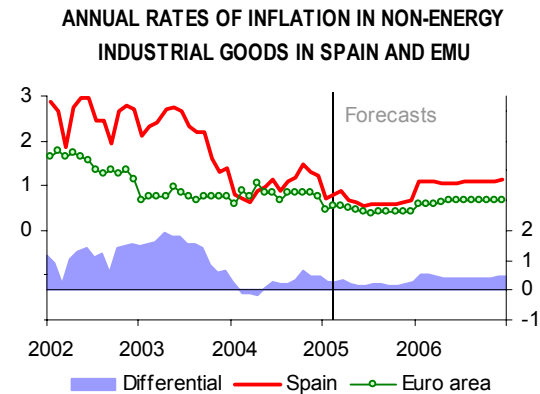


Table III.1.1.3

ANNUAL AVERAGE RATES OF GROWTH					
CPI inflation	Observed			Forecasts	
	2002	2003	2004	2005	2006
Total (100%)*	3.5	3.0	3.0	2.8	2.6
Core (82,3%)	3.7	2.9	2.7	2.7	2.7
Processed Food (17,2%)	4.3	3.0	3.6	3.3	2.6
Non-energy Industrial goods (30,1%)	2.5	2.0	0.9	1.0	1.1
Services (35,1%)	4.6	3.7	3.7	3.8	4.1
Residual (17,7%)	2.6	3.6	4.7	3.5	2.3
Non-processed Food (8,6%)	5.8	6.0	4.6	4.4	4.5
Energy (9,1%)	-0.2	1.4	4.8	2.8	0.3

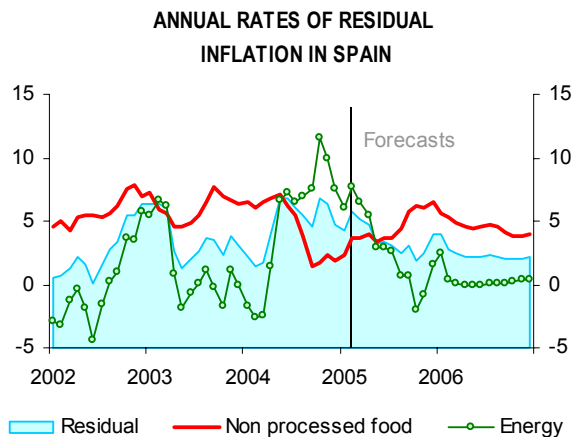
Source: INE & IFL (UC3M)
Date: February 16, 2005

Graph III.1.1.3



Source : INE & IFL (UC3M)
Date: March 2, 2005

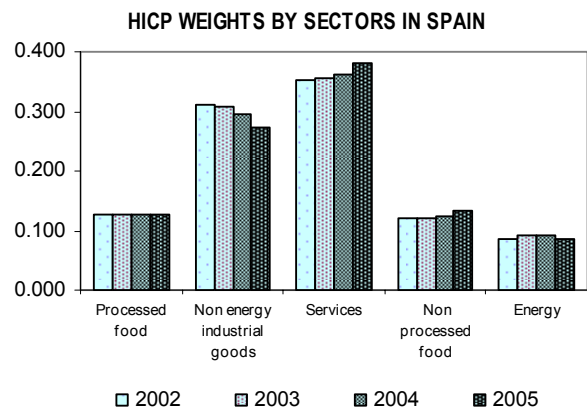
Graph III.1.1.2



Source: INE & IFL
Date: February 16, 2005

Graph III.1.1.3 shows the inflation differential between Spain and the euro area. It is expected that the annual rates of inflation of non-energy industrial goods will be 0.4% in 2005 in the euro area and 1.0% in Spain, so the differential between the annual inflation rate in Spain and the euro area will be around 0.6% in the last few months of 2005, two tenths more than forecast last month. Although this differential decreased significantly in 2004, it is important to progress in increasing productivity in order to refrain from becoming less competitive in trade within the euro area. As for core inflation, the annual rate in January 2005 fell to 1.8% in the euro area compared with the 2.0% observed in December 2004. The expectations for the mean annual rate of core inflation in the euro area fall to 1.7% and 1.8% in 2005 and 2006, respectively compared with the forecast values for Spain: 2.7% in both 2005 and 2006.

Graph III.1.1.4



Source : Eurostat
Date: February 28, 2005



III.1.1. TABLES AND PLOTS ABOUT SPAIN INFLATION

Tables:

- Spain Index of Consumer Price (CPI) desaggregation.
- Forecast errors by sectors for Spain.
- CPI annual average rates of growth by components in Spain.
- Index of Consumer Price (CPI) Annual Growth Rates by sectors in the Spain.
- Index of Consumer Price (CPI) Monthly Growth Rates by sectors in the Spain.

Plots:

- CPI monthly growth rates in Spain.
- Annual Forecast for the Spain Inflation.
- Year-on-year rate of Spain inflation and contributions of main components



Methodology: Analysis of spanish inflation by sectors							
BASIC COMPONENTS AGGREGATES		BASIC COMPONENTS		BASIC COMPONENTS AGGREGATES			
<div>IPSEBENE 81.401% (1+2+3 +4+5)</div> <div>↓</div> <div>CORE INFLATION IT IS CALCULATED ON THE IPSEBENE INDEX</div>	<div>(1) AE-X 13.331% Processed food excluding fats and tobacco CPI</div> <div>(2) MAN 30.150% Non-energy industrial goods</div> <div>(3) SERV-T 33.725% Services excluding packages tourist CPI</div> <div>(4) X 3.046% Fats and tobacco CPI</div> <div>(5) T 1.149% Tourist packages CPI</div> <div>(6) ANE 9.142% Non processed food CPI</div> <div>(7) ENE 9.142% Energy CPI</div>	<div>BENE-X 44.481% (1 + 2)</div>	<div>IPSEBENE-X-T 77.206% (1 + 2 + 3)</div> <div>↓</div>	<div>IPC (1 + 2 + 3 + 4 + 5 + 6 + 7)</div> <div>↓</div> <div>TOTAL INFLATION IT IS CALCULATED ON THE CPI INDEX</div>	<div>RESIDUAL 22.735% (4 + 5 + 6 + 7)</div> <div>↓</div> <div>RESIDUAL INFLATION IT IS CALCULATED ON THE RES INDEX</div>		
						<div>TREND INFLATION IT SI CALCULATED ON THE IPSEBENE-X-T</div>	
							<div>↓</div>
		<div>↓</div>					
			<div>↓</div>				
		IPC = 0.13331 AE-X + 0.3150 MAN + 0.3715 SERV- T + 0.03046 X + 0.01149 T + 0.093498 ANE + 0.09142 ENE					
Source: INE & IFL (UC3M)							

FORECAST ERRORS IN THE MONTHLY INFLATION RATE BY SECTORS IN SPAIN					
	Weights 2005	Observed Monthly Growth	Forecast	Annual Growth Observed	Confidence interval at 80%
Processed food	17.17	0.43	0.50	4.15	0.38
Non energy industrial goods	30.05	-3.78	-3.57	0.98	0.15
Services	35.05	0.59	0.54	3.77	0.04
CORE	82.28	-1.04	-0.97	2.83	0.12
Non-processed food	8.60	1.02	0.13	2.25	0.61
Energy	9.12	-0.81	-1.19	6.04	1.45
RESIDUAL	17.72	0.08	-0.55	4.23	0.33
TOTAL INFLATION	100.00	-0.84	-0.90	3.08	0.09

Source: INE & IFL (UC3M)
Date: February 16, 2005



CPI ANNUAL GROWTH BY SECTORS IN SPAIN										
		Consumer Prices Index								
		Core				Residual			TOTAL 100%	
		Processed food	Non energy industrial goods	Services	TOTAL	Non processed food	Energy	TOTAL		
Weights 2004		17.2%	30.1%	35.1%	82.3%	8.6%	9.1%	17.7%		
ANNUAL AVERAGE RATE	1997	0.3	1.7	3.5	2.1	0.9	2.4	1.5	2.0	
	1998	1.3	1.5	3.6	2.3	2.1	-3.8	-0.2	1.8	
	1999	2.1	1.5	3.4	2.4	1.2	3.2	2.2	2.3	
	2000	0.9	2.1	3.7	2.5	4.2	13.3	8.8	3.4	
	2001	3.4	2.6	4.2	3.5	8.7	-1.0	3.6	3.6	
	2002	4.3	2.5	4.6	3.7	5.8	-0.2	2.6	3.5	
	2003	3.0	2.0	3.7	2.9	6.0	1.4	3.6	3.0	
	2004	3.6	0.9	3.7	2.7	4.6	4.8	4.7	3.0	
	2005	3.3	1.0	3.9	2.7	4.4	2.8	3.6	2.8	
	2006	2.6	1.1	4.1	2.7	4.5	0.3	2.3	2.6	
ANNUAL RATES (growth of the month over the same month of the previous year)	2004	January	2.5	0.7	3.6	2.3	6.5	-1.7	2.2	2.3
		February	2.4	0.5	3.6	2.3	6.1	-2.5	1.5	2.1
		March	2.4	0.5	3.6	2.2	6.5	-2.5	1.6	2.1
		April	2.9	0.7	3.7	2.4	6.8	1.4	3.9	2.7
		May	3.7	0.9	3.8	2.7	7.0	6.6	6.8	3.4
		June	4.0	1.0	3.8	2.8	6.2	7.2	6.8	3.5
		July	4.2	0.8	3.7	2.8	5.5	6.6	6.1	3.4
		August	4.2	1.0	3.7	2.9	3.8	7.0	5.5	3.3
		September	4.3	1.0	3.8	2.9	1.4	7.5	4.6	3.2
		October	4.0	1.3	3.6	2.9	1.8	11.6	6.8	3.6
		November	4.1	1.2	3.8	2.9	2.3	9.9	6.3	3.5
		December	4.1	1.2	3.8	2.9	1.8	7.6	4.8	3.2
	2005	January	4.2	1.0	3.8	2.8	2.3	6.0	4.2	3.1
		February	4.1	1.1	3.8	2.9	3.7	7.7	5.8	3.4
		March	4.1	1.1	3.9	2.9	3.6	6.5	5.1	3.3
		April	4.0	1.0	3.6	2.7	3.9	5.4	4.7	3.1
		May	3.2	0.9	3.8	2.6	3.4	2.9	3.1	2.7
		June	3.0	0.9	3.8	2.6	3.7	3.0	3.3	2.7
		July	2.9	0.9	3.8	2.6	3.6	2.6	3.1	2.7
		August	2.9	0.9	3.8	2.6	4.3	0.7	2.5	2.5
		September	2.9	0.9	3.9	2.6	5.8	0.6	3.1	2.7
		October	2.9	1.0	4.0	2.6	6.2	-2.0	1.8	2.5
		November	2.9	1.0	4.0	2.7	6.1	-0.8	2.5	2.6
		December	2.9	1.0	4.1	2.7	6.5	1.6	4.0	2.9
	2006	January	2.8	1.1	4.1	2.7	5.6	2.4	4.0	3.0
		February	2.8	1.1	4.0	2.7	5.3	0.4	2.7	2.7
		March	2.8	1.1	4.0	2.7	4.9	0.1	2.4	2.6
		April	2.5	1.1	4.1	2.6	4.6	-0.1	2.2	2.6
		May	2.6	1.0	4.1	2.7	4.5	-0.1	2.1	2.6
		June	2.6	1.1	4.1	2.7	4.5	-0.1	2.2	2.6
		July	2.6	1.1	4.1	2.7	4.6	0.0	2.3	2.6
		August	2.7	1.1	4.1	2.7	4.5	0.1	2.2	2.6
		September	2.6	1.1	4.1	2.7	4.1	0.1	2.1	2.6
		October	2.6	1.1	4.1	2.7	3.9	0.2	2.0	2.6
		November	2.6	1.1	4.1	2.7	3.8	0.3	2.0	2.6
		December	2.6	1.1	4.1	2.7	3.9	0.4	2.1	2.6

Source: INE & IFL (UC3M)

Date: February 16, 2005



CPI MONTHLY GROWTH BY SECTORS IN SPAIN										
		Consumer Prices Index								
		Core				Residual			TOTAL 100%	
		Processed food	Non energy industrial goods	Services	TOTAL	Non processed food	Energy	TOTAL		
Weights 2004		17.2%	30.1%	35.1%	82.3%	8.6%	9.1%	17.7%		
MONTHLY RATES (Growth of the month over the previous month)	January	2003	0.5	-3.1	0.6	-0.8	0.4	2.2	1.4	-0.4
		2004	0.4	-3.6	0.6	-1.0	0.6	0.6	0.6	-0.7
		2005	0.4	-3.8	0.6	-1.0	1.0	-0.8	0.1	-0.8
		2006	0.4	-3.7	0.6	-1.0	0.1	0.0	0.0	-0.8
	February	2003	0.6	0.0	0.4	0.3	-1.5	1.3	0.0	0.2
		2004	0.5	-0.2	0.4	0.2	-1.9	0.4	-0.7	0.0
		2005	0.4	-0.1	0.5	0.2	-0.5	2.0	0.8	0.3
		2006	0.3	-0.1	0.4	0.2	-0.8	0.0	-0.4	0.1
	March	2003	0.3	1.0	0.5	0.6	0.5	1.4	1.0	0.7
		2004	0.3	0.9	0.5	0.6	0.8	1.5	1.2	0.7
		2005	0.3	1.0	0.6	0.7	0.7	0.4	0.5	0.6
		2006	0.3	1.0	0.5	0.6	0.4	0.0	0.2	0.6
	April	2003	0.1	2.7	0.7	1.3	0.0	-2.6	-1.4	0.8
		2004	0.5	3.0	0.7	1.5	0.3	1.3	0.8	1.4
		2005	0.5	2.8	0.4	1.3	0.5	0.2	0.4	1.1
		2006	0.2	2.8	0.5	1.2	0.2	0.0	0.1	1.0
	May	2003	0.1	0.5	-0.2	0.1	0.6	-2.5	-1.1	-0.1
		2004	1.0	0.6	-0.1	0.4	0.8	2.5	1.7	0.6
		2005	0.1	0.6	0.1	0.3	0.3	0.0	0.2	0.2
		2006	0.2	0.6	0.1	0.3	0.2	0.1	0.1	0.2
	June	2003	0.1	-0.2	0.4	0.1	0.3	-0.6	-0.2	0.1
		2004	0.4	-0.1	0.4	0.2	-0.5	0.0	-0.2	0.2
		2005	0.2	-0.1	0.4	0.2	-0.2	0.1	-0.1	0.1
		2006	0.2	-0.1	0.4	0.2	-0.1	0.1	0.0	0.2
	July	2003	0.1	-3.5	0.7	-1.0	1.5	0.9	1.2	-0.6
		2004	0.2	-3.7	0.6	-1.1	0.8	0.3	0.5	-0.8
		2005	0.1	-3.6	0.6	-1.0	0.7	-0.1	0.3	-0.8
		2006	0.2	-3.6	0.6	-1.0	0.8	0.0	0.4	-0.7
	August	2003	0.2	-0.3	0.7	0.2	1.9	1.4	1.6	0.5
		2004	0.2	-0.1	0.6	0.3	0.3	1.8	1.1	0.4
		2005	0.2	-0.1	0.6	0.3	1.1	0.0	0.5	0.3
		2006	0.2	-0.1	0.6	0.3	0.9	0.1	0.5	0.3
	September	2003	0.1	1.0	-0.5	0.2	2.2	-0.4	0.8	0.3
		2004	0.2	1.1	-0.4	0.2	-0.2	0.1	-0.1	0.2
		2005	0.1	1.1	-0.3	0.2	1.2	0.0	0.6	0.3
		2006	0.1	1.1	-0.3	0.2	0.8	0.0	0.4	0.3
	October	2003	0.3	2.3	0.2	1.0	-0.4	-1.1	-0.8	0.7
		2004	0.1	2.6	0.0	0.9	0.0	2.6	1.4	1.0
		2005	0.1	2.6	0.1	1.0	0.3	0.0	0.1	0.8
		2006	0.0	2.6	0.1	1.0	0.1	0.0	0.1	0.8
	November	2003	0.2	1.1	-0.2	0.4	0.0	0.3	0.1	0.3
		2004	0.2	1.0	0.0	0.4	0.6	-1.2	-0.4	0.2
		2005	0.2	1.0	0.0	0.4	0.5	0.0	0.2	0.4
		2006	0.2	1.0	0.0	0.4	0.4	0.1	0.2	0.4
	December	2003	0.1	-0.1	0.4	0.1	0.9	-0.3	0.3	0.2
		2004	0.2	-0.2	0.4	0.1	0.4	-2.5	-1.2	-0.1
		2005	0.2	-0.1	0.4	0.2	0.8	0.0	0.3	0.2
		2006	0.2	-0.1	0.4	0.2	0.9	0.0	0.5	0.2

Source: INE & IFL (UC3M)

Date: February 16, 2005



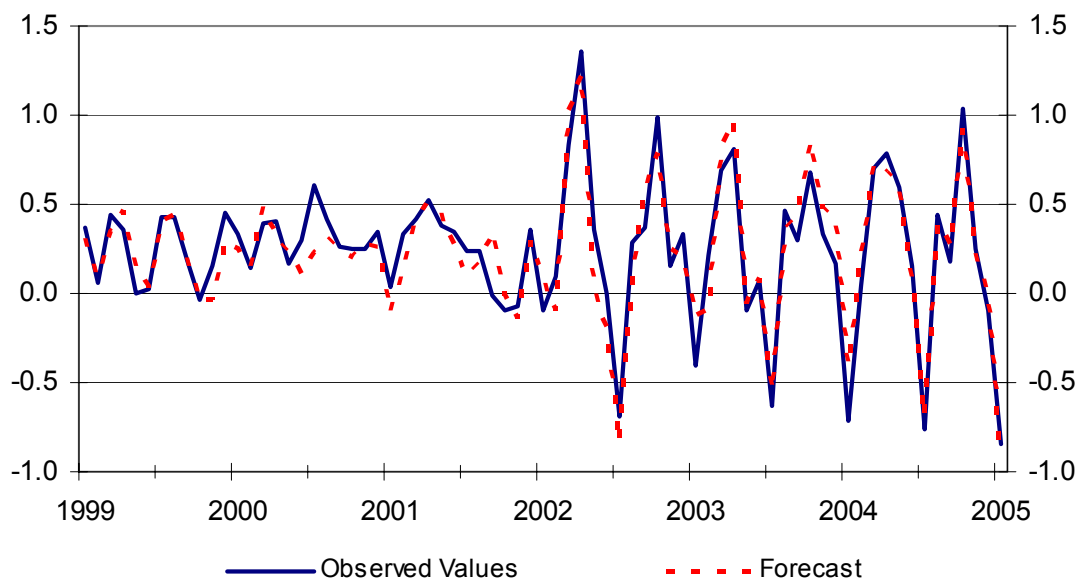
CPI ANNUAL AVERAGE GROWTH BY COMPONENTS IN SPAIN														
				Weights 2005	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
HICP Total Inflation	Core Inflation	Processed food	AE less tobacco & fats	133.3	1.3	1.4	0.8	1.4	4.1	3.1	2.8	2.7	3.0	2.9
			Oils & Fats	7.6	-26.8	-11.1	15.0	-7.6	-7.3	15.2	3.5	14.7	5.2	5.0
			Tobacco	22.8	16.3	7.9	4.3	2.5	4.9	7.4	3.8	5.6	4.0	0.5
		Non energy industrial goods	Vehicles	63.8	1.4	0.6	0.6	1.7	1.8	1.7	1.7	1.6	2.0	1.9
			Footwear	19.5	2.5	2.5	2.6	2.7	4.0	5.6	3.6	1.9	1.4	0.8
			Clothing	1.5	2.0	2.0	2.2	2.0	2.4	5.2	3.8	1.8	1.0	1.5
			Rest	140.6	1.5	1.4	1.2	2.2	3.0	2.4	0.9	0.3	0.5	0.6
		Services	Postal services	0.0	8.1	31.0	0.0	0.0	13.1	13.3	3.3	3.1	2.7	0.0
			Cultural services	3.4	1.1	2.3	2.5	2.6	3.8	4.5	3.0	3.0	2.7	3.4
			Education	4.4	5.5	4.0	3.3	4.1	4.0	3.3	4.6	3.6	4.5	4.4
			Hotels	5.0	3.1	6.1	6.5	10.6	9.9	5.8	3.4	3.0	2.2	5.0
			Health	3.4	4.2	4.0	2.8	3.4	4.7	4.8	4.0	3.2	6.5	6.2
			Household equipment	5.5	3.9	4.3	3.8	3.8	3.7	4.8	5.1	4.4	4.8	5.3
			Restaurants	3.3	3.0	3.0	3.5	3.9	4.7	5.8	4.4	4.1	3.7	3.4
			Telephone	0.0	-0.3	1.9	2.1	-5.6	-1.1	-3.1	-2.7	-1.1	-0.4	0.0
			Transports	50.1	2.5	2.5	3.5	4.2	4.1	5.3	3.6	4.4	4.6	6.0
			Package holidays	6.6	14.8	15.4	7.2	12.3	7.1	8.7	3.1	1.4	4.8	6.6
			University	3.5	4.1	3.1	2.4	2.1	3.9	5.0	5.4	4.9	4.2	3.5
			Housing	4.3	4.2	3.7	2.7	3.8	4.5	4.6	4.0	4.5	4.3	4.3
			Rest	3.9	3.4	2.9	2.3	2.6	3.4	4.2	3.9	4.2	3.9	3.9
	Inflación Residual	Non processed foods	Meat	36.0	1.4	-2.1	-2.1	5.8	10.5	1.7	4.7	3.6	4.4	2.7
			Fruits	15.6	-3.1	3.7	7.0	-0.7	7.8	9.8	11.6	6.3	4.5	7.6
			Eggs	2.4	0.0	-0.9	-5.0	9.3	3.4	1.7	8.4	11.6	-3.1	-0.7
			Vegetables	10.7	-0.2	9.6	3.7	5.9	5.7	18.0	5.1	3.6	8.4	7.5
			Mollusc	7.9	5.6	4.1	-0.9	6.2	7.3	7.3	2.4	3.1	6.7	5.6
			Potatoes	3.6	-2.6	19.6	7.5	-1.0	23.4	0.4	2.5	16.2	-1.6	6.1
			Fish	17.7	5.9	4.6	2.0	4.8	3.3	5.0	4.4	2.0	3.2	3.4
		Energy	Heat energy	50.5	3.4	-3.3	5.2	18.1	-2.1	0.5	1.4	7.1	3.3	0.7
			Fuels	4.0	4.7	-8.9	13.3	39.0	-6.1	-3.1	6.1	12.0	4.8	-2.0
			Electricity and gas	36.9	0.5	-3.6	-1.6	0.2	2.4	-1.4	0.8	0.8	1.6	0.0

Source: INE & IFL (UC3M)

Date: February 16, 2005

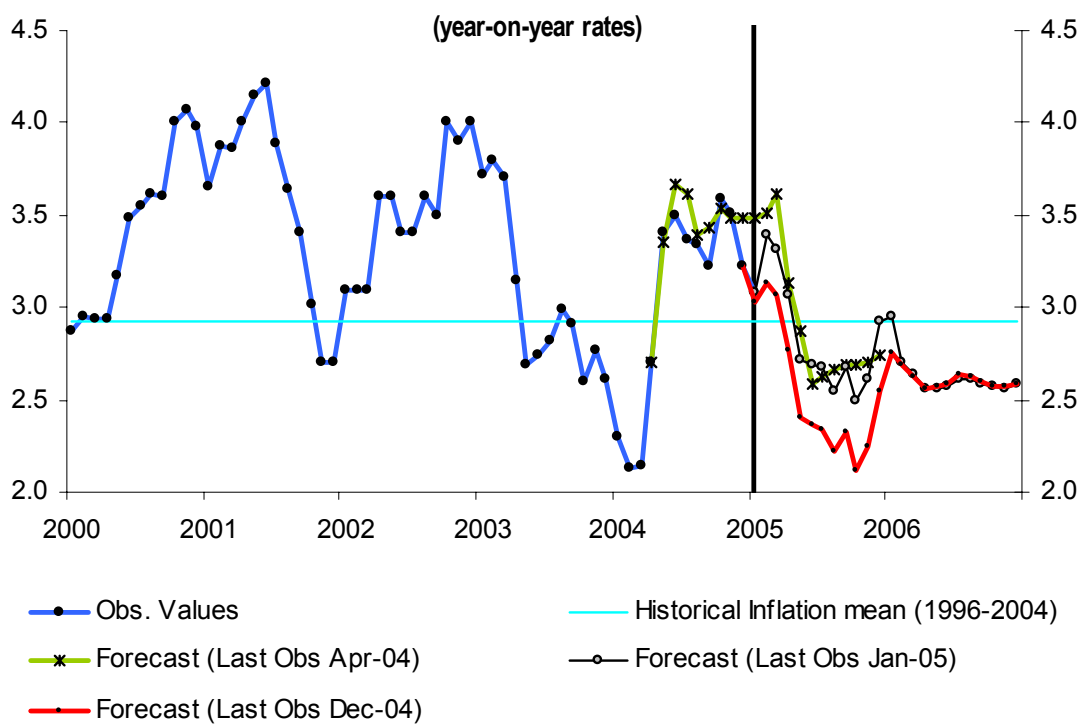


CPI MONTH-ON-MONTH RATES OF GROWTH IN SPAIN



Source: INE & IFL (UC3M)
Date: February 16, 2005

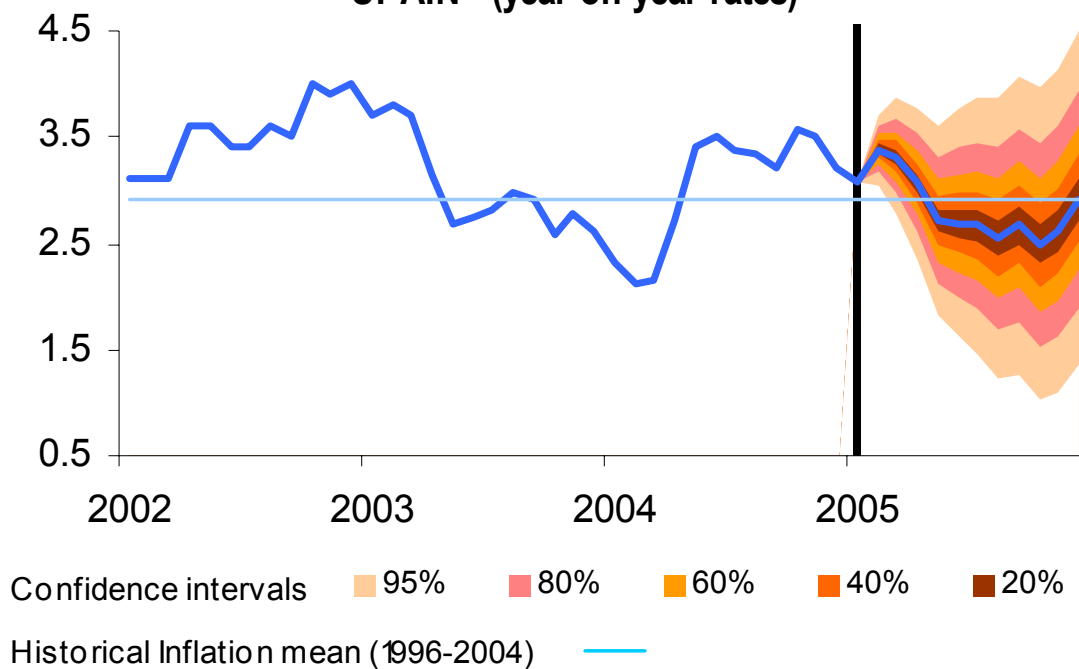
ANNUAL FORECASTS FOR TOTAL INFLATION IN SPAIN



Source: INE & IFL (UC3M)
Date: February 16, 2005

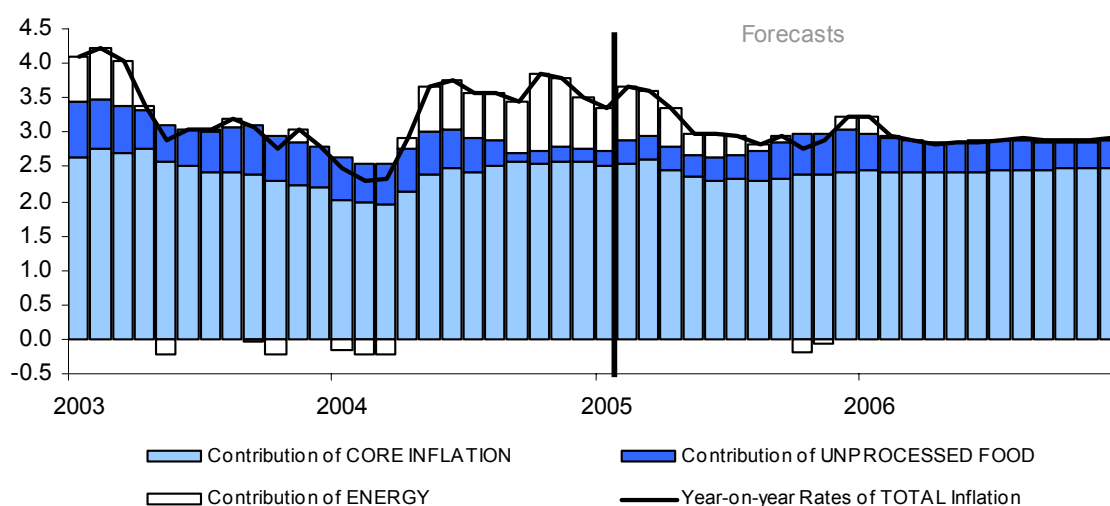


ANNUAL FORECASTS FOR TOTAL INFLATION IN SPAIN (year-on-year rates)



Source: INE & IFL (UC3M)
Date: February 16, 2005

YEAR-ON-YEAR RATE OF INFLATION IN SPAIN AND CONTRIBUTIONS OF MAIN COMPONENTS



Source: INE & IFL (UC3M)
Date: February 16, 2005



III.2. MACROECONOMIC TABLE OF SPANISH ECONOMY

MACROECONOMIC TABLE AND INDICATORS (*)					
	Annual Rates				
	2003	2004	Forecasts BIMA(*)		Budget
			2005	2006	2005
<i>Private Final Consumption Expenditure</i>	2.9	3.5	3.4	3.3	3.2
Public Final Consumption Expenditure	3.9	4.9	4.5	4.2	3.5
Gross Fixed Capital Formation	3.2	4.6	4.5	3.6	4.0
Equipment	1.0	5.8	7.1	5.8	(3)
Building	4.3	4.4	3.2	2.3	3.2
Other products	3.0	3.2	4.9	4.6	(3)
Inventory change (1)	0.1	0.2	-0.2	0.0	0.0
Domestic Demand	3.2	4.2	3.7	3.5	3.4
Exports of Goods and Services	2.6	4.5	6.3	7.7	6.4
Imports of Goods and Services	4.8	9.0	8.7	8.7	7.3
Net Exports (1)	-0.8	-1.7	-1.2	-0.8	-0.6
GDP	2.5	2.7	2.7	2.9	3.0
GDP, current prices	6.6	6.4	6.5	6.1	6.3
Prices and Costs					
CPI, annual average	3.0	3.0	2.8	2.6	
CPI, dec./dec.	2.6	3.2	2.9	2.6	
Average earning per worker	4.2	4.1	4.2	4.2	
Unit labour cost	3.5	3.4	3.7	3.6	
Labour Market (Data poll labour force)					
Labour Force (% variation)	2.6	2.0	1.9	2.0	
Employment (EPA)					
Annual average variation in %	2.7	2.5	2.5	2.7	
Annual average variation in thousands	436.9	422.0	428.0	474.0	
Unemployment rate	11.3	10.8	10.4	10.0	10.8
Basic balances					
Foreign sector					
Current Account (m. €.)	-24.634	-45.437	-37.224	-33.436	
Net lending or borrowing (% GDP) (2)	-3.3	-5.7	-4.4	-3.7	
AA.PP. (Total) / Public Administration					
Net lending or borrowing (% GDP) (2)	0.0	-0.8	-1.2	-1.0	
Other Economic Indicators					
Industrial Production Index	1.6	1.7	0.1	1.2	

(1) Contributions to GDP growth

(2) In term of national accounts

(3) Equipment goods and other goods: Forecast PGE, 5.1; Forecast BIAM, 6.3.

Source: INE & UC3M

Date: February 28, 2005.

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

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



IV. FORECAST SUMMARY

IV.1. EURO AREA AND USA

INFLATION FORECASTS AND EVOLUTION IN THE EURO AREA AND USA								
	1999	2000	2001	2002	2003	2004	Forecast	
							2005	2003
TOTAL INFLATION								
Euro-area (100%).	1.1	2.1	2.3	2.3	2.1	2.1	1.7	1.7
USA (81.5%). ⁽¹⁾	2.1	3.5	2.6	0.9	2.2	2.8	2.5	2.2
A HOMOGENEOUS MEASURE OF CORE INFLATION ⁽²⁾								
Services and Non-energy industrial goods excluding food and tobacco.								
Euro- area (72.34%).	1.1	1.0	1.8	2.4	1.8	1.8	1.5	1.7
USA (55.6%). ⁽¹⁾	1.4	2.1	2.1	1.6	1.1	1.6	2.3	2.3
DIFFERENT COMPONENTS OF THE HOMOGENEOUS MEASURE OF CORE INFLATION								
(1) Services.								
Euro- area (41.33%).	1.5	1.5	2.5	3.1	2.6	2.6	2.4	2.4
USA (27.4%). ⁽¹⁾	2.7	3.5	3.6	3.6	3.2	3.3	3.2	3.2
(2) Non-energy industrial goods excluding food and tobacco.								
Euro- area (31.01%).	0.7	0.4	0.9	1.5	0.8	0.8	0.4	0.7
USA (29.0%).	-0.5	-0.1	-0.2	-1.5	-2.1	-1.0	0.8	0.8
INFLATION IN EXCLUDED COMPONENTS FROM THE HOMOGENEOUS MEASURE OF CORE INFLATION								
(1) Food.								
Euro- area (19.53%).	0.6	1.4	4.5	3.1	2.8	2.3	1.6	2.3
USA (14.9%).	2.1	2.3	3.1	1.8	2.1	3.4	2.5	2.5
(2) Energy.								
Euro- area (8.13%).	2.4	13.0	2.3	-0.6	3.0	4.5	2.8	0.7
USA (9.90%).	3.6	16.9	3.8	-5.9	12.2	10.9	4.1	0.6

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

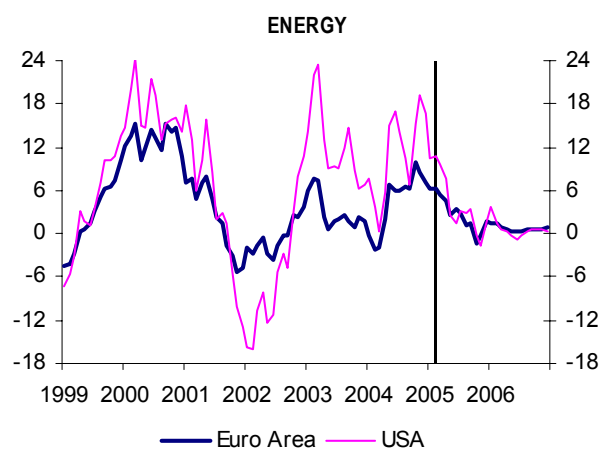
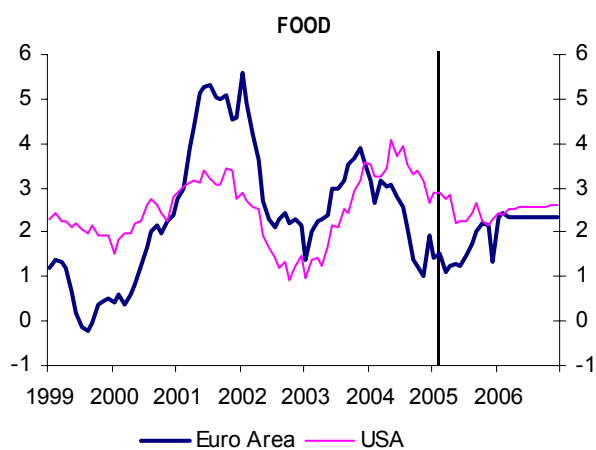
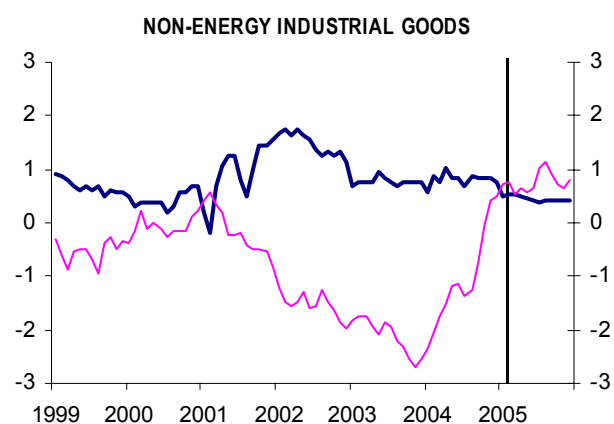
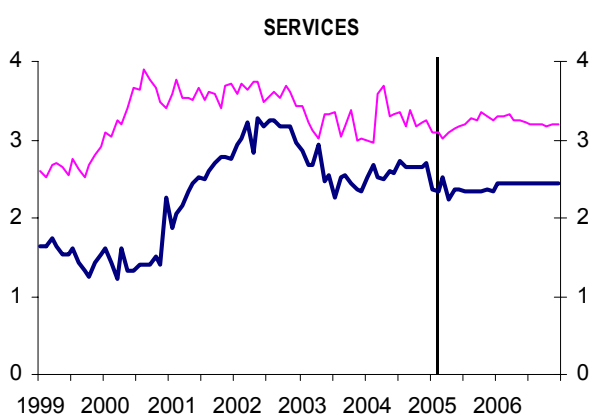
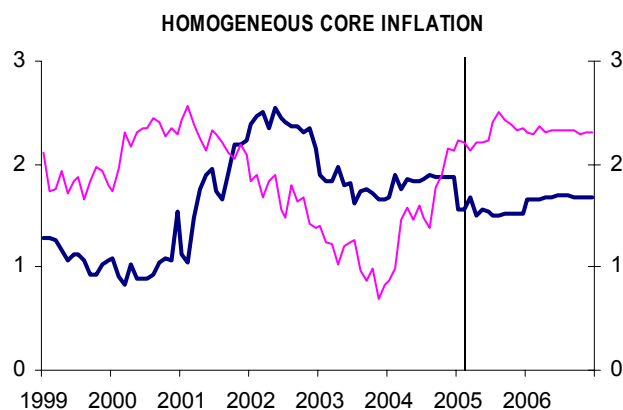
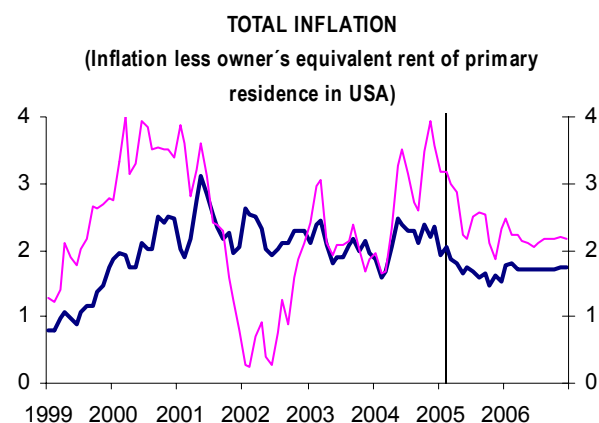
⁽²⁾ This homogeneous measure of underlying inflation does not coincide with the usual measure of core inflation for the EMU nor for the USA. It has been constructed in order to compare the data in the EMU and in the USA.

Source: EUROSTAT, BLS & IFL

Date: March 2, 2005



YEAR-ON-YEAR RATES OF INFLATION IN THE EURO AREA AND USA



Source: EUROSTAT, BLS & IFL

Date: March 2, 2005

Total inflation is less owner's equivalent rent of primary residence. The core inflation has been constructed in order to compare the data in the EMU and in the USA.



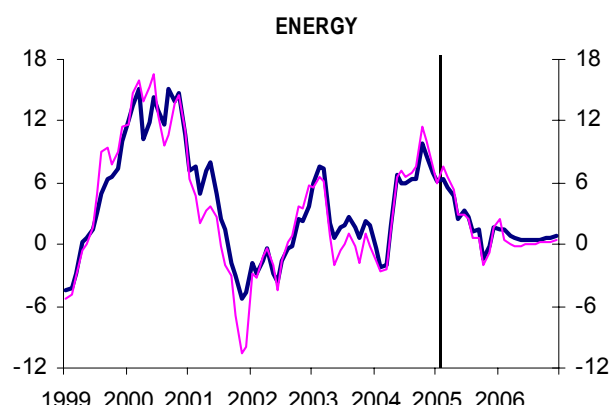
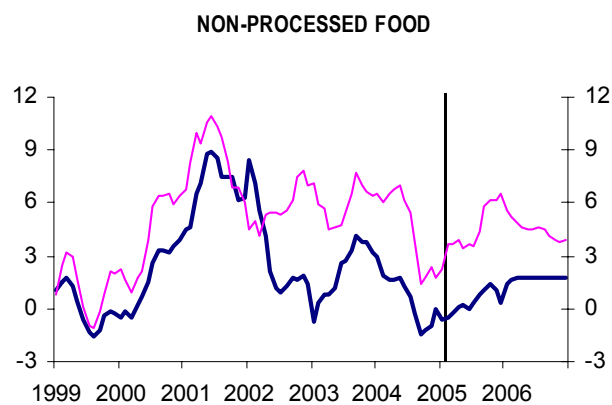
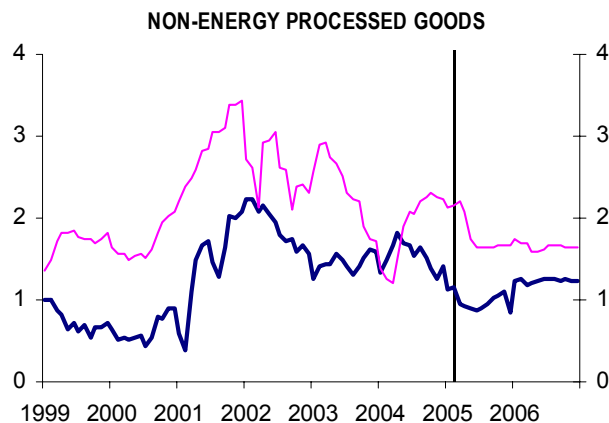
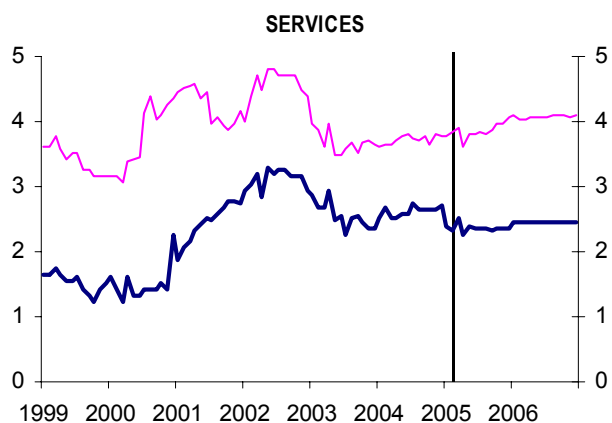
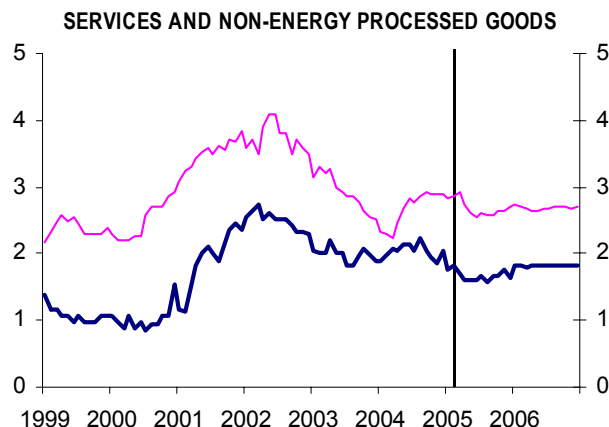
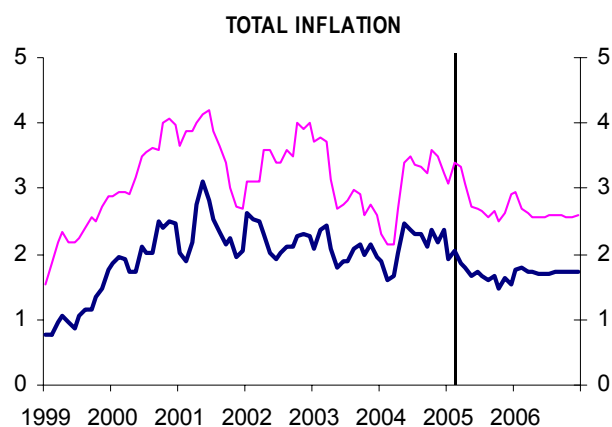
IV.1. EURO AREA AND SPAIN

INFLATION FORECASTS AND EVOLUTION IN THE EURO AREA AND SPAIN (1998-2005)								
	1999	2000	2001	2002	2003	2004	Forecasts	
							2005	2006
TOTAL INFLATION								
Spain (100%).	2.3	3.4	3.6	3.5	3.0	3.0	2.8	2.6
Euro-area (100%).	1.1	2.1	2.3	2.3	2.1	2.1	1.7	1.7
CORE INFLATION								
Services and Non-energy processed goods.								
Spain (81.40%).	2.4	2.5	3.5	3.7	2.9	2.7	2.7	2.7
Euro-area (84.18%).	1.1	1.0	1.9	2.5	2.0	2.0	1.7	1.8
DIFFERENT COMPONENTS OF CORE INFLATION								
(1) Services.								
Spain (34.87%).	3.4	3.7	4.2	4.6	3.7	3.7	3.9	4.1
Euro- area (41.33%)	1.5	1.5	2.5	3.1	2.6	2.6	2.4	2.4
(2) Non-energy processed goods.								
Spain (46.53%).	1.7	1.7	2.9	2.6	2.4	1.9	1.8	1.7
Euro- area (43.26%).	0.7	0.6	1.5	1.9	1.5	1.5	1.0	1.2
INFLATION IN EXCLUDED COMPONENTS FROM CORE INFLATION								
1) Non-processed food.								
Spain (9.40%).	1.2	4.2	8.7	5.8	6.0	4.6	4.4	4.5
Euro- area (7.69%).	0.0	1.7	7.0	3.1	2.2	0.6	0.3	1.7
(2) Energy.								
Spain (9.14%).	3.2	13.3	-1.0	-0.2	1.4	4.8	2.8	0.3
Euro- area (8.13%).	2.4	13.0	2.3	-0.6	3.0	4.5	2.8	0.7

Source: EUROSTAT, INE & IFL
Date March 2, 2005



YEAR-ON-YEAR RATES OF INFLATION IN THE EURO AREA AND SPAIN



— Euro area — Spain

— Euro area — Spain

Source: EUROSTAT, BEA & IFL

Date: March 2, 2005



I.7 INFLATION FORECASTS OF DIFFERENT INSTITUTIONS

INFLATION FORECASTS OF DIFFERENT INSTITUTIONS ¹										
	BIAM ²		CONSENSUS FORECASTS ³		IMF ⁴		ECB ⁵		OCDE ⁶	
	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
EURO AREA	1.7	1.7	1.8	1.7	2.1	1.9	1.9	1.8	1.7	1.8
USA.	2.5	2.3	2.4	2.2	3.0	3.0	-	-	1.8	1.7
SPAIN	2.8	2.6	2.8	2.6	2.6	2.7	-	-	3.2	2.7

1 The forecasts are based on CPI in USA and Spain and on HICP in the Euro area

2 Bulletin EU & US Inflation and Macroeconomic Analysis, February 2005.

3 February, 2005.

4 IMF. World Economic Outlook. September 2004.

5 ECB. Monthly Bulletin. Survey of Professional Forecasters. February 2005.

6 OECD Economic Outlook 76. November 2005. For Euro area and USA measured by the increase in the GDP deflator. For Spain, the forecasts are based on HICP inflation.

Our forecasts for total inflation in the euro area and Spain are slightly greater than the previsions 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 thorough different multipliers. The innovations derived from residual inflation are less persistent.

Our forecasts of total inflation for euro area in 2005 is reduced until the 1.7% with respect to 2.0% hoped in the previous bulletin, agreeing with the given ones by others institutions. For Spain the forecasts are reviewed to the rise until 2.8% respect to 2.3% anticipated the last month. The forecasts in USA also increase until 2.8% respect to 2.3% for 2005, published in the January bulletin.



Econometric modelling for short-term inflation forecasting and diagnosis in the euro area.2

Rebeca Albacete Sánchez-Mateos

February 2005

Economic agents and financial authorities require frequent updates to a path of inflation forecasts covering at least the current and following year. They also require these forecasts not to be mere isolated estimates but to provide the probability of different value ranges occurring at each point of the path. Finally, and probably most importantly, agents need forecasts to include an explanation of the factors by which they are determined. This thesis studies how to approach this need, developing a method for analysing inflation in the euro area, measured according to the harmonised index of consumer price (HICP), aimed at providing a reliable forecast while at the same time obtaining an explanation of the factors on which it depends.

Forecasting accuracy depends on the nature of the economic phenomenon considered, over which the analyst has no control, the data set used and the econometric model employed. This thesis suggests useful models for different data set levels.

The smallest possible data set includes no more than the present and the past of the variable in question, called a basic univariate set, enabling us to construct univariate ARIMA models in which the present value of the variable is explained by how it is related to its past values.

The basic univariate data set can be enlarged in different, non-exclusive directions, which can be classified as follows: (a) frequency enlargement, integrating data more frequent over time; (b) enlargement by means of the functional and geographic disaggregation of an aggregate variable; (c) enlargement with other series with which an empirical dependence relationship is detected; and (d) enlargement with other time series with which a theoretical relationship is suggested. In case (a), we continue to observe a single aggregate phenomenon and the resulting data set is still univariate. In case (b), it is an internal multivariate set in the sense that different components of the aggregate variable under study are considered. In cases (c) and (d), we are using an external multivariate data set, since we consider other variables related to the phenomenon of interest.

The development of the proposed method consists of detecting in which direction we should enlarge the information relevant for the forecast, for which the underlying theory is decisive. On the properties of the data set contemplated will depend the complexity of the appropriate econometric method. In this process of increasing the data used, and thus the complexity of the econometric models as we detect that certain lines of data enlargement are important for the forecast, the evaluation of the forecasting accuracy of the alternative econometric models at the different levels of data is essential.

The highest level of disaggregation over time available is, in general, preferable for short-term forecasting. In this type of forecast – and often in others – the largest possible amount of recent information on the variable of interest is more important than less recent data concerning decisive

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summary of the Phd research elaborated by Rebeca Albacete and directed by Antoni Espasa. Statistics Department. Universidad Carlos III de Madrid. December 2004.



variables, because immediate endogenous lags include a lot of information on the most remote past of such variables. The thesis studies how quarterly inflation forecasting gains from using observations corresponding to some of the months in the first quarter appearing on the forecasting path and shows that such gains are considerable. The models studied in this thesis are therefore monthly whenever possible.

The analysis of an aggregate variable, such as the HICP, gives rise to the question of whether best results are obtained by directly modelling the aggregate or, in contrast, by disaggregating and obtaining the aggregate forecast from the components. The literature includes disaggregate analyses of macroeconomic and business variables based on alternative criteria such as sectorial or geographic variables, and the results in general favour disaggregation.

The suggested geographic decomposition of the euro zone in the thesis consists of considering four components at the most, corresponding to the four most significant countries, Germany, France, Italy and Spain, or five, corresponding to as many geographic units consisting of each of these countries plus a fifth area added to the rest. The resulting vector is small, since a vectorial analysis with the available sample would be impossible with the twelve euro area countries. The empirical analysis performed on this geographic disaggregation shows that considering a set of four countries representing 80% of the aggregate, Germany, France, Spain and Italy, does not appropriately represent the total. To solve this problem and to cover the total HICP of the euro zone, this thesis suggests grouping together the remaining less significant eight countries in an aggregate entitled Rest.

Disaggregating the total euro area HICP in these five geographic areas, we obtain two cointegration relations. One related the relative prices between Germany and France with the relative prices between Italy and Spain. This relation, therefore, suggests the existence of two price areas, Germany and France on the one hand and Italy and Spain on the other, in each of which prices present similar trends and, in relative terms, have a long-term constraint with the other area's relative prices. The other cointegration relation includes the HICP of Rest. This group of countries cannot be considered exogenous when analysing inflation in the euro zone. The absence of complete cointegration, that is the fact that there is not the highest possible number (4) of cointegration relations, among these five price components appears to indicate convergence problems within the euro zone.

On the other hand, the disaggregation of the total euro area HICP into five sectors (processed food, non-energy industrial goods, non-processed food and energy), finds a single cointegration relation relating service prices to goods prices, and does not enter the VEqCM model equations corresponding to inflation in the two food price sub-indices. VEqCM models are VAR models formulated on the stationary transformations in dependent variables including cointegration relations as explanatory variables.

The above results show that inflation in the euro area is not fully cointegrated either by sector or by country, with both cointegration relations between the components and a plurality of common trend factors. Disaggregation, therefore, is a way of increasing the information about the different trends affecting prices, which can be used econometrically providing appropriate data is available on a disaggregate level – such as for European consumer prices – and it is possible to obtain reasonably acceptable models for the components. In these circumstances, a disaggregate vector model is the convenient way of considering long-term constraints between the different price sub-indices.

Another important aspect is that HICPs by sector and country and aggregate variables suffering from frequent special effects on some of their components. The effects considered in this thesis refer to method changes such as the introduction of sales prices when calculating the HICP, or the introduction of the euro; tax changes in the case of administered prices such as tobacco, gas or electricity prices; the oil crisis in the case of fuel prices; or adverse weather conditions and epidemics affecting the prices of non-processed food. In this situation, the approach suggested in the thesis consists of estimating the aggregate effects from the effects identified and estimated in the sub-indices concerned.

The alternative of estimating the effects of special events directly on the aggregate eliminates data which is not limited to the events themselves. Moreover, all these effects on the different price components in the different countries involves a large number of aggregate observations, so if the



correction is applied directly, there is a drastic reduction in degrees of freedom which impedes a satisfactory quantitative analysis. This correction to the components is important for many other applications such as, for instance, seasonal HICP adjustment. Ideally, special effects should be estimated on price sub-indices at the highest level of disaggregation, but this is not feasible in this thesis and the estimation is based on a disaggregation of the HICP into 25 components.

One of the most significant of these special effects is the use of sales prices to calculate the HICP. The thesis studies these effects with special attention, since they have given rise to a considerable change in price seasonality, occurring in different years in different countries, so direct estimation based on the aggregate would suffer from a severe loss of degrees of freedom. On the other hand, failing to make such corrections and leaving the effects within the randomness of price seasonality, which would then be processed by unit root schemes to obtain its changes over time, is incorrect; the effects produced by timely changes in national consumer price index methods cannot be considered to be generated by unit root schemes. This shows how dangerous it can be to use data with official seasonal adjustments when the way in which such adjustments are made is not published and, therefore, unknown.

Many of these special effects occur in the 2001-2003 period used to assess the forecasting performance of the models proposed in the thesis. Since, in general, these effects cause structural changes to the level or seasonal cycle, the timing of which is known in advance, the procedure followed in the thesis consists of assuming that all the structural changes in the models contemplated in the forecasting exercise are known. This way of assessing forecasts follows the theoretical analyses provided in Clements and Hendry (1999).

The disaggregate analysis proposed and developed in this thesis is based on considering simultaneous modelling of the components as a way of capturing long-term interrelations and the time-dependence between their stationary variations. This simultaneous process is necessary – and, if it is carried out correctly, sufficient – for direct modelling of the aggregate does not contain information ignored in the disaggregate approach. In the thesis, these simultaneous models also include – as we mentioned earlier – appropriate processing of the special effects with an impact on price index observations. Very recent working papers from other institutions also study whether forecasting the HICP through its components obtains more accurate forecasts than from an aggregate model. The results obtained show that, in general, such a possible advantage in the disaggregate approach either does not exist or is small and restricted to short forecasting horizons, as it is shown in table 1. None of these papers either contemplate simultaneous component modelling or appropriately handle special effects that avoid biases in favour of aggregate forecast. Both these characteristics are factors of interest in this thesis.

Table 1: Different studies on year-on-year inflation rate forecast in the euro area.

	<i>Albacete (2004)</i> <i>2000(1)-2003(7)^(a)</i>	<i>Hubrich (2003)</i> <i>1998(2)-2001(12)</i>	<i>den Reijer & Vlaar</i> <i>(2003)</i> <i>1998(1)-2002(12)</i>	<i>Benalal et al (2004)</i> <i>1998(1)-2002(6)</i>
<i>Reduction or decrease of the RSME for 12 periods ahead with the disaggregate forecasts respect to the aggregate one</i>	<i>Reduction^(b)</i>	<i>Increase</i>	<i>Increase</i>	<i>Increase</i>
<i>(a) Evaluation period for the forecasts.</i>				
<i>(b) The difference in the RSME is different from zero following Diebold & Mariano statistics.</i>				



The thesis shows that disaggregation by sector and country is important, but that it alone is not sufficient to capture the different trend factors of prices. One important contribution of this study consists of approaching disaggregation using the double criterion of sectors and countries. With this double criterion, disaggregation may be too great to be processed by a vector model and approximations are required to make it feasible. In this respect, the thesis identifies two factors. One consists of using the cointegration results to propose a reduction in components when using the combined country and sector criterion. The other consists of proposing constraints leading to a vector model in blocks, based on the data characteristics found.

Disaggregating the total euro area HICP considering two sectors, core – consisting of the prices with which core inflation is calculated, processed food, non-energy industrial goods and services – and residual – consisting of all the other prices –, in the five geographic areas mentioned above we obtain three cointegration relations defined as mixtures the definition of which include both core and residual indices. This result indicates that core and residual indices should be modelled together. But given the sample size available, there are adjustment problems for some equations, so we have to include constraints to accommodate the estimation to the existing number of degrees of freedom, although data do not totally support these constraints. In this respect, we show that diagonal block constraints separating the two sectors provide a good approximation for the construction of simultaneous models of inflation in the euro area.

Disaggregating each total national HICP in these two sectors, core and residual, we find no cointegration between these national price pairs. The same result is obtained for the euro zone, supporting, but not totally justifying, the approximation described in the previous paragraph. The lack of cointegration between the core and residual HICP in turn indicates that core inflation is not a good leading indicator of total inflation. The thesis shows that the interest of core inflation as a macroeconomic indicator lies in the fact that it is made up of the prices for which persistent innovations are larger.

The previous models enable the introduction of individual indicators in the component equations or general indicators that may have different effects by component. This is another of the major advantages of the models proposed in the thesis. In this respect, we perform an in-depth analysis of the inclusion of international crude oil prices in the different models considered and show that they improve sample fit.

Comparing the forecasting results obtained from monthly models, we show that disaggregation is important and that disaggregation based on the mixed sector and country criterion obtains more accurate forecasts than disaggregations using a single criterion. Likewise, and in general, vector model with the equilibrium correction mechanism obtain better forecasts than single-equation models for each component, showing the relevance of capturing the cointegration and time-dependence relations between stationary component variations not only in the estimation but also in the forecast. Diebold and Mariano tests provide evidence in this respect.

Comparing the forecasting performance of the different monthly models (table 2), we reach the conclusion that the best monthly strategy for forecasting inflation in the euro zone consists of disaggregating the total HICP into ten components, two sectors – core and residual – and five geographic areas, constructing a VEqCM model including the diagonal block constraint between the equations corresponding to core and residual price indices, and including Brent crude oil prices as a leading indicator only for horizons 1 and 2. One result of interest in this thesis consists of obtaining empirical evidence that international crude oil prices do not increase forecasting accuracy – which they actually diminish – in horizons of over two months, both when the indicator is forecast using univariate models and by means of the prices on current future markets.



Table 2: Forecasting errors for the year-on-year rates of total HICP in the EMU. Forecast Period January 2000 – July 2003.

Periods ahead	Statistic	Disaggregate Analysis by Countries		Disaggregate Analysis by Sectors		Forecasts Combination		Disaggregate Analysis by Sectors & Countries		
		UNIV	VEqCM	UNIV	VEqCM	UNIV	VEqCM	UNIV	VEqCM	
									Vector of 10 components	Block-Diagonal Vector Model
1	$\frac{MSE(i)}{MSE(univ)}$	0.86	0.80	0.64*	0.63*	0.64*	0.59*	0.47*	0.46*	0.57*
3	$\frac{MSE(i)}{MSE(univ)}$	0.98	0.90	0.62*	0.57*	0.70*	0.58*	0.54*	0.57	0.47*
6	$\frac{MSE(i)}{MSE(univ)}$	1.14	0.71*	0.87	0.76	0.94	0.64*	0.72	0.78	0.44*
12	$\frac{MSE(i)}{MSE(univ)}$	1.53	0.68*	1.32	0.84	1.35	0.63*	1.01	1.14	0.39*

MSE stands for mean squared error.

* indicates that the Diebold & Mariano test between each approach and the univariate model for the aggregate finds a significant difference in the forecasts accuracy.

Numbers in bold type correspond to the least value.

Monthly forecasts are acceptably accurate, including the most recent information on prices and an important functional disaggregation, but they do not provide an explanation of the factors by which the forecast is determined. In this respect, it is important to advance in the data set used and consider explanatory variables showing a causality relationship based on economic theory by constructing congruent econometric models, derived from economic theory and according to the data available. These models can convenient be formulated on a quarterly basis, since factors determining inflation such as unit labour costs are only observed with this frequency.

Following Hendry (2001), as factors determining inflation in the euro zone, these congruent models include disequilibria on different markets, goods and services, labour, monetary and international, thus contemplating the most relevant theories when analysing inflation. Congruent quarterly models have been estimated both on a vector and single-equation level, estimating or imposing the formulation of the cointegration relations between prices and other economic variables following the economic theory. The resulting sample fit is very similar in all cases. However, the thesis shows that the congruent vector model estimating the cointegration relations between prices and their determining factors obtains more accurate forecasts than the other congruent models proposed.

These congruent models lead to an analysis of inflation according to its determining factors, of which we can distinguish four classes: (1) transient dynamic factors including lagged inflation, variations in unit labour costs, in the monetary aggregate, in the GDP, in the excess demand and in import and crude oil prices; (2) long-term disequilibria, consisting of empirical cointegration relations between aggregate prices and other economic variables, or long-term constraints established by economic theory, such as the quantitative theory of money from which monetary deviations from the



nominal GDP are obtained, and the mark-up theory, according to which prices are determined in the long term as the margin over unit labour costs; (3) factors including the effect of dummy variables capturing deterministic seasonality and sales prices in HICP construction since the start of the year 2000; and finally 4) a residual factor.

From this classification of factors, we can calculate their effect on inflation at any given time, now or in the future, and interpret the monetary policy followed or obtain a possible pattern for its future implementation. The thesis shows that from 1993 to 1995 the monetary policies applied by the different central banks pushed inflation up in the euro zone, whereas the policies applied in the following years had constraining effects. Of special interest is the 2002-2003 period, with its low interest rate policy and therefore pushing inflation upwards, which nevertheless was not sufficient to compensate for the reducing effect of the lack of demand.

In order to make the most of the advantages of each type of model, the monthly analysis which produces more accurate forecasts, and the quarterly exercise providing good but less accurate forecasts, with an explanation of the factors determining inflation, we present alternative ways of consistently using both results. They consist of: (1) combining the two types of forecast and then adjusting the effect of the determining factors, (2) performing a regression between the quarterly and the monthly forecasts from a quarterly perspective, so that the factors determining the quarterly forecasts from a congruent model can be transferred to the time series forecasts, and (3) adding the cointegration relations between the prices and other economic variables derived from the congruent quarterly vector models to the monthly models as exogenous variables. For this propose the cointegration relationships are interpolated at monthly level. The monthly models, besides contemplating heterogeneous inflation in different sectors, will thus also be able to contemplate the impact of different factors determining inflation, which will be different for the different components. The thesis shows that this last procedure does not improve the forecasts obtained with monthly models not including such cointegration relations.

The final result of the thesis shows that if we combine the forecasts derived from the diagonal block disaggregate monthly vector model, on a quarterly basis, with the forecasts derived from the congruent aggregate quarterly vector model including empirical long-term constraints, we obtain the most accurate forecast of inflation (table 3).

Table 3: Root Mean Squared Forecast Error for the year-on-year inflation rate in the EMU. Forecast Period 2000(I)-2003(II).

<i>Periods</i>	<i>Quarterly congruent vector model</i>	<i>Monthly block-diagonal vector model</i>			<i>Forecasts Combination</i>	
		<i>Three months unknown</i>	<i>First month known</i>	<i>Two first months known</i>	<i>Three months unknown</i>	<i>Two first months known</i>
1	0.12	0.12	0.06	0.02	0.09	0.06
2	0.18	0.18	0.17	0.13	0.14	0.11
3	0.21	0.21	0.20	0.19	0.17	0.15
4	0.28	0.24	0.21	0.18	0.22	0.20

Numbers in bold type correspond to the least value.

These what we will call final forecasts are proposed in this thesis to analyse inflation in the euro zone. From these forecasts, the contributions of the different economic variables to inflation will have to be adjusted to obtain a precise explanation of the factors determining the final forecasts. Likewise, we will have to adjust the forecasts of the different price sub-indices by country and sector to provide a sector and geographic map of the estimated future values of inflation in the euro area. We thus obtain congruence between the geo-sectorial breakdown of inflation – which is necessary in any case to increase forecasting accuracy – and the contributions of the economic factors determining



inflation forecasts; this is important, because the two sources of information about future inflation are useful. The former informs of the nuclei of more or less inflationist tension, and this is of interest for economic diagnosis and policy. And the latter provides an estimation of the factors determining the inflation forecasts required by the authorities to design monetary policy and by economic agents to better assess inflation forecasts and, particularly, to form more accurate expectations related to changes in monetary policy.

The thesis shows that an econometric model aimed at forecasting as accurately as possible while including appropriate estimates of the determining factors does not appear to be possible. And neither is an econometric model feasible which provides forecasts on a minimally relevant geo-sectorial breakdown level together with the contributions of the determining factors. However, all these results are demanded by the authorities and economic agents, and they can be obtained by separate models, as in the thesis, followed by combining results and adjusting the partial contributions of the sectors and economic factors. It is important to emphasise that vector formulation is important in both types of model. This final conclusion reached in the thesis contemplates the relevant methodological and theoretical contributions provided by the literature for studying inflation, and is developed from a modern quantitative perspective as described by Granger and Jeon (2004).

The above results lead to a proposed method for forecasting inflation in the euro zone which can be applied to other indicators or macroeconomic variables. The basic points of this method are:

- (a) In short-term forecasting, using the greatest possible level of disaggregation over time if the quality of the data on such a level is acceptable and it is feasible to construct appropriate econometric models.
- (b) Using a both functionally and geographically disaggregated data set, including the long-term constraints between the components in the respective econometric model.
- (c) Simplifying the model by block formulations, so that the number of parameters required is compatible with the types of sample available.
- (d) Including specific and general indicators when explaining the different components of the aggregate phenomenon.
- (e) Using non-linear formulations when necessary.
- (f) Combining forecasts from different models if it increases the accuracy of the forecasting paths, normally constructed for the current and following year.
- (g) If the above forecasts are not based on a congruent econometric model, they should be related with those provided by a model of this kind to obtain an economic explanation. This can be done combining the forecasts derived from both kinds of models and adjusting the partial contributions of the sectors and economic factors to the result of this combination. The last point is important because both, the geo-sectorial disaggregation and the economic factors are useful information sources for the economic policy.

(h)

We can conclude by saying that the method proposed in this thesis is based on the principle of progressive augmentation of the relevant data set with an appropriate econometric analysis in each case, which is determined by the forecasting improvements derived from such a progressive approach.

There exist four works related to this thesis: Espasa et al. (2002), Espasa & Albacete (2004, a and b) and Albacete & Espasa (2005).



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THE CAPITALISM TO COME:

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February 2005

CHAPTER III.3.: STATE**III.3.3. THE SIZE OF THE STATE AND THE NUMBER OF STATES**

III.3.3.A. The scenario and the problem

III.3.3.B. Territorialized public goods

- a. Heterogeneity and optimum size
- b. Financing

III.3.3.C. Deterritorialized public goods

- a. Intellectual property
- b. Defence of competition
- c. A brief corollary on the media

Summary**SUMMARY**

In the previous chapter, we concluded that we were tending towards a State with a minimal scope in which the functions performed by that State will be limited to guaranteeing security (physical and judicial) and defending competition, together with the non-exclusive provision of public goods such as education, for instance. Physical security is now threatened by radical Islamic terrorism and will be contemplated in the last chapter. This chapter, then, has concentrated on the provision of public goods, distinguishing between territorialised and deterritorialised goods. The former include education and other similar goods, whereas of the latter we have focused on intellectual property and the defence of competition. This concentration of themes is pursued by the study of the size of the State, and consequently the number of States, and the analysis of how globalisation, the growing importance of digital goods such as information, and the new technologies (ICTs) can influence this size.

However, a study of size cannot easily be derived from an analysis of the provision of certain public goods. To start with, this study becomes more complicated for several reasons. The considerable and growing participation of information in added value means that, in this new economy, raw materials are of limited importance; on the other hand, globalisation implies a disassociation between the size of the State and the size of the market and, through immigration, makes it difficult to have homogeneous preferences in any jurisdiction, however small; and, finally, ICTs can weave and undo volatile and overlapping identity-based communities the existence of which is not easily related to the size of the State.

As for the provision of a public good such as education, which has been our example, we have attempted to examine the trade-off that necessarily exists between increasing returns to scale, which would require a very broad jurisdiction, and the diversity of educational preferences which would require smaller jurisdictions associated to homogeneous communities. We have



learned that in heterogeneous societies (like the society being created by globalisation, or by the mere existence of information via the personal mobility that it fosters), we should expect education to be underproduced, since the wealthy and the whites (say) do not wish to pay for the education of the poor and the black (say). In other words, the optimal provision, which can be more easily calculated thanks to ICTs or is put into practice by private initiative, again thanks to ICTs, is more difficult to finance in heterogeneous societies. And we have also learned that the trade-off between returns to scale and heterogeneity exists and is particularly intense in education and in the example we have just used in which heterogeneity is racial. Our tentative conclusion is that, in this example of education and in the plural society to come, we would appear to need to tend towards small jurisdictions with coordination between them. This is precisely the case of Spain and its autonomous regions, in which these effects could be improved with something like the Basque system based on the principle of subsidiarity.

Intellectual property and the defence of competition are two institutions which are crucial for economic innovation and which initially protect two public goods related to such innovation, creativity and competition.

In relation to intellectual property, I have insisted that its excessive extension could delay or prevent innovation, so it must be regulated. I have also argued that if we allowed private initiative to work in that regulation, we would probably reduce excess. And, finally, I have attempted to close the argument by venturing the opinion that it is easier for private initiative to work when the size of the jurisdiction delimiting regulation capacity is smaller.

As for competition, its defence is special when we are referring to goods and sectors with increasing quantitative importance, related to the New Economy and digital products. The idea is not to prohibit, but to foster the necessary mergers and acquisitions to fight not on the market but for the market, as in the case in sector where increasing returns reign. This *sui generis* defence of competition is easier if there are jurisdictions competing with alternative and experimental regulations.

As you will have noticed, the conclusions of this chapter, which tends to forecast a proliferation of jurisdictions, not necessarily States, are more speculative than other chapters. Given that the problem contemplated is much more difficult, this is only to be expected.

III.3.3. THE SIZE OF THE STATE AND THE NUMBER OF STATES

In the previous section, I believe that I have accumulated sufficient theory and evidence to believe that the scope of the State may become smaller even though there are occasionally spurious interests which may attempt to slow the process down in the hope that they will be able to continue to enjoy an underserved revenue derived from the capture of the State involved in crony capitalism. This blemish on the capitalist system can only be eliminated precisely by reducing the scope of the State, which is possible because of the principle that, since the first section of this chapter, I have been calling the principle of the aligning virtues of private initiative.

In this order of things, we have adventured the arrival of a small and strong State. On the one hand, we said that the minimum State has to do all it can to maintain or foster competition and provide security, both the physical security recently endangered by international terrorism and legal security, including the defence of ownership in general and the definition and regulation of intellectual property. On the other hand, the strength of the territorialized State will have to be measured in relation to the management of the provision of public goods such as education and healthcare, which can only be de-territorialized to a limited extent.

We now consider a different, but not altogether independent, problem. It refers to the size of the State, measured in terms of inhabitants or square miles, for instance. In other words, it refers to the problem of the number of States or other new jurisdictions. This alternative explains the title of this third part of the chapter on the State. The first way of seeing it involves the provision of local public goods such as, for instance, education or healthcare. The second way of considering the problem involves the provision of global public goods such as, for instance, intellectual property or the defence of competition, together with international terrorism. However, since the new



technologies diminish the importance of territory and since globalisation, via immigration, fosters the heterogeneity of any jurisdiction considered as the scope of State power, it would seem more convenient to order our considerations according to whether the public goods are territorialized or not. The latter include, for example, the physical security endangered precisely by international terrorismⁱ

III.3.3.A The scenario and the problem

Before considering specific aspects, I will attempt to describe the scenario on which they occur and to identify the intellectual problem involved. Although it is commonplace to say that the important factors of the new environment are now the knowledge society, globalisation and information and communication technologies (ICTs), I am not sure that all their consequences have been identified in relation to the specific determination of the network of communities or jurisdictions that could replace the world's division into nation States.

In the part of the world to which I am referring, knowledge is now a large and growing part of the added value of production, which immediately brings to mind the fact that raw materials are reducing their importance in the configuration of States, and that knowledge, which is gradually replacing them (although this fact is often forgotten under the influence war and subsequent events in Iraq), incorporates people who can move freely and offer their services to the highest bidder. This has led to the sudden appearance of the deterritorialisation of jurisdictions and to personal mobility.

On the other hand, with globalisation it is clear that the size of the market (of the essence for specialisation and the subsequent increase in productivity) is not necessarily associated to the size of the corresponding State. Furthermore, the more homogeneous the user preferences, the easier the provision of public goods. Consequently, it would seem that, as A. Alesina and E. Spolaore forecast years ago in a paper and repeat in their recent book, *The Size of Nations*, we can expect an increase in decentralisation and demands for secession, especially by small communities providing they are homogeneous according to a certain feature, no easy feat with free personal mobility.

But the importance of information in today's society and globalisation are not the only two factors describing the scenario on which these problems arise. Information and communication technologies (ICTs) are important too. They have two capabilities to be considered when answering our question concerning the size of the State. On the one hand, ICTs effectively create networks of individuals which become identity-based communities built around a specific feature, such as language, for instance, and which sustain mutual trust and reduce internal transaction costs. Since these identity-based communities can often be volatile and variable, we will find that their network structures overlap. This overlapping form of the network of networks adds specificity to the problems to be discussed in relation to the size of the State. In as much as each community is homogeneous, the correct provision of de-territorialised public goods (such as a radio broadcast, say) is much easier providing they are provided precisely to these homogeneous and self-aware communities, which are not necessarily territorial. In as much as communities or jurisdictions can be territorial, the heterogeneity provided by immigration makes things more difficult. In relation to possible supra-community externalities (a nuclear accident like Chernobyl, for instance) or to de-territorialised public goods (such as legislation concerning intellectual property), the problems arising are easier to solve when the identity-based networks overlap.

On the other hand, ICTs are going to influence the final solution in relation to diversity. As we saw in II.3.2.A, it is often convenient for two communities identified by different and complementary features to "merge". An "individualist" community which has to produce engineering and finance, and another more "community oriented" and gregarious community producing the same two things could improve by merging because this would give them the opportunity to assign individualists (gregarious individuals) to finance (engineering) where they have a comparative advantage. This tendency to "merge" that we detected when referring to fraternity, and which could be an advantage for large States, could, however, be counter arrested by the possibility of cooperation between homogeneous but overlapping communities.



This description of the scenario on which the determination of the number of States or their size is at stake, is sufficient to realise that we are in the presence of a true problem, complicated and by no means easy to solve. Let us start with the two central ideas of Alesina and Spolaoreⁱⁱ. According to these authors, globalisation makes the large size of a State appear to have no advantages, whereas a small State does appear to be better in relation to the correct provision of public goods, due to the homogeneity assumed for a small size. This can be questioned, however, in view of our scenario. A large size could be better for issues requiring a global and de-territorialised approach, such as intellectual property, competition, or how to use diversity to one's advantage, whereas a small size could be no advantage at all, since immigration could make it impossible for a territorial community to be homogeneous and ICTs can facilitate the provision of public goods in heterogeneous territorial communities (by the discovery the true marginal willingness to pay made possible by accumulated and obtainable information), enabling the provision of de-territorialisable public goods such as remote courses in Swahili, for instance.

I will attempt to view the issue according to an ordered description of the problem of the principal public goods that we have mentioned as impossible to be dissociate from a small and strong State, and applying by analogy the principle identified here as the aligning virtues of private initiative.

III:3.3. B. Territorialised public goods

Let us consider goods which have some public features but the influence of which is restricted to a certain territory. Two paradigmatic, but impure, examples are education and healthcare. They are now largely provided by the public sector which, in many States (or other jurisdictions) has a public education system and a national health service. Certainly, many members of borderline populations could initially make use of a foreign educational system if it is better than their own, making use of a legal loophole, and a sanitary kind of tourism has been operating for some time, but even so we will take these two examples of education and healthcare as examples of territorialised public goods. Our question is whether globalisation, the availability of information and ICTs have an impact on their provision, and whether such an impact could help us to detect a trend identifying the optimum size of the jurisdiction by which they are provided.

The most simple way of analysing this problem of the optimum size of jurisdictions may be to consider a specific, although stylised, situation and progress step by step. Consider Spain and its autonomous regions, each of which is responsible for providing its registered inhabitants with education. Before going on to analyse the problem more closely, we need to remember a number of elementary analytical features. From an analytical perspective, conventional wisdom tell us that, indeed, the education service should be provided publicly because the market cannot operate, and that even so there is no way of providing optimum quantity because we do not initially know the personalised price to be applied to each user, and it will be difficult to find out due to the evident incentive to underestimate it, because even if I pay little for the service, I will receive it in its entiretyⁱⁱⁱ. These two complementary "truths" have been relativised for some time. Starting with the latter, we know that there are different, more or less expensive, algorithmic methods with which to discover the marginal willingness to pay of each user (in other words, the private goods that he/she is willing to refrain from consuming in order to consume a unit of education) and, as we have already seen, private initiative could compete for the provision of a public good, thus representing those algorithms and therefore providing something like the optimal provision of education^{iv}. With regards to the first "truth", we find that this private way of providing the public good of education is not a market proper, but that it would work, for instance, if the service is being auctioned by the State, with this State establishing specific standards and fees and the number of concessions. It is not the market, but private initiative could replace the State in this function. Furthermore, note that, from then on, there could be a return to those algorithmic methods which, applied by the State or the private provider, enable us to approach the optimum amount of education. In relation to this traditional problem, all we can say is that ICTs and their ability to create identity-based networks somewhat simplify the optimal provision problem. Whether provided by the State or by private initiative, much more will be known about how much can be obtained from each agent, and the optimum fee and a complete grant system will be easier to establish.



Knowing this, we return to the optimum size of a jurisdiction, an autonomous region in this case, and how to finance this public service, education, regardless of whether it is public or private and regardless of the size of the jurisdiction. We are not starting from scratch because we know quite a few things. We know that, in relation to the provision of a public good such as education, private initiative can provide it in a way that imitates the algorithms designed by several neoclassic authors. And we also know that, regardless of the provider, the provision is, caeteris paribus, more expensive if society is more heterogeneous, because in this case the highest layers of society will be willing to pay less for it. Even admitting this, in the general case of there being identity-based ghettos, there is a veritable trade-off between increasing returns to scale and differentiation. Empirical arguments appear to tilt the balance towards renouncing to returns to scale and towards the differential provision of education by small jurisdictions.

a. Heterogeneity and optimum size

Let us assume for a minute that the population of Spain is perfectly homogeneous in relation to its educational preferences. In this case, it is clear that the optimum size of the educational jurisdiction is the entire country. This is the case because of the economies of scale involved, in the purchase of school library books, say, and because there is no smaller jurisdiction with different ideas concerning what those libraries should contain.

But now consider that both globalisation and the information society are leading to heterogeneous identities, even in relation to educational preferences. Globalisation fosters immigration, and immigrants of different races and religions settle differently. The information society makes the mobility of individual agents much simpler, and this also encourages people to move according to their taste for local diversity, which could make heterogeneity widespread throughout the country, creating ghettos based on certain identity-related parameters.

Consider the first case, a similar heterogeneity spreading like oil throughout the country. From an analytical perspective, we find the same situation as when we assumed that the country was homogeneous, with one difference. Initially, therefore, the optimum size of the jurisdiction is the large version, covering Spain in its entirety, for the same economies of scale arguments. But it now so happens that some identities are willing to pay less for services, as we saw in chapter II.3.1.B when we referred to the "progressive dilemma" consisting of wanting solidarity in diversity on the one hand, but of not wanting to pay for the "needs" or fancies of those who are not like ourselves on the other. As Alesina, Glaeser and Sacerdote have empirically shown, the greater the heterogeneity of a jurisdiction, lower is the level of social expenditure (spending on education in our example).

This is just what leads us to the second case that could arise from the immigration made possible by globalisation and from the mobility reinforced by the knowledge society: fragmentation into identity-based ghettos. In this case there is a true trade-off between scale economies and differentiation. It is no longer clear that all the jurisdictions want school libraries to contain the same items, and it therefore seems evident that the optimum size is not the entire country, although the specific optimum size, which would not necessarily have to be each of the identity-based jurisdictions formed by ICTs, is not clear. Imagine a sort of negotiations between these jurisdictions, which would lead to a certain equilibrium and a certain size of the educational jurisdiction. The empirical study performed by Alesina, Baqir and Hoxby convinces us that, precisely for educational purposes, the trade-off is considerable in the case of race which is, of course, the most relevant with regards to immigration. We have to expect, then, that in the case of education, the factors we are examining will finally tend towards a reduction in the size of the educational jurisdiction. If, finally, we now move from our example to generic theory, we would say (even though we realise that this move ignores many other factors) that we can expect a reduction in the size of the State and an increase in the number of States, as we were imagining in the first section of this third part of the chapter on the State, based on the work of Alesina and Spolaore

If these remarks are correct, we would be moving towards multiculturalism as described and criticised in chapter II.3.2.B; so we should hope, to continue with our example, for all of us to agree to preserve a managing centre to ensure a minimum degree of homogeneity in education, thus progressing from a nasty kind of multiculturalism to an enriching pluralism. But this immediately leads us to the problem of financing education: who writes the rules and who does the spending.



This is no trivial problem, and it is quite normal, not only in our theoretical example of education. If this subsection has convinced us that the inevitable heterogeneity of the future will lead us to small jurisdictions, we are forced to face the problem of deciding how these jurisdictions finance educational expenditure. And this is the problem we will now be considering.

b. Financing

When there is a need to provide local public goods and there is no fiscal sovereignty in the corresponding field, there is a financial problem to be solved. In a small jurisdiction it may be necessary to provide education, healthcare, or even justice and security. And that jurisdiction may not have sufficient fiscal sources. This is a financing problem experienced in the Spanish autonomous region system established in the 1978 Constitution. I will now focus on this subject starting with the ideas recently presented by A. Zabalza. At this point I am interested in the principles to which he refers, and I propose to discuss the principle of subsidiarity as an important principle, which is independent from those proposed by Zabalza. My aim is to show how the widespread application of the system by which the Basque Country and Navarre currently compensate the central government for their services would be one way of putting it into practice. For the discussion not to be strictly Spanish, and applicable in other places, remember that when I refer to autonomous regions, I am referring to more or less independent jurisdictions, and even States forming part of a federation or confederation, derived, for instance, from the tendency to reduce the size of the State that we have started to examine^V.

Initially, the two basic principles used by Zabalza seem very reasonable. Basic Principle I says that "for the same needs and fiscal burden, the autonomous regions should have the same resources", and Basic Principle II says that "each autonomous region should benefit from total national expenditure according to its needs and help to finance that expenditure according to its possibilities". Zabalza uses an example to question whether the current model and the two new models that he examines comply or not with these two apparently compatible principles. The model currently applied in Spain complies with neither of them, and it is redistributive in a specific sense that I will use with no further precisions but which is not necessarily the only possible one. I shall describe a system as redistributive if the ratio of public resources available between a rich region and a poor one is lower than the corresponding income ratio, with both regions having the same needs (population, say) and regional tax burden.

But there are alternatives and Zabalza examines two. He calls his first alternative the warranty model. This model, however, which is also redistributive, would comply with basic principle I because all the regions would have the same public resources to finance their needs providing they comply with a reference tax burden. It does not comply, however, with basic principle II. This, together with its redistributive aspects, generates suspicion, and it is therefore difficult to implant because it is necessary to define the common level of reference not only of the tax burden but also of the quality of the services.

The only model which complies with basic principle II is the second alternative contemplated by Zabalza. This is the tax balance equilibrium model which is, in fact, the reformulation of the basic principle which demands that an autonomous region provides according to its possibilities (income, say) and receives according to its needs (population, say). The model continues to be redistributive and it does not comply with basic principle I. This model is a reasonable system in as much as it complies with basic principle II and could comply with basic principle I if tax burden referred not only to the regional burden but to the total burden (region + State).

In my opinion, what makes the discussion very difficult is that, in any of the models considered, the allocation aspects is mixed with the compensatory aspect or, if you wish, efficiency is mixed with equity, so that when it attempts to comply with the latter the incentives to maximise the income of each community are reduced; this is an aspect that is usually absent from discussions concerning alternative regional financing systems. However, we have the example of the Basque and Navarre systems which do not disincentivate, because it is not redistributive; and comply with an important third basic principle, the principle of subsidiarity (although fail to comply with the other two). If the same system was applied to all regions it would generate healthy fiscal competition and nothing would prevent it from being supplemented with an interregional compensation fund which



could be as redistributive as necessary but not mixed with the allocation problem. I will now attempt to discuss the advantages of such a system.

The basic principle underlying this system is subsidiarity: what can be done by a lower level of government closer to the population should indeed be done by that level and not by a higher level. This principle is perfectly in line with the liberal idea of broadening the scope of freedom and immediately leads us, although not without problems, to a distribution of “competences”, for instance, between local corporations, the autonomous regions and the central government.

Although this argument is intended to be generally applicable, and although this does not reflect the reality of the Basque or Navarre system or any other possible arrangement, I will refer to the relations between the autonomous regions and the central government in Spain and assume that all fiscal sources are allocated to the autonomous regions which collect taxes, change the tax burden if they wish and, in general, compete between each other for tax purposes. Furthermore, and here comes the “cup” system, they share the cost of the responsibilities corresponding to the State according (for example, and to simplify) to their relative income. This system is not redistributive: the income ratio between any pair of autonomous regions will remain constant after paying the fee, another way of understanding its definition. In a way, this aspect makes the system Calvinist in that it applies no penalty for redistributive reasons to the effort to generate income. This is the aspect of this system that makes it incentive compatible, providing the notion of incentive can be applied to a group, and it could cause a certain downwards fiscal competition between autonomous regions with no contraindication since the absence of a lower limit to public expenditure does not seem likely. The system is compatible with an interregional compensation fund which can and should be discussed independently, to which each community would contribute, or from which each community would receive, with criteria considering not only “natural” data but also information about the autonomously defined tax burden: if the tax burden is the same in all autonomous regions, there should be the same minimum resources in each; but if that is not the case, the issue becomes more complex and mixed with problems related to personal distribution. The advantage is that these difficulties are handled directly in their own terms and do not interfere with a problem of exercising responsibilities or making fiscal decisions. These characteristics make the widespread application of this system the ideal way to finance small jurisdictions to which a reduction in the size of the State leads.

I end the financing discussion here, but insist that the specificity of the debate, specifically referring to the situation in Spain and which had its origin of a text to which I wish to remain faithful, does not reduce its applicability to the problem considered in this last part of the chapter concerning the State in THE CAPITALISM TO COME. With regards to the possible impact of territorialised public goods on the size of the State, this capitalism that is waiting for us just around the corner, will bring a proliferation of small jurisdictions, States or not. I will now examine the impact that de-territorialised public goods could have on their size.

III.3.3.C De-territorialised public goods

All economists worth their salt pursue triumph over scarcity as all doctors pursue victory over disease. The ideas about growth which are already present in the genes of those who study economic systems lead us to believe that the most we can do is access a path on which per capita output is constant, because output grows at the same rate as hand labour. To continuously obtain a growing per capita output productivity also has to increase continuously. We can imagine that this could be the result of a true miracle in which, endogenously, greater capital per capita produced an output which, used to accompany labour, makes the latter an increasingly productive production factor, thus creating an endless virtuous circle. This endogenous growth may have several sources, but since the work of Paul Romer, innovation is the most popular, especially when innovation is related to the digital technologies typical of what is known as the “new economy”. There are two institutional arrangements supporting this innovation, and they are necessary for it to arise and remain. I am referring to ownership and competition. Let’s consider their justification and how their contribution to creative innovation can be artificially weakened^{vi}.

Let us begin with private ownership. In its absence, as we described earlier, we face a serious incentives problem because we will work less than is socially optimal if we are unable to



appropriate the fruits of our work. It follows that we will have no incentive to create or innovate unless we can sell the product of our innovation at a positive price. But if the good we create or innovate is digital – such as a cd, a dvd or a software programme – this good can be reproduced at a cost close to zero and no one will pay us enough for it to create an incentive for our innovative creativity. Although there were no digital goods in the sixties, Arrow understood the incentive problem underlying all inventions and started the economic theory of intellectual property (patents and copyright), suggesting that creators should temporarily be granted the exclusive ownership of the product in order to combine its availability with the incentive to create. Now, however, we realise, thanks to the militant work of M. Boldrin and D. Levine, that in certain far from extravagant conditions, the present discounted value of the quasi-income generated from the sale (or possibly for the copy) of a product not protected by intellectual property can be positive and, surprisingly, all the greater the lower the cost of the copy^{vii}.

We have learned, then, that it would be a good idea to review the current legislation on intellectual property which is now applied in unprecedented fields (such as business management practices, for instance) for excessive periods of time, an example of which is the so-called Sonny Bono Act. These artificial extensions can, indeed, be harmful for innovation and for the continued growth desired, because they could be prevented from interfering with the temporary monopoly artificially created by copyright or patent. Connecting this intellectual property institution with competition, the other central institution, we see that copyright and patents certainly establish certain entry barriers.

Competition is the overall result of the private initiative of each individual agent. The fact that this private initiative can develop freely not only gives rise to social advantages in resource allocation, as all economists know, but also has a civilising value, in as much as it is part of our personal fulfilment, as has been clearly observed by such dissimilar authors as Hayek or Sen. However, when, under the influence of the powerful Neoclassic Theory of General Equilibrium, we consider competition from a static perspective, relating it to the number of suppliers, we see its allocative advantages but fail to notice its civilising value or its creative virtuality. On the contrary, when we think about competition dynamically, in a way that is compatible with this General Equilibrium theory but partly disguised by many of its features, we realise that free entry is fundamental for the well of creativity not to run dry, and for innovation to really take place. Consequently, what we learn from this new look at the theory is that policies to defend competition are not easily and automatically focused on “mergers and acquisitions” or the number of suppliers, but that they must contemplate the specific peculiarities of very different cases. All the lawsuits which Microsoft has fought, and continues to fight, in America or Europe are examples of the need for detail, of the radical newness of the “new economy” and the need to remember that entry barriers need to be overcome for innovation to move freely in any direction.

What is delicate about theoretical development in the two central fields of ownership and competition, a development that should lead both to a review of intellectual property legislation and a reconsideration of competition defence policy, is that its theoretical comprehension and application can be easily perverted by the crony capitalism that is not limited to backward societies and their emerging economies. I would go as far as to say that a society in which, thanks to the connivance of the government and people who are powerful for different reasons, the limits of intellectual property protection are extended and/or entrance barriers are increasingly difficult, is a sick society. Social health requires a more open capitalism in which the sources of innovation do not run dry based on old interpretations of some economic theories.

a. Intellectual property

We have referred at some length to intellectual property in chapter II.1, about ownership and incentives. We saw (II.1.1.A) how market socialism could not work without private ownership and we then considered (II.1.1.B) the problem of intellectual property. We then explained, following a couple of previously published papers, how the doctrine was changing and how we needed to review conventional wisdom concerning patents and copyright. In the summary of that chapter, I said that the central role played by ownership “does not justify the time and scope being applied to the intellectual property field. It is thus gradually being accepted that what arose as an institution designed to combine the incentive to create with the need for availability is becoming an unnecessary barrier for creativity”. I continued that “I would go so far as to predict that in the



immediate future the duration of copyright will be reduced, together with a drastic reduction in the range of tangible or intangible goods the merits of which deserve protection by intellectual property rights". In the chapter to which I am referring I was particularly interested in the possibility of artificially creating ownership rights which, as I have repeated here, are harmful for innovation. I then quoted an article written with Michele Boldrin^{viii} as saying: "This may sound heretical, but what in general we know as "piracy" is no more than technological progress, innovation and, ultimately, an ambushed future". And I ended by summarising that, in that future, "the rotation of goods related to the destructive creation of the competitive process will accelerate".

Now, in the context of this chapter about the State and in this third instalment considering its size and the number of States, we are interested in how the appropriate provision of a de-territorialised public good such as copyright by the State can influence the size of that State. The question sounds strange and there is no immediate answer, so we have to proceed step by step and finally apply the principle we are calling the aligning virtues of private initiative, which will point the way to the answer we are seeking.

We have to start by clearly explaining that the debate about the socio-economic role that copyright, patents and other similar instruments play in the determination of welfare, is not referring to an irrelevant intellectual twist. The scope, regulation and management of ownership rights affects most economic activity and many fields of economic analysis, such as economic growth, industrial organisation and international trade. We have already mentioned the importance of innovation for endogenous growth and how an excessive defence of intellectual property can inhibit such innovation. Said excesses can influence international trade by working against underdeveloped countries and the precise regulation imposed will influence the business models adopted in the affected industries. We could argue in detail about the influence of intellectual property in these fields; but for our ultimate purpose it is better to refer to a field in which we are all involved, the field of culture^{ix}.

a.1. Let us look a little closer at this culture thing, a very controversial word indeed. There are cultural assets such as one of Chillida's sculptures, for instance; they cannot be digitally reproduced. There are cultural services such as a live opera performance which can be recorded and played back, even though "Carmen" on video is not the same as live, and there are cultural objects such as cinematographic, discographic or editorial productions which can be adapted to a digital format and be converted into dvds, compact disks or diskettes with copies of books. This last possibility is relatively recent; it is due to technological innovations in the last decade which may be crucial for the massive spread of culture, because they help to reduce the cost of reproducing and distributing cultural objects substantially in comparison with traditional formats.

This fundamental consequence of recent technological development, however, does not appear to have reached public opinion although it has been possible to produce/record/distribute music, videos and books at much lower costs than before for nearly a decade. A cd with a music recording costs 70 euro cents, its distribution on the Internet less than 10 cents, and authors/musicians/singers receive between a euro and a euro and a half for each cd (practically none of them receive as much as two euros). So where do the other 15-16 of the nearly 20 euros that a cd costs in a shop end up? It is surprising to find that, with the current state of technology, no one questions why, when video cameras are cheaper to manufacture, for instance, the prices of cds, dvds and books remain unaltered.

Assuming that the massive diffusion of cultural objects is a de-territorialised public good, many voices are heard demanding State aid for their production; this could consist, for instance, of a reduction in the VAT applied to these cultural products. The aforementioned facts and these demands lead us to think. Evidently, a society in which citizens read a lot of books and listen to a lot of music is preferable (providing the books and the music are "good", but that's another question) to one in which that is not the case. It is also preferable to have a society in which the citizens have a lot of shoes, cars and ties than to have a society of homeless people. But practically no one suggests solving the problem of the shortage of beds, ties and lamb chops by means of State aid or reducing taxes on acquisition and consumption. For some time now, we have realised that the solution (partial, in any case) to the problem of shoe and lamb chop shortages can only come from applying technological breakthroughs to the production of these goods. Why does what seems natural for shoes seem otherwise for books, music and dvds? Are shoes all that different from



books? Let us consider that they are not; we can argue that citizens will only read more books if we treat them (the books) in the same way in which we treat shoes, and that considering the problem as if books were not a product of conventional human economic activity is an inappropriate approach.

In late April, 2004, the new Minister of Culture created considerable controversy, and more than a little laughter, by suggesting the idea of reducing the VAT rate applied to books (from 5% to 1%), records and dvds (from 15% to close to 4%) as a way of promoting cultural development, enhancing the dissemination of literature, music, cinema and more general art forms. The intention was praiseworthy, but unfortunately it was not pursued effectively. And not only because EU legislation would prevent us from reducing the VAT applicable to books or cds and because public budgetary constraints prevent us from reducing the VAT on anything, but because the measure in question would have no perceivable consequences on the demand for culture and cultural goods. Other kind of measures are required to lower the price of books, cds and films, both in Spain and elsewhere. We will now see why.

How significant would be the effect of the VAT reductions contemplated on prices? It is easy to calculate. Most books cost from 10 to 20 euros, and the 4% VAT reduction therefore represents a potential reduction of from 40 to 80 cents per book. As we all know, there is a concept known as elasticity of demand (and supply) which implies that only part of the tax reduction would represent a price reduction for consumers, since some of the benefit would remain with the publishers, distributors, book retailers or even authors. The idea of cutting VAT, in the best of cases, would therefore have represented a reduction of between 20 and 40 cents in book prices. A similar calculation for cds provides discounts of between 50 and 80 cents. We doubt that such small price reduction would have a significant effect on the demand and consumption of books, records and cultural products in general.

In view of this data, and although we applaud the Minister's intention, we believe that there must be an as yet unexplored way, other than interventionism, to reduce prices by means of the technological progress of the last twenty years in data recording, storage, reproduction and distribution techniques. This progress has, potentially but substantially, reduced the cost of producing and distributing books, music and films; but no decrease has been observed in the relative price of these products; indeed the opposite seems to be the case. Now that recording a piece of music, in terms of technological equipment, costs a tenth of what it cost in 1980, and the same can be said for the instruments used to record a film, not to mention how cheap it is to edit, print and distribute books by computer, why do books and cds continue to cost twenty euros each? We believe that this is the case fundamentally because of the monopolistic rights that current copyright legislation awards to book, cd and dvd producers and distributors, and that the use of such power by several specialised agencies in each segment^x artificially raises the price of cultural objects. Let's take a look at a symptomatic example. *Tarnation*, a film by Jonathan Caouette, was a great success at the 2004 Cannes Film Festival. The director/producer made considerable use of digital technologies to produce the film. Its total cost was 400,218 dollars, 218 dollars of effective cost and another 400,000 to pay for the copyright, obtain permission to use images from old films or recordings from their soundtrack, and to cover other similar expenses. There is no moral here, but the conclusion is evident.

The elimination or drastic reduction of copyright terms would automatically bring about a revolution in book and cd distribution technology, which currently represents three fifths of the end price. Competitive digital distribution can cost 10% of this, or even less. This change in intellectual property rights would not only enable us to dramatically reduce production costs, but it would be extremely fair. The monopolistic profits obtained nowadays by some, and only some, "artists" are excessive in relation to their opportunity costs. The figures suggest that, even without this excessive monopolistic revenue, authors would continue to create and, what is possibly more important still, we could shake off the present "concession culture" and start to progress towards a truly "free culture". This is the argument presented in the book by L. Lessig ([Free Culture: how big media uses technology and the law to lock culture and control creativity](#)). In the preface, Lessig says that "A free culture is not a culture without property; it is not a culture in which artists don't get paid...A free culture, like a free market, is full of property. It is filled with rules of property and contract that get enforced by the State. But just as a free market is perverted if its property becomes feudal, so too can a free culture be queered by extremism in the property rights that define it". And this is precisely



what has been happening lately; producers' intellectual property rights last for so long and are so broad scoped in their coverage of the protected goods that, far from fostering invention, they are killing creativity, which has always been related to the use and transformation of previous cultural goods. The need to ask permission to do this is leading us towards a culture which is not only dull but also expensive.

a.2. In this intellectual property issue, of which the copyright used to mediate between creation and diffusion in the cultural world is an example, the difference between individual incentives and social good is very clear. Creators or producers aim at the limitless extension of intellectual property rights, whereas social good would need them to be reduced to foster the creativity of both these creators and their competitors, who will not find producers as long as the latter are reaping the fruits of an extended temporary monopoly. What we are facing, then, is an incentive alignment problem for which we know there is a solution. Consider the individual initiative of a property rights manager who offers his possible clients the "opportunity" of being paid a premium for a shorter period of time and which probably decreases over time. Creators or producers will earn more than before, with a possibly falling differential, for less years. Depending on the expectations of each author or producer in relation to the fall-off in sales over time and on their patience, or lack of it, it is easy to imagine that they will accept the offer, thus making the "opportunity" real enough to be written without inverted commas. It is not difficult to imagine that, in these terms, there is room for many imaginative managers of this kind and that, under certain conditions, we will find a shorter mean duration and quite possible a greater mean amount of invention. Suffice it to consider that the producer can now produce two products when he previously produced one. Each one will earn less than before but he will earn more than before with them both. The creator will work a little harder but he will also earn more, and the user will pay less if he is willing to wait a little to enjoy the product^{xi}. I get the impression that this situation is better for innovation. And it seems evident that this improvement is due to the aligning virtues of private initiative.

a.3. What does this imply for the number of States and their size? They evidently do not depend only on intellectual property rights but, *caeteris paribus*, we should conclude that the more States that are willing to regulate the terms of intellectual property rights, the more intense will innovation be in general. Each of these States would in fact be performing the same function as the manager in the previous paragraph. It would be proposing legislation that would attract creators and producers who, given their expectations, would prefer a shorter duration with a bonus, as in our example. The key to this is that we are allowing each creator and producer to be willing to act according to his own interests, but they are not allowed to profit from others^{xii}.

This reasoning is important because, in any case, it is perfectly possible to argue that an increase in the number of States or jurisdictions, with each of them able to regulate intellectual property, would give rise to varied legislation in relation to which creators and producers would automatically be selected and which could give rise to more innovation in general, which is our objective in our attempt to correctly provide the de-territorialised public good known as intellectual property. Today's battle in the software field between Microsoft and Linux has to do with the competition policy that we now go on to consider, but it also has to do with the extension of intellectual property rights. We can learn two lessons from it. The first is that the unquestionable innovation associated to Linux would not have been the same if the battle had not been fought in different jurisdictions, in this case each with its own competence over competition, the U.S. and the EU. The second is that Linux is the perfect example of private initiative and it is Linux that forces Microsoft to innovate more rapidly even though the giant from Redmond does all it can to attack the free software used by Linux based precisely on the intellectual property rights that it claims to own on a crucial part used by Linux.

b.- Defence of competition.

What I aim to do now is to make some considerations enabling us to affirm that in the capitalism towards which we are moving, technological breakthroughs, globalisation and abundant information support competition. What is interesting about my argument is the way in which it becomes established, not at all as our intellectual inertia would suggest and highly dependent on the power of ICTs and their ability to weave networks. Furthermore, in a way, this form in which competition becomes established and what then occurs, constitute an activity of such a kind as to



reconciliate great liberals with themselves; it can be understood as a bridge between the neoclassic and Austrian conception of market or between the engineering and social aspect of economics. Liberals defend the market even when its structure cannot be considered fully competitive, and we are now in a position to see clearly that what liberals saw in the market were not only allocations but, above all, an enormous capacity to raise the barriers to the creation of wealth by means of its prophylactic function. The engineering conception designs algorithms to correct defects and enable private imitative to function in the provision of public goods, and the more social conception discovers how this private initiative can influence the way institutions work.

I will now explore three related issues in turn. The first consists of attempting to obtain an idea of the notion of competition and of relating it to ICTs and the network-effect they allow to function. The second issue is the changes in the nature of competition policy and the third is the application of this policy to fostering the principle of the aligning virtues of private initiative^{xiii}.

b.1 .- Both text books and newspaper discussions use alternative notions of competition in an attempt to characterised so-called perfect competition. In general, the man on the street and text books, captured not so very long ago by the Walrasian tradition, consider that the perfection of competition is characterised by a large number of competitors. However, older text books written in the Marshall tradition, and businessmen, believe that what enables us to operate competitively is rivalry between companies, whatever their number, including the merely potential rivalry exemplified by freedom of entry.

Competition and rivalry, in the sense in which the words are used in the previous paragraph, share an incentive problem, the type of problem to which we referred in chapter II.2. Every economic agent must have incentives to behave how he is supposed to behave in order to maximise collective welfare, if I am allowed to use the neoclassic terminology. In other words, the economic system must be efficient and compatible in incentives. Salvador Barberá (together with Matthew Jackson) has proved that for an economic system to be efficient and compatible in incentives there must be rates of exchange between things that are the same for all individuals, regardless of the quantity (parametric prices). Competition consists of economic agents acting as price takers, and this is the case when there are a large number of them. But Joe Ostroy (together with Louis Macowski and U. Segal) has similarly proved that the coexistence of compatibility in incentives and efficiency requires each agent to simultaneously attempt to appropriate all the surplus generated by the exchange or production of goods. This means that each agent has to act as a perfectly discriminating monopolist charging each client the highest price that he is willing to pay. In this case, competition would consist of each economic agent rivaling against his competitors with the same force as they rival against him. This happens when they are large in number, but it can happen when they are but few. Both interpretations of competition are equivalent, but what is interesting is that they can both give rise to alternative forms of valuing competition. Defending the consumer by promoting competition is today considered as underlining “rivalry” and ignoring “competition”. If we were to recommend otherwise, we would not be heard in the prevalent liberal environment.

b.2.- Defending competition, then, will at least consist of preventing the existence of barriers to entry, both to the entry to a market and to the entry to at the an institution managing public services. I shall be returning to this a little later (b.3), so I will now consider how the nature of competition defence policies will change in the presence of the new technologies.

Where these new technologies are going to have a most significant impact is clearly on how competition, the free exercise of which is the true force of the market, is going to work. We have seen in chapters I.2 and II.1 that perfect competition, a desideratum, can be conceived as the limit of a netweaving process by ICTs which exhibits the increasing returns of the network-effect to which we referred in the previous chapter. This notion of competition is nothing like the Walrasian notion based on the large number of participants, but rather mirrors the Marshall conception based on the lack of barriers to participation. Although ICTs foster the creation of enormous productive units, they cannot exercise their market power because, if they did, the ICTs themselves would put a stop to it. Therefore, since in the limit of the network-effect process perfect competition obtains, and this is the origin of all abilities to create wealth in capitalism, there is no question that the policies defending competition should be reconsidered and aimed at preventing companies from hindering the free development of netweaving, which would be tantamount to putting up entry barriers.



Defence of competition is no longer necessary on the limit of netweaving. It is clear that the management systems and business strategies typical of the New Economy make sense as long as this situation is avoided; but they are self-defeating, because they drive the economic system towards its desideratum of perfect competition, something that is desired by consumers but dangerous for producers. I will now attempt to understand the limits to the development of netweaving by studying the obstacles which may arise endogenously, both in the productive system itself and in business incentives, which immediately brings us to the question of the role to be played by competition policy.

It is quite simple to analyse business incentives, because we know that although perfect competition disciplines entrepreneurs, their aim is for competition not to be perfect, but the nearest thing to a monopoly as possible. Their shareholders will be pleased. The cleverest of business managers, having already obtained a certain amount of monopolistic power, will aim at the community comprised by their clientele and networked on the Internet not spreading completely. Consider digital platforms or ATM networks or any other sector in which the network effect is more or less significant. I do not mean that in these cases each company will limit club membership to its clientele but that it will allow other clubs to exist for its competitors' clients. Why? Because the companies who used to fight each other relentlessly now have incentives to work in an implicitly or explicitly coordinated manner in order to delay the advent of perfect competition and continue to enjoy a certain degree of monopoly acquired with intelligence and an understanding of how networks operate. What is new here is that monopolistic conduct is inappropriate not because it aims at increasing the scope of the monopoly at the expense of the clientele of others, but because it makes insufficient efforts to do so. Consequently, the defence of competition in these sectors should foster increasing the size of the monopolistic enterprises of today (in order to get ready for the desideratum we are starting to see at the end of the road) instead of the existence of a large number of operations which, after all, are unable to make effective use of the network effect.

b.3 .- But if competition policy worked like this, it would, oddly enough, find resistance in the entrepreneurs themselves, who prefer to exercise self-control to make their power last longer and not merely crumble away. This could be questioned because, after all, entrepreneurs know not how to temper their ambition, either because they are short-sighted, because they see the future as very far away or because this ambition is part of a freely chosen life project. But their eyes may be opened, for the worse, in certain circumstances. We will now consider two of these circumstances, one of them technological and the other related to business forms, which will foster another way of understanding competition policy not by preserving it but by helping it to come out on top.

Technologically, there is an objective obstacle to network overlapping which keeps economic agents in separate groups. In development literature this phenomenon was christened the "O-ring effect" by Kremer as a reference to the small rubber washer that caused the Challenger space launch disaster. A tiny fault destroys a delicate project with enormous technical demands. The moral to this story has been described by Cohen as follows: "On an assembly line, the tiniest maladjustment endangers the entire end product. So workers involved in the same process tend to have very similar skills". This is relevant for economic development because of the dual salary system it involved, but what is of interest now is that there are forces leading us to form homogeneous, separate communities. It is therefore possible that, instead of making full use of the advantages of trading with other communities and generating joint projects with them, we will lose opportunities to improve our economic situation merely because we lack the necessary trust.

If modern technology fosters these differential couplings, entrepreneurs will have an excuse to follow their incentives and halt the proliferation of overlapping networks. They will struggle to obtain the loyalty of a certain group by means of networks; but they will possibly reject the idea of forming networks with the members of other communities. But will this be enough to convince their shareholders that it is not worth attempting to extend their monopolistic power? Shareholders are consumers too and, as such, they would like perfect competition to arrive as soon as possible, although as shareholders they would prefer a share in the extraordinary profits to be obtained on the road to it. It is therefore possible that shareholders will attempt to delay the advent of the desideratum, oddly in agreement with the executives. For this not to happen, we would have to strengthen the services or courts protecting competition so that they not only encourage monopoly holders, as we have just said, to increase their customer base (the opposite of what they usually do) but also make the business control market work, so that more short-sighted companies with a



greater future discount will obtain control over those which have still to exploit all the monopolistic power. But this business control market is merely an example of what has to be done for the principle of the aligning virtues of incentives to work.

However, companies have incentives to slow down the advent of perfect competition and its technological and institutional creation capabilities in order to continue to earn extraordinary profits. These incentives help our old friend crony capitalism to objectively hinder the creation of wealth and the exercise of freedom, in the worst case in connivance with the government. ICTs can also lend a hand here, as they did when Google started to trade on the stock exchange, in spite of the way in which the established investment banks made it difficult for this to take place on line. But wherever ICTs fail to reach, the defence of competition should act driven by the convenience of allowing private initiative helping to align private incentives with social interest. For example, when licenses were required years ago to implant third generation cell phones, the defence of competition should have forced the government to use the auction method which happens to include the possibility of aligning incentives.

b.4 .- To end our arguments in this chapter, we have to relate these new notions about the defence of competition to the problem of the size of the State. We have already seen that in the New Economy, innovation requires the promotion of the business control market to prevent them from conniving to delay the final battle, not on the market, but for the market. I argue that this is easier when the State or jurisdiction concerned is small. The reason is similar to the one used with reference to intellectual property. If there were many courts defending competition, one in each jurisdiction, an ambitious company will attempt to purchase another in the jurisdiction to which it is entitled and which might make it easier for these operations aimed at taking over control to come to fruition. Caeteris paribus, there will be more opportunities to allow the network effect to do its job to the end. Or, in other words, it will be more difficult for crony capitalism to prevent perfect competition. With a single jurisdiction, it is easier to capture the defender of competition (so that he disallows acquisitions which are necessary for the network effect to work) than when there are many alternative possibilities of seeing through the acquisition^{xiv}.

c.- A brief corollary on the media

My description not only of intellectual property but also of defence of competition as two paradigmatic examples of deterritorialised public goods and two very important factors for innovation and endogenous growth, not only reveals that the size of the State should be smaller (to a certain extent because, paradoxically, this facilitates the complete deployment of the advantages of increasing returns) but also a sort of tangential manifest. Indeed, although the argument is not central to our discussion, this section has shown us that economic theory should not be used anyhow, and that one must pay attention to stratagems which are only apparently based on good theory but really consist of a twisted manner of pursuing either the restriction of innovation opportunities (based on the need for copyright) or the slowing down of increasing returns from the demand side (based on an inappropriate interpretation of competition).

This manifest is immediate applicable to the world of communications. The media, of whatever kind, is at a crossroads. On the one hand, they should disseminate what is thought of intellectual property and competition, using the many occasions which are bound to arise in relation to patent or copyright problems (from generic drugs to digital piracy). Their compliance with this function would help ideas to arise and foster the innovation required for continued growth. But, on the other hand, the incentives of the executives of production companies or publishers, and the interests of their shareholders, could push the media in the opposite direction, slowing down innovation. It won't be long before we discover if the media are going to foster or hinder innovation, depending on whether they demolish or construct barriers providing or preventing access to the business of companies based on the new digital technologies, allowing interactivity and new business models. My prognosis would be shared by any other economist, and it is that the media will all attempt to delay the incorporation of these companies until the cleverest of them breaks with discipline and forces the rest to follow in its footsteps. The same old story; what is surprising is that it has not yet happened.



NOTES

ⁱ International Islamic terrorism is a deterritorialised public “evil”. A description of the best way to combat it has implications for the question of the size of the State and, in this respect, could have been provided in that chapter. However, I have preferred to discuss it in the last chapter of THE CAPITALISM TO COME, because in this chapter I intended to focus on the anti-globalisation positions which often seem to indicate that this new terrorism could be an undesired effect of globalisation.

ⁱⁱ In Urrutia (2004 a), I provided a brief description of the principal ideas of these two economists, from Harvard and Yale respectively, attempting to complete them with the implications of globalisation and the use of ICTs. This paper gave rise to some angry reactions by those for whom it appeared to be dangerously defending Basque nationalism. As the reader can see, these arguments actually tend to sustain an organisation based on city networks. On the other hand, I believe that Basque nationalism neither needs nor uses such arguments. I do believe that its dialectic position would be improved if it did use them, but I am also aware that if it did, some of its profound convictions would suffer in the process.

ⁱⁱⁱ This problem of public goods is well known since the time it was clearly analysed by Samuelson.

^{iv} In the previous chapter, I referred to a paper by Coase about lighthouses, which proceeded along these lines.

^v What follows is based on Urrutia (2004 b).

^{vi} The following paragraphs form part of my words of welcome at the presentation of the LECG (Law and Economic Consulting Group) in Madrid on November 27, 2004. They were later published in article form in Expansión. See Urrutia (2005)

^{vii} Boldrin and Urrutia present the work of Boldrin and Levine in more detail, emphasising how they renew review Arrow’s work providing a dynamic interpretation of general equilibrium, and assuming the cost of reproduction be positive, however small. Also see Quah to see that the result is not correct is this cost is literally zero.

^{viii} See the previous note.

^{ix} The content of the paragraphs contained in a.1. is part of a non-published paper written by Boldrin and myself, which originated with a sentence of the Competition Court in the Gedeyprensa case, to which we referred in Boldrin and Urrutia, and, simultaneously, to a declaration by the Spanish Minister of Culture, Carmen Calvo, about reducing the VAT rate applied to books and other cultural products. However, the argument is general.

^x There are at least eight of significance in Spain: SGAE, Cedro, Agedi, AIE, Vegap, Egeda, Aisge and Dama. They specialise in managing the rights of different types of creators, from authors and publishers (SGAE), to performers (AIE) and plastic artists (Vegap).

^{xi} All these statements are tentative, and they would require a specific modelling which I may possible attempt on another occasion.

^{xii} Naturally, the argument used in the text cannot only be used to support an increase in the number of States; in general, it is applicable to the multiplication of jurisdictions with competence on individual property regulations, not necessarily States. What these informal results show is that private initiative has enabled each individual to face the same costs as society, exactly the same result as the algorithms for the optimal provision of public goods, and exactly the same as what has been accomplished in England, Wales, Scotland and Ireland with their peculiar form (described by Coase and mentioned earlier) of building, operating and maintaining lighthouses via private initiative.

^{xiii} What follows is based on a series of papers published in Expansión and included in Economía en Porciones (Urrutia 2003 a and b) on which my final argument concerning the size of the State is based. With regards to the defence of competition proper, in these papers I was interested in emphasising how this policy should be reconsidered for sectors producing digital goods, given the characteristics of these products. Later, the work by Ch. Ahlborn, D. S. Evans and A. Jorge Padilla which is quoted in the references considered the question in much more detail with closer reference to the institutional practices of the EU. See this work if you are interested in the difference between digital and non-digital goods or between the industries that produce them, in relation to costs, the network effect, durability, competitive races, enormous possible profits and dynamic competition. The text makes direct or indirect use of these characteristics, although they are not listed as the key concepts of European competition defence policy as they are in the work by these authors. In any case, the overall conclusion is the same: in the New Economy one has to study each case carefully because the application of conventional ideas may inhibit innovation.

^{xiv} Before ending this chapter, it is worth mentioning two disperse theoretical papers which nevertheless are relevant for a deeper analysis of the size of the State. X. Vives, in his paper on "Supervisión bancaria en la Unión Monetaria" published in a collection of papers published by F.BBV, suggests centralised



regulation, with arguments which are questioned by Urrutia (1999) in the remarks on the article. On the other hand, Urrutia (2004 c), in a paper with a very different purpose than that of this chapter, considers, following a paper by Sah and Stiglitz, two different ways of making decisions, which can be described as centralised and decentralised, underlying the circumstances in which the decentralised model could be advantageous.

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HICP Total Inflation	Core Inflation	Processed food	AE less tobacco & fats	133.3	4.1	3.1	2.8	2.7	3.0	2.9	
			Oils & Fats	7.6	-7.3	15.2	3.5	14.7	5.2	5.0	
			Tobacco	22.8	4.9	7.4	3.8	5.6	4.0	0.5	
			Processed food	17.3	3.4	4.3	3.0	3.6	3.3	2.6	
		Non energy industrial goods	Vehicles	63.8	1.8	1.7	1.7	1.6	2.0	1.9	
			Footwear	19.5	4.0	5.6	3.6	1.9	1.4	0.8	
			Clothing	1.5	2.4	5.2	3.8	1.8	1.0	1.5	
			Rest	140.6	3.0	2.4	0.9	0.3	0.5	0.6	
			Non energy industrial goods	30,1	2.6	2.5	2.0	0.9	1.0	1.1	
		Services	Postal services	0.0	13.1	13.3	3.3	3.1	2.7	2.5	
			Cultural services	3.4	3.8	4.5	3.0	3.0	2.7	3.4	
			Education	4.4	4.0	3.3	4.6	3.6	4.5	4.4	
			Hotels	5.0	9.9	5.8	3.4	3.0	2.2	5.0	
			Health	3.4	4.7	4.8	4.0	3.2	6.5	6.2	
			Household equipment	5.5	3.7	4.8	5.1	4.4	4.8	5.3	
			Restaurants	3.3	4.7	5.8	4.4	4.1	3.7	3.4	
			Telephone	0.0	-1.1	-3.1	-2.7	-1.1	-0.4	0.0	
			Transports	50.1	4.1	5.3	3.6	4.4	4.6	6.0	
			Package holididays	6.6	7.1	8.7	3.1	1.4	4.8	6.6	
			University	3.5	3.9	5.0	5.4	4.9	4.2	3.5	
			Housing	4.3	4.5	4.6	4.0	4.5	4.3	4.3	
			Rest	3.9	3.4	4.2	3.9	4.2	3.9	3.9	
		Services	35.1	4.2	4.6	3.7	3.7	3.9	4.1		
		Core Inflation			82.3	3.5	3.7	2.9	2.7	2.7	2.7
		Residual Inflation	Non processed foods	Meat	36.0	10.5	1.7	4.7	3.6	4.4	2.7
				Fruits	15.6	7.8	9.8	11.6	6.3	4.5	7.6
				Eggs	2.4	3.4	1.7	8.4	11.6	-3.1	-0.7
	Vegetables			10.7	5.7	18.0	5.1	3.6	8.4	7.5	
	Mollusc			7.9	7.3	7.3	2.4	3.1	6.7	5.6	
	Potatoes			3.6	23.4	0.4	2.5	16.2	-1.6	6.1	
	Fish			17.7	3.3	5.0	4.4	2.0	3.2	3.4	
	Non processed foods			8,6	8.7	5.8	6.0	4.6	4.4	4.5	
	Energy		Heat energy	50.5	-2.1	0.5	1.4	7.1	3.3	0.7	
			Fuels	4.0	-6.1	-3.1	6.1	12.0	4.8	-2.0	
			Electricity and gas	36.9	2.4	-1.4	0.8	0.8	1.6	0.0	
		Energy	9.1	-1.0	-0.2	1.4	4.8	2.8	0.3		
	Residual Inflation			17.7	3.6	2.6	3.6	4.7	3.6	2.3	
	HICP Total Inflation			100.0	3.6	3.5	3.0	3.0	2.8	2.6	

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