



OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS



Universidad Carlos III de Madrid

Macroeconomic Forecast and Analysis Laboratory, IFL, N° 118, July, 2004.

Acceleration of core inflation and high energy prices increase the mean inflation rate in the US to 2.7% for 2004. A fall to 2.2% is expected for 2005.

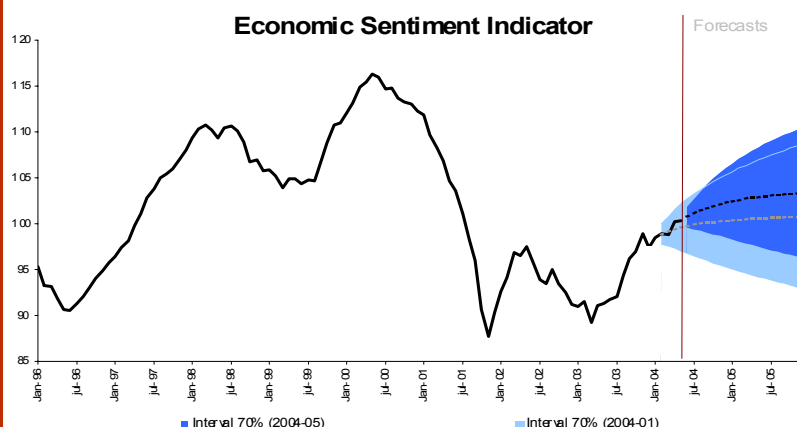
AVERAGE ANNUAL RATE OF GROWTH IN US

CONSUMER PRICES INDEX (CPI)	2000	2001	2002	2003	2004 (forecasts)	2005 (forecasts)
Food	2,3	3,1	1,8	2,1	3,6	2,9
Energy	16,9	3,8	-5,9	12,2	10,2	-1,2
Non-food and non-energy goods	0,5	0,3	-1,1	-2,0	-0,9	0,5
Less tobacco	-0,1	-0,2	-1,5	-2,1	-1,0	0,4
-Durable goods	-0,5	-0,6	-2,6	-3,2	-2,3	0,6
-Nondurable goods	1,4	1,1	0,4	-0,7	0,5	0,3
Non-energy services	3,3	3,7	3,8	2,9	3,0	3,2
-Services less owner's equivalent rent of primary residence (5-a)	3,5	3,6	3,6	3,2	3,4	3,5
-Owner's equivalent rent of primary residence (a)	3,0	3,8	4,1	2,4	2,4	2,9
Core Inflation	2,4	2,7	2,3	1,5	1,9	2,5
Total inflation	3,4	2,8	1,6	2,3	2,7	2,2

Source: BLS & INSTITUTO FLORES DE LEMUS

Data: July 20, 2004

The Economic Sentiment Indicator in the EMU has recovered since the start of 2004, with greater growth forecast for the area. Nevertheless, growth expectations in the EMU for 2005 are more moderate.



Source: Eurostat, UC3M & IFL

Date: June, 2004

Monthly Debate

The Capitalism to Come:
Fraternity: Scope, Diversity and Cultural
Relativism.

by Juan Urrutia. See Page. 31



CAJA MADRID

CONTENTS

I. MAIN POINTS AND NEW RESULTS

[1.1 Inflation in the Economic and Monetary Union](#) p.1

[1.2 Macroeconomic Table of Euro-zone economy](#) p.3

[1.3 Inflation in United States](#) p.5

[1.4 Inflation in Spain](#) p.7

[1.5 Macroeconomic Table of Spanish Economy](#) p.9

[1.6 Forecast Summary](#) p.11

[1.7 Inflation Forecasts of Different Institutions](#) p.15

II. ANALYSIS OF INFLATION, MONETARY POLICY AND INTERNATIONAL ANALYSIS

[II.1 EMU and European Union](#) p.16

[II.2 Industrial Production EMU & USA](#) p.20

[II.3 United States](#) p.22

[II.4 Spain](#) p.26

MONTHLY DEBATE p.31

THE CAPITALISM TO COME:

Fraternity: Scope, Diversity and Cultural
Relativism.

By: Juan Urrutia Elejalde

TABLES & PLOTS p.54

N°118



www.uc3m.es/boletin



CONSEJERÍA DE ECONOMÍA
E INNOVACIÓN TECNOLÓGICA

Comunidad de Madrid



BULLETIN



OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS



Universidad Carlos III de Madrid

Supporting Entities



**FUNDACIÓN
UNIVERSIDAD CARLOS III**

BBVA

Macroeconomic Forecast and Analysis Laboratory, Instituto Flores de Lemus
Universidad Carlos III de Madrid
C/ Madrid, 126 E-28903 Getafe (Madrid) Tel +34 91 624 98 89 Fax +34 91 624 93 05
[www. Uc3m.es/boletin](http://www.Uc3m.es/boletin) E-mail: laborat@est-econ.uc3m.es



OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS



Universidad Carlos III de Madrid

PUBLICATION MANAGEMENT COMMITTEE:

Michele Boldrin, Juan José Dolado, Antoni Espasa and Juan Urrutia.

DIRECTOR: Antoni Espasa.

COORDINATION: Iván Mayo and Rebeca Albacete.

INFLATION ANALYSIS AND FORECASTS:

EUROPE AND SPAIN: Iván Mayo and Cesar Castro.

UNITED STATES: Ángel Sánchez

MACROECONOMIC ANALYSIS AND FORECASTS: Nicolás Carrasco, Coordination, and Román Mínguez

INDUSTRIAL PRODUCTION ANALYSIS: Eva Senra

MADRID STOCK EXCHANGE MARKET: Pablo Gaya.

COLLABORATOR IN INFLATION FORECASTS: César Castro, Agustín García.

COMPOSITION: Elena Arispe.

BULLETIN OF EU & US INFLATION AND MACROECONOMIC ANALYSIS is an independent academic publication, monthly published by the Macroeconomic Forecast and Analysis Laboratory, Universidad Carlos III de Madrid.

All rights reserved. Reproduction in part or whole is strictly prohibited without prior written permission of the Macroeconomic Forecast and Analysis Laboratory.

Depósito Legal: M22 938 - 1995

TERMINOLOGY USED:

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

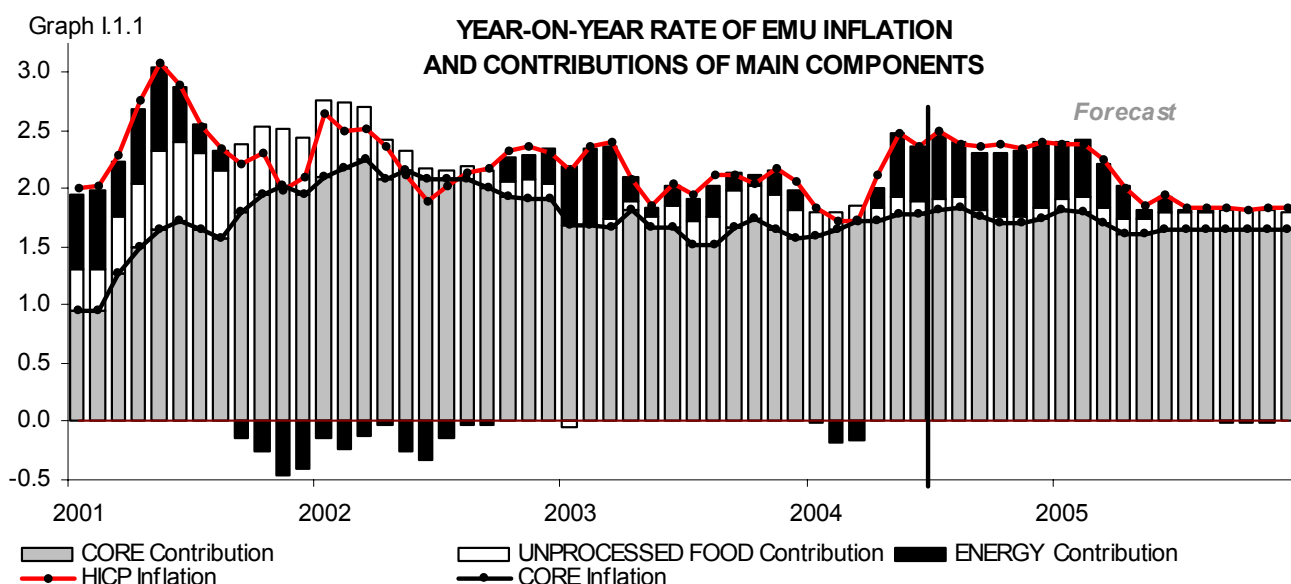
Thus, the previous basic breakdown has been amplified for Spain in the following manner: a) ANE, b) ENE, c) Tobacco, Oils and Fats, and Tourist Packages, d) Processed Foods excluding Tobacco, Oils and Fats, (AEX).ge) Other Goods (MAN), and f) Other services, excluding Tourist Packages (SERT). The measure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

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

I. MAIN POINTS AND NEW RESULTS

I.1. ECONOMIC AND MONETARY UNION

- For this month, we are forecasting a negative monthly inflation rate of 0.1%, without increasing annual inflation in the euro zone from last month's figure, 2.4%. Core inflation will reach an annual rate of 2.2% in July, due to stable growth in this component. Within core inflation, there is a reduction in the mean inflation rate for processed food in 2004, due to a heavy fall in June and the reviewed May figure. The second sales of the year take place in July, and their effects are noted in non-energy industrial goods, the prices of which reach negative monthly rates of 1.4%, similar to previous years. This effect is not seen on core inflation due to the increase in monthly service inflation rates caused by the start of the high holiday season.
- Inflation in the euro zone performed better than expected in June, with zero growth in the monthly rate, below the forecast 0.09%, and with the annual rate for June falling to 2.39%. The annual inflation rate in the euro zone has been on the increase since the beginning of the year, and this is the first month that has seen a reduction. The main innovations in the monthly rate occurred in core inflation, with 0.09% observed instead of the 0.14% forecast, due to processed food, excluding tobacco, and manufactured goods, and energy, which performed better than expected with a negative monthly rate of 0.79% instead of the negative 0.24% rate forecast. In June, the annual rate of core inflation remained at 2.14%, whereas inflation in non-processed food and energy was 1.26% and 5.87%, respectively. (tables 2.1.1 of section II.1 and A2 in the appendix).



Source: EUROSTAT, IFL & UC3M Date: July 21, 2004

- The expected performance of inflation in the euro zone in 2004 is characterised by the stability of annual core inflation, with rates of around 2.1% for the remaining months of the year, and the marked volatility of annual inflation in energy. Thus, the total annual inflation rate has been on the increase from the 1.6% registered in February to the 2.5% observed in May, but annual rates are expected to stabilise at around 2.3% starting in July. This difference between the evolution of total and core inflation is caused by the performance of energy prices, which started to grow in March and are not expected to decrease until March, 2005, so their effect on the annual rate of total inflation will continue until mid-2005 (see graph I.1.1 on the contributions of components to European inflation). The last few energy price growth forecasts have increase slightly; we are expecting rates of around 7% for the end of the year.

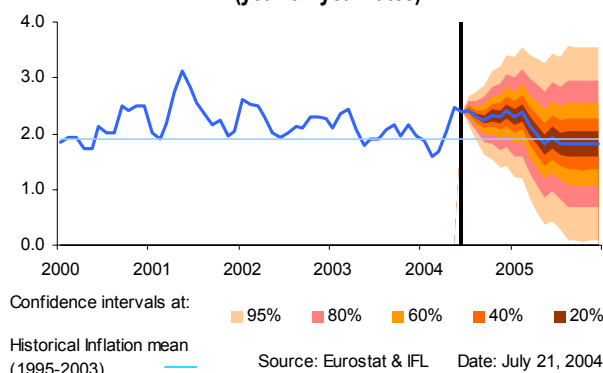


□ For 2004, we forecast a mean total inflation rate of 2.2%, with which the probability of the mean annual inflation rate exceeding 2% is over 60% – as we can see from fan chart 1.1.2 of the forecasting intervals for 2004. On the other hand, the risk of deflation in the EMU disappeared several months ago.

□ The differential between total inflation in the EMU and the US prior to 2002 was systematically one percentage point, in favour of the Economic and Monetary Union. The annual inflation rate last year and in the first months of this year in the two economies appears to converge at values of around 2%, but due to the rapid rise in crude oil prices, which influenced energy prices in both economies starting in March, this situation has changed. Since March, the two inflation rates have again diverged because of the greater sensitivity of U.S. inflation to crude oil market fluctuations. We thus expect the differential between the two economies for June and July to be around one percentage point in favour of the EMU, and this situation should remain unaltered until mid-2005 (see page 16).

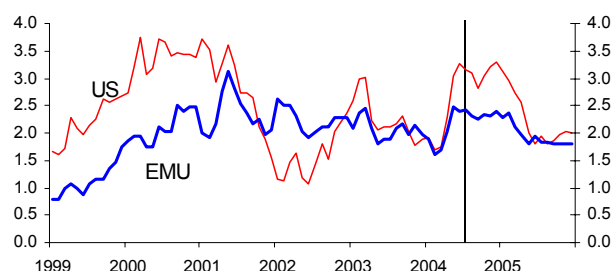
Graph I.1.2

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



Graph I.1.3

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



Source: BLS, EUROSTAT, IFL & UC3M
Date: July 21 / 2004

□ Independently from the above, the inflation differential in services continues to be in favour of the EMU, in non-energy industrial goods in favour of the U.S. Whereas expectations for the mean annual rates of service prices, excluding owner's equivalent rents in the U.S., are 3.4% in 2004 and 3.5% in 2005, compared to the 3.2% observed in 2003, in the EMU they are 2.6% in 2004 and 2005, compared to the 2.6% also observed in 2003. In non-energy industrial goods, the corresponding rates for the U.S. have a negative value of 0.9% in 2004 and a positive value of 0.5% in 2005, and 0.8% in 2004 and 0.9% in 2005 in the EMU (Graphs I.1.3).

Table I.1.1

FORECASTS FOR THE MEAN ANNUAL RATES IN THE HICP OF THE EMU

Harmonised Indices of Consumer Prices (HICP)	2000*	2001*	2002*	2003*	Forecasts	
					2004	2005
TOTAL INFLATION (100%)	2.1	2.3	2.3	2.1	2.2	1.9
CORE INFLATION (84,17%)	1.0	1.9	2.5	2.0	2.1	2.0
Non energy processed goods HICP (42,85%)	0.6	1.5	1.9	1.5	1.6	1.4
Services HICP (41,33%)	1.5	2.5	3.1	2.6	2.6	2.6
RESIDUAL INFLATION (15,82%)	7.5	4.4	1.1	2.6	2.7	1.8
Non Processed Food HICP (7,69%)	1.7	7.0	3.1	2.2	1.4	1.8
Energy HICP (8,13%)	13.0	2.3	-0.6	3.0	4.0	1.8

* Observed Values (revised)

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

Source: Eurostat & UC3M/ Date: July 21, 2004



I.2 MACROECONOMIC TABLE OF EURO-ZONE

	Annual Averages Growths				
	2001	2002	2003	Forecasts BIMA (*)	
				2004	2005
GDP p m	1.6	0.9	0.5	1.7	2.0
Demand					
Final Consumption	2.0	1.2	1.2	1.6	1.9
Capital Investment	-0.3	-2.8	-0.8	2.2	2.1
Contribution Domestic Demand	0.9	0.4	1.1	1.7	1.8
Exports of Goods and Services	3.4	1.5	0.1	4.1	4.7
Imports of Goods and Services	1.7	0.3	1.9	4.2	4.6
Contribution Foreign Demand	0.7	0.5	-0.6	0.0	0.2
Supply					
Gross Value Added Total (market prices)	1.6	0.9	0.5	1.7	2.0
Net Taxes	-2.9	-1.0	-0.9	0.9	1.9
Gross Value Added Total (basic prices)	1.9	1.0	0.6	1.8	2.0
Gross Value Added Agriculture	-1.2	0.8	-3.4	1.1	1.2
Gross Value Added Industry	0.5	0.3	0.0	1.8	1.8
Gross Value Added Construction	-0.6	-1.0	-0.5	0.8	0.3
Gross Value Added Services	2.7	1.4	1.0	1.9	2.2
Private	3.1	1.1	0.9	2.2	2.4
Public	1.7	2.1	1.1	1.3	1.6
Prices					
CPI harmonized, annual average	2.3	2.3	2.1	2.2	1.9
CPI harmonized, dec./dec.	2.1	2.3	2.0	2.4	1.8
Employment					
Unemployment rate	8.0	8.4	8.9	8.9	9.0
Others Economic Indicators					
Production Index of Industry (excluding construction)	0.4	-0.5	0.4	2.3	2.1

Source: EUROSTAT & UC3M

Date: July 20, 2004

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

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





I.3. UNITED STATES

- The general index forecast for **July** is a 0.01% increase, with the annual rate falling from 3.27% to 3.16%. This slight reduction in the annual rate is explained by the energy index. For core inflation, we forecast a 0.13% increase, with its annual rate growing slightly from 1.84% to 1.89% (chapter II shows the details).

Table I.3.1

**OBSERVED VALUES AND FORECAST ON CONSUMER PRICE
FIGURES IN US
-June 2004-**

CONSUMER PRICES INDEX (CPI)	Monthly Growth (T^1_t)		Confidence Intervals at 80% level (+ -)
	observed (a)	forecasts (b)	
Residual Inflation	1.38	1.14	0.39
Core Inflation	0.05	0.05	0.15
Total inflation	0.32	0.29	0.13

Source: BLS & Universidad Carlos III Madrid
Data: July 20, 2004

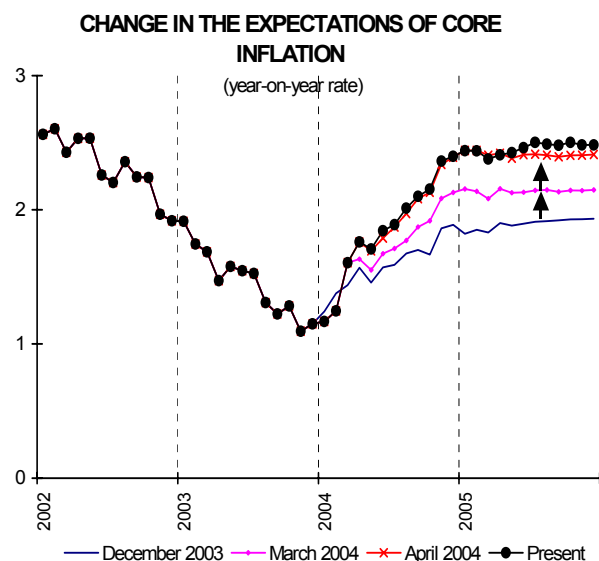
- In **June**, the U.S. CPI rose by 0.32% from the previous month's figure, much as expected: 0.29% (see **Table I.3.11**), with the annual rate rising from 3.05% to 3.27%.
- All items performed as expected, except gas and electricity with a worse performance. As forecast, milk continued to rise although much more moderately, with its annual rate going from 22.82% to 27.22%.

- As for core inflation, prices rose 0.05% exactly as forecast, with the annual rate going from 1.71% to 1.84%. The fall registered in non-energy manufactured goods was 0.57%, similar to the 0.54% forecast, and the annual rate rose from a negative value of 1.06% to another negative value of 0.26%. On the other hand, service prices rose by 0.26%, much as expected (0.29%), with the annual rate increasing from 2.91% to 3.02%. Core inflation, not including owner's equivalent rent of primary residence and tobacco, and therefore comparable with the underlying rate in Europe excluding food, decreased by 0.01%, exactly as forecast, with the annual rate growing from 1.45% to 1.55% (chapter II shows the details).
- For **2004** and **2005**, we forecast mean total annual inflation rates of 2.7% and 2.2%, respectively, which means that we increase last month's forecast for 2004 by one tenth and maintain the forecast for 2005. The higher rate forecast for 2004 is due solely to the worse than expected evolution of energy prices (see **Table I.3.2** and **Graph I.3.2**).
- During the first few months of the year core inflation forecasts were constantly corrected upwards, but the May and June figures were exactly as predicted in April. We expect the annual core rate to grow rapidly this year from today's 1.84% to the 2.40% forecast for December. It should then become stable at a somewhat higher level throughout 2005. This forecast is the same as the one presented in last month's report (**Graph I.3.1**).
- In 2004, when we add food and energy prices to this context of rapid core inflation growth, this generates a general CPI annual mean growth rate of around 2.7%, with the lowest level in September (2.8%) and the highest in December (3.3%). This is explained by the evolution of energy prices.

1 The official information provided is with one decimal aggregation error

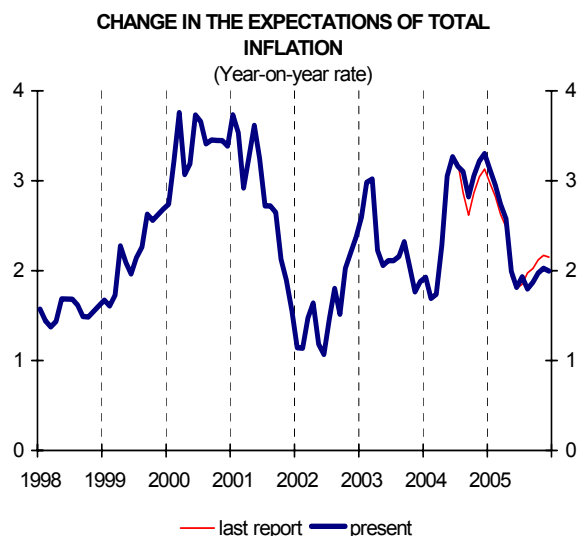


Graph I.3.1



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

Graph I.3.2



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

Table I.3.2

AVERAGE ANNUAL RATE OF GROWTH IN US

CONSUMER PRICES INDEX (CPI)	2000	2001	2002	2003	2004 (forecasts)	2005 (forecasts)
Food (1)	2.3	3.1	1.8	2.1	3.6	2.9
Energy (2)	16.9	3.8	-5.9	12.2	10.2	-1.2
Residual Inflation (3=2+1)	6.8	3.3	-0.8	5.3	5.9	1.4
Non-food and non-energy goods (4)	0.5	0.3	-1.1	-2.0	-0.9	0.5
Less tobacco	-0.1	-0.2	-1.5	-2.1	-1.0	0.4
-Durable goods	-0.5	-0.6	-2.6	-3.2	-2.3	0.6
-Nondurable goods	1.4	1.1	0.4	-0.7	0.5	0.3
Non-energy services (5)	3.3	3.7	3.8	2.9	3.0	3.2
-Services less owner's equivalent rent of primary residence (5-a)	3.5	3.6	3.6	3.2	3.4	3.5
-Owner's equivalent rent of primary residence (a)	3.0	3.8	4.1	2.4	2.4	2.9
Core Inflation (6=4+5)	2.4	2.7	2.3	1.5	1.9	2.5
Core inflation less owner's equivalent rent of primary residence (6-a)	2.2	2.3	1.7	1.1	1.7	2.3
Core inflation less owner's equivalent rent of primary residence and tobacco	2.1	2.1	1.5	1.1	1.7	2.3
Total inflation (7=6+3)	3.4	2.8	1.6	2.3	2.7	2.2
All items less owner's equivalent rent of primary residence (7-a)	3.5	2.6	1.0	2.2	2.8	2.0

Source: BLS & Universidad Carlos III Madrid

Data: July 20, 2004

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



I.4. SPAIN

- The total monthly inflation rate forecast for July is a negative value of 0.7%, and the expected annual rate is 3.4% (graphs I.4.2 and I.4.3).

- The monthly rate of total inflation in June, 0.16%, was higher than our forecast, 0.09%. Core inflation (processed food, industrial goods and services) registered an upwards innovation derived especially from processed food. Residual inflation (non-processed food and energy) fell slightly largely due the improved performance of energy (table I.4.1)

Table I.4.1 OBSERVED VALUES AND FORECASTS IN THE MONTH-ON-MONTH RATE OF GROWTH IN THE COMPONENTS OF THE CPI IN SPAIN			
Consumer Price Index (CPI)	Observed growth June 2004	Forecast	Confidence interval at 80%
Total Inflation(100%)	0.16	0.09	± 0.15
Core inflation (82.28%)	0.24	0.15	± 0.13
Residual inflation (17.72%)	-0.24	-0.21	± 0.22

(*) At 80% confidence level.

Source: INE & UC3M / Date: July 21, 2004

- The annual rate of core inflation was 2.8% in June 2004, greater than the 2.7% observed in May of the same year. Core inflation has continued to increase since March, 2004. In June, the increase is again explained by the poor evolution of processed food prices, which registered a monthly rate of 0.38%, higher than the 0.25% forecast, due to the increase in the monthly rate of tobacco prices, 0.98%. Non-energy industrial goods performed slightly worse than expected, with a negative monthly rate of 0.05% instead of the forecast negative value of 0.15%. As for services, the monthly rate grew by 0.43% compared with the 0.34% forecast, largely due to the heavy increase in tourism prices, 6.08% compared with the expected 2.78%. Most service components, such as transport, household goods, restaurants and housing, continue to have annual rates of over 4%, whereas university expenses have an annual rate of over 5% (5.05).
- In June 2004, the annual rate of inflation in non-energy industrial goods, 1.0% was above the annual rate observed in the EMU, 0.8% and the annual rate in Spain is expected to be around 1.2% at the end of 2004, above the 0.9% expected for the EMU. Therefore, the mean annual rate expected in Spain is 0.9%, slightly higher than the 0.8% rate forecast for the EMU. In the U.S., negative expectations are maintained for the mean annual rate of growth, -0.9% for 2004 and 0.5% for 2005, compared with a negative 2.0% value observed in 2003.

Table I.4.2 FORECASTS FOR THE MEAN ANNUAL RATES OF GROWTH IN THE CPI IN SPAIN				
Consumer Prices Index (CPI)	2002	2003	Forecasts	
			2004	2005
TOTAL INFLATION (100%)	3.1	3.0	3.0	2.9
CORE INFLACIÓN (82,28%)	3.7	2.9	2.7	2.8
TREND INFLACIÓN (77,21%)	3.4	2.9	2.6	2.8
Non energy industrial goods (30,05%)	2.5	2.0	0.9	1.3
Services CPI (35,05%)	4.6	3.7	3.8	4.0
Processed food CPI (17,17%)	4.3	3.0	3.6	3.1
RESIDUAL INFLATION (17,72%)	2.6	3.6	4.5	3.1
Non processed food CPI (8,60%)	5.8	6.0	5.2	4.9
Energy CPI (9,12%)	-0.2	1.4	3.9	1.4

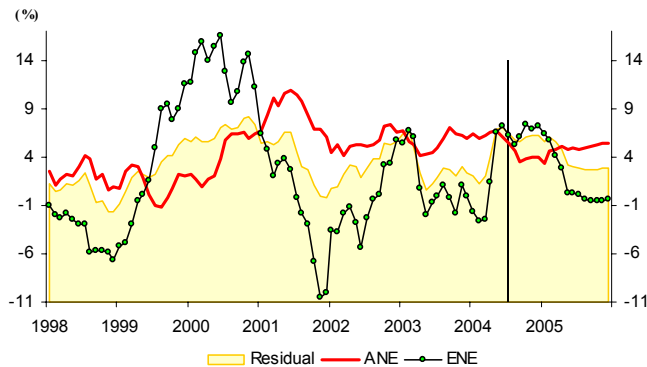
Monthly and annual rates can be found in tables A7A and A7B in the appendix

Source: INE. IFL & UC3M / Date: July 21, 2004



Graph I.4.1

ANNUAL RATES OF RESIDUAL INFLATION AND ITS COMPONENTS IN SPAIN



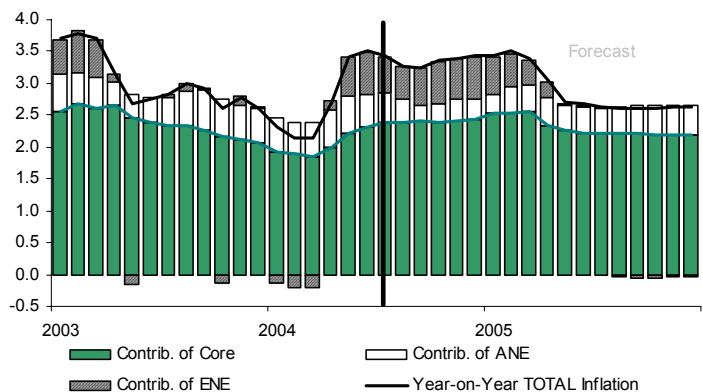
Source: INE, IFL & UC3M / Date: July 21, 2004

(table I.4.2).

- In the EMU, the annual rate of core inflation in June 2004 remained unaltered since March at 2.1%. Forecasts for the mean annual rate are 2.1% in 2004 and 2.0% in 2005, compared with the 2.7% and 2.8% forecast in Spain for the same years. Therefore, the differential between Spain and the euro zone for 2004 is expected to be more than half a percentage point in favour of the EMU.
- As for the evolution of residual inflation components, the mean annual rate of non-processed food prices is expected to fall from values of around 6.0% in the first half of 2003 to values around 4.0% at the end of 2004. A mean annual rate of 5.0% is expected for 2004, and 4.6% for 2005.
- As for energy, the last information received shows a more inflationist profile in international oil prices compared with the previous month. We therefore forecast an annual energy rate of 6.2% for July. The mean annual rate forecast for 2004 is 3.9%, higher than the 1.5% observed in 2003.

Graph I.4.2

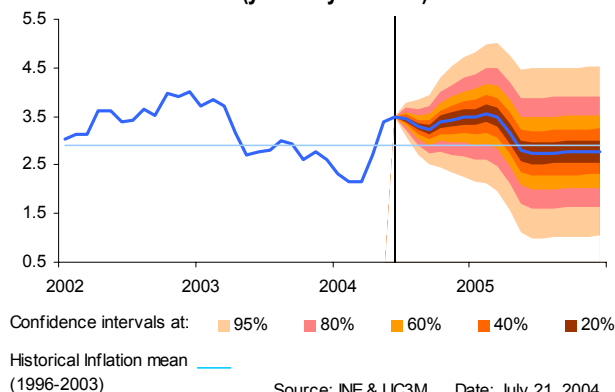
CONTRIBUTIONS TO TOTAL INFLATION IN SPAIN (YEAR-ON-YEAR RATES)



Source: INE & UC3M Date: July 21, 2004

Graph I.4.3

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



Confidence intervals at: 95% 80% 60% 40% 20%
Historical Inflation mean (1996-2003)

Source: INE & UC3M Date: July 21, 2004

- Total inflation in Spain for the remaining months of 2004 and the first few months of 2005 will have an annual rate of over 3.0%. The contribution of core inflation and non-processed food is expected to remain stable until 2005. The fall in the contribution of energy for the second half of 2005 will make total annual inflation return to levels close to those observed in 2003 (see graph I.4.2).
- The mean annual total inflation rate in Spain was 3.0% in 2003, and will be 3.0% in 2004 and 2.9% in 2005 (table I.4.2). Chart I.4.3 confirms the high likelihood of the total annual inflation rate in 2004 exceeding its historic mean of 2.9%.

I.5. MACROECONOMIC TABLE OF SPANISH ECONOMY

MACROECONOMIC TABLE AND INDICATORS (*)					
	2002	2003	Annual Rates		
			Forecasts BIMA(*)		Budget
			2004	2005	2004
Private Final Consumption Expenditure	2.6	3.0	3.3	3.4	3.1
1. Public Final Consumption Expenditure	4.4	4.6	4.1	3.4	2.9
Gross Fixed Capital Formation	1.0	3.0	3.4	3.8	3.8
Equipment	-5.4	1.9	4.0	5.8	(3)
Building	4.2	3.7	3.0	2.2	3.0
Other products	2.6	2.8	3.5	5.8	(3)
2. Inventory change (1)	0.0	0.1	0.0	0.0	0.0
Domestic Demand	2.6	3.3	3.4	3.5	3.3
Exports of Goods and Services	0.0	4.0	5.5	7.1	6.3
Imports of Goods and Services	1.8	6.7	6.8	7.4	7.0
Net Exports (1)	-0.6	-1.0	-0.6	-0.4	-0.4
GDP	2.0	2.4	2.9	3.2	3.0
GDP, current prices	6.6	6.7	6.4	6.5	5.9
Prices and Costs					
CPI, annual average	3.1	3.0	3.0	2.9	
CPI, dec./dec.	4.0	2.6	3.4	2.6	
Average earning per worker	3.8	3.9	3.5	3.4	
Unit labour cost	3.1	2.9	2.6	2.6	
Labour Market (Data poll labour force)					
Labour Force (% variation)	3.0	2.6	2.0	1.7	
Employment (EPA)					
Annual average variation in %	2.0	2.7	2.2	2.3	
Annual average variation in thousands	312.5	437.0	367.0	392.5	
Unemployment rate	11.4	11.3	11.1	10.8	11.0
Basic balances					
Foreign sector					
Current Account (m. €.)	-18.691	-23.660	-20.247	-19.023	
Net lending or borrowing (% GDP) (2)	-1.6	-2.0	-2.6	-2.3	-2.6
AA.PP. (Total) / Public Administration					
Net lending or borrowing (% GDP) (2)	-0.1	0.0	-0.1	-0.1	
Other Economic Indicators					
Industrial Production Index	0.1	1.6	2.3	2.6	
(1) Contributions to GDP growth					
(2) In term of national accounts					
(3) Equipment goods and other goods: Forecast PGE, 5.0; Forecast BIAM, 5.2.					

Source: INE & UC3M

Date: July 27, 2004.

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

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





I.6 FORECAST SUMMARY

INFLATION FORECASTS AND EVOLUTION IN THE EMU AND USA (1998-2005)								
	1998	1999	2000	2001	2002	2003	Forecasts	
							2004	2005
TOTAL INFLATION								
Euro-zone (100%).	1.1	1.1	2.1	2.3	2.3	2.1	2.2	1.9
USA (81.5%). ⁽¹⁾	1.1	2.1	3.5	2.6	1.0	2.2	2.8	2.0
A HOMOGENEOUS MEASURE OF CORE INFLATION ⁽²⁾								
Services and Non-energy industrial goods excluding food and tobacco.								
Euro-zone (72.34%).	1.4	1.1	1.0	1.8	2.4	1.8	1.8	1.9
USA (55.6%). ⁽¹⁾	1.8	1.4	2.1	2.1	1.5	1.1	1.7	2.3
DIFFERENT COMPONENTS OF THE HOMOGENEOUS MEASURE OF CORE INFLATION								
(1) Services.								
Euro-zone (41.33%).	1.9	1.5	1.5	2.5	3.1	2.6	2.6	2.6
USA (27.4%). ⁽¹⁾	2.9	2.7	3.5	3.6	3.6	3.2	3.4	3.5
(2) Non-energy industrial goods excluding food and tobacco.								
Euro-zone (31.01%).	0.9	0.7	0.4	0.9	1.5	0.8	0.8	0.9
USA (29.0%).	-0.1	-0.5	-0.1	-0.2	-1.5	-2.1	-1.0	0.4
INFLATION IN EXCLUDED COMPONENTS FROM THE HOMOGENEOUS MEASURE OF CORE INFLATION								
(1) Food.								
Euro-zone (19.53%).	1.6	0.6	1.4	4.5	3.1	2.8	2.8	2.4
USA (14.9%).	2.2	2.1	2.3	3.1	1.8	2.1	3.6	2.9
(2) Energy.								
Euro-zone (8.13%).	-2.6	2.4	13.0	2.3	-0.6	3.0	4.0	1.8
USA (9.90%).	-7.7	3.6	16.9	3.8	-5.9	12.2	10.2	-1.2

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

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

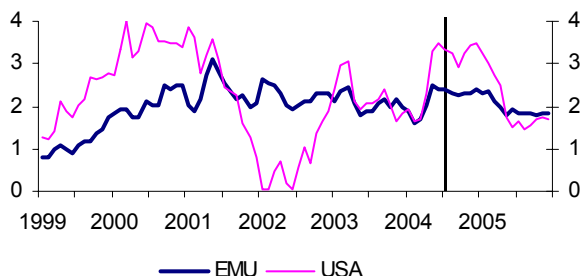
Source: EUROSTAT, BLS, IFL & UC3M.

Date: July 21 / 2004

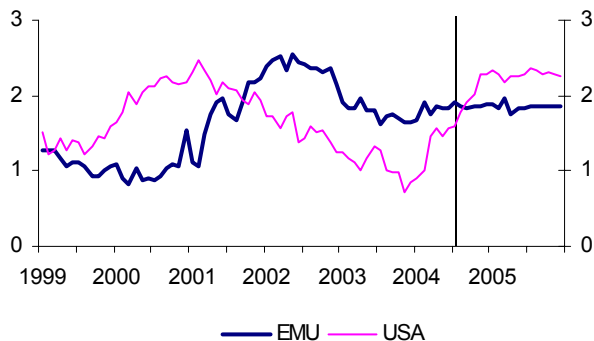


YEAR-ON-YEAR RATES OF INFLATION IN THE EMU AND USA

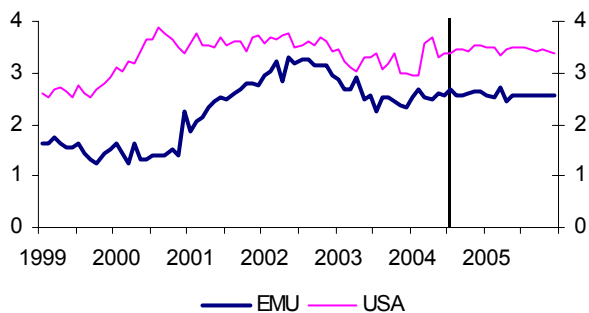
YEAR-ON-YEAR RATES OF TOTAL INFLATION IN THE EMU AND TOTAL INFLATION LESS OWNER'S EQUIVALENT RENT OF PRIMARY RESIDENCE IN USA



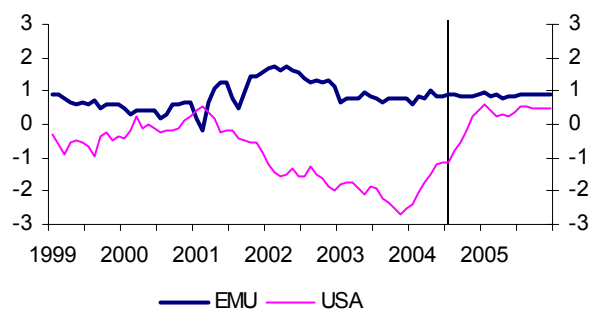
YEAR-ON-YEAR RATES OF HOMOGENEOUS CORE INFLATION IN THE EMU AND THE USA



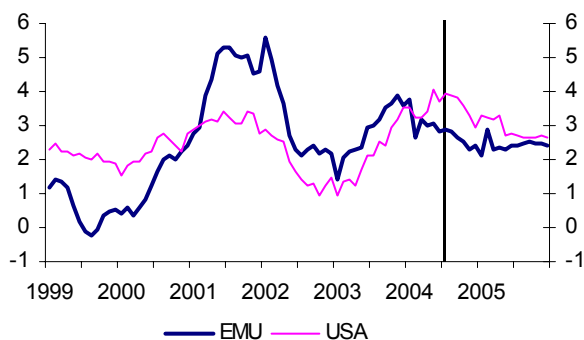
YEAR-ON-YEAR RATES OF SERVICES INFLATION IN THE EMU AND THE USA



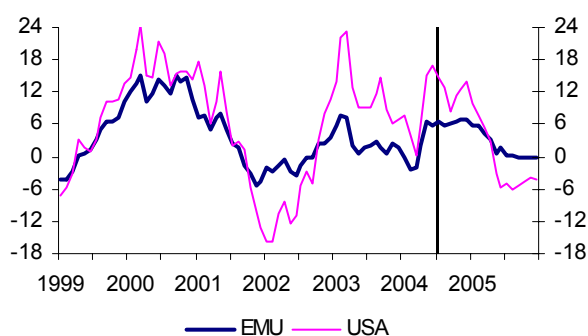
YEAR-ON-YEAR RATES OF NON-ENERGY INDUSTRIAL GOODS INFLATION IN THE EMU AND THE USA (EXCLUDING TOBACCO)



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



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



Source: EUROSTAT, BEA, IFL & UC3M
Date: July 21, 2004



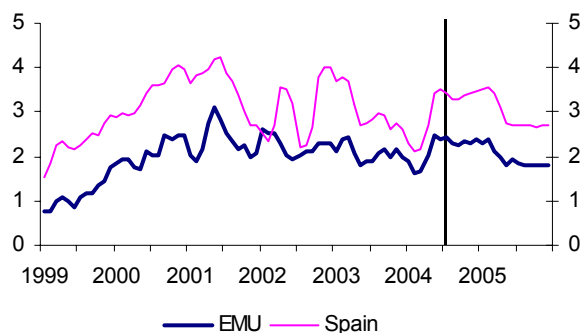
INFLATION FORECASTS AND EVOLUTION IN THE EMU AND SPAIN (1998-2005)								
	1998	1999	2000	2001	2002	2003	Forecasts	
							2004	2005
TOTAL INFLATION								
Spain (100%).	1.8	2.3	3.4	3.6	3.1	3.0	3.0	2.9
Euro-zone (100%).	1.1	1.1	2.1	2.3	2.3	2.1	2.2	1.9
CORE INFLATION								
Services and Non-energy processed goods.								
Spain (81.40%).	2.2	2.2	2.5	3.4	3.7	2.9	2.7	2.8
Euro-zone (84.18%).	1.4	1.1	1.0	1.9	2.5	2.0	2.1	2.0
DIFFERENT COMPONENTS OF CORE INFLATION								
(1) Services.								
Spain (34.87%).	3.6	3.4	3.7	4.2	4.6	3.7	3.8	4.0
Euro-zone (41.33%).	1.9	1.5	1.5	2.5	3.1	2.6	2.6	2.6
(2) Non-energy processed goods.								
Spain (46.53%).	1.4	1.7	1.7	2.9	3.1	2.4	2.2	2.0
Euro-zone (43.26%).	1.1	0.7	0.6	1.5	1.9	1.5	1.6	1.4
INFLATION IN EXCLUDED COMPONENTS FROM CORE INFLATION								
1) Non-processed food.								
Spain (9.40%).	2.1	1.2	4.2	8.7	5.6	5.6	5.2	4.9
Euro-zone (7.69%).	2.0	0.0	1.7	7.0	3.1	2.2	1.4	1.8
(2) Energy.								
Spain (9.14%).	-3.8	3.2	13.3	-1.0	-0.2	1.4	3.9	1.4
Euro-zone (8.13%).	-2.6	2.4	13.0	2.3	-0.6	3.0	4.0	1.8

Source: EUROSTAT, BLS, IFL & UC3M.
Date: July 21 / 2004.

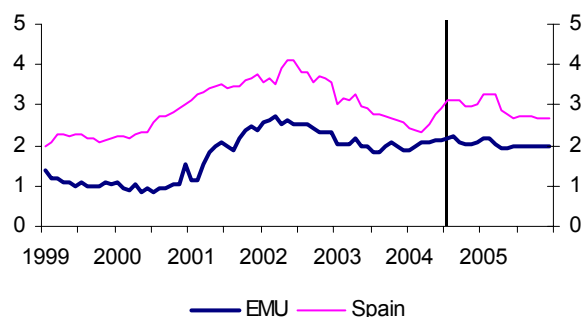


YEAR-ON-YEAR RATES OF INFLATION IN THE EMU AND SPAIN

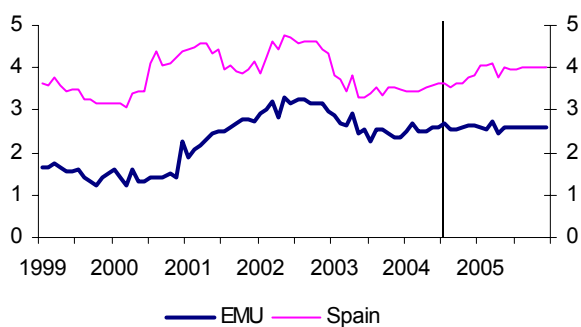
YEAR-ON-YEAR RATES OF TOTAL INFLATION IN THE EMU AND SPAIN



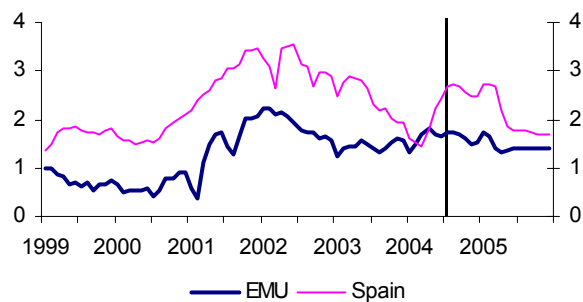
YEAR-ON-YEAR RATES OF SERVICES AND NON-ENERGY PROCESSED GOOS IN THE EMU AND SPAIN



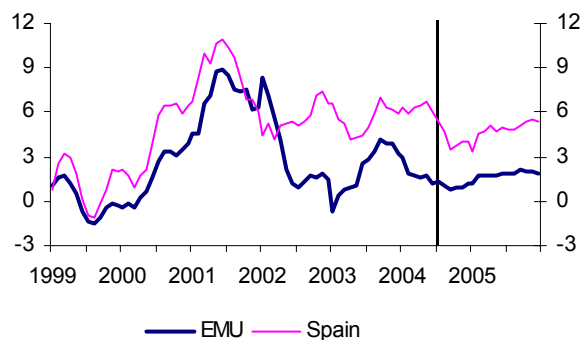
YEAR-ON-YEAR RATES OF SERVICES INFLATION IN THE EMU AND SPAIN



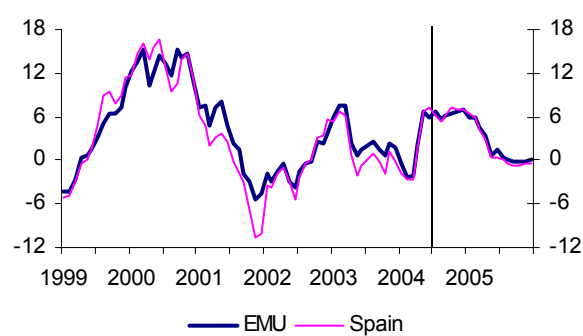
YEAR-ON-YEAR RATES OF NON-ENERGY PROCESSED GOODS INFLATION IN THE EMU AND SPAIN



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



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



Source: EUROSTAT, BEA, IFL & UC3M
Date: July 21, 2004



I.7 INFLATION FORECASTS OF DIFFERENT INSTITUTIONS

INFLATION FORECASTS OF DIFFERENT INSTITUTIONS ¹										
	BIAM ²		CONSENSUS FORECASTS ³		IMF ⁴		ECB ⁵		OCDE ⁶	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
UME	2.2	1.9	2.1	1.8	1.7	1.6	1.8	1.8	1.7	1.7
EE.UU.	2.7	2.2	2.6	2.3	2.3	2.2	-	-	1.7	1.6
ESPAÑA	3.0	2.9	2.9	2.6	2.7	2.7	-	-	2.3	2.6

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

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

3 July 12, 2004.

4 IMF. World Economic Outlook. April 2004.

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

6 OECD Economic Outlook 75. May 2004.

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

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

Our expectations about total inflation in the EMU and Spain are higher than the previous bulletin: 2.2% in 2004 and 1.9% in 2005 in the EMU and 3.0% for 2004 and 2.9% in 2005, in the case of Spain. Non-processed foods inflation expectations for 2004 for EMU and Spain are 1.4% and 5.2% respectively. Total inflation in 2004 and 2005 will be benefit from an expected lower inflation rate in non-energy industrial goods but energy prices are expected to increase due to the evolution of crude prices. The expected average inflation rate for 2004 in energy prices is 3.9% in Spain and 4.0% in the EMU.



II. ANALYSIS OF INFLATION, MONETARY POLICY AND INTERNATIONAL ANALYSIS

II.1 Economic and Monetary Union

In June 2004, inflation in the EMU registered a null monthly rate with a year-on-year rate of 2.39%.

The inflation in the euro zone performed better than expected in June, with zero growth in the monthly rate, below the forecast 0.09%, and with the annual rate for June falling to 2.39%. The annual inflation rate in the euro zone has been on the increase since the beginning of the year, and this is the first month that has seen a reduction. The main innovations in the monthly rate occurred in core inflation, with 0.09% observed instead of the 0.14% forecast, due to processed food, excluding tobacco, and manufactured goods, and energy, which performed better than expected with a negative monthly rate of 0.79% instead of the negative 0.24% rate forecast. In June, the annual rate of core inflation remained at 2.14%, whereas inflation in non-processed food and energy was 1.26% and 5.87%, respectively. (Tables 1 and A2 in the appendix).

Table 1 summarises the discrepancies between observed and forecast values for the different basic aggregations in the Euro-Zone (see table A1B in the appendix for the disaggregation scheme followed in this Bulletin).

Table II.1.1

OBSERVED AND FORECAST VALUES ON CONSUMER PRICE FIGURES IN THE EMU

Consumer Price Index (HICP)	Current growth June 04	Forecast	Confidence intervals (a)
(1) Processed food - AE (9.463%) ^(b)	0.07	0.17	± 0.09
(2) Tobacco (2.373%)	0.13	0.10	± 0.13
(3) Commodities - MAN (31.009%)	-0.19	-0.10	± 0.10
Non-Energy Manufactured Goods - BENE [1+2+3] (42.845%)	-0.11	-0.03	± 0.09
(4) Services - SERV (41.334%)	0.34	0.32	± 0.14
Core Inflation:			
Non-Energy Manufactured Goods and Services, (excluding fats, oils, tobacco and tourist packages) - IPSEBENE [1+2+3+4] (84.178%)	0.09	0.14	± 0.08
(5) Non-Processed Food - ANE (7.689%)	0.08	-0.06	± 0.46
(6) Energy Goods - ENE (8.133%)	-0.79	-0.24	± 0.60
Residual Inflation:			
Fats, Oils, Tobacco, Tourist Packages, Non- Processed Food and Energy - R [5+6] (15.822%)	-0.32	-0.16	± 0.39
Total Inflation:			
HICP [1+2+3+4+5+6] (100%)	0.00	0.09	± 0.09

(a) At 80% confidence level

(b) Excluding tobacco prices

Source: EUROSTAT, IFL & UC3M/ Date: July 16, 2004

It is important to note the existence of rounding errors in the aggregation of different sectors of HICP in the EMU. Eurostat publishes data with one decimal point and apparently they use more decimals in obtaining the aggregate indexes. The question is that the aggregate values can not be exactly reproduced up to a decimal point by the users of Eurostat data. For this reason, aggregation errors are marked in the forecast errors tables in the appendix (table A2).

The total inflation innovation was a downward innovation.

The breakdown of the harmonised consumer price index into basic market groups shows that the prices of processed food, excluding tobacco (the AE index), registered a monthly growth of 0.07% instead of the 0.17% growth predicted. The prices of tobacco registered



a rate of 0.13%, higher than the 0.10% forecast. The prices of the remaining processed goods excluding energy prices (the MAN index) registered a negative rate of 0.19%, instead of the negative rate of 0.10% forecast. With this, core inflation registered a monthly growth of 0.09%, slightly lower than 0.14% expected. Finally, in Residual inflation (non-processed food and energy), there was a downward innovation, -0.32% instead of -0.16% (see table A5A and A5B).

The forecast for the year-on-year rate of inflation in July 2004 is 2.4%.

Total European expected inflation will stay at 2.4% in July. The expected monthly inflation rate is a negative value of 0.1%. The expectations for the average annual rate are 2.2% in 2004 and 1.9% in 2005, compared to the 2.1% registered in 2003.

T.II.1.2 summarises the forecasts for the different components in the Monetary Union. Monthly and annual rates may be found in tables A5A and A5B in the appendix.

Table II.1.2 AVERAGE ANNUAL RATE OF GROWTH IN MONETARY UNION							
	Observed					Forecasts	
	1999	2000	2001	2002	2003	2004	2005
Residual Inflation 15.822%	1.2	7.5	4.4	1.1	2.6	2.7	1.8
Non-Processed Food 7.689%	0.0	1.7	7.0	3.1	2.2	1.4	1.8
Energy 8.133%	2.4	13.0	2.3	-0.6	3.0	4.0	1.8
Core Inflation 84.178%	1.1	1.0	1.9	2.5	2.0	2.1	2.0
Processed Food ^(a) 9.463%	0.5	0.6	2.7	2.4	2.1	1.6	2.0
Tobacco 2.373%	3.1	3.4	3.8	5.9	8.4	12.0	6.6
Non-Energy Commodities 31.009%	0.7	0.4	0.9	1.5	0.8	0.8	0.9
Non-Energy Services 41.334%	1.5	1.5	2.5	3.1	2.6	2.6	2.6
Total Inflation 100%	1.1	2.1	2.3	2.3	2.1	2.2	1.9

(a) Excluding tobacco prices

Source: EUROSTAT, IFL & UC3M/ Date: July 21, 2004

The average annual rate in 2003, 2.1%, is achieved through decreases in core inflation in 2003 to 2.0% in relation to the 2.5% observed in 2002, due to the favourable evolution of prices of non-energy industrial goods and services and the absence of the euro-rounding effect in the year-on-year rates of 2003, and increases in residual inflation, due to prices of energy compared with the values registered in 2002. The expected evolution of core inflation will be similar to last year; energy is the component that is increasing the performance of total inflation during 2004 from March, and this trend is not expected to change until March 2005.

By country, the expectations for month-on-month inflation for next July is a positive rate of 0.4% for Germany and negative rates of 0.6% in Spain, 0.2% in Italy and 0.1% in France.

T.II.1.3 summarises average annual growth rates for the main countries. Monthly and annual forecasts for all countries can be found in tables A4A, A4B, A4C and A4D in the appendix.



Table II.1.3							
ANNUAL AVERAGE RATES OF GROWTH							
	Observed					Forecasts	
	1999	2000	2001	2002	2003	2004	2005
Spain HICP (11.11%) *	2.2	3.5	2.8	3.6	3.1	3.1	3.0
Germany HICP (29.26%)	0.6	1.4	1.9	1.3	1.0	1.7	1.2
France HICP (20.70%)	0.6	1.8	1.8	1.9	2.2	2.4	1.8
Italy HICP (19.26%)	1.7	2.6	2.3	2.6	2.8	2.3	2.7
EMU HICP (100%)	1.1	2.1	2.3	2.3	2.1	2.2	1.9
United kingdom HICP	2.1	0.8	1.2	1.3	1.4	1.3	1.2

* country weights in the total HICP for the EMU

Source: EUROSTAT, IFL & UC3M/ Date: July 21 / 2004

Inflation expectations vary considerably among countries (see table II.1.3). For one year ahead these expectations go from 1.22% for Germany to values around 3.0% for Portugal, Spain, Italy and Greece. Consequently, the corresponding actual real interest rates are negative for these countries. On the other hand these rates are higher than 1% for Germany and Finland. These differentials are indicative of the different investment situations that the countries of the Euro-area face.

Table II.1.4	INFLATION EXPECTATIONS		ACTUAL REAL INTEREST RATES	
	Three Months	One Year	Three Months	One Year
Italy	2.62	2.71	-0.51	-0.36
France	1.97	1.76	0.15	0.59
Germany	1.45	1.22	0.67	1.13
Belgium	1.77	1.78	0.35	0.57
Netherlands	2.09	2.22	0.02	0.13
Portugal	4.31	4.13	-2.20	-1.78
Austria	2.00	1.96	0.11	0.39
Finland	0.35	0.47	1.77	1.88
Ireland	3.10	3.17	-0.98	-0.82
Luxembourg	3.34	3.19	-1.23	-0.84
Spain	3.19	3.00	-1.07	-0.66
Greece	2.82	2.74	-0.70	-0.40

Source: ECB, Eurostat & EFN

Date: July 21, 2004

Table II.1.5 shows annual observed HICP rates for energy and those corresponding to the remainder of goods and services – denominated HICP excluding energy.



Table II.1.5

ANNUAL GROWTH HICP

	HICP excluding Energy						HICP energy					
	Observed				Forecasts		Observed				Forecasts	
	Jun. 2004	Media 2001	Media 2002	Media 2003	Media 2004	Media 2005	Jun. 2004	Media 2001	Media 2002	Media 2003	Media 2004	Media 2005
Germany	1.6	1.5	1.4	0.8	1.5	1.1	4.9	5.7	0.3	4.0	3.8	2.5
Spain	3.2	4.0	3.4	3.2	3.1	3.1	7.2	-1.0	-0.2	1.3	3.9	1.4
France	2.3	2.1	2.3	2.2	2.3	1.8	6.6	-1.5	-1.5	2.3	3.8	1.5
Italy	2.4	2.4	3.0	2.8	2.4	2.7	3.5	1.6	-2.6	3.2	2.0	3.9
Monetary Union	2.1	2.3	2.6	2.0	2.0	2.0	5.9	2.3	-0.6	3.0	4.0	1.8

Source: EUROSTAT, IFL & UC3M/ Date: July 21, 2004

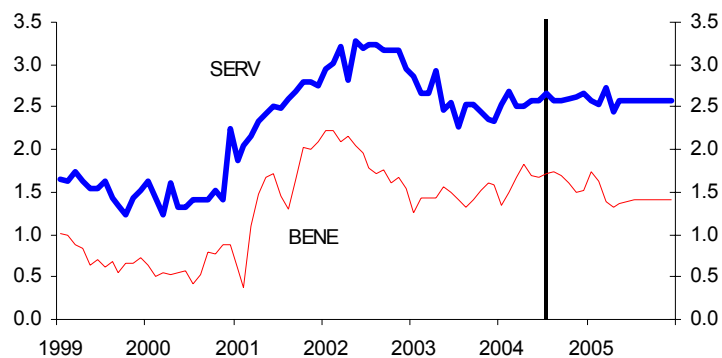
There are important inflation differentials among countries in prices excluding energy.

Year-on-year rates of energy prices in June, 2004 registered values higher than 3% in these four countries, as shown in table 5. For non-energy prices, Germany registered in June a year-on-year rate of 1.6%; forecasts for the annual average rates will be around 1.5% in 2004 and 1.1% in 2005. France registered for the HICP excluding energy a year-on-year rate of 2.35% in June and the forecasts for the annual average rate are 2.3% in 2004 and 1.8% in 2005. The observed value for the annual rate in Italy was 2.38% and forecasts are 2.4% in 2004 and 2.6% in 2005. In the case of Spain, the annual rate was 3.2% in June and a mean annual rate of 3.1% is expected in 2004 and 3.1% in 2005. Therefore, in the HICP excluding energy, German inflation will perform better than French, which will in turn perform better than Spanish and Italian inflation.

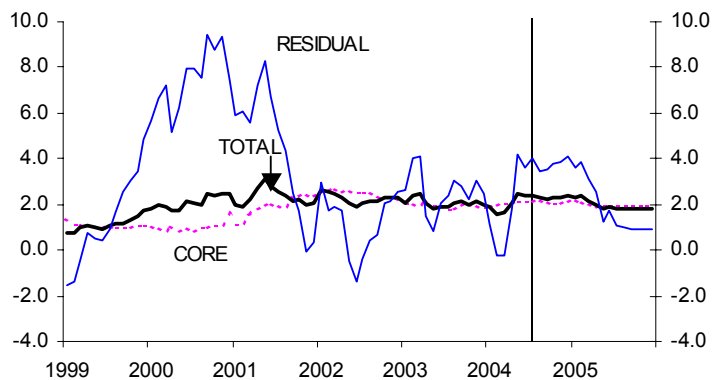
HICP YEAR-ON-YEAR RATES OF GROWTH IN THE EMU

Graph II.1.1

Non Energy Processed Commodities (BENE) and Services (SERV)



CORE, Residual and total inflation



Source: EUROSTAT, IFL & UC3M/ Date: July 21, 2004



II.2 Industrial Production in the EMU and USA.

The Industrial Production Index published for May 2004 has been an upwards innovation in the global index and in all the components analysed in this publication., as it can be seen in table II.2.1.

Table II.2.1 FORECASTS AND OBSERVED DATA IN THE ANNUAL RATE OF GROWTH OF THE DIFFERENT EMU IPI COMPONENTS CORRESPONDING TO MAY		
	Forecast for May	Observed in May ^(*)
Capital	3.5	5.6
Durable	3.4	3.9
Intermediate	2.9	3.7
Non Durable	2.6	2.8
Energy	3.8	4.2
Total	3.1	3.9

Working day adjusted data.
Source: Eurostat and UC3M.

The expectations now are a more optimistic than in the last report with an average rate of growth of 2.32 and 2.05% for 2004 and 2005 respectively instead of the 1.98 and 1.89% previously forecasted. The expectations of growth for the different sectors are shown in table II.2.2.

Table II.2.2 ANNUAL AVERAGE RATES FOR INDUSTRIAL PRODUCTION IN EMU ^(****)								
	1998	1999	2000	2001	2002	2003	2004	2005
Capital	6.7	2.4	8.2	1.6	-1.5	0.1	3.4	3.5
Durable	4.2	1.3	6.1	-2.1	-5.7	-4.2	0.9	-0.0
Intermediate	3.7	1.9	6.2	-0.6	0.1	0.4	2.2	2.0
Non Durable	2.1	1.2	0.9	0.8	0.5	0.1	1.2	0.9
Energy	1.6	0.8	1.9	1.4	1.0	2.9	2.9	1.7
Total EMU	3.8	1.8	5.2	0.4	-0.5	0.4	2.3	2.1

(****) Bold figures are forecasts. Working day adjusted data.
Source: Eurostat and UC3M.
Date: JuLY, 19th2004

In US, the last published data corresponds to June and has been an downwards innovation in all the components analyzed in this publication except in Non Durable Consumer Goods, as it can be seen in table II.2.3.

Table II.2.3 FORECASTS AND OBSERVED DATA IN THE ANNUAL RATE OF GROWTH OF THE DIFFERENT EMU IPI COMPONENTS CORRESPONDING TO JUNE		
	Forecast for June	Observed in June
Durable Consumer Goods	8.3	5.8
Non Durable Consumer Goods	5.2	5.4
Equipment and Supplies	7.4	3.7
Materials	8.0	6.1
TOTAL US	7.4	6.2

Source: Federal Reserve and UC3M



Table II.2.4 shows the updated forecasts. The average rate of growth for IP in 2004 has been downwards revised from 6.1% to 4.9% and in 2005 from 5.2% to 4.0%.

Table II.2.4 ANNUAL AVERAGE RATES FOR INDUSTRIAL PRODUCTION IN US ⁽¹⁾								
	1998	1999	2000	2001	2002	2003	2004	2005
Durable Consumer goods	7.2	6.9	3.9	-5.8	4.7	2.3	4.3	3.7
Non Durable Consumer Goods	2.3	-0.1	1.7	0.4	-0.6	-1.7	3.1	1.7
Equipment and Supplies	8.1	4.8	5.9	-4.1	-0.6	0.4	5.2	4.0
Materials	5.2	5.7	5.3	-4.5	0.4	0.5	5.1	4.3
TOTAL US	5.6	4.3	4.7	-3.5	-0.6	0.2	4.9	4.0

(1) Bold figures are forecasts.
Source: Federal Reserve and IFL.
Date: July 19th, 2004



II.3 United States

In June, the U.S. CPI rose by 0.32% from the previous month's figure, much as expected: 0.29%, with the annual rate rising from 3.05% to 3.27%. All items performed as expected, except gas and electricity with a worse performance.

In June, the U.S. CPI rose by 0.32% from the previous month's figure, much as expected: 0.29% (see **Table II.3.1**), with the annual rate rising from 3.05% to 3.27%. All items performed as expected, except gas and electricity with a worse performance. As forecast, milk continued to rise although much more moderately, with its annual rate going from 22.82% to 27.22% (see **Graph II.3.2**).

Table II.3.1

OBSERVED VALUES AND FORECAST ON CPI IN US June 2004

CONSUMER PRICES INDEX (CPI)	Relative importance Dec. 2003	Annual Growth (T ¹ ₁₂) observed	Monthly Growth (T ¹ ₁)		Confidence Intervals at 80% level (+ -)
			observed (a)	forecasts (b)	
Food (1)	14.4	3.73	0.11	0.33	0.34
Energy (2)	7.1	17.00	3.63	2.56	1.06
Residual Inflation (3=2+1)	21.5	8.32	1.38	1.14	0.39
Non-food and non-energy goods (4)	22.3	-0.97	-0.57	-0.54	0.31
Less tobacco	21.4	-1.13	-0.61	-0.54	0.20
-Durable goods	11.3	-2.97	-0.26	-0.07	0.31
-Nondurable goods	11.0	0.91	-1.00	-1.02	0.45
-Non-durable goods less tobacco	10.2	0.75	-1.12	-1.05	0.30
Non-energy services (5)	56.3	3.02	0.26	0.29	0.15
-Services less owner's equivalent rent of primary residence (5-a)	32.9	3.37	0.32	0.35	0.24
(a) -Owner's equivalent rent of primary residence	23.4	2.56	0.18	0.20	0.13
Core Inflation (6=4+5)	78.5	1.84	0.05	0.05	0.15
Core inflation less owner's equivalent rent of primary residence (6-a)	55.2	1.58	0.00	-0.01	0.19
Core inflation less owner's equivalent rent of primary residence and tobacco	54.3	1.55	-0.01	0.00	0.17
Total inflation (7=6+3)	100.0	3.27	0.32	0.29	0.13
All items less owner's equivalent rent of primary residence (7-a)	76.6	3.50	0.36	0.32	0.14

Source: BLS & Universidad Carlos III Madrid

Data: July 20, 2004

As for core inflation, prices rose 0.05% exactly as forecast, with the annual rate going from 1.71% to 1.84%.

As for core inflation, prices rose 0.05% exactly as forecast, with the annual rate going from 1.71% to 1.84%. The fall registered in non-energy manufactured goods was 0.57%, similar to the 0.54% forecast, and the annual rate rose from a negative value of 1.06% to another negative value of 0.26%. On the other hand, service prices rose by 0.26%, much as expected (0.29%), with the annual rate increasing from 2.91% to 3.02%. Core inflation, not including owner's equivalent rent of primary residence and tobacco, and therefore comparable with the underlying rate in Europe excluding food, decreased by 0.01%, exactly as forecast, with the annual rate growing from 1.45% to 1.55%.



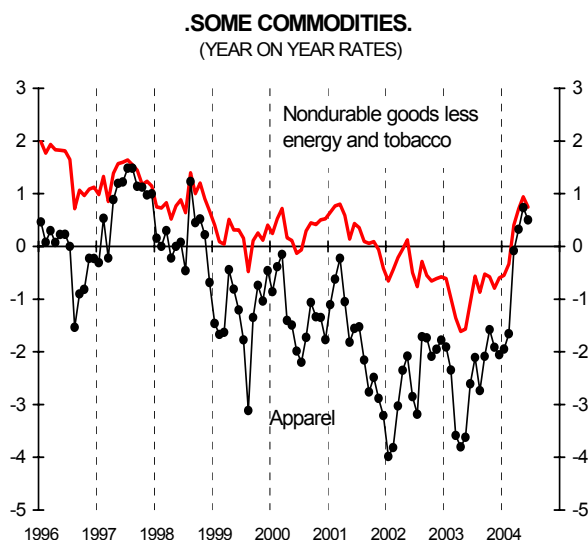
By components, the index for commodities less food and energy without tobacco decreased by 0.61% instead of the 0.54% expected, with the annual rate going from a negative value of 1.18% to another negative value of 1.13%. Non-durable goods prices, excluding the index for tobacco, decreased by 1.12%, instead of the 1.05% expected, with the annual rate going from 0.94% to 0.75%. Regarding non-durable goods, the annual rate of the apparel index went from 0.73% to 0.50% (see Graph II.3.1). And the index for tobacco increased by 0.53% as opposed to the decrease forecast of 0.67%, with the annual rate going from 1.70% to 2.70%. Durable goods prices decreased by 0.26% as opposed to the forecast 0.07%, with the annual rate going from -3.12% to 2.97%. With regards to durable goods, the annual rate of the new car index went from the previous month's -0.51% to 0.07%.

The index for services excluding owner's equivalent rent of primary residence shows an increase of 0.32%, similar to the 0.35% forecast, with the annual rate going from 3.31% to 3.37%. The index for owner's equivalent rent of primary residence increased by 0.18%, similar to the 0.20% forecast, with the annual rate going from 2.37% to 2.56% (see Graph II.3.4).

The difference between the index for services (excluding the index for owner's equivalent rent of primary residence) and the index for commodities less food and energy (excluding tobacco prices) remains at the 4.5 points registered last month.

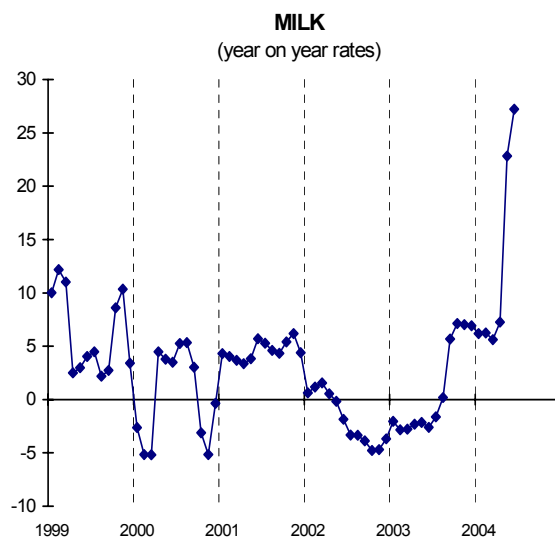
Residual inflation increased by 1.38%, more than expected: 1.14%, with the annual rate rising from 7.82% to 8.32%. By components, food prices have increased by 0.11%, less than expected: 0.33%, due to the price of fruit, with the annual rate going from 4.08% to 3.73%. The index for energy performed worse than expected, with an increase of 3.63% as opposed to the forecast 2.56%. Its annual rate has gone from 15.00% to 17.00%. It performed particularly badly in gas and electricity prices, with increases of 3.99% and 7.17%, respectively, compared to the forecast 0.42% and 6.18%.

Graph II.3.1



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

Graph II.3.2



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

The general index forecast for July is a 0.01% increase, with the annual rate falling from 3.27% to 3.16%. This slight reduction in the annual rate is explained by the energy index

The general index forecast for **July** is a 0.01% increase, with the annual rate falling from 3.27% to 3.16%. This slight reduction in the annual rate is explained by the energy index. For core inflation, we forecast a 0.13% increase, with its annual rate growing slightly from 1.84% to 1.89%.

By components, the expected increase in the index for services is 0.43%, 0.29% for the index for owner's equivalent rent of primary residence and 0.52% for the rest. The annual rate of the index for owner's equivalent rent of primary residence will increase to 2.62%. The year-on-year rate for the index for all other services, on the whole, will increase slightly from 3.37% to 3.39%.



For core inflation, we forecast a 0.13% increase, with its annual rate growing slightly from 1.84% to 1.89%

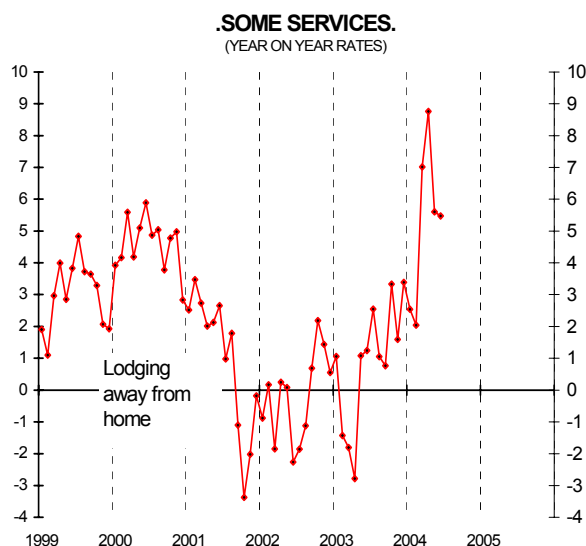
For 2004 and 2005, we forecast mean total annual inflation rates of 2.7% and 2.2%, respectively, which means that we increase last month's forecast for 2004 by one tenth and maintain the forecast for 2005. The higher rate forecast for 2004 is due solely to the worse than expected evolution of energy prices.

Taking commodities less food and energy into consideration, the expected decrease is 0.65%, with the annual rate going from -0.97% to -1.00%. Excluding the index for tobacco, the predicted decrease is 0.69%, which would leave the year-on-year rate at -1.12%, as opposed to last month's -1.13%. Durable goods prices are expected to decrease 0.24%, leaving the annual rate at -2.70%. Non-durable goods prices are forecast to decrease -1.06%, bringing the annual rate from 0.91% to 0.55%. Within the index of non-durable goods, tobacco prices are predicted to increase by 0.58%, which would leave the year-on-year rate at 2.06%.

The expected decrease in residual inflation is 0.42%, which would leave the year-on-year rate at 7.72%, as opposed to last month's 8.32%. With regards to residual inflation, the expected increase for the food index is 0.28%. Energy prices are expected to decrease by 1.61%, which would leave the year-on-year rate at 14.78%, as opposed to last month's 17.00%.

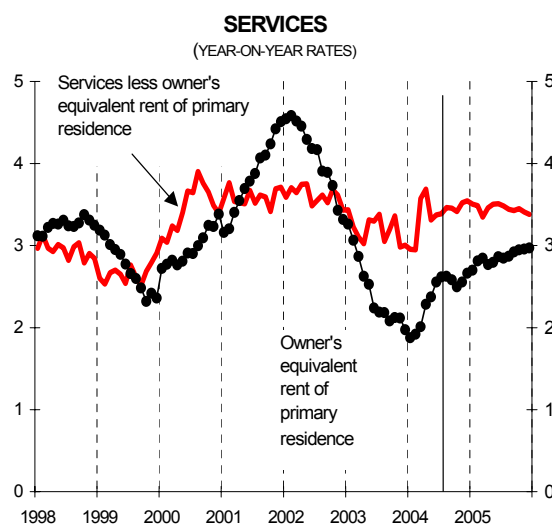
For **2004** and **2005**, we forecast mean total annual inflation rates of 2.7% and 2.2%, respectively, which means that we increase last month's forecast for 2004 by one tenth and maintain the forecast for 2005. The higher rate forecast for 2004 is due solely to the worse than expected evolution of energy prices (see **Graph II.3.6**).

Graph II.3.3



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

Graph II.3.4



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

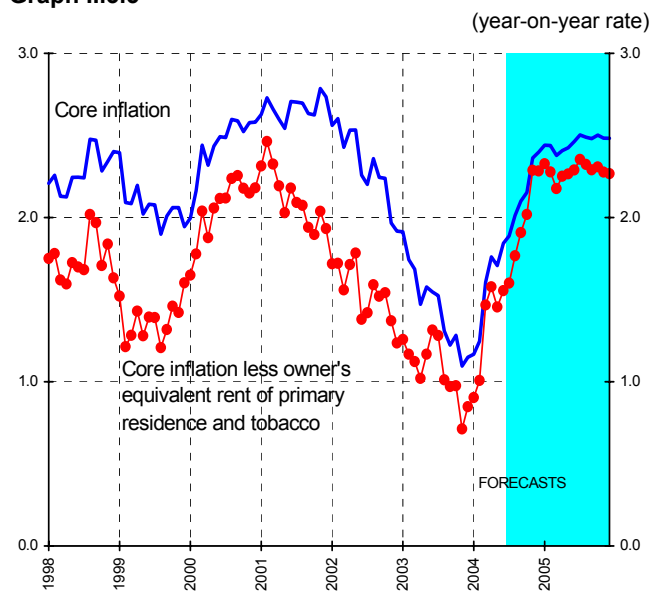
During the first few months of the year core inflation forecasts were constantly corrected upwards, but the May and June figures were exactly as predicted in April

During the first few months of the year core inflation forecasts were constantly corrected upwards, but the May and June figures were exactly as predicted in April. We expect the annual core rate to grow rapidly this year from today's 1.84% to the 2.40% forecast for December. It should then become stable at a somewhat higher level throughout 2005. This forecast is the same as the one presented in last month's report (see **Graph II.3.5**).

In 2004, when we add food and energy prices to this context of rapid core inflation growth, this generates a general CPI annual mean growth rate of around 2.7%, with the lowest level in September (2.8%) and the highest in December (3.3%). This is explained by the evolution of energy prices.

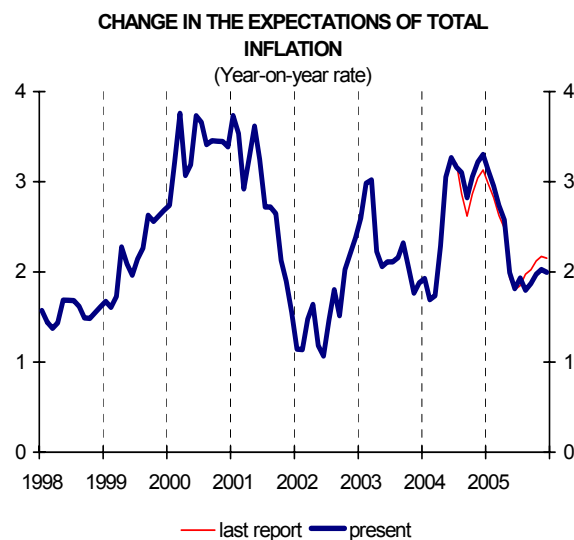


Graph II.3.5



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

Graph II.3.6



Source: Universidad C.III Madrid & BLS / Date: July 20, 2004

Table II.3.2

AVERAGE ANNUAL RATE OF GROWTH IN US (*)

CONSUMER PRICES INDEX (CPI)	2000	2001	2002	2003	2004 (forecasts)	2005 (forecasts)
Food (1)	2.3	3.1	1.8	2.1	3.6	2.9
Energy (2)	16.9	3.8	-5.9	12.2	10.2	-1.2
Residual Inflation (3=2+1)	6.8	3.3	-0.8	5.3	5.9	1.4
Non-food and non-energy goods (4)	0.5	0.3	-1.1	-2.0	-0.9	0.5
Less tobacco	-0.1	-0.2	-1.5	-2.1	-1.0	0.4
-Durable goods	-0.5	-0.6	-2.6	-3.2	-2.3	0.6
-Nondurable goods	1.4	1.1	0.4	-0.7	0.5	0.3
Non-energy services (5)	3.3	3.7	3.8	2.9	3.0	3.2
-Services less owner's equivalent rent of primary residence (5-a)	3.5	3.6	3.6	3.2	3.4	3.5
-Owner's equivalent rent of primary residence (a)	3.0	3.8	4.1	2.4	2.4	2.9
Core Inflation (6=4+5)	2.4	2.7	2.3	1.5	1.9	2.5
Core inflation less owner's equivalent rent of primary residence (6-a)	2.2	2.3	1.7	1.1	1.7	2.3
Core inflation less owner's equivalent rent of primary residence and tobacco	2.1	2.1	1.5	1.1	1.7	2.3
Total inflation (7=6+3)	3.4	2.8	1.6	2.3	2.7	2.2
All items less owner's equivalent rent of primary residence (7-a)	3.5	2.6	1.0	2.2	2.8	2.0

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

Source: BLS & Universidad Carlos III Madrid

Data: July 20, 2004



II.4 Spain

The CPI for June 2004 in Spain showed a monthly rate of 0.16% with an annual rate of 3.50%.

The consumer price index in June 2004 in the Spanish economy showed a monthly rate of 0.16%, higher than our predicted 0.09%. The annual rate increased to 3.5%, compared to the 3.4% registered in May.

Core inflation, calculated on the basis of the IPSEBENE index, registered an annual rate of 2.82% in June. **Residual inflation** (ANE and ENE) was 6.76% in June, 2004.

Residual inflation registered a downward innovation and core inflation increased

The observed monthly rate of core inflation (0.24%) was higher than our forecast 0.15%. In its components, there was an increase in non-energy industrial goods, in processed food and in services. In residual inflation, there was a decrease due to the energy component.

To analyse this in greater detail, please refer to tables II.4.1 and II.4.2. Table II.4.1 shows the breakdown used in this Bulletin to study inflation behaviour (there is a more detailed version in table A1A at the end of the document) and table II.4.2 summarises prediction errors made for different components.

Table II.4.1				
SPANISH CPI DISAGGREGATION (*)				
1.	Processed Foods CPI	AE (17.17%)	Trend Inflation (1+2+3) IPSEBENE (82.28%)	CPI (100%)
2.	Non Energy Commodities CPI	MAN (30.05%)		
3.	Non Energy Services CPI (excluding Tourism)	SERV (35.05%)		
4.	Non Processed Foods CPI	ANE (8.60%)		
5.	Energy CPI	ENE (9.12%)		
(*) More detailed information can be found in table A1 in Appendix.				

Source: IFL & UC3M

Table II.4.2 OBSERVED VALUES AND FORECASTS ON CONSUMER PRICE FIGURES IN SPAIN			
Consumer Price Index (CPI)	Current growth June 04	Forecast	Confidence Intervals ^(*)
(1) AE (17,17%)	0.38	0.25	± 0.18%
(2) MAN (30,05%)	-0.05	-0.15	± 0.16%
(3) SER (35,05%)	0.43	0.34	± 0.17%
IPSEBENE [1+2+3] (82,28%)	0.24	0.15	
IPSEBENE-X-T (77,21%)	0.13	0.09	± 0.13%
(5) ANE (8,60%)	-0.48	-0.51	± 1.09%
(6) ENE (9,12%)	-0.02	0.06	
R [5+6] (17.72%)	-0.24	-0.21	± 0.22%
IPC (100%)	0.16	0.09	± 0.15%
*) At 80% confidence level.			

Source: INE, IFL & UC3M Date: July 13, 2004

The forecast for mean growth in processed food prices is 3.6% for 2004 and 3.1% for 2005

Inflation in **processed food**, AE, registered a monthly rate of 0.38%, higher than the 0.25% forecast. The annual rate increased to 4.0% compared with the 3.7% observed in May 2004. This more inflationist performance was due to the increase in tobacco prices, with a monthly rate of 0.98% instead of the forecast zero rate. The monthly rate of



inflation in oils and fats moderated its growth compared with the previous month, but the annual rate remains high at 19.38%. The mean growth expected in processed food is 3.6% in 2004 and 3.1% in 2005, higher than the mean rate of 3.0% observed in 2003. The prices of processed foods are subject to offers leading to a more erratic seasonal profile.

The offers picked up by the INE lead to a more erratic evolution of trend inflation in food.

Prices of **non-energy industrial goods**, MAN registered a negative monthly rate of 0.05%, higher than our prediction of a negative value of 0.15%. The annual rate registered in June was 1.0%, higher than the 0.9% registered in May. The main upwards innovation in MAN components in Spain was observed in motor vehicles, with a monthly rate of 0.39% instead of the forecast 0.1%. In the euro zone, the annual MAN rate was 0.8% for the second consecutive month. Therefore, in June 2004, the inflation differential in the annual rate of inflation in non-energy industrial goods between Spain and the EMU was again one tenth. By the end of the year, we forecast that the annual rate of inflation in manufactured goods in Spain will be greater than in the EMU, and that the differential will be around half a percentage point (see comparative tables in section I.8). The annual rates of growth in apparel and footwear were 1.91% and 2.30%, respectively, in June. These goods are the most related to foreign trade and if there is no corresponding increase in the quality of these products, as there is in other European countries, the Spanish economy will suffer a loss of competitiveness in relation to Europe, which will translate to lower economic growth. The average annual rate in non-energy industrial goods prices was 2.0% in 2003 and the predictions are 0.9% in 2004, and 1.3% in 2005.

The differential between annual inflation for industrial goods in Spain and the EMU for the end of 2004 is forecast at less than 0.5%.

Table II.4.3 shows a summary of average annual predictions for the different components that make up core and residual inflation (more detailed information may be found in tables A7A and A7B in the appendix).

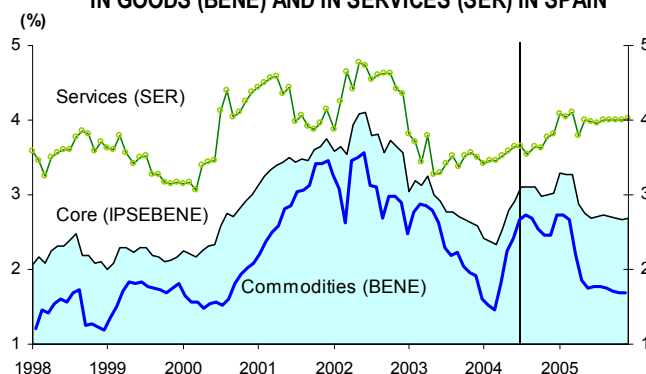
Table II.4.3								
SPANISH AVERAGE RATES OF GROWTH								
	1998	1999	2000	2001	2002	2003	Forecasts	
							2004	2005
Residual Inflation	0.4	2.8	6.7	3.7	2.6	3.6	4.5	3.1
Fats	-11.1	15.0	-7.6	-7.3	15.2	3.5	16.2	9.8
Tobacco	7.9	4.3	2.5	4.9	7.4	3.8	5.7	2.5
Tourism	15.4	7.2	12.3	7.1	8.7	3.1	2.5	6.7
Non Processed Foods	2.1	1.2	4.2	8.7	5.8	6.0	5.2	4.9
Energy	-3.8	3.2	13.3	-1.0	-0.2	1.4	3.9	1.4
Core Inflation	2.2	2.2	2.5	3.4	3.7	2.9	2.7	2.8
BENE-X	1.6	1.5	1.9	3.1	2.6	2.3	1.7	1.8
Processed Food excluding fats and tobacco	1.4	0.8	1.4	4.1	3.1	2.8	2.6	2.8
Non-energy industrial goods	1.5	1.5	2.1	2.6	2.5	2.0	0.9	1.3
SERV-T	3.3	3.3	3.5	4.1	4.3	3.5	3.6	3.9
CPI Inflation	1.8	2.3	3.4	3.6	3.1	3.0	3.0	2.9

(*) More detailed information can be found in tables A6A and A6B in Appendix.

Source: INE, IFL & UC3M / Date: July 21 / 2004



Graph II.4.1
**AVERAGE RATES OF GROWTH OF CPI INFLATION
IN GOODS (BENE) AND IN SERVICES (SER) IN SPAIN**



Source: INE, IFL & UC3M / Date: July 21 / 2004

The worrisome evolution of service prices leads to a greater inflation differential between industrial goods and services, 2.8 points in June 2004.

With regards to the **services** sector (SER), it registered a monthly rate of inflation of 0.43%, higher than our forecast, 0.34%. Even so, the evolution of service prices is especially worrisome in most of the components, transport, restaurants, medicine, housing, teaching and household services, which show annual rates of around 4% or more, whereas the annual rate for universities is 5.05%. The inflation differential between the annual rates of non-energy industrial goods market and the services market, was 2.8 percentage points in June, greater than the point registered in June last year. This differential is also greater than the 1.8 points observed in June 2004 in the EMU. Service prices in June registered an annual rate of 3.8%, which compares badly with the 2.6% observed in the euro zone. We expect the differential in Spain between the annual SER and MAN rates to remain above two percentage points in the remaining months of 2004 and the whole of 2005. Mean growth in service prices is forecast at 3.8% in 2004 and 4.0% in 2005, compared to the 3.7% observed in 2003.

The mean annual rate of core inflation will be 2.7% in 2004 and 2.8% in 2005.

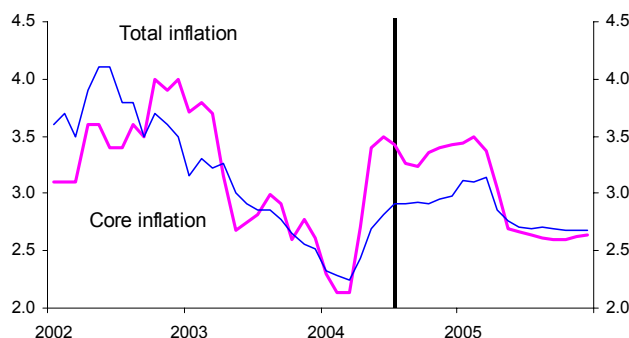
With the aforementioned innovations in the goods and the services market, **core inflation** in June, calculated from the IPSEBENE index, was 2.82%. It is predicted that the average rate of growth of core inflation will be 2.7% in 2004, rising to 2.8% in 2005, compared to the 2.9% observed in 2003.

The evolution of total inflation in Spain will be marked in 2004 by the evolution of energy prices.

The prices which serve as a basis for calculating **residual inflation** (RES), have registered an upward innovation in non-processed food and a decrease in energy, which performed worse than expected with a negative monthly rate of 0.02% instead of the positive value of 0.06% forecast.

The crude oil market has recently worsened, so the forecast for mean growth of energy prices is now 3.9% in 2004 and 1.4% in 2005, compared to the 1.4% observed in 2003. As for the forecast for the mean annual rate of non-processed food, it is 5.2% in 2004 and 4.9% in 2005, after the 6.0% observed in 2003.

Graph II.4.2
ANNUAL RATES OF TOTAL AND CORE INFLATION IN SPAIN



Source: INE, IFL & UC3M / Date: July 21, 2004



The annual inflation forecast for July 2004 is 3.4%; the monthly rate will have a negative value of 0.7%.

As a result, the forecast for **total inflation** for July 2004 is a monthly negative value of 0.7% and annual growth of 3.4%, less than the 3.5% observed in June. Monthly core inflation will be a negative value of 0.9%, and trend inflation will be -1.1%. The mean inflation rate within the overall CPI is forecast at 3.0% in 2004 and 2.9% in 2005, after the 3.0% observed in 2003. The mean rate of core inflation will be 2.7% in 2004 and 2.8% in 2005, after the 2.9% observed in 2003.

We forecast an acceleration in general inflation, reaching rates of over 3% for the rest of 2004. This is basically due to the heavy increase in energy prices, the annual rate of which is expected to reach its highest value in October, 7.3%, following the 7.2% observed in June. This worse forecast for energy prices compared to the previous bulletin is due to the recent evolution of the Brent market, with the expected mean price in euros for 2004 increasing from 28.16 € to 28.94 € per barrel this month.

Table II.4.4 shows the average annual rates between 2000 and 2005 of the different sectors in the EMU and Spain, where the important differentials in industrial goods and services mentioned earlier can be observed.

Table II.4.4 HARMONIZED CPI ANNUAL GROWTH BY SECTORS IN THE EMU AND SPAIN 2000-2001-2002-2003-2004-2005							
		2000	2001	2002	2003	Forecasts	
						2004	2005
AE^(a)	EMU	1.1	2.9	3.0	3.3	3.7	2.9
	SPAIN	0.9	3.4	4.3	3.0	3.6	3.1
MAN	EMU	0.4	0.9	1.5	0.8	0.8	0.9
	SPAIN	2.1	2.6	2.5	2.0	0.9	1.3
BENE	EMU	0.6	1.5	1.9	1.5	1.6	1.4
	SPAIN	1.7	2.9	3.1	2.4	2.2	2.0
SERV	EMU	1.5	2.5	3.1	2.6	2.6	2.6
	SPAIN	3.7	4.2	4.6	3.7	3.8	4.0
IPSEBENE	EMU	1.0	1.9	2.5	2.0	2.1	2.0
	SPAIN	2.5	3.4	3.7	2.9	2.7	2.8
ANE	EMU	1.7	7.0	3.1	2.2	1.4	1.8
	SPAIN	4.2	8.7	5.8	6.0	5.2	4.9
ENE	EMU	13.0	2.3	-0.6	3.0	4.0	1.8
	SPAIN	13.3	-1.0	-0.2	1.4	3.9	1.4
RESIDUAL	EMU	7.5	4.4	1.1	2.6	2.7	1.8
	SPAIN	2.5	3.5	2.6	3.6	4.5	3.1
HICP CPI	EMU	2.1	2.3	2.3	2.1	2.2	1.9
	SPAIN	3.4	3.6	3.1	3.0	3.0	2.9

(a) Including tobacco prices

Source: INE, EURO

Date: July 21, 2004





THE CAPITALISM TO COME:

Juan Urrutia Elejalde
Professor of Economics

Junio 2004

CHAPTER II.3.: FRATERNITY: SCOPE, DIVERSITY AND CULTURAL RELATIVISM

II.3.0 Introduction

II.3.1. Fraternity and its scope

II.3.1.A. Creation and proliferation of "memes"

II.3.1.B. The Polis

II.3.2. Diversity and culture

II.3.2.A. Diversity

II.3.2.B. Cultural relativism.

Summary

SUMMARY

In the first part of this attempt to discover THE CAPITALISM TO COME, we discussed two notions, Identity and Fraternity which, together with Rebelliousness (which helped to characterise the optimal scientific strategy) form the plot of this chapter which completes the second part. Identity is a notion required to understand a type of rationality other than instrumental rationality which also, on the other hand, is in reality subject to the influence of ICTs which could well generate a kind of continuous movement of identity formation, destruction and reconstruction. Fraternity, however, was a polymorphic concept which, disguised as a desire to be together or other less plastic concepts, performed the important function of keeping a set of agents together to form a true community in which these ICTs helped to define different lifestyles. Finally, rebelliousness would be the best strategy on which to found scientific knowledge without which there is no sense in the society which will be hosting the capitalism system in the next few years in which important added value will be precisely derived from knowledge.



In this chapter, completing the second part, these three notions combine and become clearer both in themselves and in their relations with each other. Fraternity is studied in detail with its origin in Evolutive Game Theory and it also appears as the practice of contacts in which community members learn and the rule of thumb arising as a result of these contacts. These rules of thumb are what define the Identity of different subsets and it is the Rebelliousness of some individuals which initiates the contacts renewing admitted rules of thumb and changing them until they finally configure a certain optimum which can be said to make "sense".

Although these notions, especially when one attempts to consider them in a unified manner, may seem too basic to be useful for sketching the economic future, this is not the case. The three forceful ideas – new technologies, knowledge society and globalisation – the consequences of which on the basic institutions of capitalism we are attempting to discover, have a great deal to say in this chapter.

In the first place, I have emphasised that ICTs will contribute to the speed in which new potential memes arise, thus generating a kind of pressure cooker in which a possible, but impossible to predict, future is on the boil. In a situation like this, what is now called multiculturalism cannot be a stable social formation and what can be expected to prevail is a cultural pluralism that we could call crossbreeding. It seems clear that commercial strategies will have to be changing and led by those who are capable of recognising new trends before others do.

In the second place, I have attempted to consider the impact of the immigration that has become inevitable in globalisation due to industrial outsourcing and personal freedom of movement in increasingly large areas. This immigration poses the question of multiculturalism to which we have already referred. In spite of the fears arising in this context, the chapter shows that, due to the influence of ICTs and because knowledge is replacing superstition, these fears cannot contribute to the isolation of each culture and they will finally disappear under the pressure of the evidence of the advantages of crossbreeding. However, the heterogeneousness of the communities that we can expect poses the question of what the text calls the "progressive dilemma", a dilemma that aspires at the apparently impossible co-existence of the welfare state and diversity. In heterogeneous communities, it appears that there is less desire to publicly contribute to the provision of public assets than in homogeneous communities. In as much as ICTs and knowledge favour crossbreeding, the problem is a minor one; but it is worth calling attention to it in relation to the notion of diversity.

Indeed, diversity is a concept arising naturally from the way in which we have attempted to consider the scope of fraternity. We have underlined that diversity, in spite of the difficulty we have just mentioned, can be a source of "sense", transforming a fraternal society (with accepted rules of thumb) into a true Polis. But there is more to be said about it, because it is this diversity that incubates rebelliousness and rebelliousness is, in turn, the driving force behind knowledge. Those who experiment and finally lead us to overcome the cultural relativism of multiculturalism and move towards commonly accepted rules of thumb that nonetheless are not common to us all, are rebels. It is this conceptual pluralism which, to close the circle, will enrich knowledge.

II.3.0. INTRODUCTION

In the first two chapters of this second part I have attempted to outline the features of capitalism which are propitiated by factors such as globalisation and the knowledge society (together with the technologies making it possible), when they affect the new perspectives established by certain theoretical developments such as the three aforementioned interrelated revolutions: incentives, transaction costs and information. We have thus been able to examine, with a certain order, the new factors appearing on the horizon in relation to ownership (and how it is related to science and patronage) or information problems (such as transparency), or incomplete markets, and the corresponding uncertainty which, when transactions costs are not zero, is transformed by the emergence of new markets or the disappearance of others, as in the case of outsourcing or insourcing, for instance.



Up to now, however, I have been incapable of doing without methodological individualism, although, in the first part of this attempt at discovering the economic horizon, I have sketched a homo posteconomicus in whom the figures of the consumer, the producer and the intermediary converge and which, therefore, it is difficult to conceive outside a social environment which could and should be better defined than I have done so far. Although I approached the notion of fraternity in the third chapter of the first part as a quality of the human group making up the economic system, allowing me to approach problems such as community network architecture or the epistemic conditions of collective action, we also concluded that community forming, the nature of the links defining each community, the internal diversity compatible with its uniqueness and, in general, the scope of such a community, were issues requiring a more profound analysis, which I announced would be provided in this chapter.

In that chapter, we referred to fraternity (as something other than solidarity) providing possible alternative and complementary notions of the concept, and we presented cases (such as Schelling's segregation) in which we could refer to Social Economics, a way of intellectually approaching certain economic problems which do not necessarily start with the notion of market. We emphasised the emergence of different lifestyles characterised as "memes", and we applied this perspective, for instance, to future foreseeable forms of marketing, while we also attracted attention to the difficulty or impossibility of conceiving or observing a truly universal economy. The latter is the focal point of this chapter; what is the scope of fraternity, how does it grow or shrink, and how the "memes" of which it consists may evolve. To consider these problems, I will be making free and non-technical use of an article which intended to interpret Aristotelian ethics in terms of Evolutionary Game Theory¹

In the first section, I will explain how an evolutionary game can be understood as a factory of "memes" (or behavioural patterns voluntarily shared by each agent because they are shared by the rest) which can proliferate or rapidly mutate (thanks to ICTs) as we insinuated (and for the same reasons) when we referred to the notion of identity, a notion which will now be better defined. What is important in this section is that it provides us with the instruments required to recognise when there is a certain degree of stability in the formation and proliferation of "memes" enabling us to refer to the scope of the community defined as a set of stable rules of thumb which are not necessarily shared by all the members of the community. When communities may be heterogeneous, one evident problem is the provision of public goods. They have to be useful for those who want them based on some of their characteristics, but they may not be genuinely desired by other members of the community with other features in common. There are groups, for instance, desiring a certain religious practice (prayers in schools) and others who are radically opposed. For these and other general reasons, the scope of fraternity, or Polis, will be studied in depth in the second part of this section, emphasising the fact that its real correlate may grow or shrink according to the pressure brought to bear by the immigration inevitably associated to globalisation.

In the second section of this last chapter of the second part of THE CAPITALISM TO COME, we will be considering two related issues, one in each section. In the first, we will be contemplating the issue of diversity and its possible value in a Polis, an issue which cannot ignore current problems such as multiculturalism, cultural crossbreeding and cultural relativism which go far beyond the narrow notion of culture and are of undeniable economic importance. They will be studied in the last section of this chapter.

The reader may find that the introduction to this chapter is both too philosophical and too technical. This may be so, but I have two things to say in my defence. The first is that the technique (which comes from Game Theory) is an expedite way of clarifying philosophical issues. The second is that these issues are inevitable if we are to understand the environment in which capitalism will be operating. Moreover, and although this is not an important issue, this type of introduction does not hinder but rather helps to understand the implications of the three forces the potentiality of which I am attempting to track: the new information and communication technologies, knowledge as a decisive factor of society and globalisation.



II.3.1. FRATERNITY AND ITS SCOPE

Fraternity would not appear to be too attractive an issue for either theoretical or practical economists. This species – I am referring to economists in general – tends to use as primitive concepts individual agents only. Since it has travelled so far with so little baggage, it would be interesting to ask why it should bother with such a slippery issue as fraternity which, since it is not the same as solidarity, is neither obvious nor intuitively understood by practical economists. Indeed, theoretical economists are well prepared to analyse ideas such as freedom and equality which, whether or not they are preached by a set of individual agents, can be defined exclusively in terms of such a set. However, do economists have sufficient tools to analyse an idea like fraternity, which cannot be defined exclusively in terms of individual agents but is, however, predicated from the set that they form?

What I called Social Economics in the introduction to this chapter provides sufficient tools; but before we show how powerful they are, we should say add some precision however small to our subject. As a first example of fraternity, I will point to the assumption implicit in the Equivalence Theorem between the core of an economy and the set of equilibrium allocations of the same economy², according to which firm commitments are technically possible between members of any subset of the set of agents established as a coalition. This is a property of the set of individuals which, if it is in place, provides a cooperative basis for the notion of economic equilibrium. It is quite evident that this technical possibility of firm commitment must be related to a group's identity and the mutual trust which partly defines this identity as common to all its members.

It could naturally be objected that, in as much as the search for a non-cooperative basis for cooperation is a well-defined research strategy, there is no need to resort to an idea like fraternity. But it is also true that, for instance, it is difficult to imagine how, in the prisoner's dilemma we studied in chapter I.1. a dominated strategy (and, therefore, irrational) could be played without making use of some particular property of the set of individuals preventing its members from applying rational strategies but forcing them to apply what, in as much as they are used by all the members who would therefore improve their situation, we could call intelligent strategies.

As our second example, consider the dynamic signalling game with incomplete information presented by Gale and reproduced in chapter II.1. Rationality forces one of the players to imitate the other, and the latter to deceive the former. In these conditions, Gale's example shows how a fixed point may not be reached unless the set of strategies is limited to a set of stationary strategies. But why should agents be limited to the use of such a narrow set of strategies? My answer would be "Because of fraternity".

As our third and final example, let us consider a suggestion made by Aumann to contemplate rationality, for certain purposes, solely as mutual knowledge of the order N , instead of common knowledge. This suggestion could justify the use of some strategies that I have classified as intelligent and which would never be used if rationality was an object of common knowledge. But why should people have to assign a positive probability to the irrational actions of their opponents? Once again, my answer would be "Because of fraternity"³.

I now intend to define this concept of fraternity based on an article by Domenech⁴ in which he claims that the concept of fraternity (i) never had any philosophical depth, (ii) never had the least importance for the development of moral philosophy, and (iii) never had an impact on politics. Therefore, his attempts – apparently for the first time – (i) to produce a "proteic" philosophical concept of fraternity, (ii) show its importance for the establishment of freedom and equality, and (iii) emphasise its implications for some contemporary political problems such as xenophobia, poverty, nationalism, fundamentalism, ecology and so on, which are inevitably of central importance for capitalism in the opening stages of the 21st century.



To do this, Doménech offers a historic panorama which, for the purposes of my argument, is summarised at the top of the enclosed table. The types of fraternity are organised according to four classifying axes: the general concept which groups together and identifies the set of individuals; the force binding the members of the set together; the property relevant to the set and generated by the force, and the political version of this last property. For my own purposes I have added the lower rows on the table. An "archaeological study" of Economics⁵ would not only reveal the enormous impact of Christian fraternity, with which methodological individualism is related, but also the touch of sociological holism typical of agnostic fraternity to which it has always been associated. But what I would like to underline here is the fact that most concepts of fraternity are not universal in scope, and that a singular aspect of fraternity is that it is a dynamic construct associated to aspects of the Austrian school.

In the first section I intend to define an alternative concept to the one provided by Domenech, based on evolutionary game theory. As we shall see, the patterns of conduct related to fraternity may not be common and this makes it difficult to provide public goods. I shall be examining these difficulties in the second section when I attempt to define the notion of Polis or, for our purposes, the scope of fraternity, a notion with a correlate capable of growing or shrinking.

	CLASSICAL GREECE		PRE-CLASSICAL GREECE	
	Platonic fraternity	Aristotelian fratern	Christian fraternity	Agnostic fraternity
General concept	People	Cultivation of "memes"	Humanity	Society
Force	Eros	Eros	Agape (Caritas)	"Phillia"
Relevant Property	Primitive unit	Fraternity (Teleia Phillia)	Solidarity	Sociability
Political Version	Mega-State	Polis	Cosmopolis	State
Methodological Position	Static	Dynamic	Static	Static
Approach	Restricted	Restricted	Universal	Restricted (?)
Impact on the economy.	none	negligible	considerable	some (?)

II.3.1.A. The creation and proliferation of "memes"

With a view to approaching a conceptually rich notion of fraternity, I will be contemplating the first three basic axes appearing in the above table, reserving the fourth for the following section. I will start with the notion of Eros. According to DOMÉNECH (1993, p. 52), "Eros is man's aspiration to the supreme good" and this desire or emotion is materialised in a willingness to seek areté (virtue). For this search to be successful, according to Doménech, man must be "capable of effectively living a human life because he is, up to a point, capable of choosing his own self and consequently modelling himself". The search for virtue, therefore, becomes a self-fulfilment process, so that if it is completed, we say than an individual has reached his identity, although, since he is



socially conditioned, it may not be exactly what he desired. This notion of identity has been used earlier in relation to the presentation of a type of rationality, expressive rationality for instance, which should not be mistaken for instrumental rationality. We introduced this notion of identity in chapter I.1 as the set of common attributes shared by a sub-set of the set of individual agents. We must now explain that the identity reached by an individual by means of a social process of self-fulfilment must be understood as the set of behavioural patterns which define what Aristotle would call his character.

Assuming that character is an issue of behavioural patterns, we have to distinguish between individual (rules of thumb) and social behavioural patterns, of which moral patterns are an interesting sub-set. Lledó makes this distinction very clearly when he separately considers *hexis* and *êthos*. The best way to illustrate this is with a quotation from his work. Lledó starts by saying "Subject to the improvisation of existence, man has to construct a *hexis* in himself, a memory based on honest or intelligent exercise, involving a certain degree of solidity in the constant flow of choices and actions" (Lledó 1994, p.68). On the other hand, *êthos* is a sort of collective *hexis*: "Ethos arises slowly from the fabric of life. And this *êthos* becomes solid due to a repetition of acts derived from historic passions, reflections and collective interests" (1994, p. 199). According to Lledó, both *hexis* and *êthos* can only be interpreted within a non-deterministic real-time (historic) process. These constructs appear to be a necessary condition for human life. Referring to *ethos* again, Lledó says that "*êthos* has solidified forms of human behaviour and created, above the level of instincts and animal life, a superstructure which is the plasma in which life develops" (1994, p.163). Finally, he concludes that *êthos* is a human creation which, as such, can only be contemplated in terms of sense: "Ethos is not only formed in mere repetition, in the randomness with which life offers its alternatives, but in organised activity humanised by the presence of a master who converts temporality into maturity. Living in history, separating the good from the distant universe of ideas, the being of which is only the being of language, also implies putting it in the hands of mankind and so determining its sense" (Lledó 1994, p.68).

I will now explain the general concept of community with which fraternity is defined. We must first remember a fundamental notion. Dawkins has used the word *meme* to describe any systematic, more or less complex, procedure transforming stimuli into reactions, and Susan Blackmore has constructed *memetics* as an independent field of knowledge. A trivial example of *meme* is found in the stationary strategies of Gale's example, which was explained in chapter II.1. *Hexis* and *êthos*, as we have just described them, are also *memes*, the complexity of which is not pre-judged. Even things as complex as any social convention, language or even a culture, can be understood as *memes* in the sense we are using it here. As a general concept of the set of agents, I now suggest *nursery* or, better still, the cultivation of *memes*. Strictly speaking, this concept refers to the evolutionary process resulting in the appearance of the equilibrium behavioural patterns forming *memes*. However, before going on to study this process, we will present the set of potential *memes* and other concepts which we will find useful.

We have to begin by carefully specifying the static game that we think takes place amongst community members at each moment in time. Each individual in this community has several strategies at his disposal. For example, in what I will call the trivial case, a community consists of two players, 1 and 2, in which each of them has a set of strategies from which to choose. The pay-off function of the static game played by the members of the community at each moment specifies what each individual wins according to the strategies followed by them both. In the trivial case, it specifies what each of the individuals wins according to each one's strategy. For this static game, we can now conceive two notions of equilibrium relative to a given pay-off function f .

The first type of equilibrium is very well known. We can say that a set of strategies is a (weak) Nash equilibrium relating to f (NE (f)) if the strategy followed by each player is the best response (weak) to the strategies followed by the rest. In other words, in this equilibrium, each player, playing an equilibrium strategy, wins at least as much as he would win with any other, given the strategies of the others. In the trivial



case, each of them wins at least as much, given what the other does, as he would win with any other strategy.

The second notion of equilibrium, represented by ESS (f) has a somewhat dynamic flavour. We call it equilibrium in evolutionary stable strategies and it is intended to represent a set of strategies, one for each individual, such that they are either the (strong) best response to the strategies of others, in which case it is a (strong) Nash equilibrium, or, if this is not the case, there is no other strategy profile complying with the definition. The dynamic interpretation is very easy to understand in the trivial case. A couple of mutant strategies will invade the population, or in other words, they will be adopted by both players if they are the best weak response for each of them, not only to current strategies but also to mutant strategies. Consequently, an equilibrium in evolutionarily stable strategies relating to f -ESS (f)- is a strategy profile that cannot be invaded by any group of mutant strategies.

We are now in a position to explain what cultivation of memes represents as a general concept applicable to the community to which we are referring. At each stage of the game, the players form random pairs and each pair plays the static game we have described, once or several times. At the end of this stage, each player will have learned something about the distribution of strategies and the relative effectiveness of each one, and will therefore change his strategy. In the aggregate, the frequency with which each strategy is used will vary in a way that guarantees that the "best" strategies grow no less than the "worst". We will assume that this frequency dynamics exhibits limited rationality and a certain inertia, two typical characteristics of evolutionary games. This cultivation of memes compatible with f, Ff can reach two types of equilibrium in relation to Ff. The first is a fixed point of the "mapping" reflecting the dynamic process. The second is one of those fixed points, which is also locally stable. The first type is represented by FP(Fj) (fixed point of F f) and the second by EE(Ff) (evolutionary equilibrium of Ff). Although the first inclusion does not always occur, Friedman has shown that $ESS(f) \subset \subset EE(Ff) \subset \subset NE(f) \subset \subset FP(Fj)$.

The cultivation of memes can take us to an EE (Ff) in which patterns of conduct structure the set of agents, giving it the property that we call fraternity. The behavioural patterns that define fraternity will thus depend on the initial conditions and the basins of attraction of each EE(Fj). In any one of these evolutionary equilibria of Fj, we find that the pattern of conduct followed by an individual (hexis) is the one that others expect him to follow and that the individual wishes to follow in the understanding that the others follow the pattern prescribed by the equilibrium. It is obvious that a set of individual patterns making up a collective ethos does not have to be symmetrical but are, indeed, self-enforcing. Well, Teleia Phillia as the relevant characteristic of the Aristotelian friendship that we call fraternity is no more than an evolutionary equilibrium of Ff which is also symmetrical. This corresponds exactly to what Lewis calls a convention: a pattern of behaviour that everyone expects the rest to follow and which they all wish to follow if the rest do (a clearly self-enforcing notion).

The famous Axelrod's Tournament transparently illustrates the nature of the Teleia Phillia, as we have explained it here. We end this section by representing it as Young and Foster do. Consider a case in which there is only one population and a set of primary strategies limited to two, either L or R, with neither of them representing something specific. At each moment in time, the individuals in the population considered are paired together to repeatedly play the following static game corresponding to the prisoner's dilemma to which we referred in chapter I.1.

	L	R
L	3.3	0.5
R	5.0	1.1



Each pair plays the game $1/p$ times, where p is the probability of each time being the last. In this static, but repeated game, we can identify three strategies related to time: always play L (C), always play R (D) and play L until the opponents plays R and then always play R(T). (C,D,T) is therefore the vector of temporal strategies which can be adopted in the repeated game.

Given the structure of this game, we can construct the following matrix A, where each value shows what the row individual obtains in each case:

	C	D	T
C	$3/p$	0	$3/P$
D	$5/p$	$1/p$	$4 + 1/p$
T	$3/p$	$(1/p) - 1$	$3/p$

To understand how each entry is calculated, consider (D, T), for instance. In the initial period, the row individual playing R obtains 5 and the column individual, who plays L, obtains 0. In the $[(1/p) - 1]$ remaining periods, both players win 1. Therefore, the row individual obtains a total of $4 + 1/p$ and the column individual obtains $[(1/p) - 1]$ as observed in matrix A.

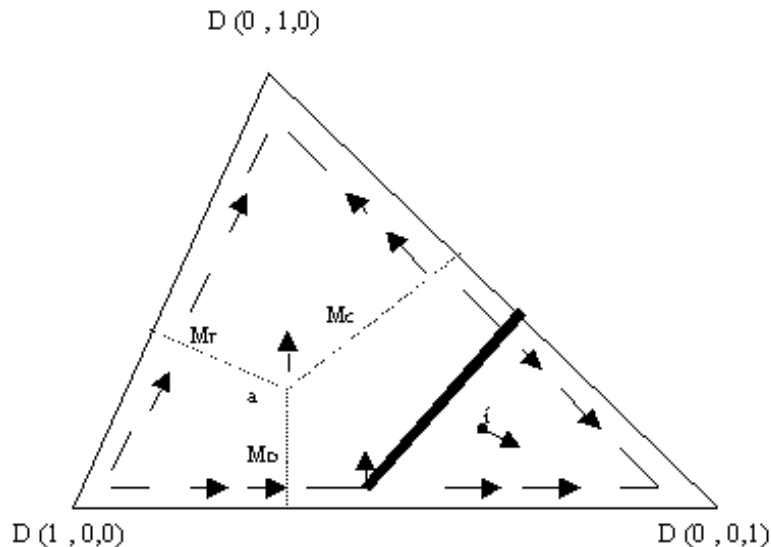
Now let's go to dynamics. Let $M(t) = [M_C(t), M_D(t), M_T(t)]$ be the vector of the number of individuals applying each temporal strategy. Let $m(t) = [m_C(t), m_D(t), m_T(t)]$ be the corresponding frequency vector. Therefore, $A_i M(t)$ is the expected pay-off for whoever plays $i = C, D, T$ in t . Consequently, the replicating dynamic, compatible with A, RA, can be expressed as follows:

$$m_i(t+1) = \frac{m_i(t) A_i m(t)}{(m(t) + A m(t))},$$

meaning that the rate of growth of the frequency of a strategy is proportional to its effectiveness in relation to the average population.

If no strategy disappears, the dynamic behaviour of this evolutionary game can be described in the internal triangle of the following figure, showing the frequencies at each point, the dynamic and the basins of attraction. Each of the vertices corresponds to a situation in which the entire population coincides on the corresponding strategy. In vertex D, for instance, the (0, 1, 0) vector means that no-one plays C and no-one plays T. Each internal point of the triangle corresponds to a certain frequency vector (m_C, m_D, m_T) which is indicated by the vertical distances to each of the axes as shown on the figure for point α . The arrows included show the dynamic evolution of the frequencies according to RA and we see how the triangle is divided into two basins of attraction by a thick straight line. Above this line, the population gets closer to D but never to C (in fact if we were at C any small shock could inevitably lead us to D). Below the thick line, the population evolves towards T. If we were to play including the external triangle, we would be permitting the extinction of one or other of the strategies.





Let us now consider what happens in this specific evolutionary game. In this case, the inclusions proven by Friedman are indeed valid, including the first. Remembering that A is the pay-off matrix and RA is the replicating dynamic compatible with this pay-off matrix, we have that

$$ESS(A) \subset EE(RA) \subset NE(A) \subset FP(RA).$$

where, as we have explained earlier, we consider that the elements of $EE(RA)$ are the strategy vectors in which we are interested as possible memes. To begin with, notice that in matrix A , and therefore in the evolutionary game, there is no non-symmetrical meme (either D , C or T). Indeed, none of them would belong to $NE(A)$, and none of them could then belong to $EE(RA)$. Now consider three symmetrical patterns of conduct, starting with (C,C) . It does not belong to $NE(A)$ and will therefore not belong to $ESS(A)$ either and, in any case, it will be easily invaded by D . Consequently, $(C,C) \notin EE(RA)$ cannot be an equilibrium pattern of conduct. Now consider (D,D) . It is included in $NE(A)$ and also in $ESS(A)$, since neither C nor T can invade it. Therefore, $(D,D) \in EE(RA)$. For similar reasons, we will conclude that $(T,T) \notin EE(RA)$.

The appearance of one of these two equilibrium memes will depend on the initial conditions of the game. If these conditions are those of point β in the figure, the system will lead to (T,T) , and everyone will always play tit for tat.

ICTs will accelerate up to paroxysm what I have called the cultivation of memes. Since Dawkins and Blackmore introduced and examined the social correlate of biological genes, it has been very clear that social time moves much faster than biological time. But what we have to emphasise now is that ICTs can increase the velocity of social time enormously. Indeed, nearly every day we observe the appearance of new potential memes and their subsequent consolidation or disappearance. In fact, what would be most reasonable would be to extend the notion of fraternity from the existence and application of shared patterns of behaviour to the meme cultivation process itself. Fraternity, what keeps a community aware of its own existence together, is the continuous experiencing of new hexis which would appear to point to new *êthos* which are often not materialised because they are overcome by the apparent emergence of experimentation with new potential memes. If when we examined identity as a new notion to be used in economic theory we explained the suspicion that ICTs would end up making it unstable, we now strengthen that suspicion.



With this explanation, possibly too technical in spite of the fact that we spent a great deal of time in chapter 1 of the first part referring to these formalisms, we come to the end of this section by saying that, as we have indicated at the end, a community at any given time is structured by individual patterns of behaviour which are not shared by all the members of the community. This leads us to the changing scope of the community, in other words to the Polis, and to the practical problems associated to the provision of public goods in heterogeneous communities.

II.3.1.B The Polis

We have just seen that fraternity is a notion that can be characterised by patterns of behaviour followed in a stable way by individuals. In a broad sense, fraternity does not require all the members of a community to follow the same equilibrium pattern; it is even reasonable for them to follow different patterns according to recognisable characteristics. For example, in a given community women go through doors before men. Once a pattern like this is established it becomes self-enforcing and can become part of the fraternity that defines the community. Strictly speaking, however, fraternity requires patterns of conduct to be the same for all the agents: everyone has to drive on the right-hand side of the road, whether they are men or women, and vehicles coming from the right always have right of way.

The scope of fraternity is not characterised, therefore, by equal patterns of conduct for all members. Its scope is characterised by the set of individuals who can reasonably play the evolutionary game which gives rise to the patterns of behaviour forming an evolutionarily stable equilibrium. This scope is called Polis (or "city").

A Polis is the natural scope, or territory, of fraternity. Both notions appear to be closely related. On the one hand, "friendship also appears to bind cities together"⁷ meaning that fraternity is what keeps a city (Polis) united. On the other hand, the principal characteristic of Polis is that it is not necessary to legally regulate the relations between its members and this is precisely because of fraternity and its associated ethical rules. However, we now have to consider one distinctive aspect of Polis.

In my interpretation, Polis is equal to fraternity plus sense. What economists understand by sense is well known. Let's go back to Axelrod's tournament, assuming that (D,D) emerges as the equilibrium behavioural pattern. I previously claimed that this is compatible with fraternity, but does this make sense? It will make none if we notice that (T,T) makes everyone a winner. This tells us that sense can be interpreted as a Pareto optimum; but there are also other possible notions of sense such as, for example, risk minimisation, which can sustain one or another evolutionary equilibrium as fraternal. Since these equilibria can be heterogeneous, we could legitimately arrive at the second question: how can fraternity appear between "us" and "them"? Since Polis is fraternity plus sense, we can now generalise and reformulate this question as follows: How can the scope of the Polis be enlarged?

This is not an empty problem, since Polis cannot be a universal concept. Polis must be considered as consisting of those individuals who, after a certain process, have reached patterns of behaviour permitting the attainment of an Evolutionary Equilibrium. We can hardly consider that this is now a universal phenomenon in spite of globalisation.

I continue by emphasising that, on this "local" level, there are no guarantees that sense (or collective good) can be achieved. It depends on many things, and particularly on the nature of the static game being played in the dynamic process. In many static games, the attainment of an idea of sense would require diversity and I will spend the first part of the following section studying this notion and its importance for attaining sense. To end this one, I will now present a few remarks on a central problem in politics for the capitalism to come. It is what David Goodhart, in an article in The Guardian (24-II-04) called the "progressive dilemma". To explain it, I quote a remark made by David Willets, a



conservative politician, at a round table on the reform of the welfare state. The basis on which you can extract large sums of money in tax and pay it out in benefits is that most people think the recipients are people like themselves, facing difficulties that they themselves could face. If values become more diverse, if lifestyles become more differentiated, then it becomes more difficult to sustain the legitimacy of a universal risk-pooling welfare state. People ask: 'Why should I pay for them when they are doing things that I wouldn't do?' This is America versus Sweden. You can have a Swedish welfare state provided that you are a homogeneous society with intensely shared values. In the United States you have a very diverse, individualistic society where people feel fewer obligations to fellow citizens. Progressives want diversity, but they thereby undermine part of the moral consensus on which a large welfare state rests.

This conflict between solidarity and diversity which arises in the Welfare State is an easily recognisable manifestation of the heterogeneity permitted by the notion of fraternity. We want to be together, or in other words, we want to play the evolutionary game which is forming the signs of identity of a community; but at the same time and in the same game, we acquire patterns of behaviour which are not the same for all the subsets in the community. In this context, it is true that there is a problem related to funding certain public goods the use of which is related to patterns of behaviour with which I am not identified.

This is not merely a theoretical problem; it is well documented in practice. Goodhart refers to an article written in 2001 by A. Alesina, E. Glaeser and B. Sacerdote in which these authors show that although 70% of the population in the U.S. is white and not Hispanic, these citizens represent only 46% of the poor population. Therefore, a proportionally larger amount of the tax income used to relieve poverty goes to black, Hispanic or oriental minorities. This paper also finds that the states which are more heavily fragmented from an ethnic perspective are those which spend less on social services. They conclude that Americans appear to consider the poor as members of a different social group.

In as much as this is not so clear in European States, we could say that each of these European States appears to be a Polis in which fraternity reigns and that the opposite is true of America, where there is not one, but several (at least two) different Polises..

If we abstract a little from the concrete example based on ethnicity and generalise, we could conclude that something like multiculturalism would be much more common in America than in Europe. I will return to this in the last part of this section, but first I want to emphasise that changes in the scope of fraternity will not only be occurring at great speed, as I mentioned at the end of the previous section, but they will also be required by the immigration phenomenon which globalisation has made possible and, indeed, fosters. Immigration and the welfare state are a couple of problematic institutions that the capitalism to come cannot ignore.

II.3.2. DIVERSITY AND CULTURE

This way of understanding the Polis as the scope of fraternity allows us to consider two inter-related and non-independent problems or issues related to providing public goods in heterogeneous communities. The first issue is diversity, a notion by no means easy to understand and even more difficult to measure, which has us wondering whether it is desirable or not and how it can be achieved if there is not enough of it in a given Polis. The second issue is cultural relativism, a notion that will lead us to consider the problem of multiculturalism, which is in turn related to the problematic relationship between immigration and welfare state.



II.3.2. A. Diversity

The problem of diversity can be considered from three different and complementary perspectives. We can try to axiomatise the notion, following Nehring and Puppe, a task which in turn could play a relevant role in Value Theory. We can also take diversity as something desirable and consequently judge different institutional arrangements according to it as Moulines does in a particular case. And finally, we can continue within our evolutionary games framework and analyse how diversity may be necessary to make some sense of fraternity, converting the community into Polis, or how the Polis may have a tendency to broaden in order to make sense. I will start with this third perspective, following a paper by Aoki which, although it is technical, can be easily summarised.

I abandon the trivial case, assuming that $K = 2$, in other words that there are two populations. Let M_k be the number of individuals in each population and let us consider $N = (I, G)$ as the set of strategies that can be adopted - let I be the individualistic strategies and G the gregarious strategies-. Let us now assume that there are two classes of economic activities that can be performed in each population: F (finance) and E (engineering). Finally, we assume that I (G) has a comparative advantage in F (E) and that the individuals are unaware of this. I will now analyse only one of the two populations, so we omit the sub-index k , to later consider the convenience for this population to join the other one. We can define strategy (mixed) as the choice of what one is - individualist or gregarious - and where one works, either in finance or engineering. The pay-off function of the static game shows the aforementioned comparative advantage and the hypothesis that there is no pay-off when there is a maladjustment between the strategy/activity coupling. If we consider the values of the matrix as pay-offs of the row individual, this pay-off function can be represented by these two matrices:

	I	G
I	e_{II}	0
G	0	e_{GG}

	I	G
I	f_{II}	0
G	0	f_{GG}

which are very easy to interpret. In engineering, represented by matrix E , gregarious individuals who work well in a coordinated manner win nothing if they join the individualists, who are incapable of team work. However, if they meet another gregarious individual, they produce a quantity that I have called e_{GG} which is greater than what a pair of individualists would produce, e_{II} . In other words, in matrix E , $e_{GG} > e_{II}$ and $e_{GI} = e_{IG} = 0$. Matrix F , representing finance, can likewise be interpreted with $f_{II} > f_{GG}$ and $f_{GI} = f_{IG} = 0$.

I can now specify the dynamic part of the evolutionary game that I am considering. At each moment in time, I know the proportion of each type of individual (individualist or gregarious) working in each activity (engineering or finance). I can represent this knowledge by the frequency vector corresponding to time t :

$$m(t) = (m_{GF}(t), m_{GE}(t), m_{IF}(t), m_{IE}(t))$$

where, naturally and for example, $m_{IF}(t)$ is the proportion of individualists in the population working in finance at time t . We now start with the contact protocol, randomly pairing off individuals from the population. For each possible pair, I can calculate the expected pay-off for each individual. For example, a gregarious individual working in



finance finds that the only possible gain consists of finding another gregarious individual in the finance sector. The probability of this occurring is given by the relative frequency of gregarious individuals working in finance: $m_{GF} / (m_{GF} + m_{IF})$ and the gain when this happens is, according to matrix F, precisely f_{GG} . Consequently, the expected pay-off of a gregarious individual in finance is given by:

$$U_{GF} = \frac{m_{GF}}{(m_{GF} + m_{IF})} f_{GG}$$

The following expected pay-offs can also be calculated in the same way

$$U_{GE} = \frac{m_{GE}}{(m_{GE} + m_{IE})} e_{GG}$$

$$U_{IF} = \frac{m_{IF}}{(m_{GF} + m_{IF})} f_{II}$$

$$U_{IF} = \frac{m_{IF}}{(m_{GF} + m_{IF})} f_{II}$$

and, therefore, we can define the maximum of all these expected pay-offs as:

$$U = \max [U_{GF}, U_{GE}, U_{IF}, U_{IE}]$$

The dynamic of the strategies of this game will tell us how each component of the strategy frequency vector $m(t)$ varies. One possible and reasonable dynamic tells us that the frequency of a strategy consisting of being $T = (I, G)$ and working in $A = (E, F)$ would evolve as follows. Firstly, if the frequency is positive it will diminish if, and only if, the expected pay-off obtained is less than the maximum amount that could be obtained:

$$\frac{dm_{TA}}{dt} < 0 \text{ si } (U_{TA} - U) < 0, \text{ si y solo si } U_{TA} < U \text{ y } m_{TA} > 0$$

Secondly, if the strategy has disappeared, in other words $m_{TA} = 0$, it will not reappear if the expected pay-off is less than the maximum obtainable.

$$\frac{dm_{TA}}{dt} = 0 \text{ si } U_{TA} < U \text{ y } m_{TA} = 0$$

The analysis of the evolutionary equilibrium is elementary. It is a frequency vector.

$$m^* = (m_{GF}^*, m_{GE}^*, m_{IF}^*, m_{IE}^*)$$

where $dm_{TA} / dt = 0$ for all $T = G, I$ and all $A = E, F$.

The following conditions⁸, which are necessary for the maximisation of the expected pay-off of each agent in the community, are met in this equilibrium

$$\begin{array}{ll} U_{IF}^* = U_{GE}^* & \\ U_{IF}^* \geq U_{GF}^* & \text{and} \quad U_{IF}^* > U_{GF}^* \rightarrow m_{GF}^* = 0 \\ U_{GE}^* \geq U_{IE}^* & \text{and} \quad U_{GE}^* > U_{IE}^* \rightarrow m_{IE}^* = 0 \end{array}$$



They are interpreted as follows: the first condition is that the expected pay-off of each type of agent, individualist or gregarious, is the same if the type of agent has chosen to work in the field in which he has a comparative advantage: finance for individualists and engineering for the gregarious. The other two conditions have the same interpretation. The frequency of poorly located agents, either individualists in engineering or gregarious individuals in finance, will always be zero providing that the poor location has bite, i.e. provides them with an expected pay-off lower than would be gained in the right activity.

From what we have seen in the first part of the first section of this chapter, we know that the set of fixed points in a dynamic system includes the evolutionary equilibria of that system. In our case, we have four evolutionary equilibria which we are now going to examine.

In the first equilibrium, which we will call Pareto equilibrium or P-equilibrium, location is perfect. There are no individualists working in engineering ($m_{IE}^* = 0$) or gregarious individuals working in finance ($m_{GF}^* = 0$) and, as far as the expected pay-offs are concerned, according to the above conditions:

$$U_{IF}^* = U_{GE}^* \equiv U^P > U_{GF}^* > U_{IE}^*$$

Adjustment is perfect because each individual is working where he has a comparative advantage: all the individualists in finance and all the gregarious individuals in engineering.

We could have a second equilibrium in which maladjustment is perfect: all the individualists work in engineering and all the gregarious individuals work in finance, so that $m_{IF}^* = m_{GE}^* = 0$, and

$$U_{GF}^* = U_{IE}^* \equiv U^W < U_{IF}^* < U_{GE}^*$$

The two intermediate equilibria are similar to each other. In the first, which we will call A-Equilibrium (A for America) everyone is an individualist, so $m_{GF}^* = m_{GE}^* = 0$. However, the relative frequency with which individualists work in finance or engineering is such that the corresponding probabilities mean that the expected pay-off is the same wherever they work:

$$U_{IF}^* = U_{IE}^* \equiv U^A > U_{GF}^* > U_{GE}^*$$

Similarly, and with the same interpretation, we can have a J-equilibrium (J for Japan) in which all individuals are gregarious ($m_{IF}^* = m_{IE}^* = 0$) and the individualists are distributed among the type of work with a relative frequency such that the expected pay-offs of the gregarious individuals are the same wherever they work:

$$U_{GF}^* = U_{GE}^* \equiv U^J > U_{IF}^* > U_{IE}^*$$



We can now complete the argument corresponding to this first way of approaching diversity, the one which I deem most appropriate to refer to the scope of fraternity, in other words to the Polis. Let us assume that the dynamic game has reached a P-Equilibrium. Not only has fraternity been achieved, corresponding – as we mentioned earlier – to the idea of evolutionary equilibrium, but also sense so that fraternity and Polis overlap exactly. The former exists and the latter does not need broadening or narrowing. We also have to note that this coincidence between fraternity and its scope has been achieved thanks to diversity and the correct location of each type of individual in each type of activity. But there may be a maladjustment between fraternity and its scope. Let us assume that we have reached an A- equilibrium in which all the agents are individualists. It is this homogeneous conduct which prevents the emergence of sense: there is fraternity but the Polis is not doing its job properly and we could even say that there is no Polis, since we have defined it as fraternity plus sense. Since exactly the same could be said of a J-Equilibrium, the question of how to join the two communities to achieve sense arises immediately. It is possible –and is to be hoped- that by joining an “American” community in which they are all individualists and a “Japanese” community in which everyone is gregarious, we could obtain a broader community in which we could achieve a P-Equilibrium making sense of fraternity and forming a Polis.

Whether this is true or not depends on the evolutionary game which starts as soon as these two populations are joined, each with a size configuring the initial conditions, and working according to the described protocol and dynamics. According to Aoki, if the two populations are the same “size” –appropriately defined- we could achieve P-Equilibrium. However, if this is not the case, the “largest” population would absorb the “smallest” and a certain type of fraternity would be destroyed without having formed a Polis.

We can now relate these ideas on diversity in the Polis with globalisation. In the first place, let us consider economic integration processes like those taking place in Europe. The evolutionary game that we have been considering provides us with some interesting ideas. For the success of the operation, we would have to consider both the initial type of equilibrium of each State, their relative size and the order in which they will be joining what is now the European Union. In fact, none of this has been taken into account; but it could be interesting to consider the price paid for not having taken these details into consideration and, in any case, we should remember them. Secondly, the relatively free movement of persons associated to globalisation will present us with the immigration problem. Let us imagine an extreme case in which, in the globalisation process, and metaphorically speaking, the “Japanese” emigrate to “America”. Initially it would appear that it is possible for finance and engineering activities to be large enough for all immigrants, gregarious Japanese all of them, to work in engineering and all the natives, individualistic Americans, to work in finance. But this would be a coincidence. It is reasonable to expect, throughout the evolutionary game and depending on the static game with its corresponding pay-offs, some “Japanese” to become individualists and some “Americans” to become gregarious. In the end, if the sizes of the initial native and immigrant populations are similar, we will have a P-Equilibrium which will not be crossbred in which there will be two separate communities living together. It would be normal, however, for the populations to change their initial signs of identity and form a new Polis with a population following certain patterns of behaviour which are the signs of fraternity.

This leads us to consider multiculturalism and cultural pluralism in the next section; but it is first worth remembering that the analytical framework in which we have operated in this section is applicable to access to employment and politics by women. This process is formally equivalent to immigration. What is interesting about it is that, without it, it is as if we were at a sub-optimal equilibrium – like the “American” and “Japanese” equilibria in the metaphorical example we have just examined – which can be improved by such access until we reach an optimal evolutionary equilibrium in which some men will probably adopt “feminine” patterns of behaviour and some women “masculine” patterns. Affairs which are much discussed, such as feminine quotas on election lists, acquire special importance in view of these ideas.



We can now turn our attention to the aspects of diversity that I mentioned in relation to the axiomatic treatment given by Nehring and Puppe and the applications of diversity made by Moulines. I will go no deeper into either, but include a free explanation using a recent article⁹.

K. Nehring and C. Puppe start their *A Theory of Diversity* with the following quote from the *Summa Contra Gentiles* III by St Thomas Aquinas: "An angel is more valuable than a stone. It does not follow, however, that two angels are more valuable than one angel and one stone". Nearly two centuries of value theory questioned by Thomas Aquinas! Is it possible that prices no longer only reflect scarcity? Should the price of something reflect, at least partly, what it contributes to the diversity of all available things? Does the price of something therefore depend on this set of things? These questions, or better still the fact that they have no answers, shows that we do not really know how to integrate the idea of diversity in value theory. And since the latter is at the heart of economic theory, it appears that we suddenly don't know where we are. In my opinion, there is a real threat of becoming lost and the works of these authors, together with their few predecessors, are merely a beginning. Indeed, they show that, under certain axioms that are more or less familiar to economists, there are certain diversity functions the expected value of which can be understood as the degree of diversity of the set to which they apply and, consequently, any sub-set can likewise be ordered according to that degree of diversity.

What do we gain from knowing, for instance, that Andalusians are more diverse than people born in Extremadura, assuming this is so? According to the cultural coordinates that now seem to be widespread, in favour of crossbreeding, the preservation of pluralism or the possible excessive elegy of multiculturalism, we could say that Andalusia is better (more valuable) than Extremadura. A biologicist interpretation would say that there are more possibilities of genetic improvement in the former than in the latter. An economic interpretation would be more ambiguous. On the one hand, those born in Extremadura would understand each other better than Andalusians, because they would be less heterogeneous; but, on the other, for this same reason there would be more scope for productive complementarities among Andalusians.

But there are additional advantages in having a certain diversity metric. Let's consider, in the field of political philosophy, a recent discussion about nationalism that has taken place on the pages of *Isegoría* between Ulises Moulines (nº 24, 2001) and Aurelio Arteta (nº 26, 2002). Without a specific diversity metric we cannot strictly compare the application of the two principles which separate the two philosophers a priori: the Intrinsic Value of Plurality (IVP) compared with the Intrinsic Value of Unity (IVU). IVP is used by Moulines to demand a State (national) for each of the world's 600 nations and IVU is the justification for Arteta to expect these 600 nations (should he admit that they exist) to become integrated into a single universal State. My idea of the culture of the time, manifest in the cultural coordinates to which I referred in the previous paragraph, would align me more with Moulines than with Arteta, because I believe that the IVP principle is more in line with the flat, or post-modern, conception of reality.

Let us now move to another application of the idea of diversity, in this case in the field of scientific philosophy. The arrogant modern impulse of the search for an ultimate reason in nature is gradually giving way to a post-modern festival that does not believe in reductionism but it does believe in what, under the name of emerging properties, represents the affirmation that everything has a point to it. If modern scientific monotheism believes in the thickness of a reality that has to be perforated, post-modern polytheism sees a huge flat surface to be discovered. Discipline against orgy, this is where I see the interest of diversity applied to science. I much prefer orgy, biological or social, over strict discipline. I see modern science as a hierarchised oil company and today's science (post-modern?) as a group of disorganised pioneers travelling towards the western frontier. These ideas coincide with the suggestion made in chapter II in relation to the advantage of a rebellious attitude to science.



Indeed, I believe that the notion of diversity, besides being the source of complex technical problems, as anyone who has read Nehring and Puppe will confirm, seriously questions a series of theoretical economic certainties that need reviewing, and can be very useful for considering political economy, for political analysis in general, for scientific policy and, if we listen to what St Thomas Aquinas says, even for theology. It is neither easy nor convenient to take up a position on a notion with so many potentially new and intellectually conflictive implications. In reaction to this perplexity, I will end by attempting to complicate the issue even further.

It may be possible to imagine that the diversity that we perceive, or even accurately measure, is not merely a sign distinguishing a certain group, or that more diversity does not only reflect a higher valuation of such a group. We may be able to look sideways at the concept from a relatively new economic perspective, considering diversity as a signal. To explore this perspective, and since the notion of diversity probably depends a great deal on the nature of the group to which it is applied, let us consider a set of citizens or scientists. I intend to consider more diversity as a signal that, in the set concerned, a more virulent, feverish and disordered battle has been fought to find new ways of living together or hidden truths (in other words, treasures), than the battle fought in other less diverse groups and that, consequently, we are more likely to find the best way of living together, or the truest proposal, in the first set than in the second. If the landscape after the battle shows more diversity it is because resources have been wasted to obtain the treasures we are seeking and this waste is the true measure of the signal telling us that, if we are looking for a good formula for living together, it will be found in a diverse society, and if we are looking for truth, it will be found in the least homogeneous scientific communities. And this is because the greater expenditure reflected by diversity is a clear indicator of a stronger will to find the treasures and, consequently, the likelihood of being successful.

The proposal I have just made to complicate the notion of diversity a little and enrich the perspectives from which it can be seen, may be more intuitively acceptable if we compare nature and society with two sets of elements with different degrees of diversity, with nature being apparently more diverse than society. This greater diversity of nature is merely the signal that natural evolution is much more virulent, feverish and disordered than social evolution. The former wastes resources exploring in any direction at random, whereas social evolution is an exploration of the possibility of a more economic and reasonable society, in spite of the errors and failed revolutions that are also observed.

My proposal implies that we have to believe that nature will finally come across a formula (although it may not be the best) with more ease than society appears to show in its attempt to accept an acceptable one¹⁰. If, with this comparison between nature and society as alternative forms of treasure hunting I have persuaded you that diversity could be a signal, you will agree that it may be a good idea to let it guide us in our search for truth or the secret of living together, although we cannot ignore the conflict which in practice may arise with the exercise of fraternity to which we have referred when speaking about providing relief to poverty in multi-ethnic or, in general, heterogeneous environments.

II.3.2. B. Culture

This last remark leads us to consider relativism and the role of cultural dissidence, where culture has to be understood as it was in the evolutionary game we have been describing in this chapter. A community's culture, then, would not so much be the number and quality of cultural services (such as concerts), assets (such as paintings) or objects (such as books or DVDs), but the set of rules of thumb or memes existing at a given time in a given community. One attempt to define culture according to the evolutionary way of contemplating changes in a community's rules of thumb would be as follows. Culture would be the set of uses, knowledge, beliefs and institutions generated by man's capacity for symbolisation, creating a culture medium outside which he is bound to perish¹¹.



In this context we can now consider the problems of cultural relativism and dissidence. I will begin with cultural relativism. As we have repeatedly seen, our culture (understood as the culture of our Polis) depends on the initial conditions from which our community starts (besides the experimentation we may have incurred or the mutant invasions we may have "suffered"). Likewise, their culture (the culture of their Polis) depends on the initial conditions from which their community starts (besides experimentation or mutant invasions).

Consequently, a first manifestation of cultural relativism is that, even with this definition, culture is not unique. On the one hand, we can refer to its manifestation in different places and at different times, thus giving rise to the notions of *Zeitgeist* and *Volkgeist*. On the other, it is well worth remembering a distinction I mentioned elsewhere¹² between (among others) scientific culture and artistic culture. The former would be much more predictable, more hierarchical and much easier to transmit than the latter. If we combine the two distinctions we observe the richness of cultural relativism since its discussion can cover, if we so wish, very diverse issues such as fashion, sensitivity, nationalism, politics in general, support and funding for science and the arts, superstition, rites and practically anything. The Taliban's right to cover their women with a chador is just one example of a fundamental debate on whether dialogue is possible between cultures or whether any one culture is worth the same as any other.

This immediately leads to the problem of multiculturalism on which I will make some remarks based on previous articles¹³ before I go on to examine the problem of the role played by dissidence.

There seems to be no doubt that different environments can generate different cultures, and that even similar environments can, nevertheless, provide incentives for the development of diverse habits and customs. When culture is so conceived, we can refer both to multiculturalism and cultural pluralism, two terms describing alternative proposals to approach the co-existence of different sets of rules, values and institutions. This problem, which has gained considerably in importance in relation to the problem of immigration, is not easily understood or solved. An economist's viewpoint may help to enrich the distinction and clarify the issues somewhat.

Although this problem is as old as the hills, its most immediate origin can be found in the 1960's. Indeed, the different movements of the time presented us with the possibility of being ourselves without ceasing to form part of a (counter)culture which, although anti-establishment and libertarian, was nonetheless related to a community; an alternative way of living together with new values, new institutions and flexible rules. Different processes led these movements with Frankfurtian roots from their American version of the 60's and 70's, via feminism, to the 1980's, when they converged in an exacerbated relativism in which no neutral methodology or cultural contamination with which to judge different cultures is to be found and in which "cultural studies" and "gender studies" occupy important positions in the curricula of American universities. This immediate origin of multiculturalism has a great deal to do not only with feminism but also with the racial problem and immigration.

Awareness of these comparatively recent and elementary facts should have prepared Europeans for the coming avalanche. But, at least in Spain, this is not the case. Sartori's book (*The Multiethnic Society*, Taurus 2001) surprised us a year ago by warning us that the permissiveness of multiculturalism can weaken democracy because, by admitting any culture on principle, we would find the antidemocratic ideas associated to specific cultures and religions as legitimate as democracy. For Sartori, cultural pluralism is entirely different. Although it hierarchises ideologies according to the prevalent culture, it permits, tolerates and even fosters contact between different cultures, in the hope that the emerging mixture will be good, or at least acceptable. In this intellectual environment, it is not surprising to find that the Director of the Immigration Forum, Mikel Azurmendi, scandalised senators when he told them that "multiculturalism" is the "gangrene of democracy".



That opinion could surely be contested, but it is immediately evident that this is a serious problem if we consider a particularly surprising case of a couple of deaf women who resorted to artificial insemination to have deaf children. The facts are as follows, according to the news item published in *El País* (March 9, 2002): "Sharon Duchesneau and Candice McCulough, mental therapists graduated from the University of Gallaudet for deaf students, are lesbians and have formed a stable couple for the last eight years. They are both deaf. And when they decided to have children, by artificial insemination, they made a very controversial decision: they too would be deaf". The mother, Sharon, says that "deaf people make society more diverse and therefore more human". Her partner Candice says that "deafness is a form of normalness, not the same as others, but not inferior either". These statements may be innocuous in the university's deaf community, but they are surprising for those of us who represent other types of normalness. However, some clues are to be found in the newspaper article. This deaf community "is intensely interrelated and only occasionally comes into contact with individuals with normal hearing". This community "does not believe that deafness is a disability, but a central characteristic of a "culture", an "identity". These events, statements and journalistic remarks appear to configure a paradigmatic example of multiculturalism.

This extreme example leads us to attempt to clarify the debate between multiculturalism and cultural pluralism. Perhaps Economics can help. We will soon see. The orthodox paradigm of modern economics is centred on the indirect interaction of individual agents on the market, and it represents an evident and artificial example of cultural pluralism: each individual, who could represent a different culture, interacts with many other individuals and, therefore, with many other cultures, based on market rules. This interaction gives rise to something which is not exactly what any of the agents wants, but which is a socioeconomic reality accepted by them all. Economists, then, are pluralists *avant la lettre*. We could, of course, argue that the idea of culture to which the multiculturalism debate refers cannot be approached with an individual reference, but economists also have something to say when we are referring to groups. If a group of economic agents can be considered a potential culture, we know, from an *ad hoc* interpretation of the Equivalence Theorem, that, although they could be isolated, all these potential cultures would co-exist pacifically in an economic system of competitive equilibrium. This is a great example of cultural pluralism although, once again, we could question the applicability of the idea of coalition of agents to the debate about cultures, since they refer to group values, institutions and rules which are explicitly absent from the concept of coalition. But, here again, something has to be said by the economists who have recently developed what Durlauf and Young (Social Dynamics, MIT Press 2001) call the New Social Economy, studying the direct interaction between agents, without market mediation. This new branch of economics attempts to apply mathematical methods typical of statistical mechanisms to the interactions between individuals belonging to several heterogeneous classes, giving rise to robust aggregate characteristics (which we would call signs of cultural identity) which depend on what these classes are like and how such heterogeneous individuals interact. This general and new way of conceiving how a group functions economically seems to be developed with the purpose of modelling the dynamics of what I have referred to as cultural pluralism.

Let's return to the deaf couple. It would not be reasonable to refuse to admit that the example of the deaf couple involves an explicit rejection of cultural pluralism (which would have left the children's hearing abilities to chance) and a proud defence of multiculturalism (in which each culture is a closed world with its own identity, and which its members have no wish to leave). It is worth re-examining the case, however. In the first place, I do not believe that it is a paradigmatic example of multiculturalism although I admit that it abruptly reveals the American approach to pluralism. That it is not pure and simply apartheid becomes clear when we read that the case has transcended the deaf community, been published in *The Washington Post* and created a national controversy involving, among others I assume, a professor of bioethics from the University of Wisconsin and the National Association for the Deaf, who do not agree with the couple's decision. But, secondly, the case is a very good example of one of the polar ways of interpreting cultural pluralism in the United States as something natural and enriching. The other pole would be represented by the late Professor Bloom, of Chicago, a convinced conservative and unusual character (mentioned in the posthumous tribute paid



to him two years ago by Saul Bellow in Ravelstein, his latest novel), who, in a devastating and highly intelligent book (*The Closing of the American Mind*), referred some fifteen years ago to the deadly influence that European thinking inherited from Nietzsche and elaborated by Heidegger and other dangerous thinkers, would have had on the way of thinking of Americans incapable of keeping to its philosophical pragmatism, converting it into the travelling companion of nihilism and the terrible relativism of decadent European culture. Between these two polar ways of understanding cultural pluralism, neither of which is to my taste, we find the natural place of the “economic” perspective of pluralism proposed by New Social Economy. The idea is to model the making and unmaking of networks of people forming communities more or less centred on multiple and changing identities. As we have seen in this chapter, some communities will be stable and others will not, some identities will remain and others will disappear, depending on factors such as the size of the communities concerned, the way in which individuals from different communities interact and the way in which connections are established and cut-off between their members. In today’s knowledge society, it is very difficult to maintain stable cultures, closed in on themselves. We know too much about others and our respective cultures to prevent the conditions permitting the pluralism of this New Social Economy. It is the latter’s underlying approach that we will now be using to study the role played by dissidence in this cultural pluralism.

Let’s return to Axelrod’s Tournament. As we will see, the resulting rule of thumb depends on the initial situation. However, if we introduce randomness in the problem, the thick line on the figure can become dotted and the “meme” of equilibrium does not depend on the initial situation. Assume that the dynamic is the following stochastic version:

$$m_i(t) = m_i(t) \hat{A}m(t) + r M(t)$$

where \hat{A} is a stochastic version of A and r is the rate of introduction of new C, D or T-type individuals. For $r = 0.18$, Young and Foster calculate the following values. For $M = 100$ there is 60% probability that 90% of the population is at T and 20% of that 90% of the population is at D. For $M = 300$, the opposite situation is the case and for $M > 300$ everyone is practically certainly at D.

There is another way of introducing stochasticity permitting an interpretation more fitting with my intention to refer to dissidence. If instead of introducing stochasticity in an aggregate manner, I allow each individual, when he pairs up to play the prisoner’s dilemma $1/p$ times, not always to play his best response to past experience; but rather to throw a dice and so generate the stochasticity I am seeking; I will say that the individual is experienced. We thus see that experimentation (or tolerance for experimentation) allows relativism to disappear. I wish to interpret this experimentation not so much as the individual’s possible errors but as an expression of his doubts, and to think that these doubts have arisen from criticism of his environment. We refer to criticism, then as a dissident’s activity¹⁴.

One way of looking at criticism is to consider its function as what formal science does: seeing things in a different way. Mathematics are the paradigm of this, although do not limit its content. This is very common in so called economic science. I will provide two examples from colleagues of mine. Salvador Barberá, in an article praising the late Nobel prize winner, Vickery, for having discovered the virtues of the second-price auction (in which you pay the price offered by the second highest bidder), tells us that “this simplicity is merely apparent. We all see what there is. They are capable, however, of seeing what seems obvious from a new perspective. This capacity, and the ability to change the perspective of others, is the gift of great investigators”.

This opinion should not surprise us coming as it does from a formal scientist little inclined towards scientific experimentation. However, Juanjo Dolado, who is an applied social scientists and conducts tests on everything, said, in an article that had not been published when I read it years ago, related to the eventual advantages of a minimum



salary, that "economists love to attack apparently well-founded old ideas accepted by most of the profession which nevertheless collapse when some of the key premises on which they are based are questioned".

Before a scientist tells me that my attempt to save criticism because of its analogies with economics is evidence of the latter's weakness, allow me to say that Niels Bohr must have had a similar idea of theoretical physics when he said that "it is wrong to think that the task of physics is to find out what nature is. Physics concerns what we can say about nature".

The above quotes are sufficient to justify the importance of criticism and, consequently, the value of dissidence¹⁵. To conclude, I will relate this to the patronage to which I referred in chapter II.1. Fostering dissidence is not part of the public logic, or of many private logics either. However, in my opinion, this is precisely the logic of foundations, or of patronage in general. As we already mentioned, patronage should not be considered as the culmination of civil society so replacing the market as an llocative device and self-interest as a social organiser by generosity. It is much more fitting to consider the market as the culmination of civil society and patronage as a way of "socialising" culture, transforming it from an exclusive good into a common good available to all. For patronage to foster criticism, thus leading to an infinite number of experiments, seems to me to be the only way we have of facing the relativism of culture.

NOTES

¹ It is "Una Reconstrucción de la Fraternidad Aristotélica mediante la Teoría de los Juegos Evolutivos", an article which partly arose as a response to another by Doménech published in Isegoría. This author has recently published a kind of treaty on the issue of fraternity

² This theorem, one of the most famous in neoclassical economics, has its roots in Edgworth and was precisely formalised in the 60's by Auman (1964).

³ This suggestion is found in Auman (1988) and it was used to understand some subtle economic issues relating to inflationary bias in Urrutia (1996)

⁴ See Doménech (1993)

⁵ As I did in Urrutia (1995)

⁶ The following pages are an interpretation, the least technical possible, of the main part of the article mentioned in note 1.

⁷ The quote is from Aristotle in his Nicomachean Ethics VIII, 1155 to 20-25

⁸ These are the known conditions of Kuhn-Tucker

⁹ See Urrutia (2004)

¹⁰ I call your attention to how these ideas are related to what in chapter II.1 I called the optimal research strategy, rebellious and experimental. I also believe that the knowledge of the so called "knowledge society" is like this orgiastic knowledge typical of nature, which is reminiscent of the remarks on gratuity also included in the same chapter.

¹¹ This is a kind of definition that I introduced in Urrutia (1988)

¹² See Urrutia (1995)

¹³ Here, I am referring to the two articles on Multiculturalism included in Economía en Porciones: "Multiculturalismo, Pluralismo y Teoría Económica" (pp. 58-61) and "El Multiculturalismo Revisitado" (pp 61-65)

¹⁴ Besides the forms of criticism I now go on to examine, I feel obliged to mention what Sloterdijk considers to be true thought, as practised by an author worthy of the name. His illustrated description applies precisely to the dissident to whom I am referring. Sloterdijk says: "Highly qualified authors do and say unprecedented things, difficult to hear; they experiment with old and new theses in the logical and aesthetic field, they test their positions:.....An author is a laboratory for more complex parts, for uncommon ideas..... There is a direct relationship between how great an author is and the danger associated to the issues he processes and dominates. The inoffensive only gives rise to the inoffensive, danger gives rise to thought (the underlining is mine. J.U.)

¹⁵ It may be worth mentioning that ICTs have "made" hackers and that hackers, at least at this time, are not inoffensive and represent dissidents.



REFERENCES

- Alesina, A, E. Glaeser and B. Sacerdote (2001): "Why doesn't the US have a European-style Welfare State?". Harvard Institute of Economic Research.
- Aoki, M (1993): "Comparative Advantage of Organizational Conventions and Gains from Diversity: Evolutionary Game Approach", mimeographed, University of Stanford.
- Auman, R (1964): "Markets with a Continuum of Traders" Econometrica 32
- Auman, R (1988): "Integrating Irrationality into Game Theory", unpublished.
- Aristotle, (1985). Etica Nicomachea. Etica Eudema, Madrid, Gredos.
- Arteta: (2002): "Réplica a Moulines", Isegoria, 26
- Blackmore, S. (1999): The Meme Machine, Oxford
- Dawkins, R (1989): The Selfish Gene, Oxford
- Domenech, A (1993): ".... y fraternidad", Isegoria 7
- Domenech, A, (2004): El Eclipse de la Fraternidad, Crítica, Barcelona
- Durlauf and P.H. Young (2001): Social Dynamics, Cambridge, Mass, MIT Press
- Edgeworth, F.Y. (1881): Mathematical Psychics, London
- Friedman, D. (1991): "Evolutionary Games in Economics", Econometrica, 59
- Goodhart, D. (2004): "Discomfort of Strangers", The Guardian, February 24
- Lewis, D. (1969): Convention: A Philosophical Study, Cambridge, Mass
- Lledó, E (1994): Memoria de la Etica, Madrid
- Nehring, K. and C. Puppe (2004): "A Theory of Diversity", Econometrica, 70
- Moulines, U (2001) "Manifiesto Nacionalista(o hasta separatista si me apuran)", Isegoria, 24
- Sartori, P. (2001). La Sociedad Multiétnica, Taurus. Madrid
- Sloterdijk, P (2003): Experimentos con uno mismo. Pre-textos. Valencia
- Urrutia, J, (1995) " El sustrato Fraternal de la Economía", unpublished
- Urrutia, J. (1995): "Una sugerencia para complicar aun más el problema de las dos culturas", BBV Foundation Newsletter.
- Urrutia, J. (1998) : "Una Reconstrucción de la Fraternidad Aristotélica mediante la Teoría de los Juegos Evolutivos", Telos
- Urrutia, J. (1996) "Historia y Diversidad. Un ensayo de Filosofía Económica". Ekonomiaz, 35
- Urrutia, J (1988): " Economía de la Cultura", Economía Industrial
- Urrutia, J. (2003): Economía en Porciones, Prentice-Hall, Madrid
- Urrutia, J (2004): "La Diversidad como señal", juan.urrutiaelejalde.org/articulos/diversidad.html
- Young, P. H. and D. Foster (1991): "Cooperation in the short and in the long run", Games and Economic Behaviour, 3.



TABLES & PLOTS

TABLES:

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

PLOTS:

- A1A: HICP monthly growth rates in EMU.
- A1B: CPI monthly growth rates in US.
- A1C: CPI monthly growth rates in Spain
- A2A: Annual Forecast For The EMU Inflation
- A2B: Annual Forecast For The USA Inflation
- A2C: Annual Forecast For The Spanish Inflation
- A3A: Year-on-year rate of EMU inflation and contributions of main components

Methodology: Analysis of EMU inflation by SECTORS

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

Methodology: Analysis of USA inflation by SECTORS

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

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

METHODOLOGY: ANALYSIS OF SPANISH INFLATION BY SECTORS

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

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

Table A2 FORECAST ERRORS IN THE MONTHLY INFLATION RATE FOR JUNE IN THE EUROPEAN UNION						
	Weights 2004 MU	Weights 2004 EU	Observed Monthly Rate	Forecast	Observed Annual Rate	Confidence Intervals at 80%
Spain	111,07		0,16	0,06	3,48	± 0,15
Germany	292,58		0,00	0,09	1,93	± 0,29
Austria	31,43		0,18	-0,05	2,27	± 0,37
Belgium	33,18		-0,09	0,25	1,96	± 0,32
Finland	15,65		-0,09	0,53	-0,09	± 0,37
France	206,97		0,09	0,06	2,71	± 0,20
Greece	26,55		-0,22	-0,13	3,00	± 0,78
Netherlands	52,90		-0,73	-0,39	1,49	± 0,33
Ireland	12,86		0,54	0,20	2,53	± 0,30
Italy	192,65		0,17	0,10	2,39	± 0,23
Luxembourg	2,73		0,42	0,05	3,84	± 0,32
Portugal	21,43		1,19	0,20	3,67	± 0,66
Denmark		11,78	-0,26	0,01	0,86	± 0,27
United Kingdom		181,92	-0,09	0,08	1,55	± 0,33
Sweden		18,65	-0,53	-0,09	1,16	± 0,50
(1) aggregation error -0.03%						
(2) aggregation error -0.08%						

Source: EUROSTAT, IFL & UC3M

Date: July 16, 2004

Table A3

FORECAST ERRORS IN THE MONTHLY INFLATION RATE FOR JUNE 2004 BY SECTORS IN THE EMU

	Weights 2004	Observed Monthly Growth	Forecast	Annual Growth Observed	Confidence interval at 80%
HICP Processed Food	118,36	0,08	0,15	3,83	± 0.14
HICP Processed Food excluding tobacco	94,63	0,07	0,17	1,39	± 0.09
HICP Tobacco	23,73	0,13	0,10	13,75	± 0.13
HICP Non Energy Industrial Goods	310,09	-0,19	-0,10	0,85	± 0.10
HICP Non Energy Processed Goods	428,45	-0,11	-0,03	1,66	± 0.09
HICP Services	413,34	0,34	0,32	2,58	± 0.14
CORE INFLATION (1)	841,78	0,09	0,14	2,14	± 0.08
HICP Unprocessed Food	76,89	0,08	-0,06	1,26	± 0.46
HICP Energy (2)	81,33	-0,79	-0,24	5,87	± 0.60
RESIDUAL INFLATION (3)	158,22	-0,32	-0,16	3,60	± 0.39
GLOBAL INFLATION (4)	1000,00	0,00	0,09	2,39	± 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: July 16, 2004

Table A4A

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

	EMU12		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avr 03/02(b)	Avr 04/03(b)	Avr 05/04(b)
Spain HICP	11,11%	2003	3,8	4,2	4,1	3,1	2,8	2,6	2,5	2,5	2,4	2,6	2,8	2,7	3,1		
		2004	2,3	2,2	2,2	2,7	3,4	3,5	3,4	3,3	3,3	3,4	3,5	3,5		3,1	
		2005	3,7	3,7	3,5	3,2	2,8	2,8	2,7	2,7	2,7	2,7	2,8	2,8			3,0
Germany HICP	29,26%	2003	0,9	1,2	1,2	1,0	0,6	0,9	0,8	1,1	1,1	1,1	1,3	1,1	1,0		
		2004	1,2	0,8	1,1	1,7	2,1	1,9	2,1	1,9	1,9	2,0	2,0	2,1		1,7	
		2005	1,6	1,6	1,4	1,2	1,0	1,2	1,1	1,1	1,1	1,1	1,1	1,1			1,2
Austria HICP	3,14%	2003	1,7	1,8	1,8	1,3	0,9	1,0	1,0	1,0	1,4	1,1	1,3	1,3	1,3		
		2004	1,2	1,5	1,5	1,5	2,1	2,3	2,2	2,2	2,1	2,1	2,1	2,1		1,9	
		2005	2,1	2,0	2,0	2,0	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9			2,0
Belgium HICP	3,32%	2003	1,2	1,6	1,7	1,4	0,9	1,5	1,4	1,6	1,7	1,4	1,8	1,7	1,5		
		2004	1,4	1,2	1,0	1,7	2,4	2,0	1,9	1,7	1,8	1,8	1,7	1,7		1,7	
		2005	2,0	1,9	2,0	1,7	1,5	1,7	1,8	1,7	1,7	1,8	1,7	1,8			1,8
Finland HICP	1,57%	2003	1,4	2,1	1,9	1,3	1,1	1,2	1,0	1,2	1,2	0,9	1,2	1,2	1,3		
		2004	0,8	0,4	-0,4	-0,4	-0,1	-0,1	0,2	0,2	0,0	0,1	0,1	0,1		0,1	
		2005	0,3	0,2	0,4	0,4	0,4	0,5	0,6	0,6	0,5	0,6	0,6	0,6			0,5
France HICP	20,70%	2003	1,9	2,5	2,6	1,9	1,8	1,9	1,9	2,0	2,3	2,3	2,5	2,4	2,2		
		2004	2,2	1,9	1,9	2,4	2,8	2,7	2,8	2,7	2,5	2,4	2,4	2,5		2,4	
		2005	2,1	2,1	2,0	1,9	1,7	1,7	1,6	1,6	1,6	1,6	1,6	1,6			1,8
Netherlands HICP	5,29%	2003	2,7	2,9	2,8	2,2	2,3	2,1	2,1	2,2	2,0	1,9	2,0	1,6	2,2		
		2004	1,5	1,3	1,2	1,5	1,7	1,5	1,4	1,4	1,5	1,7	1,8	1,9		1,5	
		2005	2,0	2,1	2,2	2,2	2,1	2,3	2,3	2,3	2,3	2,3	2,3	2,3			2,2
Ireland HICP	1,29%	2003	4,7	5,1	4,9	4,6	3,9	3,8	3,9	3,9	3,8	3,3	3,3	2,9	4,0		
		2004	2,3	2,2	1,8	1,7	2,1	2,5	2,6	2,6	2,6	2,8	2,8	2,9		2,4	
		2005	3,1	3,1	3,2	3,3	3,3	3,2	3,1	3,1	3,1	3,1	3,1	3,1			3,2
Italy HICP	19,26%	2003	2,9	2,6	2,9	3,0	2,9	2,9	2,9	2,7	3,0	2,8	2,8	2,5	2,8		
		2004	2,2	2,4	2,3	2,3	2,3	2,4	2,3	2,4	2,2	2,3	2,4	2,5		2,3	
		2005	3,0	2,7	2,6	2,5	2,7	2,7	2,7	2,7	2,7	2,7	2,7	2,8			2,7
Luxembourg HICP	0,27%	2003	3,3	3,2	3,7	3,0	2,3	2,0	1,9	2,3	2,7	1,8	2,0	2,4	2,5		
		2004	2,3	2,4	2,0	2,7	3,4	3,8	4,5	3,8	3,5	3,8	3,6	3,7		3,3	
		2005	4,1	3,1	3,3	3,2	3,1	3,0	3,4	3,0	2,8	3,2	3,1	3,0			3,2
Portugal HICP	2,14%	2003	4,0	4,1	3,8	3,7	3,7	3,4	2,9	2,9	3,2	2,8	2,3	2,3	3,3		
		2004	2,2	2,1	2,2	2,4	2,4	3,7	4,2	4,2	4,1	4,2	4,5	4,6		3,4	
		2005	4,6	4,7	4,7	4,6	4,6	4,0	3,8	3,8	3,7	3,7	3,7	3,7			4,1
Greece HICP	2,65%	2003	3,3	4,2	3,9	3,3	3,5	3,6	3,5	3,3	3,3	3,2	3,5	3,1	3,5		
		2004	3,1	2,6	2,9	3,1	3,1	3,0	3,2	3,2	3,0	2,9	2,9	2,9		3,0	
		2005	3,0	3,0	2,7	2,7	2,6	2,7	2,9	2,9	2,7	2,6	2,6	2,6			2,7

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

(1) Figures in bold type are forecasted values.

(2) Annual average rate of growth.

Source: EUROSTAT, IFL & UC3M

Date: July 21, 2004

Table A4B

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

	EU15		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avr 03/02(b)	Avr 04/03(b)	Avr 05/04(b)
Denmark HICP	1,18%	2003	2,6	2,9	2,8	2,5	2,1	2,0	1,8	1,5	1,7	1,1	1,4	1,2	2,0	0,9	1,7
		2004	1,0	0,7	0,0	0,5	1,1	0,9	1,0	1,2	0,9	1,3	1,1	1,3			
		2005	1,4	1,4	1,9	1,6	1,6	1,8	1,8	1,8	1,9	1,9	1,9	1,9			
UK HICP	18,19%	2003	1,4	1,6	1,6	1,5	1,2	1,1	1,3	1,4	1,4	1,4	1,3	1,3	1,4	1,3	1,2
		2004	1,4	1,3	0,9	1,2	1,5	1,6	1,3	1,2	1,3	1,1	1,2	1,2			
		2005	1,1	1,1	1,4	1,2	1,2	1,2	1,3	1,3	1,3	1,3	1,3	1,3			
Sweden HICP	1,87%	2003	2,6	3,3	2,9	2,3	2,0	2,0	2,4	2,2	2,3	2,0	2,0	1,8	2,3	1,1	1,5
		2004	1,3	0,2	0,4	1,1	1,5	1,2	1,1	1,3	1,1	1,1	1,3	1,3			
		2005	1,4	1,7	1,5	1,3	1,2	1,5	1,5	1,6	1,5	1,5	1,5	1,5			

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

(1) Figures in bold type are forecasted values.

(2) Annual average rate of growth.

Source: EUROSTAT, IFL & UC3M

Date: July 21, 2004

Table A4C

HARMONIZED CPI (HICP) MONTHLY GROWTH FOR EMU COUNTRIES (1)

	EMU12		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D03 / D02	D04 / D03	D05 / D04
Spain HICP	11,11%	2003	-0,4	0,2	0,8	0,8	-0,1	0,1	-0,6	0,5	0,2	0,7	0,3	0,2	2,7	3,5	2,8
		2004	-0,8	0,1	0,7	1,4	0,6	0,2	-0,6	0,3	0,3	0,8	0,4	0,2			
		2005	-0,7	0,1	0,6	1,1	0,2	0,1	-0,7	0,3	0,3	0,8	0,4	0,2			
Germany HICP	29,26%	2003	-0,1	0,6	0,2	-0,3	-0,3	0,2	0,3	0,1	-0,2	-0,1	-0,2	0,9	1,1	2,1	1,1
		2004	0,0	0,2	0,5	0,3	0,2	0,0	0,4	-0,2	-0,1	-0,1	-0,1	1,0			
		2005	-0,5	0,2	0,2	0,1	0,0	0,2	0,3	-0,1	-0,1	-0,1	-0,1	1,0			
Austria HICP	3,14%	2003	0,2	0,2	0,3	-0,1	-0,2	0,0	-0,1	0,3	0,3	0,0	0,2	0,3	1,3	2,1	1,9
		2004	0,1	0,5	0,4	-0,1	0,4	0,2	-0,1	0,3	0,1	0,0	0,1	0,3			
		2005	0,1	0,4	0,3	-0,1	0,3	0,1	-0,1	0,3	0,2	0,0	0,1	0,3			
Belgium HICP	3,32%	2003	-1,0	2,1	0,3	-0,2	-0,4	0,4	-1,2	1,7	0,2	-0,4	0,2	0,0	1,7	1,7	1,8
		2004	-1,3	1,9	0,1	0,5	0,3	-0,1	-1,2	1,5	0,3	-0,4	0,1	0,0			
		2005	-1,0	1,8	0,1	0,3	0,2	0,1	-1,1	1,4	0,2	-0,3	0,1	0,0			
Finland HICP	1,57%	2003	0,2	0,9	0,4	-0,1	-0,1	-0,1	-0,5	0,2	0,5	-0,1	-0,1	0,1	1,2	0,1	0,6
		2004	-0,3	0,4	-0,4	0,0	0,2	-0,1	-0,3	0,1	0,3	0,0	0,0	0,1			
		2005	-0,1	0,3	-0,2	0,0	0,1	0,0	-0,1	0,1	0,2	0,0	0,0	0,1			
France HICP	20,70%	2003	0,3	0,7	0,5	-0,2	-0,1	0,2	-0,1	0,3	0,5	0,2	0,1	0,1	2,4	2,5	1,6
		2004	0,1	0,4	0,4	0,3	0,4	0,1	-0,1	0,2	0,2	0,2	0,0	0,2			
		2005	-0,2	0,4	0,3	0,2	0,2	0,1	-0,2	0,2	0,2	0,2	0,0	0,2			
Netherlands HICP	5,29%	2003	0,6	0,8	0,9	0,1	-0,1	-0,5	-0,1	0,2	0,8	-0,2	-0,4	-0,6	1,6	1,9	2,3
		2004	0,5	0,6	0,8	0,3	0,2	-0,7	-0,1	0,3	0,9	0,0	-0,3	-0,4			
		2005	0,5	0,6	0,9	0,4	0,1	-0,5	-0,1	0,3	0,9	0,0	-0,3	-0,4			
Ireland HICP	1,29%	2003	0,0	1,0	0,7	0,5	-0,2	0,1	-0,4	0,6	0,2	0,0	0,0	0,4	2,9	2,9	3,1
		2004	-0,6	0,9	0,4	0,3	0,2	0,5	-0,3	0,6	0,2	0,2	0,0	0,5			
		2005	-0,4	0,9	0,5	0,4	0,2	0,4	-0,3	0,6	0,2	0,2	0,0	0,5			
Italy HICP	19,27%	2003	-0,3	-0,4	1,2	0,8	0,2	0,1	-0,1	-0,3	0,8	0,3	0,3	0,0	2,5	2,5	2,8
		2004	-0,6	-0,2	1,1	0,8	0,2	0,2	-0,2	-0,2	0,5	0,5	0,3	0,1			
		2005	-0,1	-0,5	1,0	0,7	0,3	0,2	-0,1	-0,2	0,6	0,5	0,3	0,1			
Luxembourg HICP	0,27%	2003	-0,3	1,1	0,5	-0,2	-0,2	0,0	-0,8	1,2	0,7	-0,4	0,4	0,2	2,4	3,7	3,0
		2004	-0,3	1,3	0,1	0,5	0,5	0,4	-0,1	0,6	0,4	-0,1	0,3	0,2			
		2005	0,0	0,3	0,3	0,4	0,4	0,3	0,2	0,2	0,2	0,2	0,2	0,2			
Portugal HICP	2,14%	2003	0,1	0,0	0,1	0,8	0,7	0,0	-0,2	0,1	0,2	0,2	0,1	0,1	2,3	4,6	3,7
		2004	0,0	-0,2	0,2	1,0	0,8	1,2	0,4	0,1	0,1	0,3	0,4	0,1			
		2005	0,1	-0,1	0,3	0,9	0,7	0,6	0,2	0,1	0,1	0,3	0,4	0,1			
Greece HICP	2,67%	2003	-0,8	-0,2	2,5	0,2	0,5	-0,2	-2,1	0,0	2,0	0,4	0,4	0,4	3,1	2,9	2,6
		2004	-0,8	-0,7	2,9	0,4	0,4	-0,2	-1,9	0,0	1,8	0,3	0,3	0,3			
		2005	-0,8	-0,6	2,6	0,3	0,4	-0,2	-1,7	0,0	1,6	0,3	0,3	0,3			

(1) Figures in bold type are forecasted values.

(2) Annual average rate of growth.

Source: EUROSTAT, IFL & UC3M

Date: July 21, 2004

Table A4D

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

	EU15		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D03 / D02	D04 / D03	D05 / D04
Denmark HICP	1,18%	2003	0,2	0,7	0,8	0,0	-0,3	0,0	-0,6	-0,1	0,8	-0,3	0,2	-0,2	1,2	1,3	1,9
		2004	-0,1	0,4	0,1	0,5	0,3	-0,3	-0,4	0,0	0,5	0,1	0,1	-0,1			
		2005	0,0	0,5	0,5	0,3	0,3	0,0	-0,4	0,0	0,6	0,1	0,1	-0,1			
UK HICP	18,19%	2003	-0,6	0,4	0,4	0,3	0,0	-0,1	-0,1	0,4	0,3	0,2	-0,1	0,4	1,3	1,2	1,3
		2004	-0,5	0,3	0,0	0,5	0,4	-0,1	-0,4	0,3	0,3	0,1	0,0	0,3			
		2005	-0,6	0,3	0,2	0,4	0,3	0,0	-0,3	0,3	0,3	0,1	0,0	0,3			
Sweden HICP	1,87%	2003	0,3	1,0	0,6	-0,4	-0,1	-0,2	-0,2	-0,1	0,8	0,1	-0,3	0,2	1,8	1,3	1,5
		2004	-0,3	-0,1	0,9	0,3	0,4	-0,5	-0,2	0,0	0,6	0,1	-0,1	0,2			
		2005	-0,1	0,2	0,6	0,1	0,2	-0,3	-0,1	0,0	0,5	0,1	-0,1	0,2			

(1) Figures in bold type are forecasted values.

(2) Annual average rate of growth.

Source: EUROSTAT, IFL & UC3M

Date: July 21, 2004

Table A5A

HARMONIZED CPI (HICP) ANNUAL GROWTH BY SECTORS IN THE EMU 2003-2004-2005 (a)

			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avr 03/02(b)	Avr 04/03(b)	Avr 05/04(b)
AE	9,46%	2003	1,9	2,1	2,2	2,1	2,1	2,2	2,0	2,0	2,0	2,2	2,1	1,9	2,1		
		2004	1,9	1,9	1,7	1,7	1,5	1,4	1,5	1,5	1,5	1,5	1,5	1,6		1,6	
		2005	1,6	1,6	1,8	1,9	2,0	2,1	2,1	2,2	2,2	2,2	2,2	2,2			2,0
TOBACCO	2,37%	2003	6,7	7,7	7,5	7,9	7,9	7,6	7,7	7,5	7,8	9,3	11,7	11,7	8,4		
		2004	9,0	8,3	13,9	13,1	13,8	13,8	13,8	13,7	13,5	12,1	9,7	9,4		12,0	
		2005	12,1	11,9	6,3	6,0	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4			6,6
MAN	31,01%	2003	0,7	0,8	0,8	0,8	0,9	0,9	0,8	0,7	0,8	0,8	0,8	0,8	0,8		
		2004	0,6	0,9	0,8	1,0	0,8	0,8	0,9	0,9	0,9	0,9	0,9	0,9		0,8	
		2005	1,0	0,9	0,9	0,8	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9			0,9
BENE	42,85%	2003	1,3	1,4	1,4	1,4	1,6	1,5	1,4	1,3	1,4	1,5	1,6	1,6	1,5		
		2004	1,3	1,5	1,7	1,8	1,7	1,7	1,7	1,7	1,7	1,6	1,5	1,5		1,6	
		2005	1,7	1,6	1,4	1,3	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4			1,4
SER	41,33%	2003	2,9	2,7	2,7	2,9	2,5	2,6	2,3	2,5	2,5	2,5	2,4	2,3	2,6		
		2004	2,5	2,7	2,5	2,5	2,6	2,6	2,7	2,6	2,6	2,6	2,6	2,7		2,6	
		2005	2,6	2,5	2,7	2,4	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,6			2,6
IPSEBENE	84,18%	2003	2,0	2,0	2,0	2,2	2,0	2,0	1,8	1,8	2,0	2,1	2,0	1,9	2,0		
		2004	1,9	2,0	2,1	2,1	2,1	2,1	2,2	2,2	2,1	2,0	2,0	2,1		2,1	
		2005	2,2	2,2	2,0	1,9	1,9	2,0	2,0	2,0	2,0	2,0	2,0	2,0			2,0
ANE	7,69%	2003	-0,7	0,3	0,8	0,9	1,1	2,6	2,8	3,3	4,2	3,8	3,8	3,2	2,2		
		2004	2,9	1,9	1,7	1,6	1,8	1,3	1,3	1,1	0,7	0,9	0,9	1,1		1,4	
		2005	1,2	1,7	1,8	1,8	1,7	1,9	1,9	1,9	2,1	2,0	2,0	1,9			1,8
ENE	8,13%	2003	5,9	7,6	7,5	2,2	0,6	1,6	2,0	2,7	1,6	0,8	2,3	1,8	3,0		
		2004	-0,3	-2,3	-2,0	2,0	6,7	5,9	6,6	5,7	6,1	6,5	6,7	6,9		4,0	
		2005	5,8	5,9	4,4	3,3	0,8	1,5	0,3	0,1	-0,2	-0,1	-0,1	0,0			1,8
HICP	100,00%	2003	2,1	2,4	2,4	2,1	1,8	1,9	1,9	2,1	2,2	2,0	2,2	2,0	2,1		
		2004	1,9	1,6	1,7	2,0	2,5	2,4	2,4	2,3	2,3	2,3	2,3	2,4		2,2	
		2005	2,3	2,4	2,1	2,0	1,8	1,9	1,8	1,8	1,8	1,8	1,8	1,8			1,9

Source: EUROSTAT, IFL & UC3M

Date: July 21, 2004

Table A5B

HARMONIZED CPI (HICP) MONTHLY GROWTH BY SECTORS IN THE EMU 2003-2004-2005 (a)

			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D03 / D02	D04 / D03	D05 / D04
AE	9,46%	2003	0,2	0,3	0,2	0,2	0,1	0,2	0,1	0,2	0,1	0,2	0,1	0,0	1,9	1,6	2,2
		2004	0,2	0,2	0,0	0,1	0,0	0,1	0,2	0,2	0,1	0,2	0,2	0,1			
		2005	0,2	0,2	0,1	0,2	0,2	0,2	0,2	0,2	0,1	0,2	0,2	0,1			
TOBACCO	2,37%	2003	4,2	1,0	0,1	1,2	0,1	0,1	0,1	0,1	0,3	1,4	2,3	0,3	11,7	9,4	5,4
		2004	1,7	0,3	5,3	0,4	0,6	0,1	0,1	0,1	0,1	0,1	0,1	0,1			
		2005	4,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1			
MAN	31,01%	2003	-1,4	0,0	1,1	0,6	0,3	-0,2	-1,4	-0,1	1,1	0,6	0,3	-0,1	0,8	0,9	0,9
		2004	-1,6	0,3	1,0	0,8	0,1	-0,2	-1,4	-0,1	1,1	0,6	0,3	-0,1			
		2005	-1,5	0,2	1,1	0,7	0,1	-0,2	-1,4	-0,1	1,1	0,6	0,3	-0,1			
BENE	42,85%	2003	-0,8	0,1	0,9	0,5	0,3	-0,1	-1,0	0,0	0,9	0,5	0,3	0,0	1,6	1,5	1,4
		2004	-1,0	0,3	1,1	0,7	0,1	-0,1	-0,9	0,0	0,8	0,5	0,2	0,0			
		2005	-0,8	0,2	0,8	0,6	0,1	-0,1	-0,9	0,0	0,8	0,5	0,2	0,0			
SER	41,33%	2003	-0,2	0,3	0,2	0,3	0,0	0,3	0,6	0,3	-0,3	-0,1	-0,1	0,9	2,3	2,7	2,6
		2004	0,0	0,5	0,0	0,3	0,1	0,3	0,7	0,2	-0,3	-0,1	-0,1	0,9			
		2005	-0,1	0,5	0,2	0,1	0,2	0,3	0,7	0,2	-0,3	-0,1	-0,1	0,9			
IPSEBENE	84,18%	2003	-0,5	0,3	0,5	0,4	0,1	0,1	-0,2	0,1	0,4	0,3	0,1	0,4	1,9	2,1	2,0
		2004	-0,5	0,4	0,6	0,4	0,2	0,1	-0,1	0,1	0,2	0,2	0,1	0,4			
		2005	-0,4	0,3	0,5	0,3	0,2	0,1	-0,1	0,1	0,2	0,2	0,1	0,4			
ANE	7,69%	2003	1,4	0,3	0,5	0,4	0,3	0,6	-0,6	-0,4	1,2	-0,3	-0,2	0,0	3,2	1,1	1,9
		2004	1,1	-0,7	0,3	0,3	0,4	0,1	-0,6	-0,6	0,8	-0,2	-0,2	0,3			
		2005	1,2	-0,2	0,4	0,3	0,3	0,3	-0,6	-0,5	1,0	-0,3	-0,2	0,1			
ENE	8,13%	2003	3,1	1,9	1,0	-2,9	-2,1	0,0	0,5	1,1	-0,1	-0,3	-0,2	-0,2	1,8	6,9	0,0
		2004	1,0	-0,1	1,3	1,1	2,5	-0,8	1,2	0,2	0,3	0,0	0,0	0,0			
		2005	-0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,1			
HICP	100,00%	2003	-0,1	0,4	0,6	0,1	-0,1	0,1	-0,1	0,2	0,4	0,1	0,1	0,3	2,0	2,4	1,8
		2004	-0,2	0,2	0,7	0,4	0,3	0,0	-0,1	0,1	0,3	0,2	0,1	0,4			
		2005	-0,3	0,3	0,5	0,3	0,2	0,1	-0,2	0,1	0,3	0,2	0,1	0,4			

Source: EUROSTAT, IFL & UC3M

Date: July 21, 2004

Table A6A

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

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avr 03/02(b)	Avr 04/03(b)	Avr 05/04(b)
Non energy commodities less food (1)	2003	-1,4	-1,5	-1,4	-1,8	-1,9	-1,8	-1,8	-2,2	-2,4	-2,4	-2,6	-2,5	-2,0	-0,9	0,5
	2004	-2,3	-2,0	-1,6	-1,4	-1,1	-1,0	-1,0	-0,7	-0,4	-0,1	0,3	0,5			
	2005	0,7	0,5	0,3	0,4	0,3	0,4	0,6	0,6	0,6	0,6	0,6	0,6			
Non energy services (2)	2003	3,4	3,2	3,0	2,9	3,0	2,9	2,9	2,7	2,8	2,9	2,6	2,6	2,9	3,0	3,2
	2004	2,5	2,5	2,9	3,1	2,9	3,0	3,1	3,1	3,1	3,0	3,1	3,2			
	2005	3,2	3,2	3,1	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2			
Core inflation (3=1+2)	2003	1,9	1,7	1,7	1,5	1,6	1,5	1,5	1,3	1,2	1,3	1,1	1,1	1,5	1,9	2,5
	2004	1,2	1,2	1,6	1,8	1,7	1,8	1,9	2,0	2,1	2,2	2,4	2,4			
	2005	2,4	2,4	2,4	2,4	2,4	2,5	2,5	2,5	2,5	2,5	2,5	2,5			
Core inflation less owner's equivalent rent of primary residence	2003	1,4	1,2	1,2	1,0	1,2	1,3	1,3	1,0	0,9	1,0	0,7	0,8	1,1	1,7	2,3
	2004	0,9	1,0	1,5	1,6	1,5	1,6	1,6	1,8	1,9	2,0	2,3	2,3			
	2005	2,3	2,3	2,2	2,3	2,3	2,3	2,4	2,3	2,3	2,3	2,3	2,3			
Food (4)	2003	1,0	1,4	1,4	1,2	1,7	2,1	2,1	2,5	2,4	2,9	3,2	3,6	2,1	3,6	2,9
	2004	3,5	3,3	3,2	3,4	4,1	3,7	4,0	3,9	3,8	3,6	3,3	3,0			
	2005	3,3	3,3	3,2	3,3	2,7	2,7	2,7	2,6	2,7	2,7	2,7	2,7			
Energy (5)	2003	14,1	22,0	23,4	13,0	9,0	9,3	9,1	11,8	14,7	8,8	6,2	6,9	12,2	10,2	-1,2
	2004	7,8	3,8	0,4	5,6	15,0	17,0	14,8	12,7	8,4	11,5	12,6	14,0			
	2005	10,0	7,6	5,5	2,9	-3,0	-5,8	-4,9	-6,2	-5,3	-4,4	-3,8	-4,1			
All items (6=3+4+5)	2003	2,6	3,0	3,0	2,2	2,1	2,1	2,1	2,2	2,3	2,0	1,8	1,9	2,3	2,7	2,2
	2004	1,9	1,7	1,7	2,3	3,1	3,3	3,2	3,1	2,8	3,1	3,2	3,3			
	2005	3,1	3,0	2,7	2,6	2,0	1,8	1,9	1,8	1,9	2,0	2,0	2,0			
All items less owner's equivalent rent of primary residence	2003	2,4	3,0	3,1	2,1	1,9	2,1	2,1	2,2	2,4	2,0	1,7	1,9	2,2	2,8	2,0
	2004	1,9	1,6	1,7	2,3	3,3	3,5	3,3	3,3	2,9	3,2	3,4	3,5			
	2005	3,3	3,0	2,7	2,5	1,8	1,5	1,7	1,5	1,6	1,7	1,7	1,7			

(1) Figures in bold type are forecasted values.

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

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

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

Source: BLS & Universidad Carlos III Madrid

Data: July 20, 2004

Table A6B

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

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D03 / D02	D04 / D03	D05 / D04
Non energy commodities less food (1)	2003	-0,6	0,3	0,4	-0,1	-0,6	-0,7	-0,6	-0,1	0,4	0,1	-0,4	-0,6	-2,5	0,5	0,6
	2004	-0,4	0,6	0,7	0,1	-0,2	-0,6	-0,6	0,2	0,6	0,5	0,1	-0,5			
	2005	-0,2	0,4	0,6	0,2	-0,3	-0,5	-0,5	0,2	0,6	0,5	0,0	-0,5			
Non energy services (2)	2003	0,5	0,4	0,2	0,0	0,3	0,2	0,4	0,3	0,0	0,4	-0,1	0,0	2,6	3,2	3,2
	2004	0,5	0,4	0,6	0,2	0,1	0,3	0,4	0,3	0,0	0,3	0,0	0,0			
	2005	0,5	0,4	0,5	0,3	0,1	0,3	0,4	0,3	0,0	0,4	0,0	0,0			
Core inflation (3=1+2)	2003	0,2	0,4	0,3	0,1	0,1	-0,1	0,1	0,2	0,1	0,3	-0,2	-0,2	1,1	2,4	2,5
	2004	0,2	0,4	0,6	0,2	0,0	0,1	0,1	0,3	0,2	0,4	0,0	-0,1			
	2005	0,3	0,4	0,6	0,2	0,0	0,1	0,2	0,3	0,2	0,4	0,0	-0,1			
Core inflation less owner's equivalent rent of primary residence	2003	0,2	0,5	0,3	0,1	0,0	-0,1	0,0	0,1	0,0	0,3	-0,3	-0,3	0,8	2,3	2,3
	2004	0,2	0,6	0,8	0,2	-0,1	0,0	0,1	0,3	0,1	0,4	-0,1	-0,3			
	2005	0,3	0,5	0,7	0,2	-0,1	0,0	0,1	0,3	0,1	0,5	-0,1	-0,3			
Food (4)	2003	0,1	0,5	0,2	-0,1	0,2	0,4	0,1	0,4	0,2	0,6	0,4	0,7	3,6	3,0	2,7
	2004	0,1	0,2	0,2	0,1	0,9	0,1	0,3	0,3	0,1	0,3	0,1	0,4			
	2005	0,4	0,2	0,1	0,2	0,3	0,2	0,3	0,2	0,2	0,3	0,1	0,3			
Energy (5)	2003	3,4	6,2	5,3	-3,2	-3,0	1,9	0,3	2,7	2,8	-5,3	-2,8	-1,0	6,9	14,0	-4,1
	2004	4,2	2,3	1,8	2,0	5,6	3,6	-1,6	0,8	-1,1	-2,7	-1,7	0,2			
	2005	0,7	0,0	-0,2	-0,6	-0,5	0,7	-0,6	-0,6	-0,1	-1,8	-1,1	-0,1			
All items (6=3+4+5)	2003	0,4	0,8	0,6	-0,2	-0,2	0,1	0,1	0,4	0,3	-0,1	-0,3	-0,1	1,9	3,3	2,0
	2004	0,5	0,5	0,6	0,3	0,6	0,3	0,0	0,3	0,1	0,1	-0,1	0,0			
	2005	0,3	0,4	0,4	0,2	0,0	0,1	0,1	0,2	0,1	0,2	-0,1	-0,1			
All items less owner's equivalent rent of primary residence	2003	0,5	1,0	0,7	-0,3	-0,2	0,1	0,1	0,4	0,3	-0,2	-0,4	-0,2	1,9	3,5	1,7
	2004	0,6	0,7	0,8	0,3	0,7	0,4	-0,1	0,4	0,0	0,1	-0,2	-0,1			
	2005	0,3	0,4	0,5	0,1	0,0	0,1	0,1	0,2	0,1	0,2	-0,2	-0,1			

(1) Figures in bold type are forecasted values.

(2) December 2003 over December 2002 growth rate.

(3) December 2004 over December 2003 growth rate.

(4) December 2005 over December 2004 growth rate.

Source: BLS & Universidad Carlos III Madrid

Data: July 20, 2004

Table A7A

CONSUMER PRICE INDEX, ANNUAL GROWTH RATES IN SPAIN 2003-2004-2005 (a)

			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Avr 03/02(b)	Avr 04/03(b)	Avr 05/04(b)
(1) AE	17,17%	2003	3,7	4,2	4,1	3,1	2,8	2,6	2,5	2,5	2,4	2,6	2,8	2,7	3,0	3,6	
		2004	2,5	2,4	2,4	2,9	3,7	4,0	4,2	4,2	4,3	4,1	4,1	4,1			
		2005	4,1	4,0	4,1	3,7	2,9	2,8	2,7	2,7	2,7	2,6	2,6	2,5			3,1
(2) MAN	30,05%	2003	2,0	2,2	2,3	2,6	2,6	2,5	2,2	2,0	2,1	1,5	1,2	1,2	2,0	0,9	
		2004	0,7	0,5	0,5	0,7	0,9	1,0	1,0	1,0	1,0	1,2	1,2	1,2			
		2005	1,4	1,5	1,5	1,3	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2			1,3
(3) SER	35,05%	2003	4,0	3,9	3,6	4,0	3,5	3,5	3,6	3,7	3,5	3,7	3,7	3,6	3,7	3,8	
		2004	3,6	3,6	3,6	3,7	3,8	3,8	3,8	3,7	3,8	3,8	3,9	4,0			
		2005	4,1	4,1	4,1	3,8	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0			4,0
IPSEBENE (4)=(1)+(2)+(3)	82,28%	2003	3,2	3,3	3,2	3,3	3,0	2,9	2,9	2,8	2,8	2,6	2,6	2,5	2,9	2,7	
		2004	2,3	2,3	2,2	2,4	2,7	2,8	2,9	2,9	2,9	2,9	3,0	3,0			
		2005	3,1	3,1	3,1	2,9	2,8	2,7	2,7	2,7	2,7	2,7	2,7	2,7			2,8
IPSEBENE-XT	77,21%	2003	2,9	3,0	3,0	3,2	3,1	3,0	2,8	2,8	2,7	2,6	2,6	2,6	2,9	2,6	
		2004	2,4	2,4	2,3	2,5	2,6	2,6	2,8	2,8	2,8	2,7	2,7	2,7			
		2005	3,0	3,0	2,9	2,6	2,7	2,7	2,7	2,7	2,7	2,7	2,7	2,7			2,8
(5) ANE	8,60%	2003	7,2	5,9	5,6	4,5	4,6	4,8	5,5	6,5	7,7	7,0	6,7	6,4	6,0	5,2	
		2004	6,5	6,1	6,5	6,8	7,0	6,2	5,4	4,4	3,1	3,5	3,8	3,8			
		2005	3,3	4,8	4,8	5,1	4,6	5,0	4,8	4,9	5,1	5,3	5,5	5,4			4,9
(6) ENE	9,12%	2003	5,5	6,7	6,1	0,8	-1,9	-0,6	0,0	1,1	-0,2	-1,8	1,1	-0,1	1,4	3,9	
		2004	-1,7	-2,5	-2,5	1,4	6,6	7,2	6,2	5,3	6,1	7,3	6,9	7,1			
		2005	6,3	5,8	4,2	2,8	0,3	0,3	0,2	-0,3	-0,6	-0,6	-0,5	-0,4			1,4
IPC	100%	2003	3,7	3,8	3,7	3,1	2,7	2,7	2,8	3,0	2,9	2,6	2,8	2,6	3,0	3,0	
		2004	2,3	2,1	2,1	2,7	3,4	3,5	3,4	3,3	3,2	3,4	3,4	3,4			
		2005	3,4	3,5	3,4	3,0	2,7	2,7	2,6	2,6	2,6	2,6	2,6	2,6			2,9

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

** Weights on General CPI are shown in brackets.

(a) Figures in bold type are forecasted values

(b) 2003 over 2002 mean growth

(c) 2004 over 2003 mean growth

(d) 2005 over 2004 mean growth

Source: INE, IFL & UC3M

Date: July 21, 2004

Table A7B

CONSUMER PRICE INDEX, MONTHLY GROWTH RATES IN SPAIN 2003-2004-2005 (a)

			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D03 / D02	D04 / D03	D05 / D04
(1) AE	17,17%	2003	0,5	0,6	0,3	0,1	0,1	0,1	0,1	0,2	0,1	0,3	0,2	0,1	2,7		
		2004	0,4	0,5	0,3	0,5	1,0	0,4	0,2	0,2	0,1	0,1	0,2	0,1		4,1	
		2005	0,4	0,4	0,3	0,2	0,2	0,2	0,1	0,2	0,1	0,1	0,1	0,1			2,5
(2) MAN	30,05%	2003	-3,1	0,0	1,0	2,7	0,5	-0,2	-3,5	-0,3	1,0	2,3	1,1	-0,1	1,2		
		2004	-3,6	-0,2	0,9	3,0	0,6	-0,1	-3,5	-0,3	1,0	2,5	1,1	-0,1		1,2	
		2005	-3,4	-0,1	0,9	2,8	0,6	-0,1	-3,4	-0,3	1,0	2,5	1,1	-0,1			1,2
(3) SER	35,05%	2003	0,6	0,4	0,5	0,7	-0,2	0,4	0,7	0,7	-0,5	0,2	-0,2	0,4	3,6		
		2004	0,6	0,4	0,5	0,7	-0,1	0,4	0,7	0,6	-0,4	0,2	-0,1	0,4		4,0	
		2005	0,7	0,4	0,6	0,4	0,0	0,4	0,7	0,6	-0,4	0,2	-0,1	0,5			4,0
IPSEBENE (4)=(1)+(2)+(3)	82,28%	2003	-0,8	0,3	0,6	1,3	0,1	0,1	-1,0	0,2	0,2	1,0	0,4	0,1	2,5		
		2004	-1,0	0,2	0,6	1,5	0,4	0,2	-0,9	0,2	0,2	1,0	0,4	0,2		3,0	
		2005	-0,8	0,2	0,6	1,2	0,3	0,2	-0,9	0,2	0,2	0,9	0,4	0,2			2,7
IPSEBENE-XT	77,21%	2003	-0,9	0,2	0,7	1,3	0,3	0,1	-1,3	0,1	0,4	1,1	0,5	0,1	2,6		
		2004	-1,1	0,2	0,6	1,5	0,3	0,1	-1,1	0,1	0,4	1,1	0,5	0,1		2,7	
		2005	-0,8	0,2	0,6	1,2	0,3	0,1	-1,1	0,1	0,4	1,0	0,5	0,1			2,7
(5) ANE	8,60%	2003	0,4	-1,5	0,5	0,0	0,6	0,3	1,5	1,9	2,2	-0,4	0,0	0,9	6,4		
		2004	0,6	-1,9	0,8	0,3	0,8	-0,5	0,7	1,0	0,9	0,0	0,3	0,9		3,8	
		2005	0,1	-0,5	0,8	0,6	0,3	-0,2	0,6	1,0	1,1	0,2	0,4	0,7			5,4
(6) ENE	9,12%	2003	2,2	1,3	1,4	-2,6	-2,5	-0,6	0,9	1,4	-0,4	-1,1	0,3	-0,3	-0,1		
		2004	0,6	0,4	1,5	1,3	2,5	0,0	0,0	0,5	0,3	0,0	-0,1	-0,1		7,1	
		2005	-0,1	-0,1	-0,1	-0,1	0,0	0,0	-0,1	0,0	0,0	0,0	0,0	0,0			-0,4
IPC	100,00%	2003	-0,4	0,2	0,7	0,8	-0,1	0,1	-0,6	0,5	0,3	0,7	0,3	0,2	2,6		
		2004	-0,7	0,0	0,7	1,4	0,6	0,2	-0,7	0,3	0,3	0,8	0,4	0,2		3,4	
		2005	-0,7	0,1	0,6	1,0	0,2	0,1	-0,7	0,3	0,3	0,8	0,4	0,2			2,6

** Weights on General CPI are shown in brackets.

(a) Figures in bold type are forecasted values

(b) December 2003 over December 2002.

(c) December 2004 over December 2003.

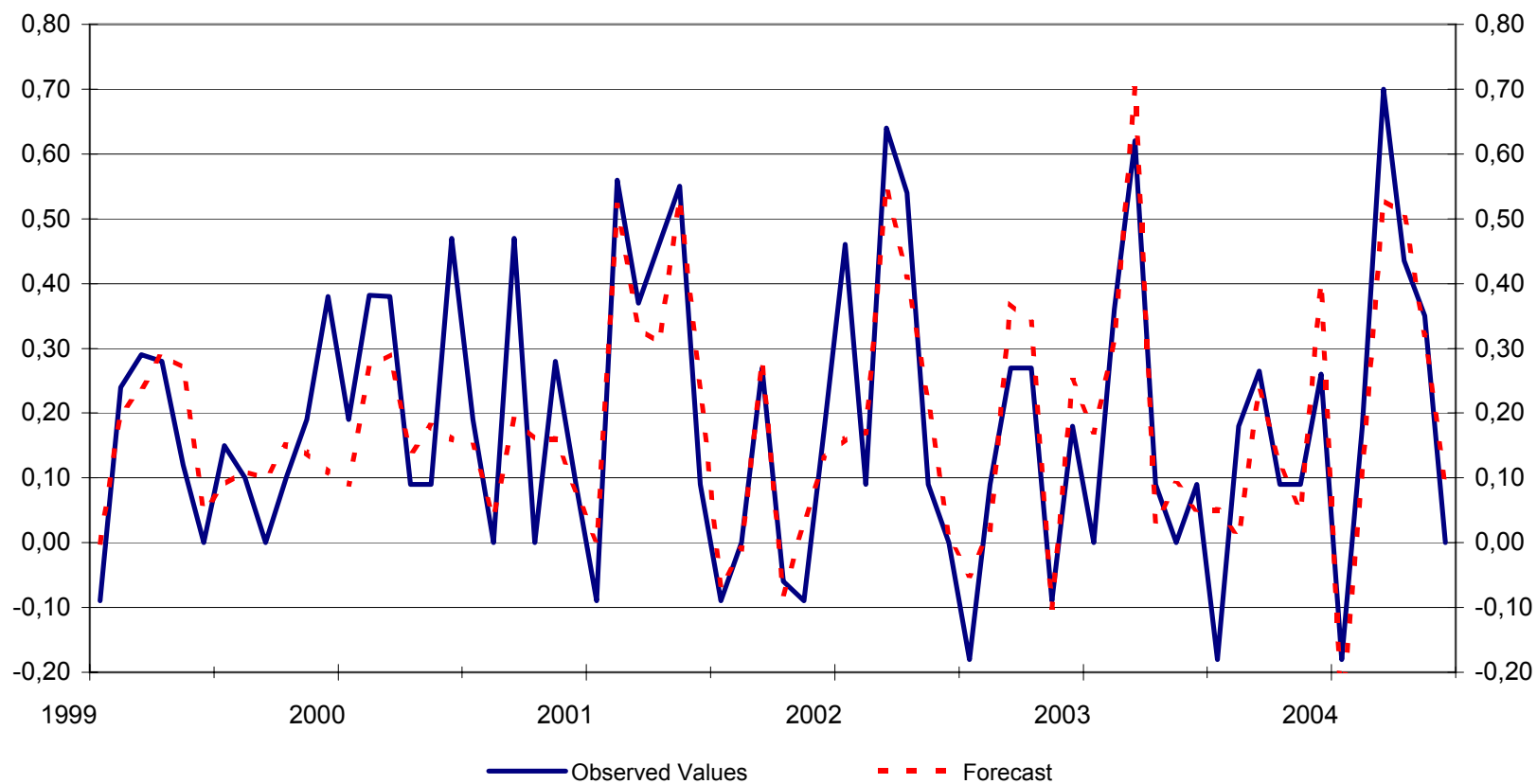
(d) December 2005 over December 2004.

Source: INE, IFL & UC3M

Date: July 21, 2004

Graph A1A

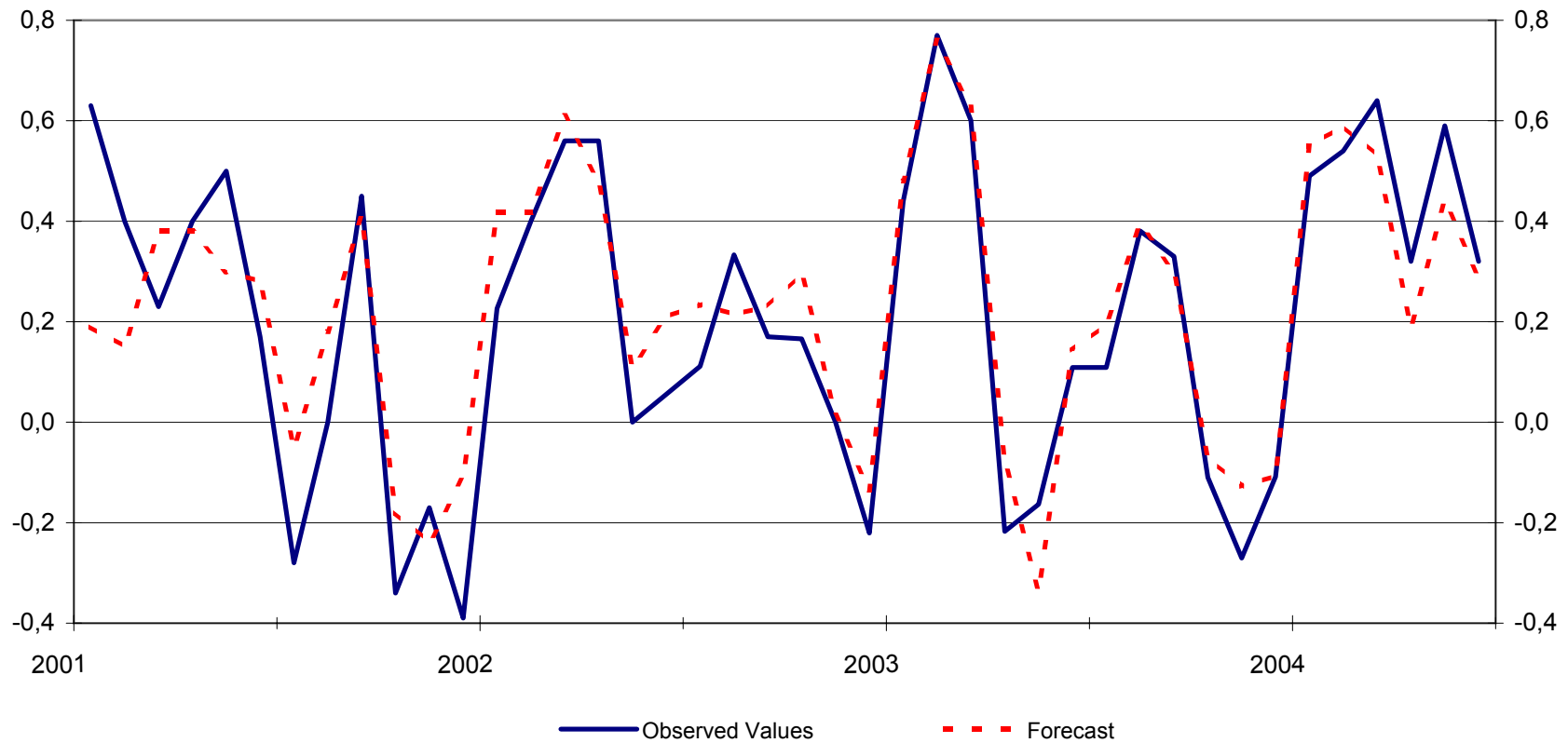
HCPI MONTH-ON-MONTH RATES OF GROWTH IN THE EMU



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

Graph A1B

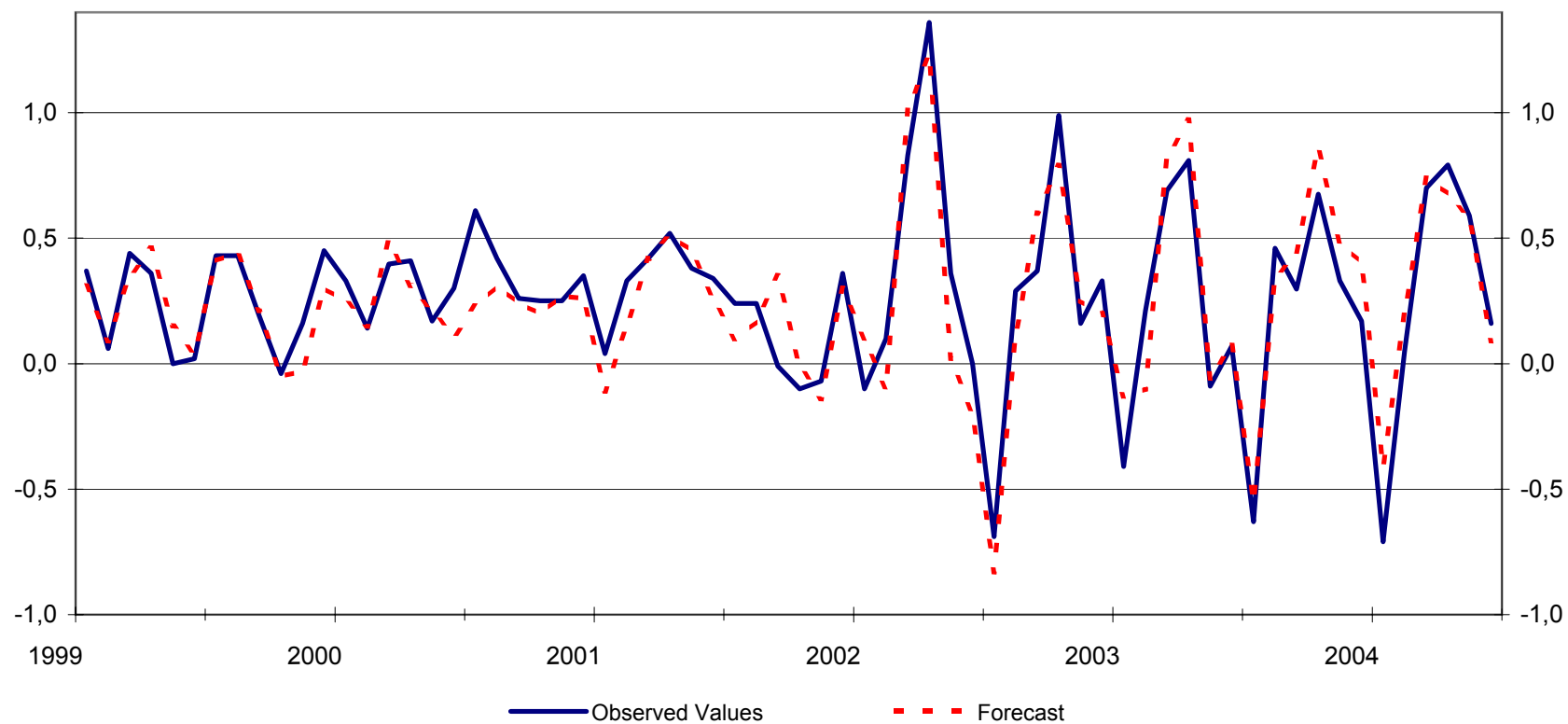
CPI MONTHLY GROWTH RATES IN USA



Source: BLS, IFL & UC3M Date: July 16, 2004

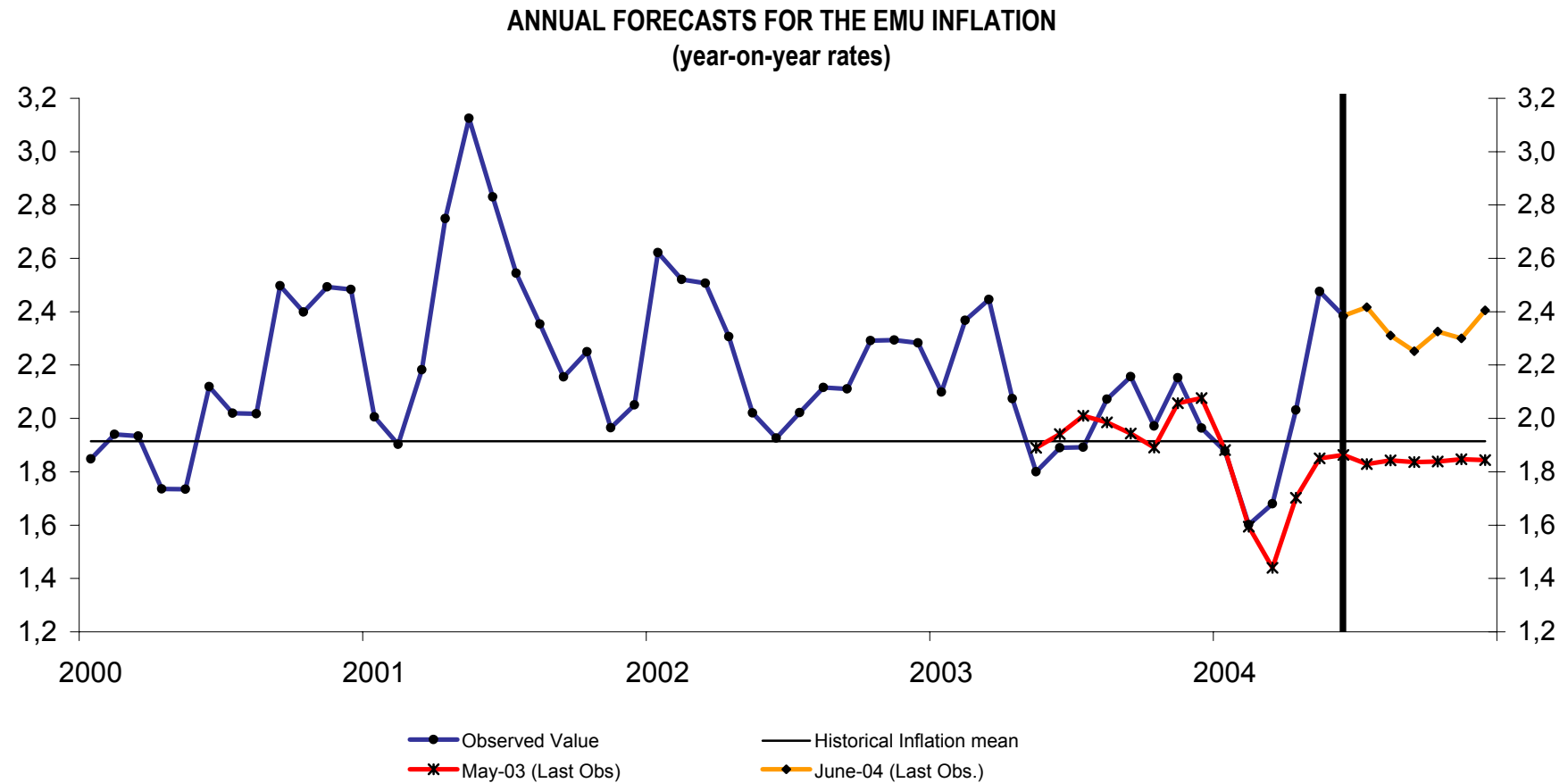
Graph A1C

CPI MONTH-ON-MONTH RATES OF GROWTH IN SPAIN

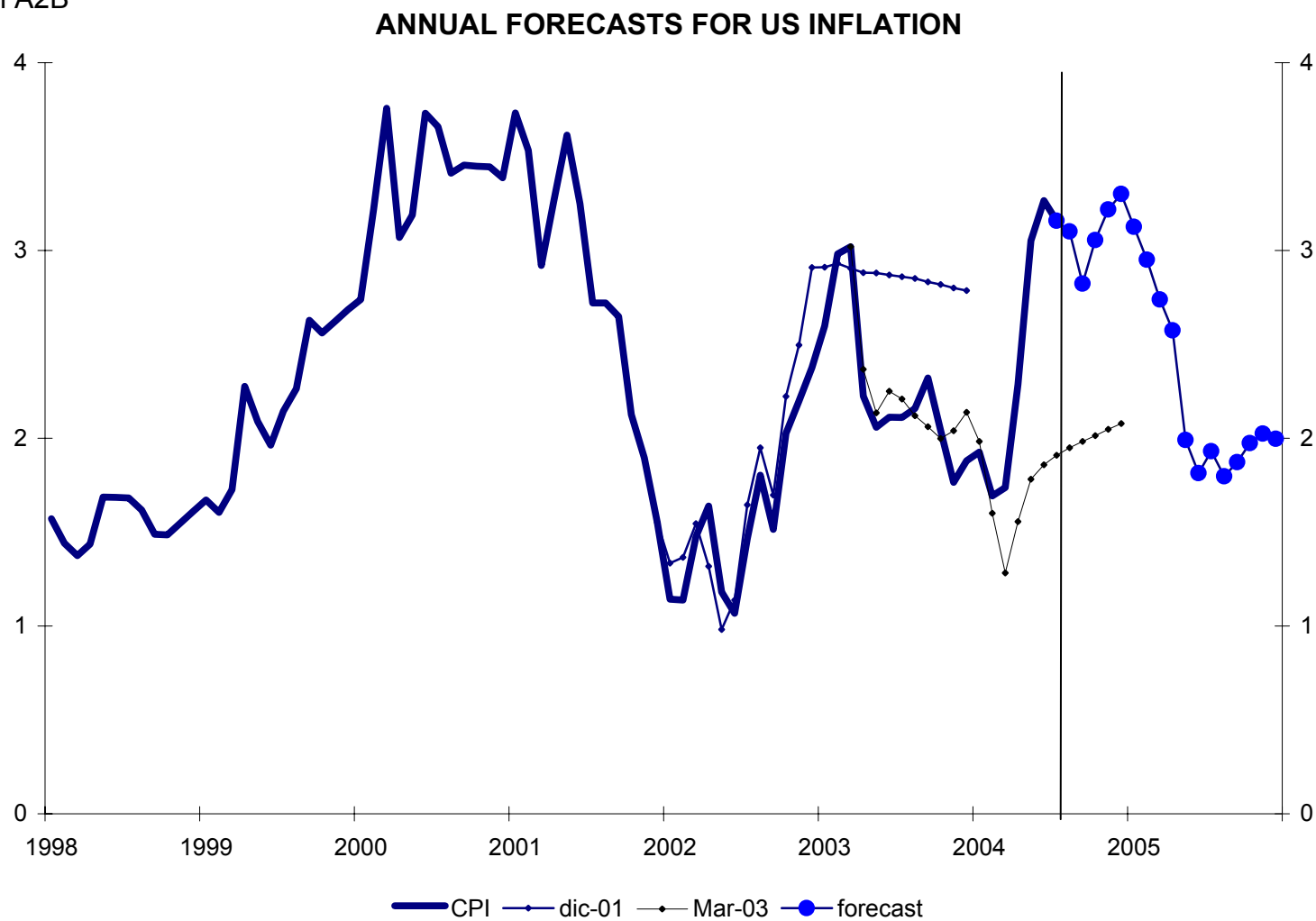


Source: INE, IFL & UC3M Date: July 13 , 2004

Graph A2A



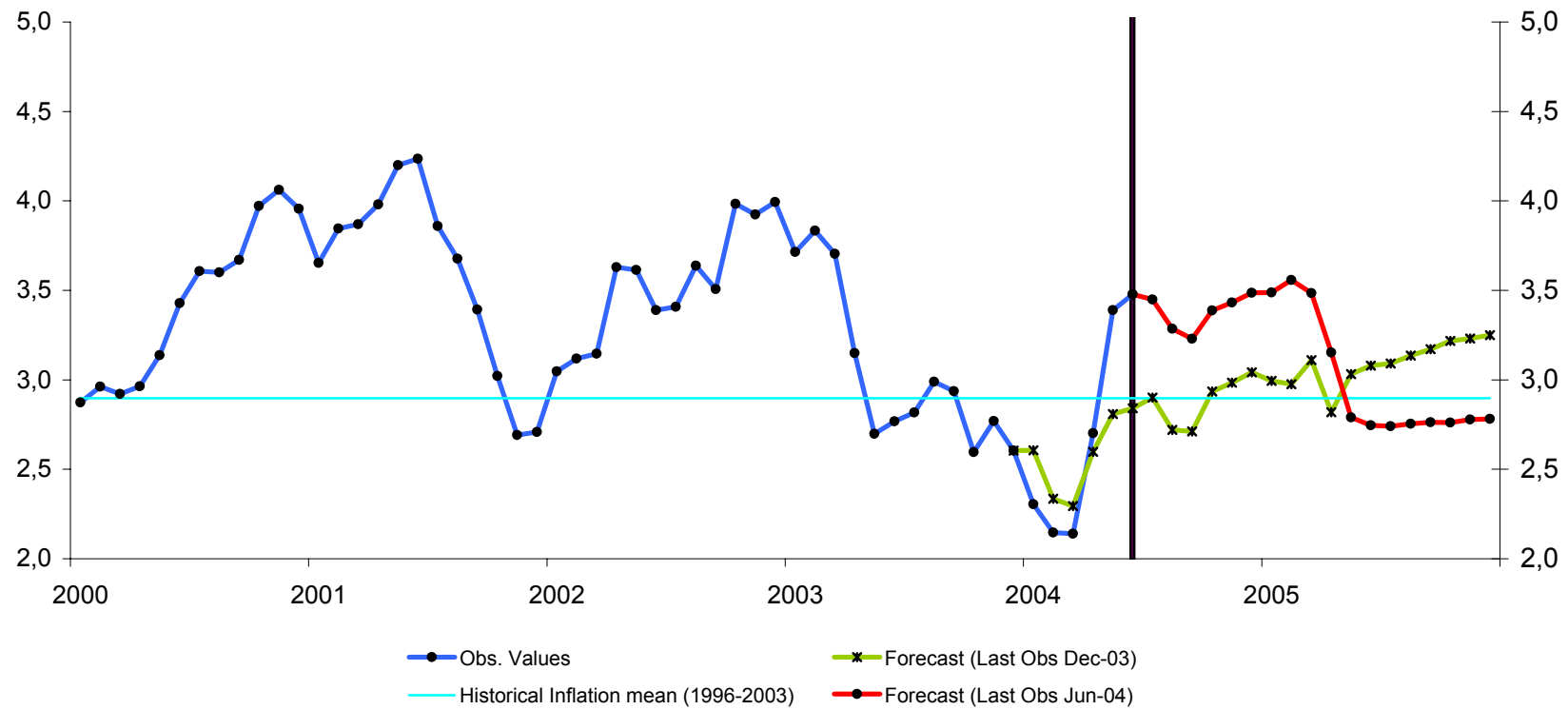
Graph A2B



Source: Universidad Carlos III, Madrid
Date: 20/07/2004

Graph A2C

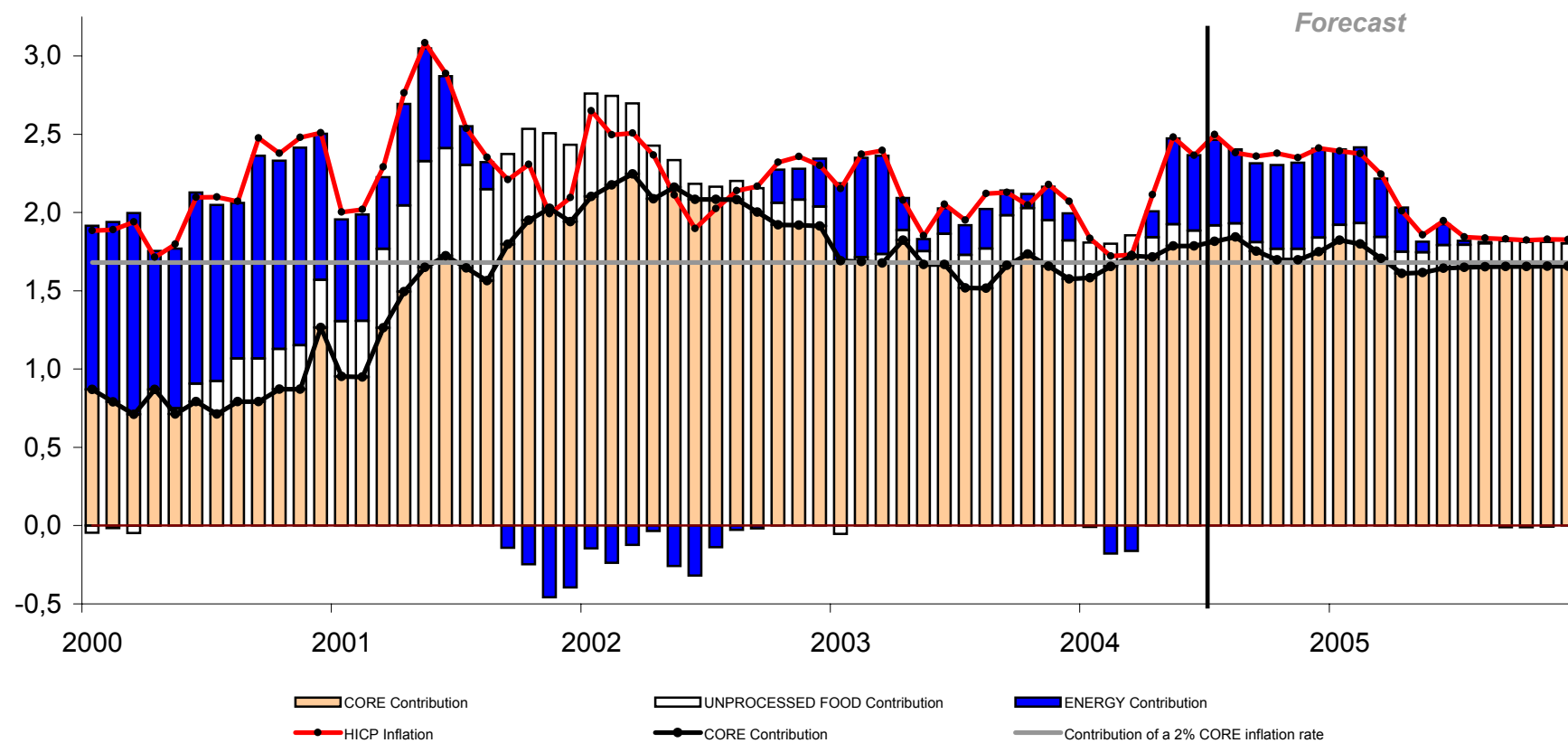
ANNUAL FORECASTS FOR TOTAL INFLATION IN SPAIN
(year-on-year rates)



Source: INE, IFL & UC3M Date: July 21, 2004

Graph A3A

YEAR-ON-YEAR RATE OF EMU INFLATION AND CONTRIBUTIONS OF MAIN COMPONENTS



Source: EUROSTAT, IFL & UC3M Date: July 21, 2004

MONTHLY DEBATES IN PREVIOUS BULLETINS

- Juan Urrutia "The Capitalism to come". Transaction costs and information problems (nº 117)
- Juan Urrutia "The Capitalism to come" Ownership, information and scope (nº116)
- Juan Urrutia "The Capitalism to come" Users as intermediaries (nº115)
- Juan Urrutia "The Capitalism to come" Users as producers (nº114)
- Juan Urrutia "The Capitalism to come" Homo Posteconomicus (nº113)
- Juan Urrutia "The Capitalism to come". (nº112)
- Juan de Dios Tena Horrillo Sectoral Output and Price Reactions to Monetary Shocks in the UK. Do Financial Factors Really Matter (nº 110)
- Enrique M.Quilis, Análisis factorial dinámico: una panorámica (nº 109)
- Banerjee Anindya,. Leading indicators for euro-area inflation and GDP growth: some considerations (nº102, pág. 48)
- Espasa A., Albacete R., "Innovations in core inflation are more persistent than innovations in other prices". (nº 96, p. 35)
- Mario Izquierdo (Banco de España), Omar Licandro (Instituto Universitario Europeo y FEDEA) y Alberto Maydeu (Universitat de Barcelona) "Mejoras De Calidad E Índices De Precios Del Automóvil En España".
- Mayo Burgos, Ivan, "Building a more dynamic Europe November 27th , 2001", (nº 89)
- Fernando Garcia-Belenguer Universidad Carlos III and Manuel S. Santos Arizona State University "Convergence in the OECD" (nº 88)
- Oxley, Les , "Earthquakes and volcanoes: the international conference on modelling and forecasting financial volatility, Perth, 7-9th September 2001" (nº 87)
- Espasa, A., Poncela, P. and Senra, E., "A disaggregated analysis of us consumer price indexes" (Bulletin nº 86)
- Pérez Pereira, María , " II Jornadas Sobre Derecho Del Comercio Electrónico. Una Crónica" (Bulletin nº 85).
- Nieto, María J., "Reflections on the regulatory approach to e finance"(Bulletin nº 84)
- Veredas, David, "Estacionalidad Intra diaria de datos financieros de alta frecuencia" nº 81, pp54-60)
- Quilis, Enrique M., "Algunas consideraciones sobre los indicadores cíclicos" (nº 79, p. 73-80)
- Jimeno, Juan F., "Empleo y salarios públicos: una aproximación a partir de la teoría de los incentivos" (nº 78, pp. 57-64)
- Herce, José A., "¿Existe una solución demográfica al problema de las pensiones?" (nº 77, pp. 71-83)
- González Veiga, I., "El cambio de sistema del Índice de Precios de Consumo", (nº 76, pp. 60-76)
- Astolfi, R. D. Ladiray y G.L. Mazzi, "Business cycle statistics for the Euro-zone: Situation and prospective", (nº 75, pp. 58-86)

Elena Arispe, Laboratorio de Predicción y Análisis Macroeconómico, Universidad Carlos III
C/ Madrid, 126 E-28903 Getafe (Madrid) T. +34 91 624 98 89 F. +34 91 624 93 05
E-mail: laborat@est-econ.uc3m.es
www.uc3m.es/boletin



OF E.U. AND US INFLATION AND MACROECONOMIC ANALYSIS



Universidad Carlos III de Madrid

SUBSCRIPTION FORM - 2004 YEAR

First and Last Name:
 Address: Postal Code:
 Telephone: Telefax E-Mail:
 VAT Number: Date:

EU & US Inflation and Macroeconomic Analysis Bulletin (*Monthly edition*) **€325** ☐
 Delivered 14 days after the European Harmonised Prices Index publication

Inflation Forecast Update Service (*3 updates*) **€1150** ☐
 12 hours after the Spanish CPI publication
 48 hours after the European Harmonised Prices Index publication
 48 hours after the United States CPI publication

Jointly Subscription **€1275** ☐
 Subscription to the EU & US Inflation and Macroeconomic Analysis Bulletin
 + Inflation Forecast Update Service.

PAYMENT METHODS

(Including VAT and shipping fees)

Bank Transfer ☐
 To: Fundación Universidad Carlos III C.C.C.: 2096-0630-18-2839372704

Credit Card **VISA** ☐ **AMERICAN EXPRESS** ☐ **MASTERCARD** ☐
 Credit card number Expiry date
 Signature

Please send me FREE OF CHARGE

A copy of the EU & US Inflation and Macroeconomic Analysis Bulletin ☐
 An Inflation Forecast Update of the current Bulletin edition ☐

☐ Thank you for giving us details of a colleague who may be interested in our products and services ☐

.....

Authorised signature:

Bulletin EU & US Inflation and Macroeconomic Analysis

INSTITUTO FLORES DE LEMUS
Universidad Carlos III de Madrid

INTERNATIONAL INFLATION FORECASTS

	JULY 2004		AVERAGE ANNUAL RATES				
	Monthly Rate	Annual Rate	2001*	2002*	2003*	2004	2005
ECONOMIC MONETARY UNION							
Total Inflation	-0.1	2.4	2.3	2.3	2.1	2.2	1.9
Core Inflation	-0.1	2.2	1.9	2.5	2.0	2.1	2.0
Goods	-1.4	0.9	0.9	1.5	0.8	0.8	0.9
Services	0.7	2.7	2.5	3.1	2.6	2.6	2.6
GDP			1.6	0.9	0.5	1.7	2.0
Private Final Consumption Expenditure			2.0	1.2	1.2	1.6	1.9
Gross Fixed Capital Formation			-0.3	-2.8	-0.8	2.2	2.1
Exports of Goods and Services			3.4	1.5	0.1	4.1	4.7
Imports of Goods and Services			1.7	0.3	1.9	4.2	4.6
Gross Value Added Total			1.6	0.9	0.5	1.7	2.0
Gross Value Added Agriculture			-1.2	0.8	-3.4	1.1	1.2
Gross Value Added Industry			0.5	0.3	0.0	1.8	1.8
Gross Value Added Construction			-0.6	-1.0	-0.5	0.8	0.3
Gross Value Added Services			2.7	1.4	1.0	1.9	2.2
OTHER ECONOMIC INDICATOR							
Industrial Production Index (excluding construction)			0.4	-0.5	0.4	2.3	2.1
UNITED STATES							
Total Inflation	2.8	1.6	2.3	2.7	2.2	2.7	2.2
Core Inflation	2.7	2.3	1.5	1.9	2.5	1.9	2.5
Goods	0.3	-1.1	-2.0	-0.9	0.5	-0.9	0.5
Services	3.7	3.8	2.9	3.0	3.2	3.0	3.2

*Observed values.

SPANISH ECONOMY FORECASTS

	JULY 2004		AVERAGE ANNUAL RATES				
	Monthly Rate	Annual Rate	2001*	2002*	2003*	2004	2005
Total Inflation	-0.7	3.4	3.6	3.1	3.0	3.0	2.9
Trend Inflation	-0.9	2.9	3.4	3.7	2.9	2.7	2.8
Goods	-3.5	1.0	3.1	2.5	2.0	0.9	1.3
Services	0.7	3.8	7.1	4.6	3.7	3.8	4.0

*Observed values.

For information about subscriptions see

SUBSCRIPTION FORM

inside this issue

www.uc3m.es/boletin