

EDITORIAL

LOS PRECIOS AL CONSUMO DE LA ENERGÍA EN LA UNIÓN MONETARIA PUEDEN PASAR DE TASAS DE VARIACIÓN ANUAL POSITIVAS DEL 15,2% EN NOVIEMBRE DE 2000 A NEGATIVAS DEL 4% EN DICIEMBRE DE 2001

EL PERFIL DE CRECIMIENTO SEGUN LA CNTR ESPAÑOLA: LOS DATOS AJUSTADOS DE ESTACIONALIDAD

La Contabilidad Nacional Trimestral (CNTR) adaptada al SEC-95 se publica en España según tres versiones alternativas: la de datos brutos, la de datos corregidos de estacionalidad y efecto calendario y la de ciclo tendencia. (Ver en p. 38)

TEMA A DEBATE

BUSINESS CYCLE STATISTICS FOR THE EURO-ZONE: SITUATION AND PROSPECTIVES,

Por R. Astolfi, D. Ladiray y G. L. Mazzi

In the recent past, Eurostat action focused essentially on structural and well-harmonised figures for the European Union. After the introduction of Euro, the situation changed considerably according to the request from European Central Bank, DG ECFIN and other institutional and non-institutional users. (sigue en p. 58)

EMPRESA Y COMERCIO ELECTRÓNICO: ALGUNAS REFLEXIONES,

Por I. Gutiérrez y C. Delgado

Se está produciendo una revolución que está cambiando la economía global. La introducción de la tecnología nweba está convirtiendo todos los aspectos de la empresa y los negocios en actividades basadas en la información. (sigue en p. 87)

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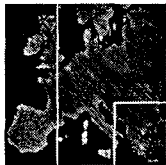
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FINANCIEROS Y TESOREROS
DE EMPRESA

LOS PRECIOS AL CONSUMO DE LA ENERGÍA EN LA UNIÓN MONETARIA PUEDEN PASAR DE TASAS DE VARIACIÓN ANUAL POSITIVAS DEL 15,2% EN NOVIEMBRE DE 2000 A NEGATIVAS DEL 4% EN DICIEMBRE DE 2001

THE YEAR-ON-YEAR RATE OF GROWTH OF THE CONSUMER PRICES OF ENERGY IN THE MONETARY UNION COULD PASS FROM A POSITIVE VALUE OF 15.2% IN NOVEMBER 2000 TO A NEGATIVE ONE OF 4% IN DECEMBER 2001

I. EDITORIAL

En la Unión Monetaria la predicción de inflación para el mes de diciembre es 0,04% (utilizando datos europeos desagregados por sectores), con lo que la tasa anual se sitúa en el 2,5%, compuesta de una tasa de 1,6% en los precios no energéticos y del 15,2% en los precios energéticos. La inflación anual media para la zona euro se predice en 2,3%, 1,8% y 1,6% en 2000, 2001 y 2002, respectivamente. Esto se lograría con subidas de la inflación subyacente durante esos años y con bajadas de la inflación residual, motivadas por la evolución de los precios de la energía, que responderían a caídas en los precios del crudo de los 32 dólares en noviembre a un valor medio de 24 dólares en 2002. Para mayor información consultar el cuadro 3 dentro del punto II.1.

La inflación en la zona euro en el mes de noviembre de 2000 se caracterizó por una tasa mensual de 0,28%, con lo que la tasa anual alcanzó el 2,88%. Como puede observarse en el cuadro 1 dentro del punto II.1 la inflación subyacente registró una ligera innovación al alza como consecuencia de las sorpresas en tal dirección en los alimentos elaborados y los servicios. La inflación residual registró una fuerte innovación al alza como consecuencia de las sorpresas en esa dirección registradas en los precios energéticos y en los alimentos no elaborados.

I. MAIN POINTS IN THIS BULLETIN

The inflation forecast for December in the Monetary Union is 0.04% (using European data disaggregated by sectors), with an annual rate of 2.5%, composed by an annual rate of 1.6% in non-energy prices and of 15.2% in energy prices. The expectations for the mean annual rate are 2.3%, 1.8% and 1.6% in 2000, 2001 and 2002, respectively. This would be achieved through increments in core inflation in those years and decreases in residual inflation, due to the favourable evolution of the energy prices as a consequence of the drops registered in the international price of crude from U.S \$32 to a mean value of U.S \$24 in 2002. More detailed information may be found in table 3 in point II.1.

In November, inflation in the Monetary Union registered a monthly rate of 0.28%, with an annual rate of 2.88%. As it is shown in table 1 inside point II.1 core inflation registered a slight upward innovation as a consequence of the surprises in the same direction registered in processed food and services. Residual inflation registered a relevant upward innovation due to the evolution of the energy prices and the prices of non-processed food.

Unión Monetaria (UM-11) <i>Monetary Union (MU-11)</i>	TASAS DE CRECIMIENTO ANUAL MEDIO AVERAGE ANNUAL RATE OF GROWTH		
	2000	2001	2002
Inflación Residual / <i>Residual Inflation</i> - 17.19%	7.6	2.2	0.3
Inflación Subyacente / <i>Core Inflation</i> - 82.81%	1.3	1.6	1.9
Inflación en el IPCA / <i>HICP Inflation</i> - 100%	2.3	1.8	1.6



En cuanto a los países que componen la Unión Monetaria, como puede observarse en los cuadros 2, dentro del punto II.1 y A2 del apéndice, se han registrado innovaciones al alza en Alemania, Francia, Italia y Bélgica, ligeras sorpresas al alza en Austria, Luxemburgo y Portugal; innovaciones a la baja en Finlandia y Holanda. El dato observado coincide con nuestra previsión para España e Irlanda.

Las predicciones de este Boletín indican que desde junio de 2000 a mayo de 2001 la inflación armonizada en la zona euro va a estar por encima del 2%. Esto es un período largo de desviaciones sobre el objetivo de inflación que puede elevar las expectativas inflacionistas de los agentes. Como también se indicó en el Boletín anterior, es probable que para cortar la posible creación de mayores expectativas de inflación, el BCE suba su tipo de interés en 50 puntos básicos durante los próximos tres meses.

Por lo que se refiere a la zona euro, mientras que el crecimiento se ralentiza, la inflación ha experimentado un cierto repunte y, como se ha mencionado antes, crecerá por encima del objetivo del 2% durante la mayor parte del próximo año. El BCE ha venido alertando del riesgo de inflación durante este año pero la reciente recuperación del euro, el descenso en el precio de los combustibles y la debilidad del crecimiento, tanto interno como del entorno internacional, sugieren que el BCE mantendrá tipos por ahora. Sin embargo, es probable que los vuelva a subir a principios de 2001 una vez que el crecimiento vuelva a un mayor ritmo.

La predicción para Estados Unidos de la tasa mensual del IPC para diciembre de 2000 es del -0,07% con una tasa anual del 3,4%. Las expectativas de crecimiento medio para el 2000 son del 3,4%, para el 2001 de 2,4% y 2,3% para el 2002.

Taken the countries that make up the Monetary Union as it is shown in tables 2 of the point II.1 and A2 in appendix, there have been upward innovations in Germany, France, Italy and Belgium: slight upward surprises in Austria, Luxembourg and Portugal; downward innovations in Finland and the Netherlands. In Spain and Ireland, observed data has coincided with our prediction.

Forecasts made in this Bulletin indicate that from June 2000 to May 2001 harmonised inflation in the Euro zone is going to be above 2%. This is a long period of deviation from the inflation objective that may raise inflation expectations on the part of the economic agents. As already was indicated in the last Bulletin, it is likely that in order to cut the possible creation of greater inflation expectations, the ECB would find itself obliged to raise interest rates in 50 basic points during the following three months.

In the Euro zone, while growth has been slowing, inflation surged and will grow above the 2% goal for most part of next year. The ECB has been warning of the risk to inflation through most of this year but the recent recovery of the Euro, the easing in oil prices, and weaker domestic and global growth suggests it will remain on the sidelines for now. However, the central bank is likely to tighten again early next year once growth starts to rebound.

The forecast for the United States monthly CPI rate for December 2000 is -0.07% with an annual rate of 3.4%. Mean growth expectations for 2000 are of 3.4%, for 2001 they are 2.4% and 2.3% in 2002.

Estados Unidos United States	TASA DE CRECIMIENTO ANUAL MEDIO AVERAGE ANNUAL RATE OF GROWTH		
	2000	2001	2002
Inflación Residual / <i>Residual Inflation</i> – 26.6%	6.6	2.0	1.8
Inflación Subyacente / <i>Core Inflation</i>– 73.4%	2.4	2.5	2.5
Inflación en el IPC / <i>CPI Inflation</i> - 100%	3.4	2.4	2.3

Se prevé que la *inflación subyacente* cierre el año 2000 con una tasa anual de 2,6%, y se mantenga bastante estable durante 2001-2002. Esto vendría propiciado por un comportamiento moderado de los precios de los bienes no alimenticios y no energéticos ("manufacturas"), que es el componente con menor tasa de crecimiento anual (0,7% para Noviembre).

Core inflation is expected to reach 2.6% in December 2000, and to remain stable enough during 2001-2002. This evolution is explained above all by the moderate growth in prices of non-energy commodities with the exception of food prices ("commodities"), which is the component with the least annual rate of growth (0.7% in November).



Las expectativas de crecimiento medio para la inflación residual (que en USA incluye alimentos y bienes energéticos) se sitúan en el 6,6% para 2000, en el 2,0% para 2001 y 1,8% para el 2002.

En el mes de Noviembre, la inflación norteamericana ha evolucionado ligeramente por encima de las expectativas (tasa mensual de 0,06% frente al 0,02% previsto). Esto ha sido debido fundamentalmente a una innovación al alza en los precios de las manufacturas que casi se ha compensado con otra de signo contrario en los servicios.

En el Boletín de este mes se hace especial hincapié en la evolución y perspectivas de los precios de las manufacturas, haciendo un estudio comparativo con la Zona Euro (véase páginas 14 y 15).

El balance de riesgos de la economía americana presenta dos elementos que serán vigilados de cerca por la Reserva Federal antes de tomar cualquier decisión. Por un lado, la evidencia de una ralentización de la actividad más rápida de lo esperado y por otro la amenaza que supone un mercado de trabajo en tensión para la estabilidad de precios.

Los responsables de la política monetaria han dejado entrever su disposición a reducir los tipos en la próxima reunión del FOMC y probablemente así sea. Sin embargo la extensión y continuidad de tal medida dependerá de la evolución tanto de los costes laborales unitarios como de las condiciones económicas. De hecho, si tal como se espera la economía se recupera en la segunda mitad de 2001, la Reserva Federal podría volver a una posición neutral o restrictiva.

La predicción de inflación en España para el mes de diciembre es 0,26%, con lo que la tasa anual alcanzará un valor de 3,86%. Las tasas medias se predicen en 3,4% para 2000 y en 3,0% y 2,8% en 2001 y 2002, respectivamente.

La inflación española en noviembre de 2000 se comportó prácticamente según lo esperado, situándose su tasa anual en el 4,1%, alcanzando el valor máximo de este ciclo. Este dato se ha caracterizado por: innovaciones al alza en bienes elaborados no energéticos dentro de la inflación tendencial y en alimentos no elaborados dentro de la inflación residual.

Como se viene comentando en Boletines anteriores la evolución de los precios de las manufacturas supone un incremento grande en términos relativos respecto a Europa, que si no está siendo compensado en aumentos relativos de calidad implica una pérdida de competitividad que necesariamente repercutirá en una menor tasa de crecimiento económico.

Mean growth expectations for residual inflation (in USA this includes food and energy goods) are placed at 6.6% for 2000, 2.0% for 2001, and 1.8% in 2002.

In November, inflation in the United States performed slightly higher than expected (monthly rate of 0.06% instead of the 0.02% forecasted). This fact was due to an upward innovation in commodities prices which was more or less offset by another in service prices in the opposite sense.

In this bulletin, we place special emphasis on the evolution and perspectives of commodity prices, with a comparative study between the USA and the Euro Zone (more details on pages 14 and 15).

The balance of risks of the American economy presents two major issues that have to be closely monitored by the Fed before taking any decision. On one side, the evidence of a faster than expected slowdown in activity and on the other, the threat posed by tight labor markets to price stability.

Policymakers have strongly hinted that they were prepared to ease policy at the next FOMC meeting and they will probably do so. However, the extent and continuity of such measure will depend very much on the performance of both unit labor costs and economic conditions. Moreover, should the economy recover, as expected, in the second half of 2001, the Fed would return to a neutral or tightening mode.

The forecast for inflation in December in Spain is 0.26%, then the annual rate will reach a figure of 3.86%. The expected mean values are 3.4% in 2000, 3.0% in 2001 and 2.8% in 2002.

In November, monthly Spanish inflation behaved as was foreseen, stayed its annual rate at 4.1%, reaching the maximum value of this period. This figure is characterised by: upward innovations in non-energy processed goods of trend inflation and in non-processed food inside of residual inflation.

As already was indicated in the last Bulletins the actual evolution of the commodities prices supposes a relevant increment in relative terms respect to Europe, that if it is not compensated in relative increases of quality would imply a loss of competitiveness which necessarily will translate into a minor rate of economic growth.



El INE está culminando la primera fase del cambio metodológico en la elaboración del IPC, con la consecución de pesos variables para cada componente. Esto supondrá una ruptura en las series que habrá que afrontar para la obtención de nuestras predicciones y diagnóstico. En este Boletín se irán realizando las adaptaciones oportunas para poder ofrecer en todo momento unas predicciones con al menos el mismo nivel de fiabilidad que el actual.

The National Statistics Institute of Spain is finalising the first phase of the methodological change in the elaboration of the consumer price index. This will imply new variable weights and suppose a rupture of the series that we are able to face in order to obtain our forecasts and diagnosis.

España <i>Spain</i>	TASA DE CRECIMIENTO ANUAL MEDIO AVERAGE ANNUAL RATE OF GROWTH		
	2000	2001	2002
Inflación Residual / <i>Residual Inflation</i> – 22.34%	6.5	2.9	2.1
Inflación Tendencial / <i>Trend Inflation</i> – 77.66%	2.5	3.1	3.1
Inflación en el IPC / <i>CPI Inflation</i> - 100%	3.4	3.0	2.8

A partir de este mes, se incorpora al boletín un **Análisis de inflación para la Comunidad de Madrid**. El objetivo de esta nueva sección viene dado por el creciente interés de las Comunidades Autónomas de disponer de instrumentos de análisis y evaluación de la realidad económica en términos absolutos y también en términos relativos respecto España y Europa.

Starting this month, an **Analysis of the inflation for the Madrid Region** will be included in the Bulletin. The main objective of this new section comes about as a result of the growing interest of Autonomous regions have instruments available for analysis and evaluation of economic reality.

El estudio de la inflación sobre la Comunidad Autónoma de Madrid (CAM) se encuentra en una primera fase, las predicciones han sido obtenidas con modelos referidos a los grupos principales del Índice de Precios para la CAM.

The Madrid Region (MR) inflation study is found in a first approach, so the predictions have been obtained with models referring to the main Consumers Price Index groups in the Madrid Region.

Índice General / <i>CPI Inflation</i>	TASA DE CRECIMIENTO ANUAL MEDIO AVERAGE ANNUAL RATE OF GROWTH		
	2000	2001	2002
Comunidad de Madrid / <i>Madrid Region</i>	3.4	3.5	3.2
España / <i>Spain</i>	3.4	3.0	2.8
UEM - 11 / <i>MEU</i> - 11	2.3	1.8	1.6

Las expectativas de crecimiento medio para la inflación en la CAM se sitúan en el 3,4% para 2000 y en el 3,5% para 2001. Estas últimas son algo superiores a las expectativas a nivel nacional. Ello es debido a que, por el momento, no hemos podido aislar el grupo de bienes energéticos, por tanto los modelos empleados no pueden estimar con precisión las fuertes oscilaciones en la inflación procedentes de dichos precios. Esto se llevará a cabo en el futuro muy próximo. Con ello suponemos que el dato de crecimiento medio para el 2001 se sitúe unas tres décimas por debajo del estimado anteriormente.

Average inflation growth expectations for the MR stand at 3.4% for 2000 and 3.5% for 2001. The latter is higher than expectations for the Spanish State as a whole. This fact is due to the impossibility of taking out the energy component, which is included in some of those main eight groups. So the available models cannot estimate the significant variations in inflation accurately owing to that erratic component. With all of this, we suppose the average rate of growth for 2001 would tend to be three tenths of a percentage point below the forecast.

De las tres versiones en que se publica la **CNTR española**, la versión de datos corregidos de estacionalidad es la más recomendable para el seguimiento de la coyuntura por las razones que se proporcionan en la sección III.

Of the three versions in which is published the **Spanish CNTR** (Quarterly National Accounts, in its Spanish abbreviation), the one corresponding to seasonally adjusted data is the version which could be considered more reliable for short-term economic analysis. The reasons for that conclusion are provided in section III.



El crecimiento del PIB en el tercer trimestre del actual ejercicio, según las recientes estimaciones de la Contabilidad Nacional Trimestral, se desacelera, tal y como se esperaba. El consumo de los hogares se debilita pero se recupera la inversión en equipo y la de la construcción mantiene su fortaleza, a pesar del aumento del tipo de interés de las hipotecas. A la luz de la nueva información se modifican ligeramente las previsiones macroeconómicas, para 2000 se aumenta la previsión de crecimiento de la inversión en equipo mientras que para el resto de las variables no se modifica. Como resultado de este cambio la previsión de crecimiento de la economía se aumenta al 4,0%. Para 2001 se reduce el crecimiento del consumo y de las exportaciones, como consecuencia de ello la previsión de crecimiento se reduce al 3,3%, dos décimas por debajo de la previsión anterior.

En la sección **"Temas a Debate"** de este mes se incluyen dos contribuciones. Una procedente de expertos de Eurostat, en la que se hace un análisis crítico sobre la situación actual y perspectivas de las estadísticas europeas a corto plazo, con una demanda actual creciente debido a la política monetaria común en la zona euro. El artículo comenta también los proyectos estadístico-econométricos existentes en Eurostat sobre temas como estimación mensual del PIB, análisis econométricos de las revisiones de datos oficiales, ajuste estacional y extracción del componente cíclico, relaciones entre los indicadores cíclicos de los diferentes países europeos, etc. La segunda contribución realizada por profesores de la Universidad Carlos III de Madrid se centra en determinadas reflexiones sobre las implicaciones del comercio electrónico en la empresa.

The growth of the Spanish GDP in the third quarter of the present exercise, according to the recent estimations of the National Accounting, decelerates, just as was expected. The consumption is weakened but recuperates the investment in equipment and that of the construction maintains its fortress, in spite of the increase of the type of interest of the mortgages. To the light of the new information the forecasts are modified slightly. As result of this change the forecast of growth of the economy is estimated as 4.0% in year 2000. For 2001 the growth of the consumption and of the exportations is reduced, as consequence of it the forecast of GDP growth is reduced to the 3.3%, two tenths below the previous forecast.

*In the section **"Monthly Debates"** appears two contributions. One, written by Eurostat experts, and analyzes the current situation and the perspectives of the short run European statistics, with an increasing current demand due to the common monetary policy in the Euro-zone. The article also comments the existent statistic-econometric projects of Eurostat about themes as monthly estimation of GDP, econometrics analysis about revisions of official data, seasonality adjustment and extraction of cyclical component, relations among European indicators, etc.. The second contribution, written by professors of Carlos III University, focus on reflexions about the implications of the electronic trade on the firms.*

22 de Diciembre de 2000

December 22, 2000



II. 1 Unión Monetaria y Europea

La inflación en la zona euro fue del 0.28%, cifra superior a nuestra predicción.

La inflación en la Unión Monetaria en el mes de noviembre fue del 0,28% frente a la predicción por sectores de 0,10% avanzada en el anterior Boletín. La tasa anual se sitúa en el 2,88%.

El cuadro 1 recoge los errores de predicción de los distintos agregados básicos para la zona euro.

II.1 Monetary and European Unions

In November, inflation in the Monetary Union was 0.28%, a figure that is greater than the 0.10% forecasted by sectors. The annual rate is standing at 2.88%

Table 1 summarises the discrepancies between observed and forecasted values for the different basic aggregations in Euro Zone.

Cuadro 1		Table 1	
VALORES OBSERVADOS Y PREDICCIONES EN LOS DATOS DE PRECIOS AL CONSUMO EN LA UM OBSERVED AND FORECAST VALUES ON CONSUMER PRICE FIGURES IN THE MU			
Indices de Precios al Consumo (IPCA) Consumer Price Index (HICP)	Crecimiento observado Current growth XI 2000	Predicción Forecast	Intervalos de confianza (*) Confidence intervals (*)
(1) Alimentos Elaborados / Processed Food - AE (12.644%)	0.28	0.11	± 0.20
(2) Manufacturas / Commodities - MAN (32.570%)	0.10	0.15	± 0.14
Bienes Elaborados No Energéticos / Non-Energy Manufactured Goods - BENE [1 + 2] (45.214%)	0.15	0.14	± 0.12
(3) Servicios / Services - SERV (37.596%)	0.09	0.01	± 0.17
Inflación Subyacente / Core Inflation: Servicios y Bienes Elaborados No Energéticos (excluyendo aceites, grasas tabaco y paquetes turísticos) / Non-Energy Manufactured Goods and Services, excluding fats, oils, tobacco and tourist packages) - IPSEBENE [1 + 2 + 3] (82.810%)	0.09	0.08	± 0.10
(4) Alimentos No Elaborados / Non-Processed Food - ANE (8.202%)	0.67	0.26	± 0.62
(5) Bienes Energéticos / Energy Goods - ENE (8.988%)	0.91	0.14	± 1.20
Inflación Residual / Residual Inflation: Aceites, Grasas, Tabaco, Paquetes Turísticos, Alimentos No Elaborados y Energía / Fats, Oils, Tobacco, Tourist Packages, Non- Processed Food and Energy - R [4 + 5] (17.190%)	0.88	0.19	± 0.67
IPC general / General CPI - IPC [1+2+3+4+5] (100%)	0.28	0.10	± 0.14

(*) Al 80% de significación / At 80% confidence level

Fuente / Source: INE & INSTITUTO FLORES DE LEMUS

Fecha: 19 de diciembre de 2000 / Date: December 19 th, 2000.

En la descomposición del índice de precios al consumo armonizado por grandes grupos de mercados se tiene que los precios en los mercados de alimentos elaborados (AE) crecieron más de lo previsto (0,28% frente a 0,11%) y los precios de los servicios (SERV) también (0,09% frente a 0,01%). Sin embargo, los precios de los restantes bienes elaborados excluidos los energéticos (MAN) crecieron por debajo de lo previsto (0,10% frente a 0,15%). Con esto la inflación

In the breakdown of harmonised consumer price index into basic groups of markets it is shown that the prices of processed food (the AE index) increased more than was foreseen (0.28% instead of 0.11%) and service prices (the SERV index) too (0.09% instead of 0.01%). Nevertheless, the prices of the remaining processed goods excluding energy prices (the MAN index) increased less than was foreseen (0.10% instead of 0.15%). With this, core inflation calculated on the basis of



En la inflación subyacente se han registrado innovaciones al alza en alimentos elaborados y en servicios.

La innovación en la inflación residual ha sido al alza, procedente de los precios de los alimentos no elaborados y de la energía.

En Alemania, Francia e Italia se ha registrado una innovación al alza.

subyacente, que se calcula a partir de la agregación de los tres índices anteriores, registró una tasa mensual de 0,09%, coincidiendo con nuestra predicción de un 0,08%.

En cuanto a la inflación residual (alimentos no elaborados y energía) ha registrado un fuerte aumento mayor del previsto tanto en los precios de la energía, como de los alimentos no elaborados. Los precios de los bienes energéticos aumentaron en noviembre un 0,91% respecto a octubre, mientras que la predicción disponible era de un aumento de 0,14%. En determinados momentos los precios energéticos son muy volátiles con lo que su predicción es compleja. Además la complejidad se agrava por el hecho de que los distintos componentes, gas y electricidad, combustibles y carburantes, tienen comportamientos muy diversos y se determinan en mercados con condiciones de oferta y demanda muy diferentes, que en algunos casos derivan en modelos no lineales para los precios. La fuerte innovación al alza en los precios de la energía deriva de la sorpresa en esa dirección registrada tanto en los precios de las gasolinas, como en los precios del gas y la electricidad.

Por países, se han registrado innovaciones al alza en los siguientes miembros de la Unión Monetaria: Alemania, Francia, Italia, y Bélgica; ligeras innovaciones Portugal, Austria y Luxemburgo; sorpresas a la baja en Holanda y Finlandia. El dato observado coincidió con nuestra predicción en España e Irlanda.

El cuadro 2 recoge un resumen de las discrepancias entre los valores observados y las predicciones. La información relativa a todos los países se encuentra en el cuadro A2 en el apéndice.

the aggregation of the previous indexes, registered a monthly rate of 0.09%, practically coinciding with our prediction of 0.08%.

As regards residual inflation (non-processed food and energy), it registered a greater increase than forecasted in both Energy prices and Non-Processed Food prices. Energy prices dropped by 0.91% in October rather than increasing by 0.14% as foreseen. In certain moments energy prices are very volatile so their prediction is very complex. Furthermore, this complexity becomes more serious if we consider that the different components, gas and electricity and fuels, show different behaviour and are determined in markets with markedly differing supply and demand conditions, which sometimes imply non lineal models for prices. The relevant upward innovation in energy prices came in both fuel and gas and electricity prices.

Taken country by country, there were upward innovations in the following Monetary Union member countries: Germany, France, Italy and Belgium; slight upward surprises in Austria, Luxembourg and Portugal and downward innovations in the Netherlands and Finland. The observed data coincided with our forecast in Spain and Ireland.

Table 2 summarises the differences between observed and forecasted values for the main countries. The information relative to all the countries can be found in table A2 in appendix.



Cuadro 2					Table 2		
VALORES OBSERVADOS Y PREDICIONES EN LOS DATOS DE PRECIOS AL CONSUMO EN LOS PAÍSES DE LA UE ^(*)							
OBSERVED VALUES AND FORECASTS ON CONSUMER PRICE FIGURES IN EU COUNTRIES ^(*)							
País Country	Ponderación Weight				Crecimiento observado Current growth XI 2000	Predicción Forecast	Intervalos de confianza (%) ^(**) Confidence Intervals (%) ^(**)
	UM	MU	UE15	EU15			
IPCA España Spain HICP	9.08%				0.27	0.27	± 0.15
IPCA Alemania Germany HICP	34.65%				0.28	0.18	± 0.29
IPCA Francia France HICP	20.91%				0.19	0.05	± 0.20
IPCA Italia Italy HICP	18.31%				0.37	0.15	± 0.23
IPCA UM MU HICP	100.00%		78.35%		0.28	0.16	± 0.12
IPCA E-15 EU-15 HICP			100.00%		0.28	0.16	± 0.11

(*) Puede encontrarse una información más detallada en el cuadro A2 del Apéndice.

(**) Al 80% de significación.

(*) A more detailed information can be found in table A2 in Appendix.

(**) At 80% confidence level.

(*) Puede encontrarse una información más detallada en el cuadro A2 del Apéndice.

(*) A more detailed information can be found in table A2 in Appendix.

(**) Al 80% de significación.

(**) At 80% confidence level.

Fuente / Source: EUROSTAT & INSTITUTO FLORES DE LEMUS

Fecha de elaboración: 19 de diciembre de 2000 / Date: December 19, 2000.

En Francia e Italia se han registrado innovaciones al alza en los componentes energético y no energético.

Tanto en el agregado de la Unión Monetaria como en Alemania, Francia e Italia se han registrado importantes innovaciones al alza procedentes de los precios energéticos. Los precios del IPCA global excluida la energía se han comportado por encima de lo previsto en Francia, Italia y España y exactamente como se esperaba en Alemania.

There were relevant upward innovations coming from energy prices in the Monetary Union, Germany, France and Italy. Overall HICP prices, excluding those of energy, ended up increasing more than expected in Italy, France, Spain and exactly as was expected in Germany.

El cuadro 3 recoge los crecimientos anuales observados en el índice de precios armonizado de la energía y en el índice correspondiente al resto de bienes y servicios (HICP-E).

Table 3 shows annual observed HICP rates for energy and those corresponding to the remainder of goods and services –denominated HICP-E.

Cuadro 3									Table 3	
PREVISIONES DE CRECIMIENTOS ANUALES MEDIOS EN EL IPCA										
MEAN ANNUAL GROWTH FORECASTS IN HICP										
	IPCA excl. Energía / HICP excl. Energy				IPCA Energía / HICP energy					
	Observ.	Predicc. / Forecasts			Observ.	Predicc. / Forecasts				
	XI 00	Media Average 2000	Media Average 2001	Media Average 2002	XI 00	Media Average 2000	Media Average 2001	Media Average 2002		
Alemania Germany	0.88	0.65	1.31	1.47	17.37	14.43	0.91	-2.19		
España Spain	3.16	2.58	3.13	2.94	14.60	13.38	1.19	0.55		
Francia France	1.26	0.82	1.35	1.34	12.63	12.18	0.84	-2.48		
Italia Italy	2.16	1.91	2.01	1.83	13.04	11.76	2.97	-1.22		
U.Monetaria Monetary U.	1.63	1.26	1.74	1.88	15.20	13.40	1.85	-0.91		

Fuente / Source: EUROSTAT & INSTITUTO FLORES DE LEMUS

Fecha: 22 de diciembre de 2000 / Date: December 22, 2000.



Se mantiene un importante diferencial de inflación, excluyendo energía, entre países.

Las tasas de la energía siguen registrando valores anuales elevados, superiores al 12,0% en Alemania, Francia e Italia tal y como se recoge en el cuadro 3. No obstante destaca el diferente comportamiento del resto de precios no energéticos (IPCA-E). Alemania viene registrando tasas anuales en el IPCA-E inferiores a la unidad desde el último trimestre de 1998 y las predicciones apuntan a que así siga ocurriendo en 2000, pero serán superiores a este valor en 2001 y 2002. Por otro lado, Francia ha repuntado al 1.3%; Italia registra valores próximos al 2% en el IPCA-E y las predicciones son de estabilidad alrededor de este valor. En el caso de España, la tasa anual está en el 3,16% y se prevé una media del 3% para 2001 y 2002.

Annual energy rates are still registering high values, higher than 12.0% in Germany, France and Italy, as is shown in table 3. Standing out, however, is the different behaviour of the other non-energy prices (HICP-E). Germany has registered below-unit annual rates since the last quarter of 1998 and forecasts show that this may continue in 2000, but they will be above this value in 2001 and 2002. On the other hand, France has upturned to 1.3%, and observed values in Italy were close to 2% in the HICP-E and forecasts are for stability around this value. In the case of Spain, the annual rate was 3.16% and an increment to 3% in 2001 and 2002 is foreseen.

La predicción de inflación para el mes de diciembre es del 0,04%, con una tasa anual del 2,53%.

La predicción de inflación por sectores para el mes de diciembre es del 0,04%, con una tasa anual del 2,53%, con una inflación subyacente del 1,44% y una inflación residual del 8,02% en esa fecha.

Inflation forecast for December is 0.04%, with an annual rate of 2.53%, with core inflation of 1.44% and residual inflation of 8.02% by that date.

El cuadro 4 recoge un resumen de las predicciones para los distintos componentes en la Unión Monetaria. Las tasas mensuales y anuales se pueden encontrar al final del documento en los cuadros A4A y A4B.

Table 4 summarises forecasts for the different components in the Monetary Union. Monthly and annual rates may be found in tables A4A and A4B in the appendix.

Cuadro 4		Table 4				
TASAS DE CRECIMIENTO ANUAL MEDIO EN LA UNIÓN MONETARIA (UM-11)						
AVERAGE ANNUAL RATE OF GROWTH IN MONETARY UNION (MU-11)						
	1998	1999	2000	2001	2002	
Inflación Residual / 17.19% Residual Inflation	-0.35	1.16	7.62	2.24	0.33	
Alimentos No Elaborados / 8.202% Non Processed Food	1.97	0.00	1.64	2.76	1.81	
Energía / 8.988% Energy	-2.65	2.23	13.40	1.85	-0.91	
Inflación Subyacente / 82.81% Core Inflation	1.41	1.11	1.27	1.64	1.89	
Alimentos Elaborados /12.644% Processed Food	1.39	0.92	1.12	1.88	2.34	
Manufacturas No Energéticas/ 32.57% Non Energy Commodities	0.86	0.64	0.71	1.18	1.41	
Servicios No Energéticos / 37.596% Non Energy Services	1.95	1.57	1.73	1.96	2.13	
Inflación en el IPCA / 100% HICP Inflation	1.09	1.12	2.33	1.84	1.61	

Fuente / Source: EUROSTAT & INSTITUTO FLORES DE LEMUS
Fecha: 22 de diciembre de 2000 / Date: December 22, 2000.

Para el año 2001 se predice un crecimiento medio anual del 1,84% en el IPCA global determinado por un crecimiento medio en la inflación subyacente del 1,64% y una moderación de la inflación residual del 2,24%

For 2001, an average annual rate of 1.84% in global HICP is forecasted, determined by a mean rate of 1.64% in core inflation and moderate residual inflation at a mean of 2.24%, as a consequence of a drop of eleven



en media, debido a una caída de 11 puntos porcentuales en la tasa anual media de la energía en 2001.

percentage points in the mean annual growth of energy prices in 2001.

El cuadro 5 recoge un resumen de las tasas de crecimiento medio para los principales países, las predicciones de inflación mensual y anual para todos los países se puede encontrar al final del documento, en los cuadros A3A, A3B, A3C Y A3D.

Table 5 summarises average annual growth rates for the main countries, monthly and annual forecasts for all the countries can be found in tables A3A, A3B, A3C and A3D at the appendix.

Cuadro 5				Table 5
CRECIMIENTOS ANUALES MEDIOS ANNUAL AVERAGE RATES OF GROWTH				
	99	Predicciones / Forecasts		
		2000	2001	2001
IPCA España / Spain HICP – 9.08%	2.23	3.48	3.00	2.75
IPCA Alemania / Germany HICP – 34.65%	0.64	2.06	1.19	1.04
IPCA Francia / France HICP – 20.91%	0.56	1.84	1.35	1.29
IPCA Italia / Italy HICP – 18.31%	1.65	2.60	2.06	1.61
IPCA UM / MU HICP – 100%	1.12	2.33	1.84	1.61

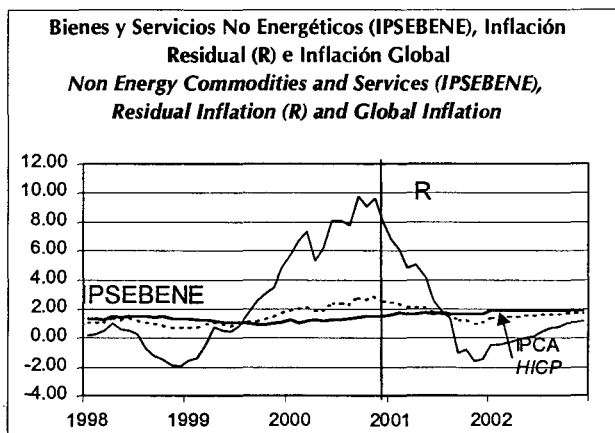
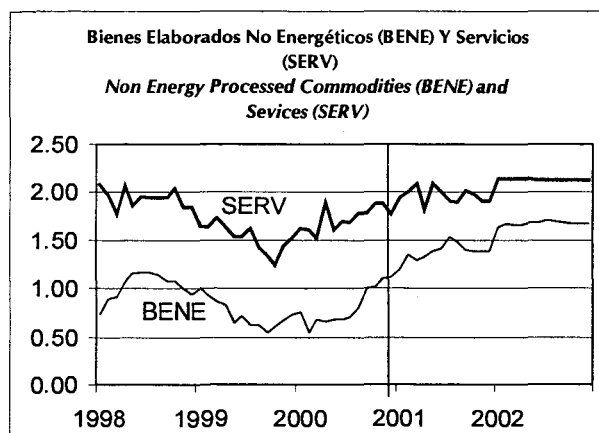
Fuente/Source: Eurostat & I. Flores de Lemus

Fecha/Date: 22 de diciembre de 2000/ December 22, 2000

Gráfico 1

Graph 1

TASAS ANUALES DEL IPCA EN LA UM HICP ANNUAL GROWTH RATES IN MU



Fuente / Source: Eurostat & I. FLORES DE LEMUS

Fecha/Date: 22 de diciembre de 2000/ December 22, 2000

Los datos preliminares sobre la marcha de la economía en el tercer trimestre apuntan a una reducción en la actividad que sitúa el tasa de crecimiento interanual del PIB en el 3,4% desde el 3,7% del segundo trimestre. La contribución más importante al crecimiento vino del lado de la inversión que se aceleró hasta el 6,5% anualizado desde el 2,7% del trimestre anterior y que se vio parcialmente compensada por el descenso desde el 3% al 2% en el gasto en consumo y por la exportación neta que detrajo 0,8 puntos

Preliminary data on economic performance for the third quarter points to a slowdown in activity as GDP year over year growth slowed to 3.4% from 3.7% in the second quarter. The major contributor to the increase was fixed investment, accelerating by 6.5% annualized compared to 2.7% in the previous quarter, which was partially offset by consumer spending, down to 2% from 3%, and net trade which subtracted 0.8 percentage points from overall activity. As far as the labor market is concerned, the unemployment rate



La economía decelera por el descenso del consumo y la exportación neta.

porcentuales de la actividad global. Por lo que se refiere al mercado de trabajo, la tasa de paro continúa cayendo y se situó en octubre en el 8,9% desde el 9% del mes anterior.

keeps moving downwards standing at 8.9 in October from 9% in the previous months.

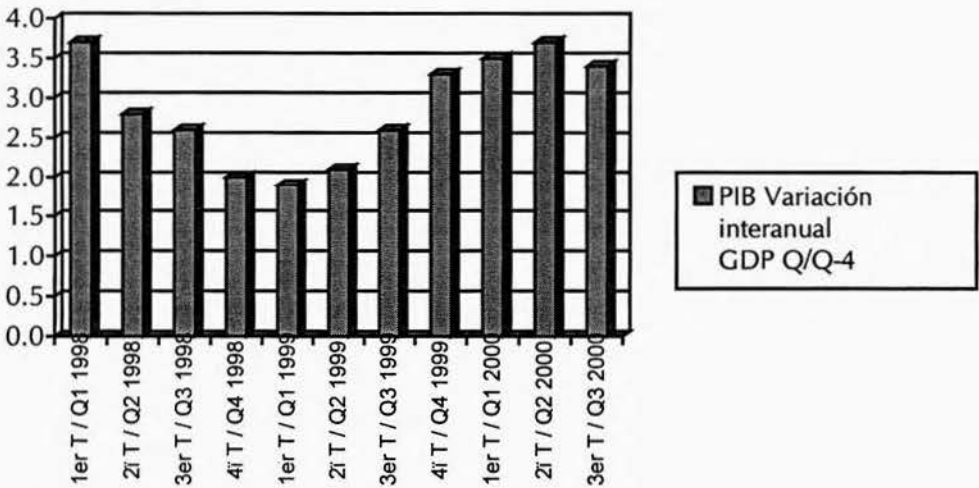
Unión Monetaria. PIB Variación interanual								Tabla 6		
Monetary Union. GDP, year-to-year rate of growth										
1er T. Q1 1998	2º T. Q2 1998	3er T. Q3 1998	4º T. Q4 1998	1er T. Q1 1999	2º T. Q2 1999	3er T. Q3 1999	4º T. Q4 1999	1er T. Q1 2000	2º T. Q2 2000	3er T. Q3 2000
3.7	2.8	2.6	2.0	1.9	2.1	2.6	3.3	3.5	3.7	3.4

Fuente / Source: Eurostat

Gráfico 2

Unión Monetaria. PIB Variación interanual
Monetary Union. GDP Q/Q-4

Graph 2



Fuente / Source: Eurostat

Mientras que el crecimiento se ralentiza, la inflación ha experimentado un cierto repunte y crecerá por encima del objetivo del 2% durante la mayor parte del próximo año.

Las predicciones para el actual trimestre apuntan a una mayor deceleración debido a un descenso en las exportaciones y a que el consumo no se ha recuperado aun del impacto del alza en el precio de los combustibles. De continuar el descenso en el precio de la gasolina, el consumo se podría recuperar a principios del año que viene.

Forecasts for the current quarter point to a further slow as exports weaken in response to slower global demand and consumption has not yet recovered from the impact of high oil prices. As oil prices continue to ease private consumption will recover early next year.

Mientras que el crecimiento se ralentiza, la inflación ha experimentado un cierto repunte y crecerá por encima del objetivo del 2% durante la mayor parte del próximo año. La inflación subyacente se sitúa en el 1,4%, aun reducida pero superior a la tasa del 1% registrada a finales del año pasado y con

While growth has been slowing, inflation surged and will grow above the 2% goal for most part of next year. Core inflation is up 1.4%, still modest but well above the 1% rate registered at the end of 1999. The ECB has been warning of the risk to inflation through most of this year but the recent recovery of



En el próximo año el euro se apreciaría entre un 5% y un 8%.

expectativas de seguir creciendo algunas décimas. El BCE ha venido alertando del riesgo de inflación durante este año pero la reciente recuperación del euro, el descenso en el precio de los combustibles y la debilidad del crecimiento tanto interno como del entorno internacional sugieren que el BCE mantendrá tipos por ahora. Sin embargo, es probable que los vuelva a subir a principios de 2001 una vez que el crecimiento vuelva a un mayor ritmo.

Durante las últimas semanas el euro ha experimentado una importante recuperación que probablemente continúe en el próximo año apreciando la moneda entre un 5% y un 8% dada la tendencia a la baja en los tipos americanos. Tras varias intervenciones por parte del BCE no fue hasta que se detectó con claridad un descenso en la actividad americana que el euro comenzó a recuperar valor.

the Euro, the easing in oil prices, and weaker domestic and global growth suggests it will remain on the sidelines for now. However, the central bank is likely to tighten again early next year once growth starts to rebound.

Over the last weeks the Euro has gone through an impressive recovery and with fed funds going down, it is likely to continue appreciating by at least 5% to 8% next year. After several rounds of intervention by the ECB it was not until solid signs of weakening US activity appeared that the Euro began to gain value.



II.2 Estados Unidos

II.2 United States

El IPC en USA en el mes de Noviembre creció un 0,06%, tal y como habíamos previsto.

Los precios en Estados Unidos en el mes de Noviembre crecieron el 0,06%, que casi coincide con nuestra tasa prevista de 0,02%. La tasa anual se ha mantenido en el 3,45%, una vez más.

Siguiendo nuestro esquema tradicional de análisis por componentes, evaluaremos el dato por su relevancia en la inflación tendencial y residual.

En el cuadro 7 se puede ver el esquema de desagregación seguido en nuestro análisis del IPC norteamericano.

In November the US Consumer Price Index went up by 0.06%, which coincides with our forecast of 0.02%. The annual rate settled at 3.45%, once again.

Following our traditional CPI analysis by components, we are going to evaluate this data by its relevance to core and residual inflation.

In table 7 we can see the disaggregation scheme following in our US CPI analysis.

Cuadro 7		Table 7	
DESGLOSE IPC EEUU USA CPI DISAGGREGATION			
IPC CPI (1 + 2 + 3 + 4) (100%)	1) IPC Energía Energy CPI (E – 10%)	INFLACIÓN RESIDUAL RESIDUAL INFLATION (1 + 2) (RI – 26,6 %)	IPC CPI (1 + 2 + 3 + 4) (100%)
	2) IPC Alimentos Food CPI (F – 16,6%)		
	3) IPC Servicios no energéticos Non energy Services CPI (S – 46,4%)	INFLACIÓN SUBYACENTE CORE INFLATION (3 + 4) (CI – 73,4 %)	
	4) IPC Bienes no energéticos no alimenticios Non energy Commodities except food CPI (C – 27%)		

Fuente / Source: BLS & INSTITUTO FLORES DE LEMUS

El cuadro 8 permite evaluar las discrepancias entre los valores observados y las predicciones de los distintos componentes.

Los errores de predicción por componentes también se pueden observar en los gráficos 6 y 7 de las páginas 18 y 19.

Table 8 allows for an evaluation of discrepancies between observed and forecasted values for the different components.

The forecast errors can be seen in graphs 6 and 7, on pages 18 and 19.



Cuadro 8

Table 8

VALORES OBSERVADOS Y PREDICCIONES EN LOS DATOS DE PRECIOS AL CONSUMO EN EEUU (*)
OBSERVED VALUES AND FORECASTS ON CONSUMER PRICE FIGURES IN US (*)

Indíces de Precios al Consumo (IPC) <i>Consumer Index Price (CPI)</i>	Crecimiento observado <i>Observed growth</i> XI 2000	Predicción <i>Forecast</i>	Intervalos de confianza ^(*) <i>Confidence Intervals</i> ^(*)
Inflación Residual <i>Residual Inflation (RI – 26,6 %)</i>	-0.23	-0.44	± 0.86
IPC Energía <i>Energy CPI (E – 10%)</i>	-1.00	-1.89	± 2.00
IPC Alimentos <i>Food CPI (F – 16,6%)</i>	0.12	0.23	± 0.36
Inflación Subyacente <i>Core Inflation (CI – 73,4 %)</i>	0.27	0.39	± 0.14
IPC Servicios no energéticos <i>Non energy Services CPI (S – 46,4%)</i>	0.29	0.31	± 0.16
IPC Bienes no energéticos no alimenticios <i>Non energy Commodities except food CPI (C – 27%)</i>	0.34	0.56	± 0.26
IPC <i>CPI (100%)</i>	0.17	0.19	± 0.25

(*) Al 80% de significación.

(*) At 80% confidence level.

Fuente / Source: BLS & INSTITUTO FLORES DE LEMUS
Fecha de elaboración: 16 de noviembre de 2000 / Date: November 16, 2000.

La tasa anual de inflación tendencial se mantiene estable entorno al 2,6%.

La tasa anual de inflación tendencial se mantiene estable entorno al 2,6%. Por componentes, se ha producido una innovación al alza en el precio de los bienes industriales no energéticos ("manufacturas"), 0,27% de tasa mensual frente al -0,09% previsto. Los principales causantes de ésta han sido los precios de los bienes no duraderos, que registraron una tasa mensual del 10%.

The core inflation annual growth rate remains stable around 2.6%. For components, there was an upward innovation in non-energy commodity prices with the exception of food ("commodities"), of 0.27% in the monthly rate instead of the -0.09% foreseen. This fact is explained, mainly, by non-durable goods prices, which registered a monthly rate of 10%.

Esta innovación en los precios de las manufacturas casi se ha compensado con otra en los precios de los servicios de sentido contrario.

This innovation in commodities prices was offset more or less with another in service prices in the opposite sense.

Los precios de las manufacturas en Estados Unidos vienen evolucionando de forma más contenida que en Europa.

Una característica destacable del comportamiento de los precios de las manufacturas en Estados Unidos es que vienen evolucionando de forma más contenida que en Europa (0,7% tasa anual para Noviembre), aunque más oscilante. Lo que indicaría que en EE.UU. la industria manufacturera absorbe los avances tecnológicos con más rapidez que en Europa.

Commodity prices are evolving more tamely than in Europe (a 0.7% annual rate in November), although they fluctuate more. This fact indicates that manufacturing industry in the USA can incorporate advances in technology more quickly than in Europe.

Esto se puede apreciar si nos fijamos en las tasas medias anuales previstas para los dos próximos años, en ambas zonas. Para el 2001 y 2002 la tasa media anual se situaría en 1% y 0,82% en EE.UU , y en 1,4% y 1,7% en Europa.

This can be appreciated if we see the forecasted average annual rates of growth for the next two years in both areas. For 2001 and 2002 the average rate of growth would be settled at 1% and 0.82% in USA, and in 1.4% and 1.7% in Euro Zone.

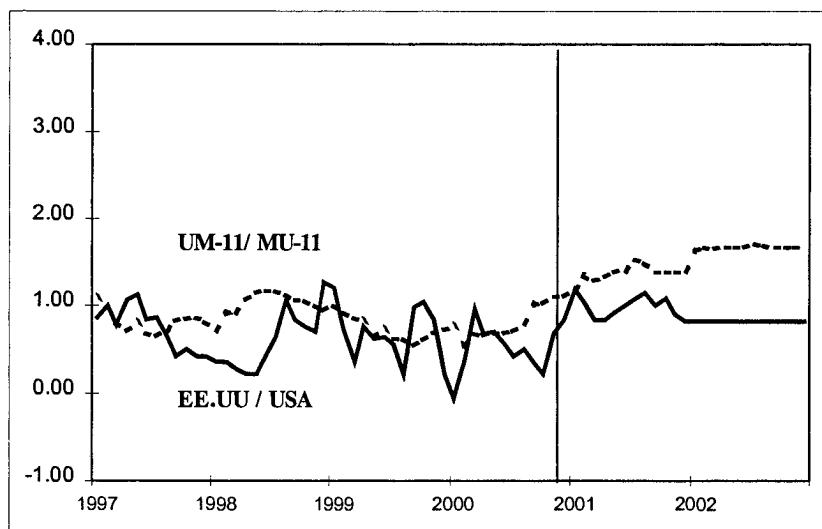


También podemos ver en el gráfico 3, esta misma idea. We can observe this same idea in graph 3.

Gráfico 3

Graph 3

TASAS ANUALES DE CRECIMIENTO DE LA INFLACIÓN TENDENCIAL EN BIENES NO ENERGÉTICOS EXCLUIDO ALIMENTOS (MANUFACTURAS) PARA EE.UU. Y ZONA EURO
AVERAGE RATES OF GROWTH OF CPI INFLATION IN NON ENERGY GOODS LESS FOOD (COMMODITIES) FOR USA AND EURO ZONE



Fuente / Source: Eurostat & I. FLORES DE LEMUS
 Fecha/Date: 19 de diciembre de 2000/ December 19, 2000

La tasa mensual de los precios de los bienes no energéticos excluida la alimentación en EE.UU. prevemos que crezca un -0,40% en Diciembre, y una tasa anual de 0,84%. Con lo que la tasa media anual para el 2000 quedaría en 0,52%.

Inflation in non-energy commodities excluding food in USA is expected to grow by -0.40% in December, with an annual rate of 0.84%. With all of this, the average annual rate for 2000 would be 0.52%.

Las tasas anuales previstas para los precios de manufacturas no energéticas americanas para el 2001 y 2002, son del 1% y 0,82%

Para los precios en el sector servicios se prevé una tasa anual de 3,40% en Diciembre. Las predicciones para el 2000, 2001 y 2002 toman un valor medio en tasas anuales de 3,27%, 3,17% y 3,18%.

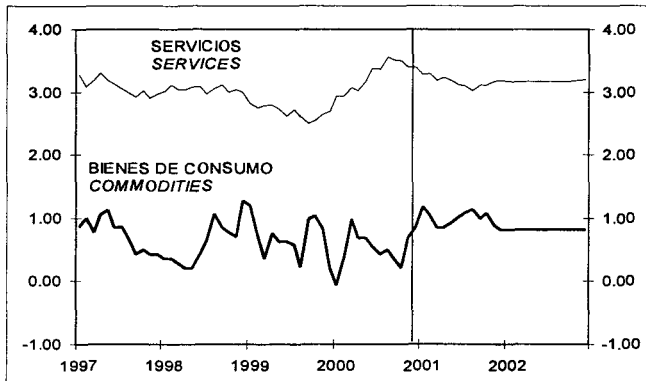
Prices in the services sector registered an annual rate of 3.40%, in December. Forecasts for 2000, 2001 and 2002, may reach average annual rates of 3.27%, 3.17% and 3.18%.

El gráfico 4 muestra las tasas anuales observadas y las predicciones de inflación subyacente en bienes y servicios. El diferencial de inflación entre estos dos sectores se espera que siga siendo de unos tres puntos porcentuales a lo largo de 2000, 2001 y 2002.

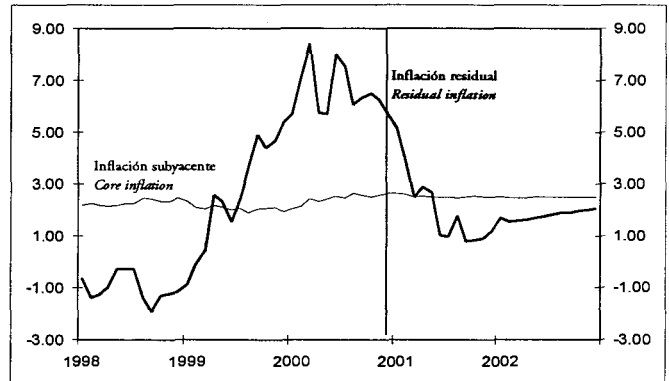
Graph 4 shows both the observed annual rates and those forecasted in core inflation in goods and services. It is expected that the inflation differential between these two sectors will continue to be of about three percentage points throughout 2000, 2001 and 2002.



INFLACIÓN SUBYACENTE EN BIENES Y SERVICIOS EN EEUU
CORE INFLATION OF COMMODITIES AND SERVICES IN US



INFLACIÓN SUBYACENTE Y RESIDUAL EN EEUU
CORE AND RESIDUAL INFLATION IN US



Fuente / Source: BLS & INSTITUTO FLORES DE LEMUS

Fecha de elaboración: 22 de Diciembre de 2000 / Date: December 22, 2000.

Los descensos en precios de alimentos y energía posibilitan una caída de la inflación residual.

Los precios del componente residual (alimentación y energía) han registrado en Noviembre una tasa mensual de -0,15%, que coincide con nuestra predicción. A esta tasa han contribuido los precios de la energía, que han caído este mes un -0,23%, y los precios de los alimentos que también se redujeron con una tasa mensual de -0,12%, debido sobre todo a las bajadas en los precios de las carnes.

Se revisan a la baja las predicciones de los precios de la energía para el 2001.

Para el próximo mes, dadas los recientes descensos de los precios del crudo (el West Texas ha pasado de 34\$ el barril a 28\$), prevemos una disminución en el precio de la energía del -1,12% mensual, con lo que su tasa anual se situaría 13,68%.

Las predicciones del crecimiento medio anual para la energía quedarían en 16,83% para el 2000, y se revisan a la baja en el 2001, con una tasa media anual de 1,10%, y para el 2002 se situaría en -0,16%.

En cuanto a los precios de la alimentación, han registrado una tasa mensual de -0,12% que esta por debajo de nuestra predicción de 0,10%. La tasa media anual prevista quedaría en 2,23% para el 2000, 2,44% para el 2001, y 2,65% en el 2002.

El cuadro 9 recoge las predicciones de inflación media anual para 2000, 2001 y 2002 para los distintos componentes de la economía americana. (Las predicciones mensuales y anuales se encuentran en los cuadros A5A y A5B en el apéndice).

Residual component prices (food and energy) registered a monthly rate of -0.15%, which coincides with our forecast. This is explained by energy prices that dropped by -0.23% last month, and food prices, which also fell, with a monthly rate of -0.12%, owing above all to drops in meat prices.

With the recent drops in crude oil prices (West Texas has gone from 34\$ to 28\$ per barrel), we forecast a decrease in energy prices for next month, with a monthly rate of -1.12%, with an annual rate of 13.68%.

The forecasts for this component might reach an annual average rate of 16.83% for 2000, and have been revised downwards for 2001, with an average rate of 1.10%, and for 2002 it would settle at -0.16%.

Regarding food prices, they registered a monthly rate of -0.12%, less than the 0.10% forecasted. The foreseen average annual rate will remain around 2.23% for 2000, 2.44% for 2001 and 2.65% in 2002.

Table 9 shows the average annual growth rates for 2000, 2001 and 2002 for the different components of the US economy (monthly and annual rates can be found in tables A5A and A5B in the appendix).



Cuadro 9		TASAS DE CRECIMIENTO ANUAL MEDIO EN EEUU (*)					Table 9
		US AVERAGE RATES OF GROWTH (*)					
		1998	1999	Predicciones / Forecasts			
				2000	2001	2002	
Inflación Residual							
Trend Inflation (RI – 26,5 %)		-1.02	2.59	6.62	2.63	1.76	
Energía							
<i>Energy (E – 11%)</i>		-7.75	3.64	16.84	2.46	-0.36	
Alimentación							
<i>Food (F – 15,5 %)</i>		2.17	2.13	2.27	2.70	2.69	
Inflación Subyacente							
Core Inflation (CI – 73,5 %)		2.29	2.08	2.43	2.49	2.56	
Bienes no energéticos (exc. alim.)							
<i>Non energy Commodities (exc. food) (C – 28%)</i>		0.59	0.68	0.44	0.55	0.64	
Servicios no energéticos							
<i>Non energy Services (S – 45,5 %)</i>		3.05	2.69	3.29	3.31	3.34	
Inflación en el IPC							
CPI Inflation (100%)		1.55	2.19	3.37	2.54	2.37	
(*) Las tasas mensuales y anuales se encuentran en los cuadros A4A y A4B del Apéndice.		(*) Monthly and annual growth rates can be found in tables A4A and A4B in Appendix.					

Fuente / Source: BLS & INSTITUTO FLORES DE LEMUS

Fecha de elaboración: 28 de Noviembre de 2000 / Date: November 28, 2000.

Para Diciembre se predice una inflación de -0,07% con una tasa anual de 3,37%.

Con todo ello se prevé una inflación de -0,07% en el mes de diciembre en el IPC global, con una tasa anual del 3,37%. Se predice que la tasa anual descienda hasta 2,18% en diciembre de 2001 y repunte a 2,41% en diciembre de 2002.

With all of the above, overall CPI inflation is expected to be -0.07% in December, with an annual rate of 3.37%. The annual rate is expected to drop to 2.18% in December 2001 and rise to 2.41% in December 2002.

En el 2001 y 2002 la tasa media anual de inflación tendencial se mantendrá entre 2,5% y 2,6%.

En cuanto a la inflación subyacente, aumentaría ligeramente desde el 2,58% registrado en noviembre hasta el 2,65% en diciembre de 2000, para acabar el año con una tasa media anual de 2,44%. Para el 2001 y 2002, nuestras previsiones apuntan a que la tasa media anual de inflación tendencial se mantendrá estable entre 2,5% y 2,6%.

Core inflation may increase slightly from the 2.58% registered in November to 2.65% in December 2000, to finish the year with an average annual growth rate of 2,44%. For 2001 and 2002, our forecasts point out that the average rate of growth in core inflation would remain stable around 2,5% and 2,6%.

La inflación residual continuará cayendo.

La tasa anual prevista de la inflación residual para diciembre es de 5,64%, con una tasa media anual de 6,59% para el 2000, 2,03% y 1,79% para el 2001 y 2002, respectivamente.

The residual inflation annual rate forecasted for December is 5.64%, with an average annual rate of 6.59% in 2000, 2.03% and 1.79% in 2001 and 2002.

Gráficos históricos de errores de predicción.

A continuación se adjuntan los gráficos de errores de predicción históricos, que ponen de relieve cuáles son los componentes con más innovaciones.

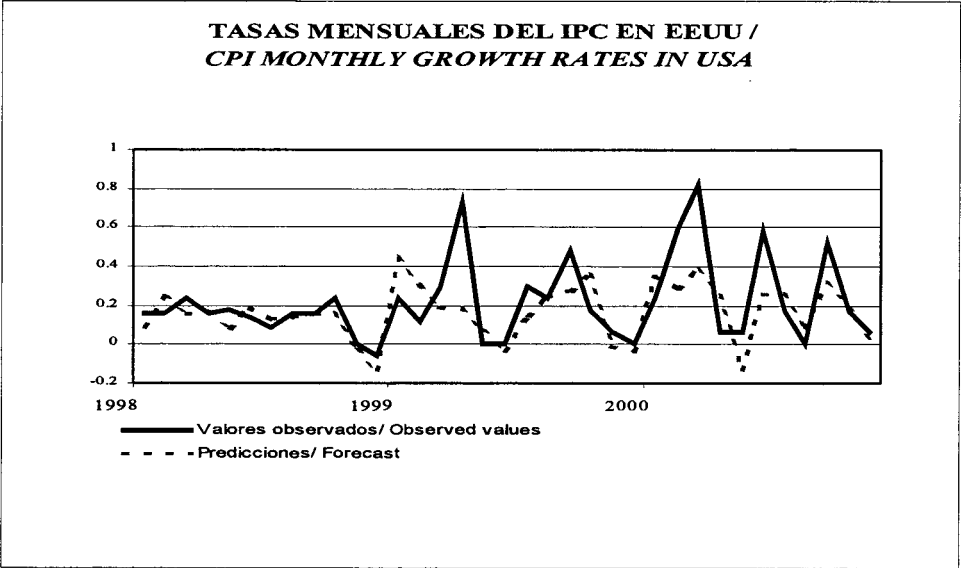
Below we attach the historical graphs of monthly forecasts versus observed values, which show us what the components with more innovations are.

Así podemos decir que la inestabilidad en el proceso inflacionario en la economía americana a partir de 1999 se ha debido principalmente a variaciones en el componente energético.

Therefore we can say that the instability in the inflationary process in US economy since 1999 has been mainly due to variations in the energy component



ERRORES DE PREDICCIÓN SOBRE TASAS MENSUALES DEL IPC USA
US CPI FORECAST ERRORS OVER MONTHLY RATES



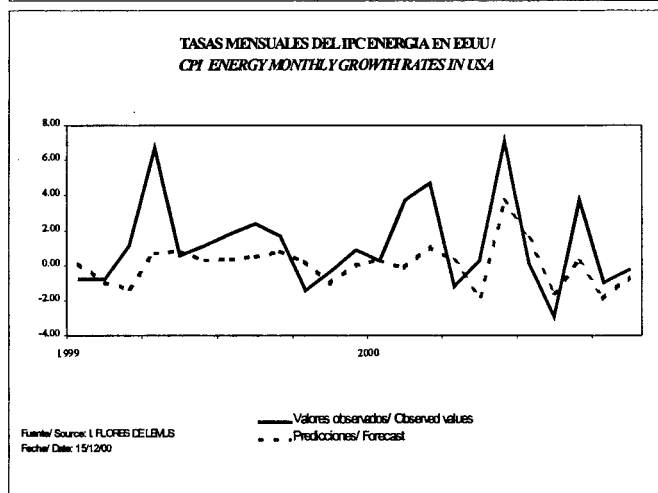
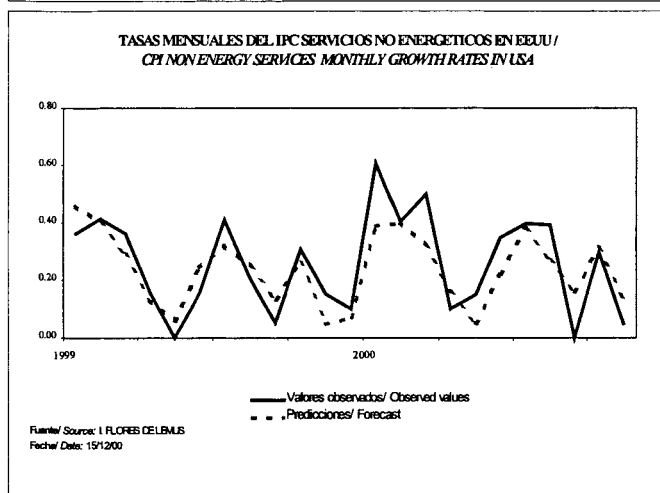
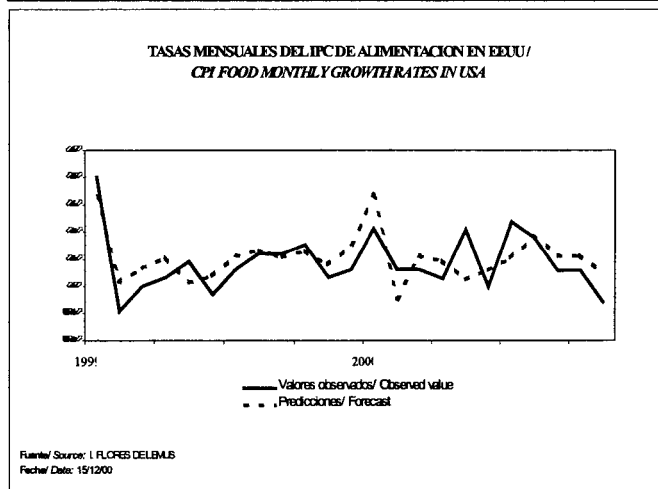
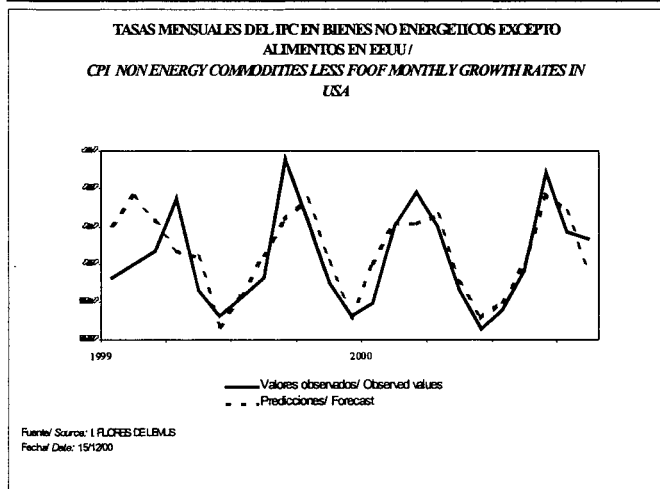
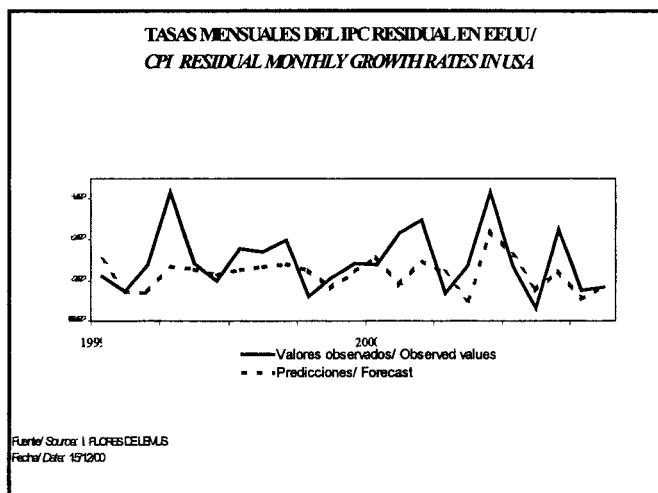
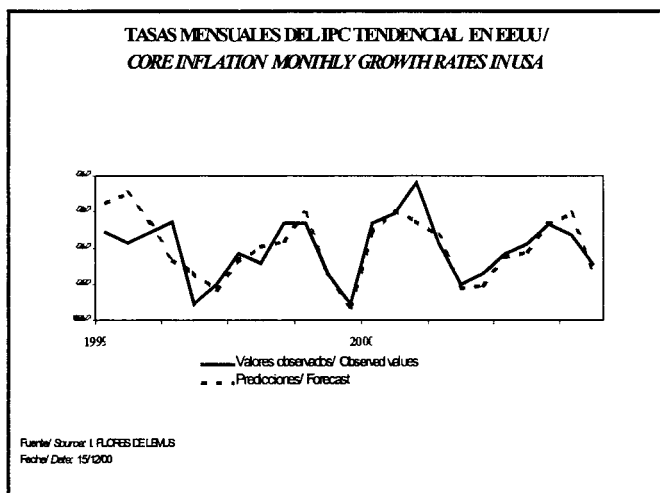
Fuente / Source: Eurostat & I. FLORES DE LEMUS
Fecha/Date: 15 de diciembre de 2000/ December 15, 2000



ERRORES DE PREDICCIÓN SOBRE TASAS MENSUALES DEL IPC USA **US CPI FORECAST ERRORS OVER MONTHLY RATES**

TENDENCIAL / TREND

RESIDUAL



Fuente / Source: Eurostat & I. FLORES DE LEMUS
 Fecha/Date: 15 de diciembre de 2000/ December 15, 2000

Cualquier decisión de la Fed vendrá limitada por la evidencia de una ralentización de la actividad más rápida de lo esperado y por la amenaza que supone un mercado de trabajo en tensión para la estabilidad de precios.

El balance de riesgos de la economía americana presenta dos elementos que serán vigilados de cerca por la Reserva Federal antes de tomar cualquier decisión. Por un lado, la evidencia de una ralentización de la actividad más rápida de lo esperado y por otro la amenaza que supone un mercado de trabajo en tensión para la estabilidad de precios. De acuerdo con la nota de prensa de la Fed tras la última reunión del Comité de Política de Mercado Abierto "los riesgos están del lado de aquellas condiciones que puedan suponer un debilitamiento de la economía" por lo tanto se espera una reducción en los tipos oficiales para la próxima reunión del Comité.

The balance of risks of the American economy presents two major issues that have to be closely monitored by the Fed before taking any decision. On one side, the evidence of a faster than expected slowdown in activity and on the other, the threat posed by tight labor markets to price stability. According to the Fed press statement issued right after the last FOMC meeting "risks are weighted mainly towards conditions that may generate economic weakness" hence, a reduction in interest rates is expected during the next meeting.

En la actualidad, los riesgos están del lado de aquellas condiciones que puedan suponer un debilitamiento de la economía.

A la Reserva Federal le preocupa la posibilidad de un " aterrizaje forzoso" dado el importante descenso de la actividad registrado en los últimos meses.

The Fed is quite concerned about the possibility of a hardlanding given the pronounced slowdown registered in the past few months.

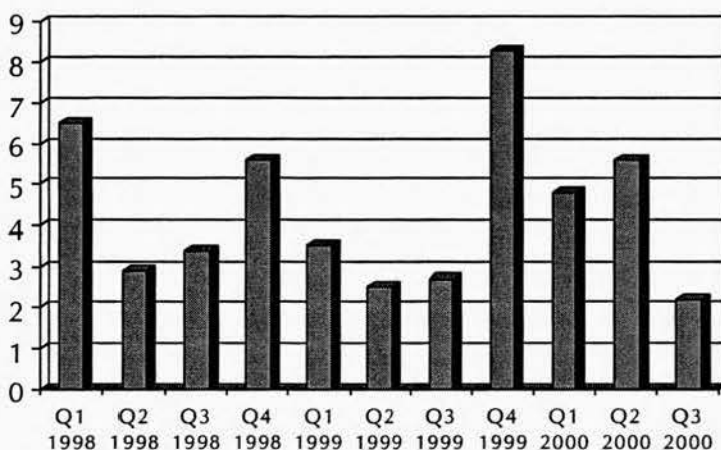
Cuadro 10										Table 10
Variación trimestral anualizada del PIB GDP Q/Q %change annualized										
1er T. Q1 1998	2º T. Q2 1998	3er T. Q3 1998	4º T. Q4 1998	1er T. Q1 1999	2º T. Q2 1999	3er T. Q3 1999	4º T. Q4 1999	1er T. Q1 2000	2º T. Q2 2000	3er T. Q3 2000
6.5	2.9	3.4	5.6	3.5	2.5	2.7	8.3	4.8	5.6	2.2

Fuente/ Source: BEA . Department of Commerce

Gráfico 8

VARIACIÓN TRIMESTRAL ANUALIZADA DEL PIB USA
GDP Q/Q % CHANGE ANNUALIZED

Graph 8



■ Variación anual
del PIB
GDP %change
annualized

Fuente/ Source: BEA . Department of Commerce



La contribución al crecimiento vino del consumo, la exportación y la inversión no residencial, parcialmente compensados por un aumento de la importación y por descensos en el gasto público y la inversión residencial.

La estimación final del crecimiento del PIB en el tercer trimestre ha reducido el dato preliminar desde el 2,4% al 2,2%. La mayor contribución al crecimiento del tercer trimestre vino del gasto en consumo, la exportación y la inversión no residencial que fueron parcialmente compensados por un aumento de la importación y por descensos en el gasto público y la inversión residencial.

The final estimates for GDP growth in the third quarter have reduced the preliminary data of 2.4% to 2.2%. The major contributors to the increase in real GDP in the third quarter were personal consumption expenditures, exports, and nonresidential fixed investment which were partially offset by an increase in imports and by decreases in federal government spending and in residential investment.

De acuerdo con la Oficina de Análisis Económico (Bureau of Economic Analysis), la deceleración del PIB en el tercer trimestre es el reflejo del descenso en la inversión en existencias y en el gasto federal y de la ralentización en la inversión no residencial parcialmente compensados por la aceleración del gasto en consumo. De hecho, el consumo personal creció un 4,5% anualizado en el tercer trimestre tras haber crecido un 3,1% en el segundo. Por el contrario, la inversión no residencial creció un 7,7% anualizado frente al avance del 14,7% del trimestre anterior y la inversión en equipo y software mejoró un 5,6% frente al 17,9% del segundo trimestre. La drástica caída en el vigor de la economía ha forzado una reducción en las previsiones de crecimiento para el 2001 situándolo por debajo de la tasa de crecimiento potencial de largo plazo del 3,5%.

According to de Bureau of Economic Analysis, the deceleration in GDP in the third quarter reflected downturns in inventory investment and in federal government spending and a deceleration in nonresidential fixed investment that were partially offset by an acceleration in personal consumption expenditure. Indeed, personal consumption is up 4.5% annualized in the third quarter from an increase of 3.1% in the second. On the other hand, nonresidential fixed investment increased 7.7% compared with the previous 14.6% advance and equipment and software investment improved by 5.6% in contrast to an increase of 17.9% in the second quarter. The sharp loss in economic momentum is forcing a downward revision to growth in 2001 to even below the long run potential rate of 3.5%.

Cuadro 11

Table 11

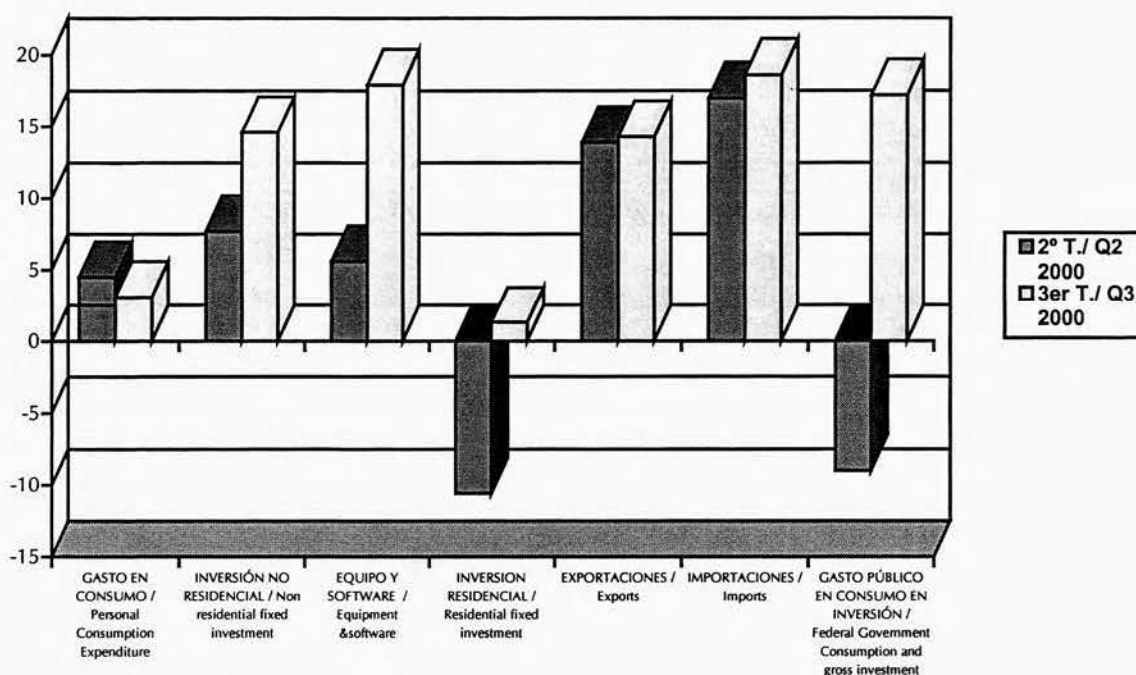
	2do Trimestre variación porcentual anualizada Q2 % change annualized 2000	3er Trimestre variación porcentual anualizada Q3 % change annualized 2000
Gasto en consumo <i>Personal Consumption Expenditure</i>	3.1	4.5
Inversión no residencial <i>Non residential fixed investment</i>	14.6	7.7
Equipo y software <i>Equipment & software</i>	17.9	5.6
Inversión residencial <i>Residential fixed investment</i>	1.3	- 10.6
Exportación <i>Exports</i>	14.3	13.9
Importación <i>Imports</i>	18.6	17
Gasto Público en consumo e inversión <i>Federal Government Consumption and gross investment</i>	17.2	- 9

Fuente / Source: BEA. Department of Commerce



Gráfico 9

Graph 9



Fuente/ Source: BEA . Department of Commerce

Las estimaciones para el cuarto trimestre también han sido revisadas a la baja.

Mirando hacia delante, las estimaciones para el cuarto trimestre también han sido revisadas a la baja debido a la expectativa de un descenso en el consumo y en las ventas de automóviles aunque es probable que el crecimiento sea ligeramente superior al del cuarto trimestre. El informe de la Asociación Nacional de Directores de Compras sugiere que los pedidos para la exportación han caído en los dos primeros meses del trimestre y que se espera una menor aportación a existencias. Por el contrario, se espera que el gasto de los sectores empresarial y público aumenten tras los últimos descensos.

Hasta hace un mes, la principal preocupación venía del lado de un repunte inflacionista alimentado por el aumento en el coste laboral y la política monetaria tenía un sesgo restrictivo. Hoy el riesgo de inflación está en segundo plano y la FED ha pasado a una posición más relajada. Sin embargo, existen ciertos riesgos a considerar.

Moving forward, estimates on the fourth quarter have also been revised down due to an expected downturn in personal consumption and auto sales although growth is likely to pick up slightly from the third quarter. The NAPM (National Association of Purchasing Managers) report suggests that export orders fell in the first two months of the quarter and a shorter inventory buildup is expected. On the other hand, business and government spending might rebound from previous declines.

Until one month ago, the main concern was the risk of an inflationary upturn fueled by increasing labor costs and monetary policy was under a tightening bias. Currently, inflation concerns are being downplayed and the Fed has shifted to an easing mode. However, there are still some risks to be aware of.



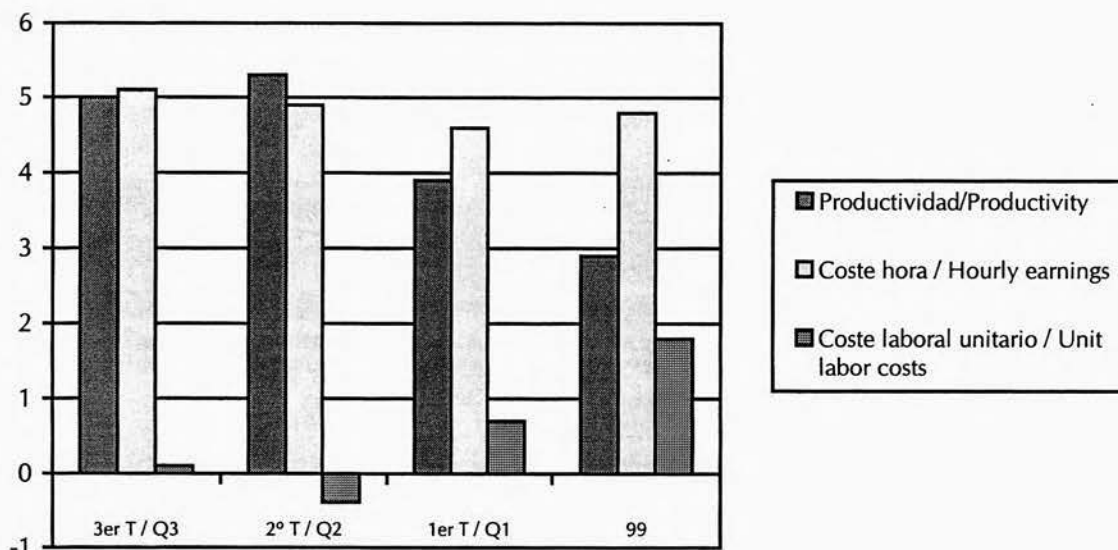
Interannual / Year over year

	1er T / Q3	2º T / Q2	1er T / Q1	99
Productividad <i>Productivity</i>	5	5.3	3.9	2.9
Coste hora <i>Hourly earnings</i>	5.1	4.9	4.6	4.8
Coste Laboral Unitario <i>Unit Labor Cost</i>	0.1	-0.4	0.7	1.8

Fuente / Source: BLS

Gráfico 10

Graph 10



Fuente/ Source: BLS

Si las demandas salariales no se adaptan a la nueva situación, la compensación al trabajo seguirá creciendo como hasta ahora.

El importante crecimiento de la demanda en los últimos años ha dado lugar a una escasez de mano de obra, empujando la compensación laboral al alza. Si no fuese por las amplias mejoras en productividad registradas, los costes laborales unitarios se habrían acelerado empujando los precios al alza. La deceleración de la economía debería eliminar cierta tensión del mercado de trabajo pero su efecto sobre la inflación salarial puede no presentarse de forma instantánea dado que en ocasiones se toma la experiencia pasada como referencia de las futuras negociaciones salariales. Si las demandas salariales no se adaptan a la nueva situación, la compensación al trabajo seguirá creciendo como hasta ahora. Además, las no tan optimistas expectativas sobre la evolución futura de la economía podrían afectar la inversión empresarial en equipo y software y por tanto reducir el crecimiento de la productividad. Todo ello empujaría los costes

The impressive growth of demand in the past years has created work shortages, pushing up hourly compensation. If not for large gains in productivity, unit labor costs would have accelerated pushing prices up. The deceleration of the economy should relieve some of the pressure in the tight labor market but the effect on wage inflation may not be seen instantly as wage bargaining is sometimes indexed to past experience. If wage demands do not adapt to the new situation, hourly earnings will keep growing at the same pace as before. On top of that, the less optimistic forecast for the overall performance of the economy may reduce business investment in equipment and software and therefore decelerate productivity gains. All together would push Unit Labor Costs upwards and will add pressure to price inflation. As an example of this, recent data on the performance of wages and labor show that the job market was in low gear in



laborales unitarios al alza ejerciendo presión alcista sobre la inflación. Como muestra de lo dicho, la información más reciente sobre el empleo y los salarios muestran que el mercado de trabajo tuvo un comportamiento discreto en noviembre mientras que la inflación salarial subió. En efecto, la tasa de paró subió hasta el 4% mientras las ganancias por hora crecían un 0,4% respecto a octubre llevando la tasa anual de inflación salarial de noviembre hasta el 4%, la más alta desde enero de 1999, tras situarse en el 3,8% el mes anterior.

Si además cae la mejora en productividad, los costes laborales unitarios evolucionarían al alza ejerciendo presión alcista sobre la inflación.

En cuanto a los precios, nuestras estimaciones de inflación están elaboradas con base en la experiencia pasada y por lo tanto la estabilidad de precios esperada se fundamenta se fundamenta en la continua mejora de la productividad. Si esto cambiase, también lo haría la predicción.

Los responsables de la política monetaria han dejado entrever su disposición a reducir los tipos en la próxima reunión del FOMC y probablemente así sea. Sin embargo la extensión y continuidad de tal medida dependerá de la evolución tanto de los costes laborales unitarios como de las condiciones económicas. De hecho, si tal como se espera la economía se recupera en la segunda mitad de 2001, la Reserva Federal volverá a una posición neutral o restrictiva.

November while wage inflation picked up. Indeed, the unemployment rate edged up to 4%, while hourly earnings rose by 0.4% in the month lifting annual wage inflation to 4.0%, the highest since January 1999, from 3.8% in October.

Our estimates on inflation are based upon past experience and therefore the subdued performance that we predict is counting on a continuous improvement in productivity so should this change, forecasts will also do.

Policymakers have strongly hinted that they were prepared to ease policy at the next FOMC meeting and they will probably do so. However, the extent and continuity of such measure will depend very much on the performance of both unit labor costs and economic conditions. Moreover, should the economy recover, as expected, in the second half of 2001, the Fed would return to a neutral or tightening mode.



II.3 España

El IPC en España en noviembre aumentó un 0,25% frente a una predicción de 0,27%.

El índice de precios al consumo en noviembre en la economía española creció un 0,25% frente a un 0,27% previsto, con lo que su tasa anual se sitúa en el 4,1%.

La inflación tendencial, calculada a partir del índice IPSEBENE-XT, registró en noviembre una tasa anual del 2,95% coincidiendo prácticamente con nuestra predicción del 2,92%. Con ello, la inflación tendencial viene creciendo sistemáticamente desde el 1,94% en octubre de 1999 hasta el 2,95% de noviembre de 2000. Con respecto a noviembre de 1999 la inflación residual ha sido del 7,86%.

Las sorpresas al alza en la inflación tendencial proceden del mercado de bienes y en la inflación residual de los alimentos no elaborados.

Las innovaciones al alza registradas en la inflación tendencial derivan del mercado de bienes (tanto alimentos elaborados como bienes industriales no energéticos). En cuanto a la inflación residual, se han registrado sorpresas a la baja en los precios de todos sus componentes excepto en los precios de los alimentos no elaborados.

Para analizar este dato más rigurosamente es necesario recurrir a los cuadros 13 y 14. El cuadro 13 recoge la desagregación utilizada en este BOLETÍN para estudiar el comportamiento de la inflación (una versión más detallada se puede encontrar en el cuadro A1 al final del documento) y el cuadro 14 resume los errores de predicción cometidos en los distintos componentes.

II.3 Spain

The consumer price index went up by 0.25% in November, practically coinciding with the 0.27% predicted, thus the annual growth rate has settled at 4.1%.

Trend inflation, calculated on the basis of the IPSEBENE-XT index, registered an annual rate of 2.95% in November, practically coinciding with the 2.92% predicted. With this, trend inflation continues the systematic process of growth that took it from 1.94% in October 1999 to 2.95% in November 2000. Since November 1999, residual inflation has been 7.86%.

Upward innovations in trend inflation come from the goods markets (processed food and non energy commodities) and the services markets. As regards residual inflation, there were downward shocks in prices of all components except in prices of non-processed food.

In order to analyse this in greater detail, it is necessary to refer to tables 13 and 14. Table 13 shows the disaggregation used in this Bulletin to study inflation behaviour (there is a more detailed version in table A1 at the end of the document) and table 14 summarises prediction errors made for different components.

Cuadro 13 DESGLOSE IPC ESPAÑA ^(*)		Table 13 SPANISH CPI DISAGGREGATION ^(*)	
1) IPC Alimentos Elaborados (excluidos Aceites y Tabaco) <i>Processed Foods CPI (excluding Fats and Tobacco)</i>	AE-X (14,82%)	Inflación Tendencial <i>Trend Inflation</i> (1 + 2 + 3) IPSEBENE-XT (77,66%)	IPC CPI (100%)
2) IPC Manufacturas No Energéticas <i>Non Energy Commodities CPI</i>	MAN (32,88%)		
3) IPC Servicios No Energéticos (excepto Turismo) <i>Non Energy Services CPI (excluding Tourism)</i>	SERV-T (29,95%)		
4) IPC Grasas, Tabaco y Turismo <i>Fats, Tobacco and Tourism</i>	XT (3,34%)	Inflación Residual <i>Residual Inflation</i> (4 + 5 + 6) R (22,34%)	
5) IPC Alimentos No Elaborados <i>Non Processed Foods CPI</i>	ANE (11,88%)		
6) IPC Energía <i>Energy CPI</i>	ENE (7,12%)		
^(*) Puede encontrarse una información más detallada en el cuadro A1 del Apéndice.		^(*) A more detailed information can be found in table A1 in Appendix	

Fuente / Source: INSTITUTO FLORES DE LEMUS



Cuadro 14

Table 14

VALORES OBSERVADOS Y PREDICCIONES EN LOS DATOS DE PRECIOS AL CONSUMO EN ESPAÑA ^(*)
OBSERVED VALUES AND FORECASTS ON CONSUMER PRICE FIGURES IN SPAIN ^(*)

Indices de Precios al Consumo (IPC) <i>Consumer Price Index (CPI)</i>	Crecimiento observado <i>Current growth</i> XI 2000	Predicción <i>Forecast</i>	Intervalos de confianza ^(*) <i>Confidence Intervals</i> ^(*)
(1) AE-X (14.82%)	0.29	0.20	± 0.18%
(2) MAN (32.88%)	0.30	0.24	± 0.16%
BENE-X [1 + 2] (47.41%)	0.30	0.22	± 0.14%
(3) SERV-T (29.95%)	0.19	0.22	± 0.17%
IPSEBENE-X-T [1 + 2 + 3] (77.66%)	0.25	0.22	± 0.13%
(4) X + T (3.34%)	-1.71	-0.01	
(5) ANE (11.88%)	0.20	-0.68	± 1.09%
(6) ENE (7.12%)	1.41	2.32	
R [4 + 5 + 6] (22.34%)	0.24	0.43	
IPC [1+2+3+4+5+6] (100%)	0.25	0.27	± 0.15%

(*) Al 80% de significación.

(*) At 80% confidence level.

Fuente / Source: INE & INSTITUTO FLORES DE LEMUS

Fecha: 14 de diciembre de 2000 / Date: December 14, 2000.

Se han producido innovaciones al alza en todos los precios de los bienes industriales no energéticos, excepto en automóviles.

La inflación tendencial en bienes (medida por el índice BENE-X) ha sido del 0,30% frente a una predicción del 0,22%. La sorpresa al alza se produce a partir de una innovación al alza tanto en el componente de alimentos elaborados (excepto aceites, grasas y tabaco), que registraron en noviembre un crecimiento de 0,29% frente al 0,20% previsto, como en el componente de manufacturas, que aumentaron el pasado mes de noviembre un 0,30% en lugar del 0,24% previsto. Con ello los precios de los bienes industriales no energéticos, índice MAN (véase cuadro adjunto sobre desglose del IPC), han alcanzado en noviembre una tasa anual del 2,56%, es decir, en diez meses han subido más de un punto porcentual. Esto contrasta con el comportamiento de estos precios en la zona euro con una tasa anual observada en noviembre del 1%, lo que implica una subida de tres décimas en los últimos diez meses. En la evolución del IPC de Manufacturas No Energéticas de noviembre, destacan las tasas anuales del calzado y del resto de bienes de consumo duradero que superan el 3%. Estos son los bienes más vinculados con el comercio exterior y a no ser que en la producción española de estos bienes se esté incorporando mayor nivel de calidad que lo que se está haciendo en los otros países europeos, se ha de estar produciendo una pérdida de competitividad que necesariamente tendría en un futuro próximo

Trend inflation in goods (measured by the BENE-X index) was 0.30% instead of the 0.22% predicted. This upward surprise comes from an upward innovation in both, the processed foods component (except oils, fats and tobacco), which registered growth of 0.29% in November instead of the 0.20% foreseen, and in commodities, which went up by 0.30% rather than by the 0.24% predicted. With this, the annual rate of growth has been of 2.56%, so in ten months it has gone up by one percentage point, in contrast with these prices in Euro-zone, with an annual rate of growth of 1%, which implies an increase of three tenths of a percentage point in the last ten months. Standing out in the evolution of the Non-Energy Commodities market are: the annual rate of growth of shoes and the remaining durable goods are greater than 3%. This is one of the worst features of Spanish inflation, because if these increments in prices are not reflected in improved quality of corresponding goods, the Spanish economy will suffer a loss of competitiveness relative to Europe, which will translate into smaller economic growth. Predictions for mean rates in commodity prices have been adjusted upwards for 2000, 2001 and 2002 to 2.08%, 2.53%, and 2.44% respectively.



unos efectos negativos en el crecimiento económico español. Las predicciones de la tasa media de los precios de las manufacturas para 2000, 2001 y 2002 se revisan al alza al 2,08%, 2,53% y 2,44%, respectivamente.

Se prevé que continúe aumentando la inflación tendencial en alimentación durante 2001 y 2002.

La innovación al alza registrada por los precios de los alimentos elaborados excluidos aceites y grasas y tabaco (AE-X) sitúa la tasa de inflación anual en el 1,87%, continuando el proceso de crecimiento que comenzó a finales del año pasado. Las expectativas de crecimiento medio se han modificado al alza para 2000 al 1,36%, para 2001 al 2,62%. La predicción para 2002 de la tasa media es 2,94%.

The upward innovation in prices of processed foods, excepting oils, fats and tobacco (the AE-X index) places the annual inflation rate at 1.87%, continuing the systematic process of growth that began at the end of 1999. Mean growth expectations for 2000, 2001 and 2002 are for 1.36%, 2.62% and 2.94% respectively.

Revisión al alza de las expectativas de crecimiento medio en la inflación tendencial en bienes.

La revisión al alza del precio de los de los alimentos elaborados y de los bienes industriales de consumo duradero revisa también al alza las perspectivas de inflación tendencial en bienes (medidas por el índice BENE-X). Las expectativas de crecimiento medio para 2000, 2001 and 2002 se sitúan en el 1,86, 2,56% y 2,59% respectivamente.

The upward adjustment of prices of processed food and consumer durables increases trend inflation expectations for goods (measured by the BENE-X index). Mean growth expectations for 2000, 2001 and 2002 are for 1.86%, 2.56% and 2.59% respectively.

El cuadro 15 recoge un resumen de las predicciones medias anuales de los distintos componentes de la inflación tendencial y residual (una información más detallada se puede encontrar en los cuadros A6A y A6B al final del documento).

Table 15 shows a summary of mean annual predictions for the different components that make up core and residual inflation (more detailed information may be found in tables A6A and A6B at the end of the document.)

Cuadro 15		TASAS DE CRECIMIENTO ANUAL MEDIO EN ESPAÑA					Table 15
		SPANISH AVERAGE RATES OF GROWTH					
		1998	1999	Predicciones / Forecasts			
				2000	2001	2002	
Inflación Residual	Residual Inflation	0.59	3.03	6.49	2.92	2.06	
Aceites	Fats	-11.11	14.95	-7.61	-14.03	-5.15	
Tabaco	Tobacco	7.90	4.33	2.68	7.05	2.50	
Paquetes Turísticos	Tourism	15.39	7.21	12.03	9.85	8.79	
Alim. No Elaborados	Non Processed Foods	2.14	1.17	4.07	4.14	2.84	
Energía	Energy	-3.82	3.23	13.38	1.19	0.55	
Inflación Tendencial	Core Inflation	2.20	2.10	2.54	3.08	3.06	
BENE-X	BENE-X	1.44	1.27	1.86	2.56	2.59	
SERV-T	SERV-T	3.30	3.31	3.48	3.81	3.69	
Inflación en el IPC	CPI Inflation	1.84	2.31	3.42	3.04	2.83	
(*) Puede encontrarse una información más detallada en los cuadros A6A y A6B del Apéndice.				(*) A more detailed information can be found in tables A6A and A6B in Appendix.			

Fuente / Source: INE & Instituto Flores de Lemus

Fecha de elaboración: 22 de diciembre de 2000 / Date: December 22, 2000.



La innovación a la baja en la inflación tendencial en servicios se ha registrado en transporte, cafeterías, hoteles, menaje y medicina.

En cuanto al sector de servicios excluido los denominados como paquetes turísticos (SERV-T) la inflación mensual, 0,19%, se comportó ligeramente por debajo de lo previsto, 0,22%, debido a innovaciones a la baja en los precios del transporte, cafeterías, hoteles, menaje y medicina. La evolución de los precios de los servicios es especialmente preocupante en el sector de cafeterías y restaurantes con una tasa de crecimiento anual algo superior al 4%, al igual que ocurre con los sectores de vivienda y transporte; en el sector de hoteles con una tasa anual superior al 9% y en el sector de paquetes turísticos con una tasa anual superior al 21%. En este último caso gran parte del crecimiento de los precios está vinculada a la depreciación del euro. Esto hace que el diferencial de inflación entre los mercados de bienes elaborados no energéticos y los mercados de servicios sea de dos puntos porcentuales. Este diferencial es también superior al correspondiente europeo; los precios de los servicios, índice SERV, han alcanzado en noviembre una tasa del 4,25% que también contrasta muy desfavorablemente con la correspondiente tasa en la zona euro 1,88%. La inflación tendencial en servicios (SERV-T) anual ha repuntado al 3,80%, y se prevé que continúe aumentando a finales de 2000 y durante 2001. Por tanto, las expectativas de crecimiento medio se revisan a la baja al 3,48% en 2000 y al 3,81% en 2001. La predicción de la tasa media para 2002 es 3,69%.

La tasa anual de la inflación tendencial continúa el proceso de crecimiento.

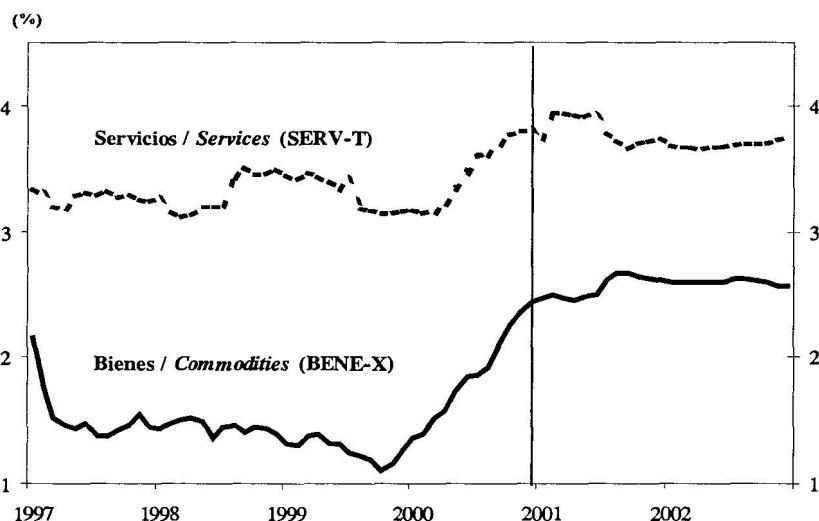
Con las mencionadas innovaciones al alza en el mercado de bienes y a la baja en el de servicios la inflación tendencial, calculada a partir del índice IPSEBENE-XT registró una tasa anual del 2,95% frente a una predicción del 2,92%. Las expectativas son de que tal inflación tendencial continúe creciendo hasta situarse sobre el 3% en diciembre de 2000, 2001 y 2002, revisando al alza las expectativas de crecimiento medio para 2000 y 2001 al 2,54% y al 3,08% respectivamente. La predicción del crecimiento medio para 2002 es 3,06%. Con ello, la inflación tendencial continúa con el sistemático proceso de crecimiento que comenzó a finales de 1999.

With regards to the services sector, excluding those components known as tourist packages (the SERV-T index), monthly inflation, 0.19%, was less than was foreseen, 0.22%, owing to downward innovations in prices of transport, catering, hotels, services relative to household and medicine. The evolution of this kind of prices is specially worried in the sectors of catering, restaurants, transport and housing with an annual rate of growth greater than 4; hotels with an annual rate of growth greater than 9% and tourist packages with an annual rate of growth above 21%. In this late case a great part of this increase is owing to the euro depreciation. So, the inflation differential between the market of Non-energy manufactured goods and the services market is of two percentage points. This differential is also greater than that in Europe; the annual rate of growth of services was of 4.25%, while the corresponding to the Euro-zone was 1.88%. The annual trend inflation in services (SERV-T) upturned to 3.80% and it is foreseen that this will continue. Mean growth expectations, therefore, have been downward adjusted to 3.48% for 2000 and 3.81% for 2001. Mean growth forecast for 2002 is 3.69%.

With the aforementioned upward innovations in the goods markets and downward surprises in the services markets, trend inflation, calculated on the basis of the IPSEBENE-XT index, registered an annual rate of 2.95% instead of the 2.92% predicted. It is foreseen that trend inflation will continue increasing and will reach an annual growth rate above 3% in December 2000, 2001 and 2002, meaning upward adjustments in mean growth expectations for 2000 and 2001, to 2.54% and 3.08% respectively. The expectation for mean growth in 2002 is 3.06%. With this, trend inflation continues to show the systematic process of growth that began at the end of 1999.



Gráfico 11
TASAS ANUALES DE CRECIMIENTO DE LA INFLACIÓN TENDENCIAL EN BIENES (BENE-X)
Y EN SERVICIOS (SERV-T)
AVERAGE RATES OF GROWTH OF CPI INFLATION IN GOODS (BENE-X) AND
IN SERVICES (SERV-T)



Fuente / Source: INE & INSTITUTO FLORES DE LEMUS
Fecha de elaboración: 22 de diciembre de 2000 / Date: December 22, 2000

Dentro de la inflación residual, los precios de los alimentos no elaborados han registrado una innovación al alza.

En cuanto a los precios sobre los que se calcula la inflación residual, se ha registrado una innovación a la baja en todos sus componentes, excepto en los precios de los alimentos no elaborados (ANE) que registraron innovaciones al alza en los precios de todos sus componentes excepto en las patatas. Los precios del tabaco aumentaron un 0,05% y los precios de los aceites y de las grasas descendieron prácticamente según lo previsto (-0,96% observado frente a -1,02% previsto). También los precios de la energía y del turismo registraron una innovación a la baja.

Con todo ello, la inflación residual se ha situado en noviembre en una tasa anual del 7,86% y se espera que vaya decreciendo de forma importante durante 2001.

Las expectativas de crecimiento medio de los precios al consumo energéticos se revisan a la baja al 13,38% y al 1,19% en 2000 y 2001, respectivamente; la predicción para la media de 2002 es 0,55%. Las tasas de variación anual media de los precios de los aceites y grasas se espera que descendan un 7,61% en 2000, un 14,03% en 2001 y un 5,15% en 2002. En cuanto a las expectativas de crecimiento medio de los precios de los alimentos no elaborados se sitúan en el

As regards those prices which serve as a basis for calculating residual inflation, they registered a downward innovation in all components except prices of non-processed food, so residual inflation behaved worse than forecasted, reaching a monthly rate of 0.24% instead of the 0.43% foreseen. In the non-processed food groups (the ANE index) there were upward innovations in prices of all its components except potatoes. Tobacco prices went up by 0.05% and prices of oils and fats behaved practically as was expected (-0.96% observed instead of -1.02% predicted). Energy prices and prices of tourist packages also registered a downward innovation.

With all of this, residual inflation registered an annual growth rate of 7.86% and a significant decrease throughout 2001 is foreseen.

Mean growth expectations of consumer energy prices are 13.38%, 1.19% and 0.55% for 2000, 2001 and 2002, respectively. Mean annual variation rates for oils and fats are expected to drop by 7.61%, 14.03% and 5.15% in 2000, 2001 and 2002, respectively. As regards mean growth expectations of non-processed foods, these are 4.07% for 2000, 4.14% for 2001, and 2.84% for 2002. Lastly, Tourist Package prices have been adjusted downwards and will reach average values of



4,07% en 2000, 4,14% en 2001 y 2,84% en 2002. Por último, los precios de los Paquetes Turísticos han sido revisados a la baja y alcanzarán valores medios del 12,03%, 9,85% y 8,79% en 2000, 2001 y 2002 respectivamente. Por tanto, el crecimiento medio estimado en la inflación residual se sitúa en el 6,49%, 2,92% y 2,06% en 2000, 2001 y 2002, respectivamente.

12.03%, 9.85% and 8.79% in 2000, 2001 and 2002, respectively. Therefore, estimated mean growth of residual inflation is 6.49% in 2000, 2.92% in 2001 and 2.06% in 2002.

La predicción de inflación para diciembre de 2000 es de un 0,26%.

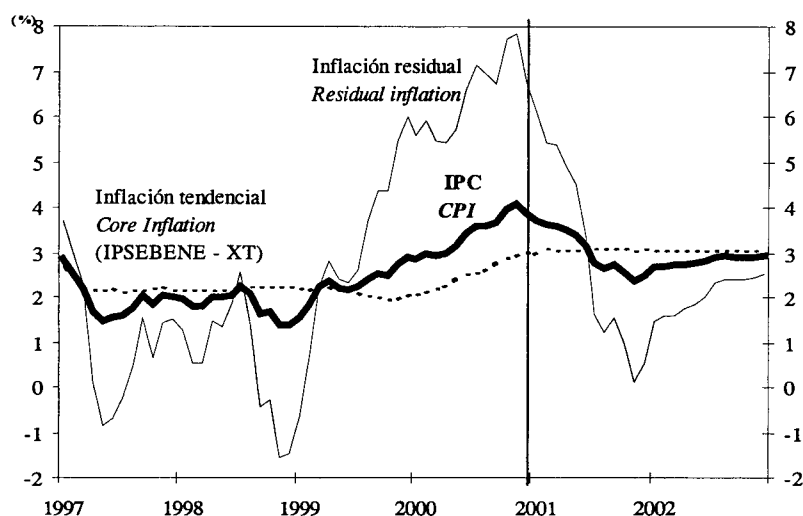
Con todo ello, la predicción de inflación para diciembre de 2000 es de un aumento del 0,26%, lo que situará su crecimiento anual en el 3,86%. La inflación tendencial será del 0,19% y la inflación residual registrará un 0,48%. Las tasas de inflación media en el IPC global se sitúan en el 3,42% en 2000, 3,04% en 2001 y 2,83% en 2002. La inflación tendencial continúa y continuará subiendo en lo que queda de 2000 y durante 2001 y 2002, llegando a tasas del 3,1% en diciembre de 2001 y 2002.

With all of this, the inflation prediction for December 2000 is for an increase of 0.26%, which will place annual growth at 3.86%. Trend inflation will be 0.19% and residual inflation 0.48%. Mean inflation rates within the overall CPI are placed at 3.42% for 2000, 3.04% for 2001 and 2.83% for 2002. Trend inflation is still increasing and will continue to do so throughout the remainder of 2000 and 2001 and 2002, reaching annual rates of growth closer to 3.1% at the end of 2001 and 2002.

Gráfico 12

Graph 12

TASAS ANUALES DE CRECIMIENTO DE LA INFLACIÓN GLOBAL, TENDENCIAL Y RESIDUAL
AVERAGE RATES OF GROWTH OF TOTAL INFLATION, CORE AND RESIDUAL INFLATION



Fuente / Source : INE & INSTITUTO FLORES DE LEMUS

Fecha de elaboración: 28 de noviembre de 2000/ Date: November 28, 2000

El descenso previsto para 2001 de la inflación residual no será suficiente para compensar tasas del 3,1% en la inflación tendencial a finales de 2001 y 2002. Este es el factor que hace que resulte muy improbable que en 2000, 2001 y 2002 la economía española pueda alcanzar el objetivo de inflación establecido por el Banco Central Europeo de no superar el 2%.

The decrease in residual inflation foreseen for 2001 will not suffice to offset rates of 3.1% in trend inflation at the end of 2001 and 2002. This fact makes it unlikely that the Spanish economy will reach the inflation objective fixed by the European Central Bank, for inflation no greater than 2%, in 2000, 2001 and 2002.



El aumento en los precios de las manufacturas puede dar lugar a una apreciable pérdida de competitividad que se traducirá en un menor crecimiento económico.

Como se ha comentado anteriormente, una de las características más negativas de la inflación española es la subida de los precios de las manufacturas no energéticas, pues si estos incrementos en los precios no vienen acompañados de incrementos en la calidad de estos bienes se experimentará una apreciable pérdida de competitividad, que se traducirá en menor crecimiento económico.

As was mentioned, one of the more negative features of Spanish inflation is the continued increments in commodity prices because if these price increases are not reflected in improvements in quality, the Spanish economy will suffer a loss of competitiveness which will mean smaller economic growth.

El INE está culminando la primera fase del cambio metodológico en la elaboración del IPC, con la consecución de pesos variables para cada componente. Esto supondrá una ruptura en las series que habrá que afrontar para la obtención de nuestras predicciones y diagnóstico.

The National Statistics Institute of Spain is finalising the first phase of the methodological change in the elaboration of the consumer price index. This will imply new variable weights and suppose a rupture of the series that we are able to face in order to obtain our forecasts and diagnosis.

La economía española redujo el ritmo de crecimiento en dicho periodo.

El Instituto Nacional de Estadística (INE) acaba de publicar la Contabilidad Nacional Trimestral (CNTR) correspondiente al tercer trimestre del actual ejercicio. De acuerdo con sus estimaciones, la economía española redujo el ritmo de crecimiento en dicho periodo. El producto Interior Bruto (PIB), en términos reales y según la versión de datos corregidos de estacionalidad y efecto calendario, registró una tasa de variación interanual del 3,9%, tres décimas menos que en el trimestre anterior.

The National Institute of Statistics (INE) has just to publish the Quarterly National Accounts (CNTR) for the third quarter of the present exercise. In agreement with its estimations, the Spanish economy reduced the rhythm of growth in that period. The Gross domestic product (GDP), in real terms and according to the version of seasonally and effect calendar adjusted data, registered a rate of interannual variation of 3,9%, three tenth less than in the previous quarter.

Entre los rasgos mas significativos de estos resultados cabe destacar la desaceleración del consumo de los hogares, tal y como se esperaba en nuestras predicciones, y la fortaleza que sigue mostrando la inversión en construcción, a pesar de la subida de tipos de interés hipotecarios, lo que puede deberse al empuje de la construcción en obra civil. Por su parte, la inversión en equipo se recupera notablemente respecto al trimestre precedente, mas de lo esperado. En cuanto al comercio exterior, las exportaciones continúan mostrando una gran fortaleza y aumentan su ritmo de crecimiento interanual, como resultado de la depreciación del euro frente al dolar, mientras que las importaciones se desaceleran en coherencia con la debilidad del consumo.

Among the more important features of these results we could emphasize the household consumption desaceleration, as it was expected in our predictions, and the fortress that go on showing the investment in construction, in spite of the ascend of mortgages interest rates, what can be owed upon pushing of the construction in civil work. The investment in equipment recuperates notably regarding the preceding quarter, more than expected. Concerning the exterior commerce, the exportations continue showing a great fortress and they increase their rhythm of interannual growth, as result of the depreciations of the euro versus dollar, while the imports decelerate in coherence with the weakness of the consumption.

A la luz de los nuevos resultados se modifican las previsiones del cuadro macroeconómico. Para 2000 se eleva el crecimiento de la inversión en equipo en dos décimas, ahora se estima una tasa de crecimiento anual del 4,9%. El resto de las variables, prácticamente, no se modifican con lo que la tasa de

With the new results, the forecasts of the macroeconomic table are modified. For 2000 the growth of the investment in equipment is elevated in two tenth, now an annual rate of growth is estimated in 4.9%. The other variables, practically, are not modified, with what the annual rate of variation growth of



Para el ejercicio 2001 se reduce el crecimiento previsto del consumo de los hogares.

La anterior previsión de crecimiento del PIB para el próximo ejercicio 2001 disminuyese en dos décimas, situándose en el 3,3%.

variación anual crecimiento del PIB se eleva ligeramente, hasta el 4,0%, lo que se produce prácticamente por el redondeo de cifras. Para el ejercicio 2001 se reduce el crecimiento previsto del consumo de los hogares, a la luz de la debilidad que muestran sus diferentes indicadores, ahora se fija en el 3,3%, dos décimas menos que en la previsión anterior. También se tiene en cuenta la reciente revalorización del euro frente al dolar y la desaceleración de la economía americana, por lo que se rebaja del crecimiento de las exportaciones al 8,7%, 2,1 puntos menos que en 2000. Como resultado de estos cambios, la anterior previsión de crecimiento del PIB para el próximo ejercicio 2001 disminuyese en dos décimas, situándose en el 3,3%.

La desaceleración del crecimiento económico se confirma también por la evolución de los últimos resultados de la producción industrial. Así, el IPI se viene desacelerando desde finales de verano y aunque el dato de octubre, extremadamente bajo, es difícil de precisar por el efecto de la huelga de transportes que tuvo lugar en la primera semana e dicho mes, muy probablemente siga reduciendo su ritmo de crecimiento.

the GDP is increased slightly, until the 4.0%, with the round. For the exercise 2001 the foreseen growth in household consumption is reduced beacuse of the weakness that show their different indicators, now themselves fixed in 3.3%, two tenth less than in the previous forecast. Also it keeps in mind the recent reassessment of the euro versus dollar and the desaceleration of the American economy, for which the growth of the exportations falls to the 8.7%, 2.1 points less than in 2000. As result of these changes, the previous forecast of GDP growth for the next exercise 2001 to diminish in two tenth, being situated in the 3.3%.

The desaceleración of the economic growth is confirmed tambien by the evolution of the last results of the industrial production. Thus, the IPI comes itself decelerating since ends of summer and although the datum of October, extremely under, is difficult of needing for the effect of the strike of transportations that took place in the first week and said month, very probably follow reducing its rhythm of growth.



CUADRO MACROECONÓMICO E INDICADORES (*)
MACROECONOMIC TABLE AND INDICATORS

	Tasas anuales / Annual Rates		
	Predicciones BIAM ^(*) Forecasts BIMA ^(**)		Previsiones PP. GG. EE. ^(***) Government Forecasts
	2000	2001	2001
Gasto en consumo final hogares / <i>Private Final Consumption Expenditure</i>	4.0	3.3	3.4
Gasto en consumo final AA.PP. / <i>Public Final Consumption Expenditure</i>	2.5	1.9	1.2
Formación Bruta de Capital Fijo / <i>Gross Fixed Capital Formation</i>	6.4	4.9	7.0
Equipo / <i>Equipment</i>	4.9	4.6	8.0
Construcción / <i>Building</i>	7.4	5.1	6.5
Variación de Existencias / <i>Inventory change (1)</i>	0.0	0.0	0.0
Demanda Interna / <i>Domestic Demand</i>	4.0	3.4	3.9
Exportación de Bienes y Servicios / <i>Exports of Goods and Services</i>	10.8	8.7	8.8
Importación de Bienes y Servicios / <i>Imports of Goods and Services</i>	10.6	8.8	9.5
Saldo Exterior / <i>Net Exports (1)</i>	-0.1	-0.2	-0.4
PIB / GDP	4.0	3.3	3.6
PIB, precios corrientes / <i>GDP, current prices</i>	7.5	6.5	5.9
Precios y Costes / Prices and Costs			
IPC, media anual / <i>CPI, annual average</i>	3.42	3.04	2.7 (4)
IPC, dic./dic. / <i>CPI, dec./dec.</i>	3.86	2.49	-
Remuneración (coste laboral) por asalariado / <i>Average earning per worker</i>	3.0	3.0	2.8
Coste laboral unitario / <i>Unit labour cost</i>	3.0	2.3	1.7
Mercado de Trabajo / Labour Market			
Población Activa (% variación) / <i>Labor Force (% variation)</i>	2.0	1.9	-
Empleo / Employment:			
Datos corregidos del cambio metodológico de la EPA Data adjusted from changes in the employment survey			
Variación media en % / <i>annual average variation in %</i>	3.6	2.8	2.5 (5)
Variación media en miles / <i>annual average variation in thousands</i>	498.0	401.0	382.8 (5)
Tasa de paro (% población activa) / <i>Unemployment rate</i>	14.4	13.9	12.7
Otros equilibrios básicos / Basic balances			
Sector exterior / Foreign sector			
Saldo de balanza por Cta. Cte. (m.m. Pts) / <i>Current Account (billions Pts.)</i>	-2914.6	-2890.8	-
Capacidad (+) o necesidad (-) de financiación (% PIB) / <i>Net lending or borrowing (% GDP) (2)</i>	-2.9	-2.7	-2.9
AA.PP. (Total) / Public Administration			
Capacidad (+) o necesidad (-) de financiación (% PIB) / <i>Net lending or borrowing (% GDP) (2)</i>	-0.5	-0.1	0.0
Otros Indicadores Económicos / Other Economic Indicators			
Índice de Producción Industrial / <i>Industrial Production Index</i>	4.5	3.7	-

(1) Contribución al crecimiento del PIB, en puntos porcentuales / *Contribution to GDP growth in percentage points*

(2) En términos de contabilidad nacional / *In national account terms*

(3) Sin la mencionada corrección el crecimiento del empleo fue de 612.000 personas, es decir, un 4,6% / *Without this adjustment the employment growth was 612.000 persons, i.e., 4,6%*

(4) Deflactor del gasto en consumo final de los hogares / *Private Final Consumption Expenditure Deflator.*

(5) Puestos de trabajo equivalentes a tiempo completo (PTETC) estimados en CNTR / *CNTR (National Quarterly Account) estimated positions equivalent to full time.*

Fuente:

INE & I. FLORES DE LEMUS

Source:

Fecha: 22 de diciembre de 2000.

Date: December 22, 2000.

(*) Boletín Inflación y Análisis Macroeconómico.

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

(***) Presupuestos Generales del Estado.



II. 4 Comunidad Autónoma de Madrid

II. 4 Madrid Region

Análisis de inflación para la Comunidad de Madrid.

En el boletín de este mes incorporamos el análisis de inflación relativo a la Comunidad Autónoma de Madrid. El objetivo de esta nueva sección viene dado por el creciente interés de las Comunidades Autónomas de disponer de instrumentos de análisis y evaluación de la realidad económica.

In this Bulletin we incorporate the inflation analysis related to the Madrid Region. The main target of this new section comes about as a result of the growing interest of the Autonomous communities to have available instruments for analysis and evaluation of economic reality.

El estudio de la inflación sobre la Comunidad Autónoma de Madrid (CAM) se encuentra en una primera fase, las predicciones han sido obtenidas con modelos referidos a los grupos principales del Índice de Precios para la Comunidad de Madrid.

The Madrid Region inflation study is still in an early stage, so the predictions have been obtained with models that refer to the main groups of the Consumer Price Index in the Madrid Region.

En el cuadro 17 se detalla el desglose por grupos del IPC, con las diferentes ponderaciones para España y Comunidad de Madrid.

In Table 17 the disaggregation is detailed by CPI groups, with the different weights for Spain and the Madrid Region.

Cuadro 17 Table 17		
PONDERACIONES DE LOS GRUPOS EN EL IPC DE ESPAÑA Y CAM / WEIGHT IN THE SPANISH CPI AND MR CPI		
GRUPOS/ Groups	Ponderación / Weighth	
	España/ Spain	CAM
1. Alimentos, bebidas y tabaco / Food, beverages and Tobacco	293.607	271.935
2. Vestido y calzado / Apparel	114.794	102.473
3. Vivienda / Housing	102.803	100.597
4. Menaje y servicios para el hogar / Household furnishings and operations	66.840	60.558
5. Servicios médicos y sanitarios / Medical care	31.260	34.946
6. Transportes y comunicaciones / Transportation and communication	165.419	168.223
7. Esparcimiento, enseñanza y cultura / Recreation and Education	72.671	86.363
8. Otros bienes y servicios / Other goods and services	152.606	174.905
TOTAL	1000	1000

Fuente / Source: INE

La imposibilidad de separar el errático componente energético en Madrid, explica el error de predicción en transportes.

La predicción de la inflación a partir de una información estadística que no particulariza la evolución de los precios de los bienes energéticos tiene que ser necesariamente imperfecta, pues los modelos empleados no pueden estimar con precisión las fuertes oscilaciones en la inflación procedentes de dichos precios. Esto explica el error cometido en la predicción del índice de precios referido a "Transportes y comunicaciones".

Inflation forecasts made with the available statistical information, which does not specify the evolution of energy goods prices, is not accurate, because the models used cannot estimate exactly the wild fluctuations owing to those erratic prices. This fact may explain the forecast error the in Transportation and Communication price index.

Se ha cometido también un error importante, en sentido contrario al anterior, en los precios correspondientes a "esparcimiento, enseñanza y cultura", por no modelar adecuadamente el efecto de que las tasas universitarias concentran toda su variación anual en el mes de Octubre.

There is an important error, in the opposite sense, in Recreation and Education prices, as we are not taking into account the effect of University fees, which concentrate all their annual variation in October.



VALORES OBSERVADOS Y PREDICCIONES EN LOS DATOS DE IPC EN LA CAM
OBSERVED VALUES AND FORECASTS ON CONSUMER PRICE FIGURES IN MR

Indices de Precios al Consumo (IPC) / <i>Consumer Index Price (CPI)</i>	Crecimiento observado <i>Observed growth</i> <i>XI 2000</i>	Predicción/ <i>Forecast</i>
1. Alimentos, bebidas y tabaco (27,19%) / <i>Food, beverages and Tobacco</i>	0.31	0.52
2. Vestido y calzado (10,24%) / <i>Apparel</i>	0.43	0.43
3. Vivienda (10,05%) / <i>Housing</i>	0.12	0.34
4. Menaje y servicios para el hogar (6,05%) / <i>Household furnishings and operations</i>	0.21	0.31
5. Servicios médicos y sanitarios (27,19%) / <i>Medical care</i>	0.27	0.08
6. Transportes y comunicaciones (3,49%) / <i>Transportation and communication</i>	0.60	-0.08
7. Esparcimiento, enseñanza y cultura (16,82%) / <i>Recreation and Education</i>	0.08	0.75
8. Otros bienes y servicios (8,63%) / <i>Other goods and services</i>	-0.21	-0.44
IPC general (100%) / <i>All Items</i>	0.24	0.20

Fuente/ *Source*: INE & INSTITUTO FLORES DE LEMUSFecha: 14 de diciembre de 2000/ *Date*: December 14th, 2000.

El cuadro 18 permite evaluar las discrepancias entre los valores observados y las predicciones de los distintos componentes.

Table 18 allows for an evaluation of discrepancies between observed and forecasted values for the different groups.

A pesar de lo anterior, comparando los valores observados en los diferentes índices de precios con sus respectivas predicciones se puede concluir que:

Despite all of the above, if we compare the observed values in the different price indexes with their respective forecasts, we can conclude that:

1. Se modera la evolución de los precios en alimentos, bebidas y tabaco que podrían acabar el año con una tasa anual inferior al 2,4%.

1. The evolution of food, beverages and tobacco prices is moderate and they could finish the year with a annual rate below 2.4%.

2. Empeora el comportamiento de los precios de los servicios médicos y sanitarios que tiende a concluir el año con una tasa anual alrededor del 3,6%.

2. The behaviour of medical care prices is getting worse, they will tend to end the year 2000 with an annual rate of 3.6%

El cuadro 19 recoge las predicciones de inflación media anual para 2000 y 2001 para los distintos grupos del IPC madrileño. (Las predicciones mensuales y anuales se encuentran en los cuadros A7A y A7B en el apéndice).

Table 19 contains the average annual rates of growth for 2000 and 2001, for the different CPI groups in Madrid. (Monthly and annual rates can be found in tables A7A and A7B in the appendix).



Cuadro 19	TASAS DE CRECIMIENTO ANUAL MEDIO EN CAM (*) AVERAGE RATES OF GROWTH IN MR(*)			Table 19
	1999	Predicciones / Forecasts		
		2000	2001	
1. Alimentos, bebidas y tabaco (27,19%) / Food, beverages and Tobacco	1.34	2.00	2.44	
2. Vestido y calzado (10,24%) / Apparel	1.57	1.00	1.21	
3. Vivienda (10,05%) / Housing	1.74	4.66	3.76	
4. Menaje y servicios para el hogar (6,05%) / Household furnishings and operations	2.29	2.59	2.54	
5. Servicios médicos y sanitarios (27,19%) / Medical care	2.11	2.48	3.49	
6. Transportes y comunicaciones (3,49%) / Transportation and communication	2.50	5.38	5.37	
7. Esparcimiento, enseñanza y cultura (16,82%) / Recreation and Education	0.32	2.68	2.37	
8. Otros bienes y servicios (8,63%) / Other goods and services	3.86	4.80	4.93	
IPC general (100%) / CPI- All Items	2.05	3.41	3.49	
^(*) Las tasas mensuales y anuales se encuentran en los cuadros A7A y A7B del Apéndice Monthly and annual growth rates can be found in tables A7A and A7B in Appendix				

Fuente / Source: INE & INSTITUTO FLORES DE LEMUS
Fecha: 20 de diciembre de 2000/ Date: December 20, 2000

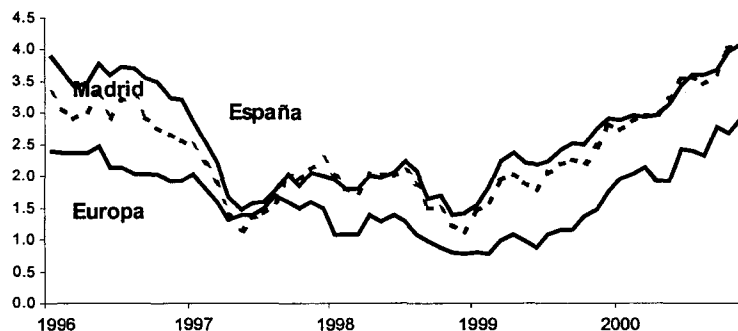
En cuanto a las predicciones para final de este año, además de lo ya comentado se tiene que:	Regarding forecasts at the end of the year, apart from all the previous commentaries, we can add:
Los índices de precios de los grupos 3 y 8 registrarán una tasa anual media sobre el 4,7%, y el grupo 6, referido a "transportes" sobre el 5,4%.	The prices index for groups 3 and 8, would register average annual rate around 4,7%, and group 6, referring to Transportation, about 5,4%.
Los índices de los grupos 4, 5 y 7 mostrarán tasas sobre el 2.5%.	Indexes of groups 4, 5 and 7 will show rates close to 2,5%.
El índice de alimentos, bebidas y tabaco alcanza el 2% de tasa media, y el de vestido y calzado se situará sobre el 1%.	Food, beverages and tobacco indexes will reach 2%, and clothing could reach 1%.
En consecuencia la tasa anual de inflación global para la Comunidad de Madrid en Diciembre de 2000 se situará sobre el 3,9%, que coincide con el esperado para la economía española, pero muy superior al 2,4% que se predice para la Unión Monetaria.	The annual global inflation annual rate for the Madrid Region in December would come to 3,9%, which is the same as the Spanish one, but higher than 2,4% forecasted for the Monetary Union.

Cuadro 20	TASA DE CRECIMIENTO ANUAL MEDIO AVERAGE ANNUAL RATE OF GROWTH			Table 20
Indice General / CPI Inflation	2000	2001	2002	
Comunidad de Madrid	3,4	3,5	3,2	
España	3,4	3,1	2,9	
UEM-11	2,3	1,9	1,6	

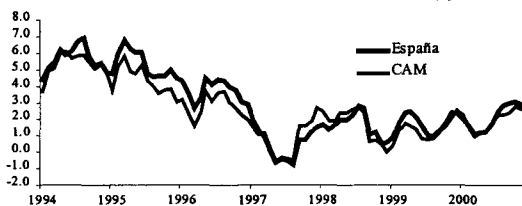
Fuente / Source: INE & INSTITUTO FLORES DE LEMUS
Fecha: 22 de diciembre de 2000/ Date: December 22, 2000



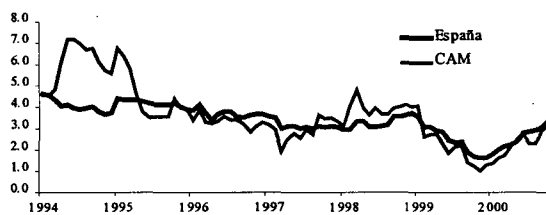
TASAS ANUALES IPC PARA CAM, ESPAÑA Y UM ANNUAL RATES CPI OF CAM, SPAIN AND MU



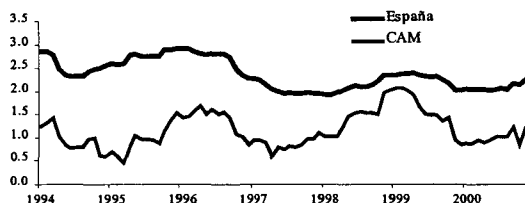
TASAS ANUALES IPC ALIMENTACION (1)



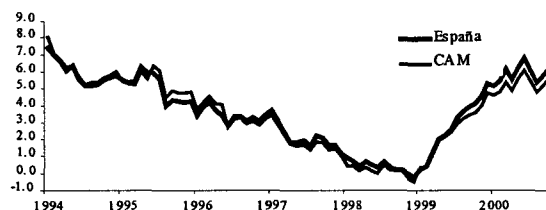
TASAS ANUALES IPC MEDICINA (5)



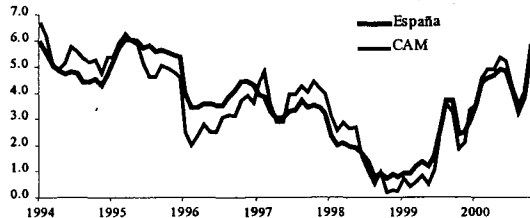
TASAS ANUALES IPC VESTIDO (2)



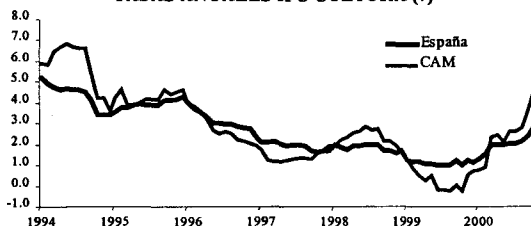
TASAS ANUALES IPC TRANSPORTE(6)



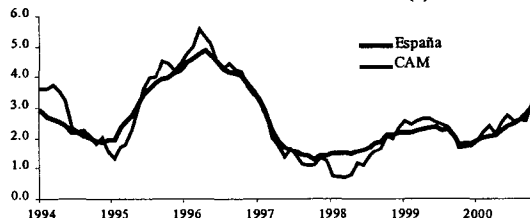
TASAS ANUALES IPC VIVIENDA (3)



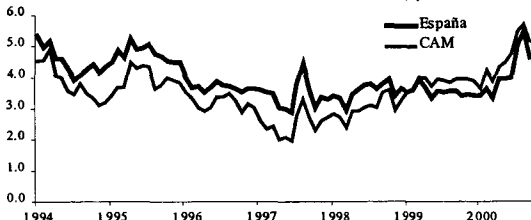
TASAS ANUALES IPC CULTURA (7)



TASAS ANUALES IPC MENAJE (4)



TASAS ANUALES IPC OTROS (8)



Fuente / Source: Eurostat & I. FLORES DE LEMUS
 Fecha/Date: 14 de diciembre de 2000/ December 14, 2000

III. EL PERFIL DE CRECIMIENTO SEGUN LA CNTR ESPAÑOLA: LOS DATOS AJUSTADOS DE ESTACIONALIDAD

La Contabilidad Nacional Trimestral (CNTR) adaptada al SEC-95 se publica en España según tres versiones alternativas: la de datos brutos, la de datos corregidos de estacionalidad y efecto calendario y la de ciclo tendencia. En el cuadro 21 y gráfico 14 adjuntos se muestra el perfil de crecimiento del PIB según las tres versiones. Los datos brutos deberían corresponderse con la auténtica Contabilidad Trimestral y deberían ser más representativos del dato real que los otros dos tipos de datos que se obtienen ignorando algún elemento de la realidad. No obstante, los crecimientos intertrimestrales de los datos brutos e incluso los interanuales muestran una elevada erradicidad, pues al igual que los otros dos tipos de datos, se obtienen mediante manipulación econométrica, ya que la oscilación estacional que muestra es estimada a partir de unos indicadores. El problema con los datos brutos se agrava por el hecho de que los indicadores empleados no son necesariamente representativos en cuanto a las oscilaciones estacionales de las macromagnitudes de la CNTR. La conclusión es que una parte de la erradicidad de los datos brutos se debe al proceso de su construcción y eso comporta un coste informativo alto para los agentes. Los datos de ciclo-tendencia son los que muestran menor variabilidad, inducida por los procedimientos de filtrado utilizados para su obtención, sin embargo, no permiten distinguir adecuadamente los movimientos a corto plazo. Los datos corregidos representan una posición intermedia entre las dos anteriores y son probablemente los mas adecuados para el seguimiento de la coyuntura. Un juicio más preciso sobre cuál de los dos tipos de datos, ciclo-tendencia o ajustados de estacionalidad, son preferibles requeriría conocer más detalles sobre su construcción.

Es interesante observar la evolución de las tasas de variación interanual del PIB en el actual ejercicio según las tres versiones que se recogen en el cuadro 21 y gráfico 14. El primer trimestre representa un crecimiento máximo, según los tres tipos de datos, desde mediados de 1998, sin embargo, la desaceleración del PIB en los dos trimestres siguientes solo es claramente perceptible en

III. THE OUTLINE OF GROWTH BY SPANISH QUARTERLY NATIONAL ACCOUNTS: THE SEASONALLY ADJUSTED DATA

The Quarterly National Accounts (CNTR, in its Spanish abbreviation) adapted to the SEC-95 is published in Spain according to three versions alternatives: that of rough data, that of data corrected of seasonality and calendar effect and that of trend-cycle. In the table 21 and graph 14, the outline of GDP growth is shown according to these three versions. The rough data should be the authentic Quarterly Accounting and should be more representative of the real data that the other two types of data. Nevertheless, the interquarterly rates of growth of the rough data and even the interannual rates of growth show a high erraticity, what behaves a high informative price for the agents. The data of trend-cycle are the ones that show smaller variability, induced by the procedures of filtered utilized for their obtaining, however, they do not permit to distinguish the short-term movements. The seasonally adjusted data represent an intermediate position among the two previous and they are probably the more adequate for the following of the coyuntura.

To this respect can be representative the observation of the evolution of the rates of growth of GDP in the present exercise according to the three versions that they are collected in the table 21 and graph 14. The first quarter represents a maximum growth, according to the three types of data, however, the GDP desacceleration in the two following quarters is clearly perceptible in the rough

Los datos corregidos representan una posición intermedia entre las dos anteriores y son probablemente los más adecuados para el seguimiento de la coyuntura.



los datos brutos y corregidos pero casi no se aprecia en los datos de ciclo tendencia. Así, en los primeros su ritmo de variación interanual desciende con intensidad, casi un punto entre el primer y tercer trimestre y la versión de datos corregidos lo hace en cuatro décimas, mientras que en ciclo tendencia solo empieza a disminuir muy ligeramente, una décima, en el tercer trimestre. Por estas razones creemos que los datos corregidos son los más adecuados, al menos en estos momentos, para el análisis de la coyuntura. En el *Boletín Inflación y Análisis Macroeconómico* los comentarios sobre los datos de CNTR se hacen habitualmente sobre la versión de datos corregidos, salvo indicación en contra.

and adjusted data, but almost is not appreciated in the trend-cycle data. Thus, in the first its rhythm of interannual variation descends with intensity, almost a point among the first one and third quarter and the version of corrected data does it in four tenth, while in alone cycle tendency begins to diminish very slightly, a tenth, in the third quarter. By these reasons we believe that the corrected data are more suitable for the analysis of the coyuntura. In the Bulletin EU & US Inflation and Macroeconomic Analysis the commentaries about the data of Quarterly Natonal Accounts are done habitually upon the version of corrected data, wit except of indication in against.

Cuadro 21

Table 21

EL PERFIL DEL PIB TRIMESTRAL (Variación interanual en %)

THE QUARTERLY GDP OUTLINES (% Interannual change)

		DATOS BRUTOS GROSS DATA	DATOS CORREGIDOS ADJUSTED DATA	DATOS DE CICLO - TENDENCIA TREND - CYCLE DATA
1998	I	5.6	5.0	4.9
	II	4.2	4.5	4.4
	III	3.9	4.0	4.0
	IV	3.7	3.8	3.9
1999	I	4.1	4.0	3.9
	II	4.5	4.2	4.0
	III	3.5	3.8	4.0
	IV	4.0	4.0	4.1
2000	I	4.6	4.3	4.2
	II	4.5	4.2	4.2
	III	3.7	3.9	4.1

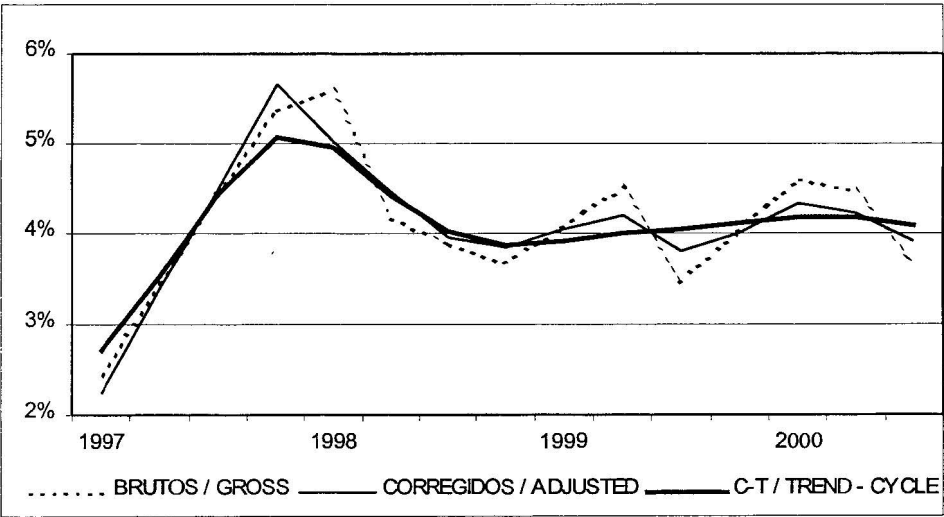
Fuente / Source : INE & INSTITUTO FLORES DE LEMUS
 Fecha de elaboración: 21 de diciembre de 2000/ Date: December 21, 2000

Gráfico 14

Graph 14

EVOLUCIÓN DEL PIB TRIMESTRAL SEGÚN SUS DISTINTAS VERTIENTES (tasas de variación interanual)

QUARTERLY GDP EVOLUTIVITY ACCORDING TO ITS DIFFERENT KINDS (interannual change rates)



Fuente / Source : INE & INSTITUTO FLORES DE LEMUS
 Fecha de elaboración: 21 de diciembre de 2000/ Date: December 21, 2000



CUADROS / TABLES :

- A1: Desglose de la inflación en España.
A1: Spanish CPI disaggregation
- A2: Errores de predicción de Europa.
A2: Europe forecast errors.
- A3A: Crecimientos anuales 2000 , 2001 Y 2002 del IPC armonizado (ICPA) para los países de la UM.
A3A: Harmonized Consumer Price Index (HICP) Annual Growth Rates for 2000, 2001 and 2002 for MU countries.
- A3B: Crecimientos anuales 2000 , 2001 y 2002 del IPC armonizado (ICPA) para los países de la UE.
A3B: Harmonized Consumer Price Index (HICP) Annual Growth Rates for 2000, 2001 and 2002 for EU countries.
- A3C: Crecimientos mensuales 2000, 2001 y 2002 del IPC armonizado (ICPA) para los países de la UM.
A3C: Harmonized Consumer Price Index (HICP) Monthly Growth Rates for 2000, 2001 and 2002 for MU countries.
- A3D: Crecimientos mensuales 2000, 2001 y 2002 del IPC armonizado (ICPA) para los países de la UE.
A3D: Harmonized Consumer Price Index (HICP) Monthly Growth Rates for 2000, 2001 and 2002 for EU countries.
- A4A: Crecimientos anuales 2000-2001-2002 del IPC armonizado (ICPA) por sectores en la UM.
A4A: Harmonized Consumer Price Index (HICP) Annual Growth Rates by sectors for 2000-2001-2002 for MU.
- A4B: Crecimientos mensuales 2000-2001-2002 del IPC armonizado (ICPA) por sectores en la UM.
A4B: Harmonized Consumer Price Index (HICP) Monthly Growth Rates by sectors for 2000-2001-2002 for MU.
- A5A: Crecimientos anuales 2000, 2001 y 2002 del IPC para Estados Unidos.
A5A: US CPI Annual Growth Rates for 2000, 2001 and 2002.
- A5B: Crecimientos mensuales 2000, 2001 y 2002 del IPC para Estados Unidos.
A5B: US CPI Monthly Growth Rates for 2000, 2001 and 2002.
- A6A: Crecimientos anuales 2000, 2001 y 2002 del IPC para España.
A6A: Spanish CPI Annual Growth Rates for 2000, 2001 and 2002.
- A6B: Crecimientos mensuales 2000, 2001 y 2002 del IPC para España.
A6B: Spanish CPI Monthly Growth Rates for 2000, 2001 and 2002.
- A7A: Crecimientos anuales 2000, 2001 y 2002 del IPC para la Comunidad de Madrid.
A7A: Madrid Region CPI Annual Growth Rates for 2000, 2001 and 2002.
- A7B: Crecimientos mensuales 2000, 2001 y 2002 del IPC para la Comunidad de Madrid.
A7B: Madrid Region CPI Monthly Growth Rates for 2000, 2001 and 2002.

GRÁFICOS (*) / PLOTS (*):

A1A: Tasas mensuales del IPCA en la UM.
A1A: HICP monthly growth rates in MU.

A1B: Tasas mensuales del IPC en USA.
A1B: CPI monthly growth rates in US.

A1C: Tasas mensuales del IPC en España.
A1C: CPI monthly growth rates in Spain.

A1D: Predicciones anuales para la inflación en España.
A1D: Annual forecasts for Spanish inflation.

(*) Los gráficos que en números anteriores aparecían bajo los epígrafes A3, A4, A5 y A6 pueden consultarse en la página web del Boletín, www.uc3m.es/boletin, con la nueva numeración correspondiente A2, A3, A4 y A5.

(*) The graphs published in previous issues as A3, A4, A5 & A6 can be found in the web page of Bulletin, www.uc3m.es/boletin, now as A2, A3, A4 and A5.



Cuadro A2					Table A2
VALORES OBSERVADOS Y PREDICCIONES DE LA TASA MENSUAL DEL IPC ARMONIZADO (IPCA) PARA LOS PAÍSES DE LA UE OBSERVED AND FORECASTED VALUES ON HARMONIZED ICP (HICP) MONTHLY GROWTH FOR EU COUNTRIES					
País Country	Ponderación Weight		Crecimiento observado Current growth	Predicción Forecast	Intervalos de confianza (%) (*) Confidence Intervals (%) (*)
	UM	MU			
IPCA España Spain HICP			0.27	0.27	± 0.15
IPCA Alemania Germany HICP			0.28	0.18	± 0.29
IPCA Austria Austria HICP			0.38	0.32	± 0.37
IPCA Bélgica Belgium HICP			0.19	0.04	± 0.32
IPCA Finlandia Finland HICP			0.00	0.09	± 0.37
IPCA Francia France HICP			0.22	0.05	± 0.20
IPCA Holanda Netherlands HICP			-0.09	0.11	± 0.33
IPCA Irlanda Ireland HICP			0.18	0.17	± 0.30
IPCA Italia Italy HICP			0.36	0.15	± 0.23
IPCA Luxemburgo Luxembourg HICP			0.28	0.20	± 0.32
IPCA Portugal Portugal HICP			0.63	0.59	± 0.66
UM IPCA HICP MU	100.00%	78.35%	0.28	0.16	± 0.12
IPCA Dinamarca Denmark HICP		1.35%	0.09	0.10	± 0.27
IPCA Grecia Greece HICP		2.19%	0.42	0.32	± 0.78
IPCA Reino Unido UK HICP		16.33%	0.28	0.20	± 0.33
IPCA Suecia Sweden HICP		1.78%	0.09	-0.19	± 0.50
IPCA UE-15 EU-15 HICP		100.00%	0.28	0.16	± 0.11
(*) Al 80% de significación.					(*) At 80% confidence level.

CRECIMIENTOS ANUALES DEL IPC ARMONIZADO (IPCA) PARA LOS PAÍSES DE LA UM ⁽¹⁾
HARMONIZED CPI (HICP) ANNUAL GROWTH FOR MU COUNTRIES ⁽¹⁾

	Pond. / Weight		Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Tasa Media / Average Rate ⁽²⁾		
	UM	MU														00/99	01/00	02/01
IPCA España <i>Spain HICP</i>	9.08%		2000	2.87	2.96	3.04	3.03	3.22	3.50	3.68	3.56	3.75	4.03	4.12	4.00	3.48	3.00	2.75
			2001	3.78	3.64	3.54	3.47	3.35	3.11	2.69	2.66	2.61	2.53	2.28	2.39			
			2002	2.60	2.63	2.63	2.66	2.69	2.73	2.82	2.85	2.84	2.83	2.84	2.87			
IPCA Alemania <i>Germany HICP</i>	34.63%		2000	1.86	2.06	2.05	1.56	1.46	2.04	2.03	1.84	2.62	2.43	2.61	2.19	2.06	1.19	1.04
			2001	1.76	1.72	1.48	1.68	1.70	1.27	1.02	1.06	0.49	0.74	0.63	0.81			
			2002	0.95	0.88	0.94	0.94	0.98	0.96	1.01	1.11	1.15	1.20	1.19	1.19			
IPCA Austria <i>Austria HICP</i>	2.91%		2000	1.37	1.96	1.95	1.76	1.56	2.35	1.96	1.86	2.35	2.24	2.33	2.18	1.99	2.00	1.92
			2001	2.18	2.03	2.02	2.07	2.10	1.93	2.02	2.04	1.92	1.93	1.90	1.90			
			2002	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92			
IPCA Bélgica <i>Belgium HICP</i>	3.99%		2000	1.85	2.14	2.52	2.32	2.41	3.00	3.18	3.48	3.95	3.66	3.65	3.64	2.99	3.20	2.56
			2001	3.81	3.53	3.31	3.49	3.55	3.38	3.20	3.06	2.71	2.91	2.84	2.69			
			2002	2.64	2.69	2.63	2.60	2.57	2.50	2.53	2.53	2.51	2.49	2.50	2.51			
IPCA Finlandia <i>Finland HICP</i>	1.51%		2000	2.34	2.72	3.20	2.50	2.69	3.07	2.89	2.88	3.44	3.44	3.44	3.35	3.00	2.67	2.11
			2001	3.51	3.11	2.78	2.75	2.54	2.40	2.79	2.83	2.26	2.30	2.39	2.36			
			2002	2.42	2.27	2.15	2.14	2.06	2.01	2.15	2.17	1.96	1.97	2.00	1.99			
IPCA Francia <i>France HICP</i>	20.91%		2000	1.67	1.47	1.66	1.36	1.56	1.85	1.96	1.95	2.34	2.14	2.26	1.83	1.84	1.35	1.29
			2001	1.86	1.66	1.42	1.49	1.47	1.29	1.32	1.33	0.96	1.19	1.02	1.19			
			2002	1.17	1.18	1.29	1.32	1.35	1.35	1.36	1.36	1.33	1.30	1.27	1.23			
IPCA Holanda <i>Netherlands HICP</i>	5.63%		2000	1.63	1.53	1.61	1.69	1.98	2.46	2.76	2.46	2.92	3.20	2.91	2.96	2.34	2.91	2.50
			2001	3.56	3.28	2.44	2.36	2.39	2.69	3.29	3.22	2.58	2.51	2.91	3.66			
			2002	2.15	2.44	3.26	3.30	3.14	2.63	1.98	2.08	2.61	2.59	2.27	1.53			
IPCA Irlanda <i>Ireland HICP</i>	0.98%		2000	4.44	4.60	4.97	5.04	5.10	5.37	5.87	5.73	5.52	5.98	5.97	5.41	5.34	5.34	5.11
			2001	5.33	5.63	5.54	5.51	5.47	5.42	5.30	5.22	5.26	5.13	5.13	5.11			
			2002	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11			
IPCA Italia <i>Italy HICP</i>	18.31%		2000	2.20	2.39	2.57	2.38	2.46	2.75	2.65	2.65	2.64	2.73	2.91	2.88	2.60	2.06	1.61
			2001	2.75	2.56	2.27	2.38	2.16	2.03	1.95	2.04	1.84	1.75	1.55	1.51			
			2002	1.58	1.54	1.59	1.60	1.59	1.58	1.60	1.64	1.68	1.65	1.62	1.63			
IPCA Luxemburgo <i>Luxembourg HICP</i>	0.20%		2000	3.47	2.63	3.02	3.19	2.90	4.44	4.70	3.66	4.23	4.31	4.50	4.40	3.79	3.63	2.60
			2001	5.04	4.36	4.15	3.76	3.91	2.99	3.95	3.58	3.15	3.01	2.95	2.86			
			2002	3.03	2.82	2.74	2.65	2.70	2.39	2.68	2.58	2.45	2.41	2.39	2.38			
IPCA Portugal <i>Portugal HICP</i>	1.81%		2000	1.90	1.61	1.42	1.88	2.44	2.81	3.28	3.57	3.57	3.66	3.63	3.68	2.79	3.46	3.05
			2001	3.80	4.01	4.10	3.80	3.65	3.43	3.22	3.17	3.19	3.12	3.07	3.07			
			2002	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05			
UM IPCA <i>HICP MU</i>	108.00%	78.35%	2000	1.95	2.04	2.13	1.93	1.93	2.41	2.40	2.31	2.79	2.69	2.88	2.57	2.33	1.87	1.63
			2001	2.49	2.32	2.07	2.13	2.13	1.83	1.75	1.82	1.46	1.55	1.42	1.55			
			2002	1.54	1.53	1.63	1.64	1.65	1.61	1.61	1.66	1.70	1.71	1.67	1.63			

* La tasa T1,12 normalmente refleja los cambios fundamentales en el crecimiento de los precios con seis meses de retraso respecto a los crecimientos mensuales, por lo que es necesario analizar sus predicciones para evaluar el momento inflacionista presente.

* 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.

(1) Las cifras en negrilla son predicciones

(1) Figures in bold type are forecasted values

(2) Tasa de crecimiento del nivel medio de un año con respecto al año anterior.

(2) Annual average rate of growth

Fuente:

Source:

EUROSTAT & INSTITUTO ESPAÑOL DE ESTADÍSTICA

Fecha de elaboración: 22 de diciembre de 2000

Date: December 22nd 2000

Cuadro A3B

Indicador
retrasado*

CRECIMIENTOS ANUALES DEL IPC ARMONIZADO (IPCA) PARA LOS PAÍSES DE LA UE ⁽¹⁾
HARMONIZED CPI (HICP) ANNUAL GROWTH FOR EU COUNTRIES ⁽²⁾

Elaboración / Elaborated by: Rebeca Albacete
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Table A3B

Lagged indicator*

	Pond. / Weight		Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Tasa Media / Average Rates ⁽²⁾		
	UM MU	UE15 EU15														00/99	01/00	02/01
UM IPCA	100.00%	78.19%	2000	1.95	2.04	2.13	1.93	1.93	2.41	2.40	2.31	2.79	2.69	2.88	2.57	2.33		
HICP MU			2001	2.49	2.31	2.07	2.13	2.13	1.83	1.75	1.82	1.46	1.55	1.42	1.55		1.87	
			2002	1.54	1.51	1.83	1.64	1.65	1.61	1.61	1.66	1.70	1.71	1.67	1.63			1.63
IPCA Dinamarca	1.35%		2000	2.80	2.79	2.96	2.86	2.85	2.93	2.75	2.18	2.73	2.82	2.73	2.64	2.75		
Denmark HICP			2001	2.74	2.63	2.35	2.39	2.42	2.32	2.48	2.73	2.32	2.27	2.32	2.26		2.43	
			2002	2.25	2.26	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25			2.25
IPCA Grecia	2.19%		2000	2.35	2.64	2.76	2.11	2.64	2.20	2.61	2.89	3.01	3.79	4.05	3.98	2.92		
Greece HICP			2001	4.12	4.16	3.89	3.83	3.80	3.87	4.05	4.03	3.81	3.69	3.65	3.56		3.87	
			2002	3.69	3.73	3.49	3.43	3.41	3.46	3.63	3.61	3.41	3.31	3.27	3.19			3.47
IPCA Reino Unido	16.33%		2000	0.77	0.96	0.67	0.57	0.48	0.76	0.96	0.57	0.95	0.95	1.04	1.10	0.82		
UK HICP			2001	1.51	1.40	1.56	1.51	1.77	1.67	1.63	1.87	1.65	1.68	1.58	1.58		1.62	
			2002	1.55	1.55	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.06			1.50
IPCA Suecia	1.78%		2000	0.98	1.36	1.36	0.97	1.25	1.35	1.26	1.36	1.35	1.34	1.83	1.69	1.34		
Sweden HICP			2001	1.96	1.75	1.60	1.83	1.62	1.62	1.87	1.81	1.60	1.59	1.49	1.49		1.68	
			2002	1.56	1.54	1.48	1.50	1.46	1.48	1.56	1.58	1.49	1.48	1.50	1.50			1.51
IPCA UE-15	100.00%		2000	1.74	1.93	1.93	1.73	1.73	2.11	2.11	2.01	2.39	2.49	2.58	2.41	2.10		
EU-15 HICP			2001	2.40	2.23	2.08	2.08	2.15	1.92	1.87	1.97	1.64	1.63	1.51	1.61		1.92	
			2002	1.61	1.60	1.67	1.68	1.68	1.65	1.66	1.70	1.72	1.72	1.70	1.58			1.66

* La tasa T1,12 normalmente refleja los cambios fundamentales en el crecimiento de los precios con seis meses de retraso respecto a los crecimientos mensuales, por lo que es aconsejable analizar sus predicciones para evaluar el momento inflacionista presente.

* 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.

(1) Las cifras en negrilla son predicciones

(1) Figures in bold type are forecasted values

(2) Tasa de crecimiento del nivel medio de un año con respecto al año anterior.

(2) Annual average rate of growth.

Fuente:

EUROSTAT & INSTITUTO FLORES DE LEON

Source:

Fecha de elaboración: 22 de diciembre de 2000

Date: December 22nd 2000

Cuadro A3C

CRECIMIENTOS MENSUALES DEL IPC ARMONIZADO (IPCA) PARA LOS PAÍSES DE LA UM ⁽¹⁾
HARMONIZED CPI (HICP) MONTHLY GROWTH FOR MU COUNTRIES ⁽¹⁾

	Pond. / Weight		Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Tasa Anual / Annual Rate ⁽²⁾		
	UM MU	UBLS BULS														D00/D99	D01/D00	D02/D01
IPCA España <i>Spain HICP</i>	9.08%		2000	0.37	0.19	0.46	0.37	0.18	0.28	0.64	0.36	0.36	0.18	0.27	0.26	4.00	2.39	2.87
			2001	0.16	0.05	0.37	0.30	0.06	0.04	0.23	0.34	0.31	0.11	0.02	0.37			
			2002	0.37	0.08	0.37	0.33	0.08	0.08	0.32	0.37	0.30	0.10	0.03	0.39			
IPCA Alemania <i>Germany HICP</i>	34.65%		2000	0.39	0.39	0.19	-0.10	-0.10	0.67	0.48	-0.19	0.48	-0.28	0.28	-0.03	2.19	0.81	1.19
			2001	-0.03	0.35	-0.05	0.11	-0.08	0.24	0.32	-0.15	-0.13	-0.04	0.22	0.23			
			2002	0.07	0.34	-0.06	0.10	-0.15	0.28	0.37	-0.15	-0.19	-0.09	0.20	0.19			
IPCA Austria <i>Austria HICP</i>	2.91%		2000	-0.38	0.77	0.10	-0.19	-0.10	0.38	-0.29	0.10	0.38	0.29	0.38	0.73	2.18	1.90	1.92
			2001	-0.39	0.63	0.09	-0.14	-0.06	0.22	-0.20	0.11	0.27	0.30	0.35	0.73			
			2002	-0.37	0.63	0.09	-0.14	-0.06	0.22	-0.20	0.11	0.27	0.30	0.35	0.73			
IPCA Bélgica <i>Belgium HICP</i>	3.99%		2000	0.19	0.48	0.48	0.19	0.28	0.38	0.38	0.09	0.75	-0.19	0.19	0.38	3.64	2.69	2.51
			2001	0.35	0.20	0.26	0.37	0.34	0.21	0.20	-0.04	0.41	0.01	0.11	0.23			
			2002	0.30	0.25	0.21	0.33	0.31	0.14	0.23	-0.04	0.39	-0.01	0.13	0.23			
IPCA Finlandia <i>Finland HICP</i>	1.51%		2000	-0.10	0.76	0.66	0.19	0.47	0.37	-0.47	0.09	1.03	0.09	0.00	0.20	3.35	2.36	1.99
			2001	0.06	0.38	0.34	0.16	0.27	0.23	-0.08	0.13	0.47	0.13	0.09	0.17			
			2002	0.11	0.23	0.22	0.15	0.19	0.18	0.06	0.14	0.27	0.14	0.13	0.15			
IPCA Francia <i>France HICP</i>	20.91%		2000	-0.10	0.19	0.48	0.00	0.19	0.29	-0.19	0.19	0.57	-0.10	0.22	0.05	1.83	1.19	1.23
			2001	-0.07	0.00	0.25	0.07	0.17	0.11	-0.16	0.20	0.21	0.13	0.05	0.23			
			2002	-0.09	0.01	0.36	0.10	0.19	0.11	-0.15	0.20	0.18	0.10	0.02	0.19			
IPCA Holanda <i>Netherlands HICP</i>	5.65%		2000	-0.28	0.57	1.13	0.37	0.28	0.00	-0.28	0.37	0.92	0.37	-0.09	-0.42	2.96	3.66	1.53
			2001	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
			2002	-1.16	0.59	1.09	0.34	0.15	-0.19	-0.34	0.40	0.82	0.28	-0.01	-0.42			
IPCA Irlanda <i>Ireland HICP</i>	0.98%		2000	-0.28	0.83	0.64	0.64	0.72	0.54	0.00	0.54	0.27	0.53	0.18	0.68	5.41	5.11	5.11
			2001	-0.35	1.11	0.56	0.61	0.69	0.48	-0.11	0.45	0.31	0.41	0.17	0.66			
			2002	-0.35	1.11	0.56	0.61	0.69	0.48	-0.11	0.45	0.31	0.41	0.17	0.66			
IPCA Italia <i>Italy HICP</i>	18.31%		2000	0.19	0.37	0.37	0.00	0.37	0.28	0.18	0.00	0.28	0.28	0.36	0.17	2.88	1.51	1.63
			2001	0.06	0.18	0.09	0.11	0.16	0.14	0.11	0.09	0.09	0.18	0.17	0.12			
			2002	0.13	0.14	0.13	0.13	0.15	0.14	0.13	0.13	0.12	0.15	0.14	0.13			
IPCA Luxemburgo <i>Luxembourg HICP</i>	0.20%		2000	-0.57	1.05	0.47	0.66	0.00	1.41	-1.02	0.65	0.74	0.37	0.28	0.29	4.40	2.86	2.38
			2001	0.04	0.40	0.27	0.29	0.14	0.51	-0.09	0.30	0.33	0.23	0.22	0.20			
			2002	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
IPCA Portugal <i>Portugal HICP</i>	1.81%		2000	-0.19	-0.28	0.19	1.12	0.65	0.55	0.46	0.09	-0.09	0.27	0.63	0.23	3.68	3.07	3.05
			2001	-0.07	-0.07	0.27	0.83	0.49	0.34	0.25	0.05	-0.08	0.20	0.59	0.23			
			2002	-0.08	-0.08	0.27	0.83	0.49	0.34	0.25	0.05	-0.08	0.20	0.59	0.23			
UM IPCA <i>HICP MU</i>	100.00%	78.33%	2000	0.10	0.38	0.38	0.09	0.09	0.47	0.19	0.00	0.47	0.00	0.28	0.08	2.87	1.55	1.63
			2001	0.02	0.22	0.13	0.15	0.09	0.18	0.11	0.07	0.11	0.09	0.15	0.22			
			2002	0.01	0.21	0.23	0.17	0.10	0.15	0.11	0.12	0.15	0.10	0.12	0.17			

(1) Las cifras en negrilla son predicciones

(1) Figures in bold type are forecasted values

(2) Tasa de crecimiento de diciembre de un año con respecto a diciembre del año anterior.

(2) December over December rate of growth

Fuentes:

EUROSTAT & INSTITUTO LOMAS DE LEMUS

Source:

Fecha de elaboración: 22 de diciembre de 2003

Date: December 22nd 2003

CRECIMIENTOS MENSUALES DEL IPC ARMONIZADO (IPCA) PARA LOS PAÍSES DE LA UE ⁽¹⁾
HARMONIZED CPI (HICP) MONTHLY GROWTH FOR EU COUNTRIES ⁽²⁾

	Pond./ Weight		Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Tasa Anual / Annual Rate ⁽²⁾		
	UM MU	UB15 BUI15														D00/D99	D01/D00	D02/D01
UM IPCA HICP MU	100.00%	78.35%	2000	0.10	0.38	0.38	0.09	0.09	0.47	0.19	0.00	0.47	0.00	0.28	0.08	2.57		
			2001	0.02	0.22	0.13	0.15	0.09	0.18	0.11	0.07	0.11	0.09	0.15	0.22		1.55	
			2002	0.01	0.21	0.23	0.17	0.10	0.15	0.11	0.12	0.15	0.10	0.12	0.17			1.63
IPCA Dinamarca Denmark HICP		1.35%	2000	-0.09	0.47	0.75	0.19	0.37	0.37	-0.46	-0.28	0.93	0.18	0.09	0.11	2.64		
			2001	0.00	0.36	0.47	0.23	0.40	0.28	-0.31	-0.04	0.53	0.14	0.14	0.05		2.26	
			2002	-0.01	0.36	0.46	0.23	0.40	0.28	-0.31	-0.04	0.52	0.14	0.14	0.05			2.25
IPCA Grecia Greece HICP		2.19%	2000	-1.31	-0.44	2.57	0.61	0.26	-0.60	-1.73	0.18	2.10	1.12	0.42	0.81	3.98		
			2001	-1.17	-0.40	2.31	0.54	0.23	-0.54	-1.55	0.16	1.89	1.00	0.38	0.73		3.56	
			2002	-1.05	-0.36	2.07	0.49	0.21	-0.48	-1.39	0.14	1.69	0.90	0.34	0.65			3.19
IPCA Reino Unido UK HICP		16.33%	2000	-0.95	0.38	0.19	0.38	0.19	0.19	-0.47	0.00	0.76	-0.09	0.28	0.24	1.10		
			2001	-0.54	0.28	0.35	0.34	0.44	0.09	-0.51	0.24	0.54	-0.07	0.19	0.23		1.58	
			2002	-0.57	0.27	0.34	0.33	0.44	0.09	-0.51	0.24	0.54	-0.07	0.19	-0.25			1.06
IPCA Suecia Sweden HICP		1.78%	2000	-0.58	0.48	0.58	-0.19	0.57	0.00	-0.57	0.10	0.86	0.19	0.09	0.15	1.69		
			2001	-0.31	0.27	0.44	0.03	0.37	0.00	-0.33	0.04	0.65	0.18	0.00	0.15		1.49	
			2002	-0.23	0.25	0.38	0.05	0.33	0.03	-0.25	0.06	0.56	0.17	0.02	0.14			1.50
IPCA UE-15 EU-15 HICP		100.00%	2000	0.10	0.38	0.38	0.19	0.09	0.38	0.00	0.00	0.56	0.00	0.28	0.13	2.41		
			2001	-0.11	0.22	0.23	0.19	0.16	0.15	-0.05	0.09	0.24	0.09	0.16	0.23		1.61	
			2002	-0.12	0.21	0.30	0.20	0.16	0.12	-0.04	0.13	0.26	0.09	0.14	0.11			1.58

(1) Las cifras en negrilla son predicciones

(1) Figures in bold type are forecasted values

(2) Tasa de crecimiento de diciembre de un año con respecto a diciembre del año anterior.

(2) Annual average rate of growth

Fuente:

Source:

EUROSTAT & INSTITUTO ESPAÑOL DE ESTADÍSTICA

Fecha de elaboración: 12 de diciembre de 2000

Date: December 12nd 2000

Cuadro A4A

Indicador
retrasado*

CRECIMIENTOS ANUALES DEL IPC ARMONIZADO (IPCA) POR SECTORES EN LA UNIÓN MONETARIA 2000-2001-2002 (a)
HARMONIZED CPI (HICP) ANNUAL GROWTH BY SECTORS IN THE MONETARY UNION 2000-2001-2002 (a)

Table A4A

Lagged
indicator

	Año Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Tasas Medias/ Average rates (b)		
														00/99	01/00	02/01
(1) AE (12.644%)	2000	0.97	0.97	0.96	0.87	0.96	0.96	1.06	1.16	1.35	1.15	1.44	1.54	1.12		
	2001	1.47	1.53	1.60	1.74	1.81	1.95	2.02	2.08	2.08	2.14	2.06	2.05		1.88	
	2002	2.26	2.27	2.28	2.31	2.33	2.36	2.37	2.39	2.38	2.40	2.38	2.38			2.34
(2) MAN (32.570%)	2000	0.69	0.39	0.59	0.59	0.59	0.59	0.59	0.69	0.88	0.98	0.98	0.96	0.71		
	2001	1.07	1.27	1.16	1.17	1.23	1.20	1.34	1.25	1.12	1.08	1.12	1.12		1.18	
	2002	1.39	1.43	1.40	1.40	1.42	1.41	1.44	1.42	1.39	1.38	1.39	1.39			1.41
BENE [(1)+(2)] (45.214%)	2000	0.76	0.54	0.68	0.66	0.68	0.68	0.71	0.81	1.00	1.02	1.10	1.11	0.81		
	2001	1.18	1.34	1.28	1.33	1.39	1.41	1.53	1.49	1.39	1.38	1.39	1.38		1.38	
	2002	1.63	1.67	1.65	1.66	1.68	1.68	1.71	1.70	1.68	1.67	1.68	1.67			1.67
(3) SERV (37.596%)	2000	1.62	1.61	1.52	1.90	1.61	1.70	1.69	1.78	1.79	1.89	1.88	1.77	1.73		
	2001	1.95	2.01	2.09	1.82	2.09	2.01	1.91	1.89	2.02	1.97	1.91	1.91		1.96	
	2002	2.14	2.14	2.14	2.14	2.14	2.13	2.13	2.13	2.13	2.13	2.13	2.13			2.13
IPSEBENE [(1)+(2)+(3)] (82.810%)	2000	1.26	1.06	1.16	1.25	1.15	1.25	1.25	1.25	1.34	1.44	1.44	1.44	1.27		
	2001	1.49	1.69	1.61	1.58	1.71	1.66	1.67	1.71	1.67	1.63	1.63	1.63		1.64	
	2002	1.87	1.89	1.88	1.88	1.89	1.89	1.91	1.90	1.89	1.89	1.89	1.89			1.89
(4) ANE (8.202%)	2000	-0.57	-0.10	-0.48	0.10	0.48	1.44	2.53	3.35	3.35	3.24	3.42	3.10	1.64		
	2001	3.47	3.16	3.53	3.18	3.31	3.05	2.79	2.34	2.36	2.26	1.87	1.81		2.76	
	2002	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81			1.81
(5) ENE (8.988%)	2000	12.21	13.57	15.29	10.26	11.97	14.48	13.48	11.87	15.55	14.49	15.20	12.39	13.40		
	2001	9.85	8.70	5.87	6.75	5.11	2.23	0.89	0.55	-3.79	-3.34	-4.38	-4.03		1.85	
	2002	-2.32	-2.33	-2.06	-1.76	-1.46	-1.32	-0.70	-0.30	-0.07	0.32	0.49	0.69			-0.91
R [(4)+(5)] (17.190%)	2000	5.64	6.65	7.31	5.23	6.21	8.07	8.06	7.76	9.75	9.06	9.60	8.02	7.62		
	2001	6.81	6.07	4.75	5.00	4.20	2.54	1.79	1.37	-1.07	-0.78	-1.62	-1.43		2.24	
	2002	-0.47	-0.46	-0.31	-0.14	0.03	0.11	0.44	0.66	0.79	1.00	1.09	1.21			0.33
IPCA (100%)	2000	1.95	2.04	2.13	1.93	1.93	2.41	2.40	2.31	2.79	2.69	2.88	2.53	2.33		
	2001	2.48	2.41	2.17	2.16	2.18	1.79	1.66	1.67	1.21	1.23	1.03	1.07		1.84	
	2002	1.44	1.46	1.48	1.52	1.55	1.57	1.64	1.68	1.69	1.73	1.75	1.77			1.61

* La tasa T1,12 normalmente refleja los cambios fundamentales en el crecimiento de los precios con seis meses de retraso respecto a los crecimientos mensuales, por lo que es necesario analizar sus predicciones para evaluar el momento inflacionista presente.

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

** En cada concepto se recoge entre paréntesis su ponderación en el IPCA global

** Weights on Global HICP are shown in brackets

(a) Las cifras en negrilla son predicciones

(a) Figures in bold type are forecasts

(b) Tasa de crecimiento del nivel medio de un año con respecto al año anterior

(b) Annual average rate of growth

Fuente:

Source:

Cuadro A4B																	Table A4B		
CRECIMIENTOS MENSUALES DEL IPC ARMONIZADO (IPCA) POR SECTORES EN LA UNIÓN MONETARIA 2000-2001-2002 (a)																			
HARMONIZED CPI (HICP) MONTHLY GROWTH RATES BY SECTORS IN THE MONETARY UNION 2000-2001-2002 (a)																			
	Año Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Tasas Anuales / Annual Rates (b) D00/D99 D01/D00 D02/D01					
(1) AE (12.644%)	2000	0.29	0.10	0.10	0.00	0.10	0.00	0.10	0.10	0.19	0.10	0.28	0.20	1.54					
	2001	0.21	0.16	0.16	0.14	0.16	0.14	0.16	0.16	0.18	0.16	0.20	0.18		2.05				
	2002	0.42	0.18	0.17	0.17	0.18	0.17	0.18	0.17	0.18	0.17	0.18	0.18			2.38			
(2) MAN (32.570%)	2000	-0.39	0.10	0.49	0.10	0.00	0.00	-0.49	0.29	0.49	0.29	0.10	-0.02	0.96					
	2001	-0.28	0.29	0.38	0.11	0.06	-0.03	-0.35	0.21	0.36	0.25	0.14	-0.02		1.12				
	2002	-0.01	0.33	0.35	0.11	0.07	-0.03	-0.31	0.19	0.33	0.24	0.15	-0.02			1.39			
BENE [(1)+(2)] (45.214%)	2000	-0.21	0.10	0.38	0.07	0.03	0.00	-0.32	0.24	0.40	0.24	0.15	0.04	1.11					
	2001	-0.14	0.26	0.32	0.12	0.09	0.02	-0.20	0.19	0.31	0.22	0.16	0.04		1.38				
	2002	0.11	0.29	0.30	0.13	0.10	0.03	-0.17	0.18	0.28	0.22	0.16	0.04			1.67			
(3) SERV (37.596%)	2000	0.09	0.47	0.00	0.28	-0.09	0.37	0.74	0.09	-0.37	-0.09	0.09	0.17	1.77					
	2001	0.27	0.53	0.08	0.01	0.17	0.29	0.65	0.07	-0.25	-0.14	0.03	0.17		1.91				
	2002	0.50	0.53	0.09	0.01	0.17	0.29	0.65	0.07	-0.25	-0.14	0.03	0.17			2.13			
IPSEBENE [(1)+(2)+(3)] (82.810%)	2000	0.00	0.19	0.29	0.10	0.00	0.19	0.19	0.09	0.09	0.09	0.09	0.10	1.44					
	2001	0.05	0.38	0.21	0.07	0.13	0.15	0.19	0.14	0.05	0.06	0.10	0.10		1.63				
	2002	0.29	0.40	0.20	0.07	0.13	0.15	0.21	0.13	0.04	0.05	0.10	0.10			1.89			
(4) ANE (8.202%)	2000	0.78	0.48	-0.29	1.06	0.38	0.09	-0.19	-0.38	0.00	0.19	0.67	0.27	3.10					
	2001	1.14	0.18	0.07	0.71	0.51	-0.15	-0.45	-0.81	0.02	0.09	0.29	0.22		1.81				
	2002	1.14	0.18	0.07	0.71	0.51	-0.15	-0.45	-0.81	0.02	0.09	0.29	0.22			1.81			
(5) ENE (8.988%)	2000	1.39	1.01	2.35	-1.15	1.25	2.65	0.69	-0.09	4.28	-0.82	0.91	-0.60	12.39					
	2001	-0.90	-0.06	-0.31	-0.33	-0.30	-0.16	-0.62	-0.42	-0.22	-0.35	-0.18	-0.23		-4.03				
	2002	0.86	-0.06	-0.04	-0.02	0.00	-0.02	-0.01	-0.02	0.00	0.03	-0.01	-0.03			0.69			
R [(4)+(5)] (17.190%)	2000	1.14	0.75	1.12	-0.09	0.83	1.46	0.18	-0.18	2.34	-0.44	0.88	-0.21	8.02					
	2001	0.01	0.05	-0.14	0.14	0.06	-0.16	-0.54	-0.60	-0.11	-0.15	0.03	-0.02		-1.43				
	2002	0.99	0.05	0.01	0.32	0.23	-0.08	-0.21	-0.38	0.01	0.06	0.12	0.09			1.21			
IPCA (100%)	2000	0.10	0.38	0.38	0.09	0.09	0.47	0.19	0.00	0.47	0.00	0.28	0.04	2.53					
	2001	0.04	0.32	0.14	0.08	0.11	0.09	0.06	0.00	0.02	0.02	0.08	0.08		1.07				
	2002	0.42	0.34	0.17	0.11	0.15	0.11	0.13	0.04	0.03	0.05	0.10	0.10			1.77			
** En cada concepto se recoge entre paréntesis su ponderación en el IPCA global																	** Weights on Global HICP are shown in brackets		
(a) Las cifras en negrilla son predicciones																	(a) Figures in bold type are forecasts		
(b) Tasa de crecimiento de diciembre de un año con respecto a diciembre del año anterior																	(b) December over December rate of growth		

Cuadro A5A Table A5A

TASAS DE CRECIMIENTO ANUALES DEL IPC USA ⁽¹⁾ <i>US ANNUAL RATES OF GROWTH ON CPI AND ITS COMPONENTS⁽¹⁾</i>																
	Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Media Avrg 00/ 99 (2)	Media Avrg 01/ 00 (3)	Media Avrg 02/ 01 (4)
Bienes no energéticos excepto alimentos <i>Non energy Commodities less food</i> (C-27%)	2000	-0.07	0.35	0.97	0.69	0.69	0.56	0.42	0.49	0.35	0.21	0.69	0.84	0.52		
	2001	1.19	1.05	0.84	0.85	0.91	1.01	1.08	1.14	1.00	1.08	0.89	0.81		0.99	
	2002	0.82	0.82	0.81	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82			0.82
Servicios no energéticos <i>Non energy Services</i> (S-46,4%)	2000	2.95	2.94	3.08	3.03	3.18	3.38	3.37	3.56	3.51	3.50	3.39	3.40	3.27		
	2001	3.29	3.29	3.19	3.23	3.19	3.12	3.11	3.03	3.12	3.12	3.18	3.19		3.17	
	2002	3.18	3.17	3.16	3.17	3.18	3.18	3.18	3.17	3.19	3.19	3.20	3.21			3.18
Inflación Tendencial <i>Core inflation</i> (CI-73,4%)	2000	2.00	2.16	2.44	2.32	2.43	2.49	2.49	2.60	2.59	2.52	2.58	2.65	2.44		
	2001	2.64	2.62	2.51	2.51	2.53	2.49	2.48	2.48	2.45	2.51	2.50	2.49		2.52	
	2002	2.48	2.48	2.47	2.48	2.49	2.49	2.49	2.49	2.50	2.50	2.50	2.51			2.49
Alimentación <i>Food</i> (F-16,6%)	2000	1.53	1.84	1.96	1.96	2.20	2.26	2.63	2.74	2.61	2.42	2.24	2.37	2.23		
	2001	2.62	2.49	2.53	2.67	2.39	2.41	2.21	2.15	2.25	2.38	2.59	2.65		2.44	
	2002	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65			2.65
Energía <i>Energy</i> (E-10%)	2000	14.68	19.94	24.19	14.95	14.58	21.35	19.32	13.12	15.37	15.86	16.01	13.68	16.83		
	2001	11.33	7.66	2.41	3.43	3.39	-1.94	-1.74	0.92	-2.37	-2.62	-2.87	-2.09		1.10	
	2002	-0.58	-0.99	-0.83	-0.72	-0.50	-0.24	-0.04	0.14	0.24	0.38	0.54	0.70			-0.16
Inflación Residual <i>Residual inflation</i> (RI-26,6%)	2000	5.70	7.22	8.40	5.76	5.72	7.99	7.54	6.06	6.33	6.50	6.26	5.64	6.59		
	2001	5.14	4.02	2.49	2.90	2.69	1.03	0.96	1.77	0.79	0.81	0.88	1.17		2.03	
	2002	1.66	1.53	1.59	1.62	1.69	1.76	1.82	1.88	1.91	1.96	2.01	2.06			1.79
IPC USA <i>US CPI</i> 100%	2000	2.74	3.22	3.76	3.07	3.19	3.73	3.66	3.41	3.45	3.45	3.45	3.37	3.38		
	2001	3.30	3.00	2.51	2.64	2.57	2.17	2.12	2.32	2.09	2.12	2.12	2.18		2.43	
	2002	2.29	2.26	2.27	2.28	2.30	2.32	2.34	2.35	2.36	2.37	2.39	2.41			2.33

(1) Las cifras en negrita son predicciones.

(2) Tasa de crecimiento del nivel medio de 2000 sobre el nivel medio de 1999.

(3) Tasa de crecimiento del nivel medio de 2001 sobre el nivel medio de 2000.

(4) Tasa de crecimiento del nivel medio de 2002 sobre el nivel medio del 2001.

(1) Figures in bold type are forecasted values.

(2) Mean level of 2000 over 1999 growth rate.

(3) Mean level of 2001 over 2000 growth rate.

(4) Mean level of 2002 over 2001 growth rate.

Fuente:

BLS & INSTITUTO FLORES DE LEMUS

Source:

Fecha de elaboración: 19 de diciembre de 2000.

Date: December, 19th 2000

Cuadro A5B																
TASAS DE CRECIMIENTO MENSUALES DEL IPC USA ⁽¹⁾ US MONTHLY RATES OF GROWTH ON CPI AND ITS COMPONENTS ⁽¹⁾																
	Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	00 (XII)/ 99(XII) (2)	01(XII)/ 00(XII) (3)	02(XII)/ 01(XII) (4)
Bienes no energéticos excepto alimentos	2000	-0.42	0.42	0.76	0.41	-0.27	-0.69	-0.48	-0.07	0.97	0.34	0.27	-0.40	0.84		
Non energy Commodities less food	2001	-0.08	0.28	0.56	0.41	-0.21	-0.60	-0.41	-0.02	0.83	0.43	0.09	-0.48		0.81	
(C-27%)	2002	-0.08	0.28	0.56	0.41	-0.21	-0.60	-0.41	-0.02	0.83	0.43	0.09	-0.48			0.82
Servicios no energéticos	2000	0.61	0.40	0.50	0.10	0.15	0.35	0.40	0.39	0.00	0.29	0.05	0.11	3.40		
Non energy Services	2001	0.49	0.41	0.40	0.15	0.11	0.28	0.38	0.31	0.09	0.30	0.11	0.12		3.19	
(S-46,4%)	2002	0.48	0.40	0.39	0.15	0.12	0.28	0.38	0.31	0.10	0.30	0.12	0.13			3.21
Inflación Tendencial	2000	0.34	0.39	0.56	0.22	0.00	0.06	0.17	0.22	0.33	0.27	0.11	-0.04	2.65		
Core inflation	2001	0.33	0.37	0.45	0.22	0.02	0.02	0.15	0.22	0.30	0.34	0.10	-0.05		2.49	
(CI-73,4%)	2002	0.32	0.37	0.44	0.23	0.03	0.03	0.15	0.22	0.31	0.34	0.11	-0.04			2.51
Alimentación	2000	0.42	0.12	0.12	0.06	0.42	0.00	0.48	0.36	0.12	0.12	-0.12	0.24	2.37		
Food	2001	0.68	-0.01	0.16	0.20	0.14	0.02	0.28	0.30	0.22	0.24	0.09	0.30		2.65	
(F-16,6%)	2002	0.67	-0.01	0.16	0.20	0.14	0.02	0.28	0.30	0.22	0.24	0.09	0.30			2.65
Energía	2000	0.27	3.73	4.71	-1.23	0.25	7.11	0.08	-2.93	3.73	-1.00	-0.23	-1.12	13.68		
Energy	2001	-1.81	0.32	-0.40	-0.24	0.21	1.59	0.28	-0.31	0.35	-1.25	-0.49	-0.33		-2.09	
(E-10%)	2002	-0.29	-0.09	-0.24	-0.13	0.43	1.86	0.48	-0.13	0.45	-1.11	-0.33	-0.17			0.70
Inflación Residual	2000	0.38	1.16	1.48	-0.33	0.37	2.15	0.35	-0.68	1.24	-0.23	-0.15	-0.18	5.64		
Residual inflation	2001	-0.10	0.09	-0.01	0.06	0.16	0.50	0.28	0.12	0.26	-0.22	-0.08	0.11		1.17	
(RI-26,6%)	2002	0.38	-0.03	0.04	0.10	0.23	0.57	0.34	0.17	0.29	-0.17	-0.03	0.16			2.06
IPC USA	2000	0.30	0.59	0.82	0.06	0.12	0.52	0.23	0.00	0.52	0.17	0.06	-0.07	3.37		
US CPI	2001	0.23	0.31	0.34	0.19	0.05	0.13	0.18	0.19	0.29	0.21	0.06	-0.02		2.18	
100%	2002	0.34	0.27	0.35	0.20	0.07	0.15	0.20	0.21	0.30	0.22	0.07	0.07			2.41
(1) Las cifras en negrita son predicciones. (1) Figures in bold type are forecasted values. (2) Tasa de crecimiento de diciembre de 2000 sobre diciembre de 1999. (2) December 2000 over December 1999 growth rate. (3) Tasa de crecimiento de diciembre de 2001 sobre diciembre de 2000. (3) December 2001 over December 2000 growth rate. (4) Tasa de crecimiento de diciembre de 2002 sobre diciembre del 2001. (4) December 2002 over December 2001 growth rate.																

Fuente:

BLS & INSTITUTO FLORES DE LEMUS

Source:

Fecha de elaboración: 19 de diciembre de 2000.

Date: December, 19th 2000

Cuadro A6A

Table A6A

CRECIMIENTOS ANUALES DEL ÍNDICE DE PRECIOS AL CONSUMO EN ESPAÑA 2000-2001-2002 (a)

CONSUMER PRICE INDEX, ANNUAL GROWTH RATES IN SPAIN 2000-2001-2002 (a)

Concepto (**) Concept	Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Med Avr 00/99(b)	Med Avr 01/00(c)	Med Avr 02/01(d)
(1) AE-X (14,82%)	2000	1.00	0.99	0.89	0.97	1.19	1.29	1.35	1.46	1.62	1.69	1.87	1.97	1.36		
	2001	2.06	2.15	2.30	2.40	2.45	2.54	2.70	2.83	2.97	3.05	3.03	3.00		2.62	
	2002	2.93	2.94	2.98	3.01	2.98	2.96	2.97	2.95	2.92	2.91	2.86	2.82			2.94
(2) MAN (32,88%)	2000	1.51	1.57	1.79	1.84	1.98	2.09	2.10	2.12	2.32	2.49	2.56	2.64	2.08		
	2001	2.65	2.65	2.53	2.48	2.48	2.48	2.56	2.60	2.53	2.46	2.45	2.45		2.53	
	2002	2.44	2.45	2.43	2.41	2.42	2.43	2.46	2.48	2.47	2.45	2.44	2.44			2.44
BENE - X '[(1) + (2)] = (47,41%)	2000	1.35	1.39	1.52	1.57	1.73	1.85	1.87	1.92	2.11	2.24	2.35	2.43	1.86		
	2001	2.47	2.49	2.46	2.46	2.47	2.50	2.60	2.67	2.67	2.64	2.62	2.61		2.56	
	2002	2.59	2.60	2.60	2.59	2.59	2.59	2.62	2.62	2.61	2.59	2.57	2.56			2.59
(3) SERV-T (29,95%)	2000	3.16	3.14	3.15	3.23	3.34	3.47	3.59	3.61	3.70	3.77	3.80	3.80	3.48		
	2001	3.73	3.94	3.94	3.93	3.91	3.93	3.79	3.73	3.66	3.70	3.71	3.74		3.81	
	2002	3.68	3.67	3.67	3.66	3.66	3.67	3.68	3.70	3.69	3.70	3.73	3.75			3.69
IPSEBENE-XT [(1) + (2) + (3)] = (77,66%)	2000	2.10	2.12	2.19	2.26	2.40	2.52	2.58	2.62	2.77	2.88	2.95	3.00	2.54		
	2001	2.99	3.10	3.08	3.07	3.08	3.10	3.10	3.12	3.08	3.08	3.08	3.09		3.08	
	2002	3.05	3.05	3.05	3.04	3.04	3.05	3.07	3.08	3.07	3.06	3.06	3.06			3.06
(4) XT (3,34%)	2000	5.16	3.82	1.42	1.91	0.18	-1.41	1.88	4.20	1.40	1.09	1.84	3.31	2.05		
	2001	3.68	2.69	4.20	3.66	5.88	5.62	0.70	-2.10	2.18	4.01	2.73	0.84		2.78	
	2002	1.31	1.73	2.00	2.24	2.57	2.79	2.99	3.12	3.16	3.15	3.03	3.12			2.61
(5) ANE (11,88%)	2000	2.20	1.69	0.97	1.78	2.11	3.88	5.82	6.40	6.43	6.55	5.96	5.14	4.07		
	2001	5.11	5.44	6.46	6.20	5.52	4.43	3.08	3.58	3.28	2.42	2.05	2.47		4.14	
	2002	2.73	2.71	2.56	2.57	2.51	2.71	3.05	3.07	2.97	2.94	3.05	3.16			2.84
(6) ENE (7,12%)	2000	11.75	14.74	15.94	13.88	15.41	16.50	12.77	9.53	10.65	13.78	14.60	11.56	13.38		
	2001	9.25	7.15	4.51	3.69	2.13	0.34	0.12	-0.14	-1.44	-2.88	-4.17	-2.52		1.19	
	2002	-0.34	-0.20	-0.09	0.20	0.39	0.44	0.77	1.00	1.05	1.09	1.14	1.18			0.55
R [(4) + (5) + (6)] = (22,34%)	2000	5.58	5.94	5.46	5.42	5.70	6.60	7.13	6.92	6.72	7.70	7.86	6.78	6.49		
	2001	6.12	5.45	5.39	4.90	4.48	3.31	1.64	1.22	1.54	0.98	0.11	0.54		2.92	
	2002	1.48	1.58	1.60	1.75	1.84	2.00	2.31	2.43	2.40	2.40	2.44	2.53			2.06
IPC (100%)	2000	2.87	2.96	2.92	2.96	3.14	3.43	3.61	3.60	3.67	3.97	4.06	3.86	3.42		
	2001	3.71	3.63	3.61	3.49	3.40	3.15	2.76	2.67	2.72	2.59	2.38	2.49		3.04	
	2002	2.68	2.71	2.72	2.74	2.77	2.81	2.89	2.93	2.91	2.91	2.92	2.94			2.83

* La tasa T1,12 normalmente refleja los cambios fundamentales en el crecimiento de los precios con seis meses de retraso respecto a los crecimientos mensuales, por lo que es necesario analizar sus predicciones para evaluar el momento inflacionista presente.

* 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

** En cada concepto se recoge entre paréntesis su ponderación en el IPC general.

** Weights on General CPI are shown in brackets.

(a) Las cifras en negrilla son predicciones

(a) Figures in bold type are forecasted values

(b) Tasa de crecimiento del nivel medio de 2000 sobre el nivel medio de 1999.

(b) 2000 over 1999 mean growth

(c) Tasa de crecimiento del nivel medio de 2001 sobre el nivel medio de 2000.

(c) 2001 over 2000 mean growth

(d) Tasa de crecimiento del nivel medio del 2002 sobre el nivel medio de 2001.

(d) 2002 over 2001 mean growth

Fuente:

Source:

Cuadro A6B

Table A6B

CRECIMIENTOS MENSUALES DEL ÍNDICE DE PRECIOS AL CONSUMO EN ESPAÑA 2000-2001-2002 (a)
CONSUMER PRICE INDEX, MONTHLY GROWTH RATES IN SPAIN 2000-2001-2002 (a)

Concepto (*) (Concept)	Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	D00/ D99(b)	D01/ D00(c)	D02/ D01(d)
(1) AE-X (14,82%)	2000	0.30	0.20	0.04	0.08	0.19	0.14	0.00	0.12	0.16	0.14	0.29	0.30	1.97		
	2001	0.39	0.29	0.19	0.17	0.24	0.22	0.16	0.24	0.29	0.22	0.27	0.27		3.00	
	2002	0.33	0.29	0.23	0.20	0.21	0.20	0.18	0.22	0.27	0.21	0.22	0.23			2.82
(2) MAN (32,88%)	2000	0.17	0.15	0.33	0.33	0.18	0.16	0.05	0.09	0.28	0.37	0.30	0.20	2.64		
	2001	0.18	0.15	0.22	0.28	0.18	0.16	0.12	0.13	0.22	0.30	0.29	0.20		2.45	
	2002	0.18	0.16	0.20	0.26	0.19	0.17	0.15	0.15	0.21	0.27	0.28	0.21			2.44
BENE - X [(1)+(2)] = (47,41%)	2000	0.21	0.17	0.24	0.25	0.18	0.15	0.03	0.10	0.25	0.30	0.30	0.23	2.43		
	2001	0.25	0.19	0.21	0.25	0.20	0.18	0.14	0.17	0.24	0.27	0.28	0.22		2.61	
	2002	0.22	0.20	0.21	0.24	0.20	0.18	0.16	0.17	0.23	0.25	0.26	0.21			2.56
(3) SERV-T (29,95%)	2000	0.71	0.31	0.31	0.35	0.30	0.25	0.35	0.17	0.40	0.26	0.19	0.14	3.80		
	2001	0.64	0.52	0.31	0.34	0.28	0.26	0.21	0.11	0.33	0.30	0.20	0.17		3.74	
	2002	0.59	0.51	0.31	0.33	0.28	0.27	0.22	0.13	0.32	0.31	0.22	0.19			3.75
IPSEBENE-XT [(1)+(2)+(3)]=(77,66%)	2000	0.42	0.23	0.27	0.29	0.23	0.19	0.17	0.13	0.31	0.28	0.25	0.19	3.00		
	2001	0.41	0.33	0.25	0.29	0.23	0.21	0.17	0.14	0.28	0.28	0.25	0.20		3.09	
	2002	0.38	0.33	0.25	0.28	0.23	0.22	0.19	0.15	0.27	0.28	0.24	0.20			3.06
(4) XT (3,34%)	2000	-0.89	0.31	0.40	1.15	-1.16	0.68	6.62	3.80	-5.03	-3.01	-1.71	2.63	3.31		
	2001	-0.54	-0.64	1.87	0.63	0.96	0.44	1.65	0.91	-0.88	-1.27	-2.93	0.75		0.84	
	2002	-0.08	-0.23	2.15	0.86	1.28	0.66	1.85	1.04	-0.85	-1.28	-3.04	0.84			3.12
(5) ANE (11,88%)	2000	0.43	-1.63	-0.11	0.85	-0.59	-0.12	1.73	1.21	1.46	0.53	0.20	1.12	5.14		
	2001	0.40	-1.33	0.86	0.60	-1.23	-1.15	0.42	1.70	1.17	-0.31	-0.17	1.54		2.47	
	2002	0.66	-1.35	0.71	0.62	-1.29	-0.96	0.74	1.72	1.08	-0.34	-0.06	1.66			3.16
(6) ENE (7,12%)	2000	-0.05	1.92	2.52	0.60	1.44	1.83	-0.01	0.14	1.37	1.54	1.41	-1.66	11.56		
	2001	-2.12	-0.04	-0.01	-0.19	-0.09	0.06	-0.23	-0.13	0.06	0.06	0.06	0.03		-2.52	
	2002	0.07	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.08			1.18
R [(4)+(5)+(6)]=(22,34%)	2000	0.02	-0.15	0.82	0.83	-0.05	0.67	2.09	1.38	0.10	0.17	0.24	0.48	6.78		
	2001	-0.59	-0.79	0.77	0.35	-0.45	-0.46	0.45	0.96	0.41	-0.38	-0.63	0.91		0.54	
	2002	0.33	-0.68	0.79	0.50	-0.36	-0.31	0.76	1.08	0.39	-0.39	-0.59	1.00			2.53
IPC (100%)	2000	0.33	0.14	0.40	0.41	0.17	0.30	0.61	0.42	0.26	0.25	0.25	0.26	3.86		
	2001	0.18	0.07	0.37	0.30	0.08	0.06	0.23	0.33	0.31	0.13	0.04	0.36		2.49	
	2002	0.37	0.10	0.38	0.33	0.10	0.10	0.32	0.36	0.30	0.12	0.05	0.39			2.94

** En cada concepto se recoge entre paréntesis su ponderación en el IPC general.

** Weights on General CPI are shown in brackets.

(a) Las cifras en negrilla son predicciones

(a) Figures in bold type are forecasted values

(b) Tasa de crecimiento de diciembre 2000 sobre diciembre de 1999.

(b) December 2000 over December 1999.

(c) Tasa de crecimiento de diciembre de 2001 sobre diciembre de 2000.

(c) December 2001 over December 2000.

(d) Tasa de crecimiento de diciembre del 2002 sobre diciembre de 2001.

(d) December 2002 over December 2001.

Fuente:

Source:

Cuadro A7A

Table A7A

TASAS DE CRECIMIENTO **ANUALES** DEL IPC **Madrid** ⁽¹⁾
MADRID ANNUAL RATES OF GROWTH ON CPI AND ITS COMPONENTS ⁽¹⁾

	Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Media Avg 00/ 99 (2)	Media Avg 01/ 00 (3)	Media Avg 02/ 01 (4)
1. Alimentos, bebidas y tabaco (27.19%)	2000	2.21	1.63	1.16	1.23	1.26	1.83	2.27	2.28	2.39	2.78	2.58	2.34	2.00		
	2001	2.49	2.65	2.80	2.78	2.83	2.65	2.43	2.47	2.32	1.94	1.95	2.00		2.44	
	2002	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.01	2.01	2.01	2.01	2.02			2.01
2. Vestido y calzado (10.24%)	2000	0.86	0.87	0.96	0.89	0.94	1.02	1.01	1.03	1.22	0.83	1.19	1.21	1.00		
	2001	1.19	1.19	1.15	1.23	1.22	1.21	1.22	1.20	1.15	1.47	1.15	1.15		1.21	
	2002	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15			1.15
3. Vivienda (10.05%)	2000	3.57	4.57	4.88	4.88	5.36	5.23	4.28	3.58	4.02	5.73	5.21	4.64	4.66		
	2001	4.48	4.01	3.79	3.77	3.61	3.61	3.72	3.82	3.59	3.53	3.75	3.52		3.76	
	2002	3.51	3.51	3.51	3.51	3.51	3.52	3.52	3.52	3.52	3.52	3.52	3.52			3.52
4. Menaje y servicios para el hogar (6.05%)	2000	1.90	2.21	2.42	2.16	2.52	2.76	2.58	2.60	2.59	3.11	3.18	3.08	2.59		
	2001	2.92	2.56	2.30	2.52	2.22	2.21	2.38	2.59	2.84	2.63	2.63	2.64		2.54	
	2002	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64			2.64
5. Servicios médicos y sanitarios (3.49%)	2000	1.35	1.61	1.74	2.14	2.48	2.73	2.29	2.30	2.92	3.11	3.54	3.57	2.48		
	2001	3.46	3.41	3.40	3.30	3.25	3.45	3.67	3.81	3.52	3.53	3.54	3.56		3.49	
	2002	3.50	3.48	3.48	3.43	3.41	3.50	3.60	3.67	3.54	3.54	3.55	3.55			3.52
6. Transportes y comunicaciones (16.82%)	2000	4.60	4.82	5.38	4.88	5.54	6.05	5.42	4.84	5.16	5.59	6.21	5.98	5.38		
	2001	5.94	5.86	5.54	5.63	5.36	5.14	5.28	5.47	5.33	5.15	4.88	4.88		5.37	
	2002	4.88	4.88	4.88	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.90	4.90			4.89
7. Esparcimiento, enseñanza y cultura (8.63%)	2000	0.77	0.90	2.34	2.41	2.12	2.62	2.62	2.77	3.59	4.53	3.74	3.78	2.68		
	2001	3.76	3.77	2.41	2.41	2.41	2.41	2.41	2.41	1.65	1.65	1.65	1.65		2.37	
	2002	1.65	1.65	1.65	1.66	1.66	1.66	1.66	1.67	1.67	1.67	1.67	1.68			1.66
8. Otros bienes y servicios (17.49%)	2000	3.64	4.20	3.88	4.32	4.49	4.75	5.45	5.70	5.18	5.08	5.40	5.38	4.80		
	2001	5.44	5.23	5.31	5.11	5.08	4.94	4.65	4.56	4.73	4.78	4.68	4.68		4.93	
	2002	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69			4.69
IPC Madrid (100%)	2000	2.73	2.86	2.96	2.98	3.19	3.55	3.56	3.45	3.59	4.02	4.07	3.89	3.41		
	2001	3.90	3.82	3.67	3.66	3.58	3.48	3.43	3.49	3.36	3.24	3.16	3.16		3.49	
	2002	3.16	3.17	3.17	3.18	3.18	3.19	3.20	3.20	3.20	3.19	3.19	3.19			3.19

(1) Las cifras en negrita son predicciones.

(2) Tasa de crecimiento del nivel medio de 2000 sobre el nivel medio de 1999.

(3) Tasa de crecimiento del nivel medio de 2001 sobre el nivel medio de 2000.

(4) Tasa de crecimiento del nivel medio de 2002 sobre el nivel medio del 2001.

(1) Figures in bold type are forecasted values.

(2) Mean level of 2000 over 1999 growth rate.

(3) Mean level of 2001 over 2000 growth rate.

(4) Mean level of 2002 over 2001 growth rate.

Fuente:

Source:

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Fecha de elaboración: 20 de diciembre de 2000.

Date: December 20th 2000

Cuadro A7B																	Table A7B
TASAS DE CRECIMIENTO MENSUALES DEL IPC Madrid ⁽¹⁾ MADRID MONTHLY RATES OF GROWTH ON CPI AND ITS COMPONENTS ⁽¹⁾																	
	Tasa Rate	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	00 (XII)/ 99(XII) (2)	01(XII)/ 00(XII) (3)	02(XII)/ 01(XII) (4)	
1. Alimentos, bebidas y tabaco (27.19%)	2000	0.45	-1.35	-0.24	0.07	0.02	-0.29	0.38	0.35	1.04	0.73	0.31	0.87	2.34			
	2001	0.60	-1.20	-0.09	0.05	0.06	-0.46	0.16	0.40	0.89	0.36	0.32	0.92		2.00		
	2002	0.60	-1.20	-0.09	0.05	0.06	-0.46	0.16	0.40	0.89	0.37	0.32	0.92			2.02	
2. Vestido y calzado (10.24%)	2000	0.05	0.02	0.22	0.11	0.05	-0.02	-0.01	0.02	0.22	0.08	0.43	0.03	1.21			
	2001	0.03	0.02	0.18	0.20	0.03	-0.03	0.00	0.01	0.16	0.40	0.11	0.03		1.15		
	2002	0.03	0.02	0.18	0.20	0.03	-0.03	0.00	0.01	0.16	0.40	0.11	0.03			1.15	
3. Vivienda (10.05%)	2000	-0.10	0.63	0.55	0.29	0.26	0.39	0.11	0.26	0.73	0.71	0.12	0.61	4.64			
	2001	-0.26	0.18	0.34	0.27	0.10	0.38	0.22	0.36	0.50	0.65	0.34	0.38		3.52		
	2002	-0.26	0.18	0.34	0.27	0.10	0.38	0.22	0.36	0.51	0.65	0.34	0.38			3.52	
4. Menaje y servicios para el hogar (6.05%)	2000	0.37	0.57	0.47	0.00	0.51	0.23	0.05	0.01	-0.03	0.43	0.21	0.21	3.08			
	2001	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22		2.64		
	2002	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			2.64	
5. Servicios médicos y sanitarios (3.49%)	2000	0.50	0.36	0.32	0.46	0.39	-0.07	-0.11	0.05	0.80	0.28	0.27	0.27	3.57			
	2001	0.39	0.32	0.30	0.37	0.34	0.12	0.11	0.18	0.52	0.28	0.28	0.28		3.56		
	2002	0.34	0.31	0.30	0.33	0.31	0.21	0.21	0.24	0.40	0.29	0.29	0.29			3.55	
6. Transportes y comunicaciones (16.82%)	2000	0.76	0.26	1.11	0.46	0.66	0.68	0.24	0.12	0.36	0.43	0.60	0.14	5.98			
	2001	0.73	0.18	0.80	0.54	0.40	0.47	0.37	0.30	0.23	0.26	0.34	0.15		4.88		
	2002	0.73	0.18	0.80	0.54	0.41	0.47	0.37	0.30	0.23	0.26	0.34	0.15			4.90	
7. Esparcimiento, enseñanza y cultura (8.63%)	2000	-0.12	0.11	1.09	0.04	0.06	0.00	-0.02	0.10	1.38	0.96	0.08	0.04	3.78			
	2001	-0.13	0.12	-0.24	0.04	0.06	0.00	-0.02	0.10	0.63	0.96	0.09	0.04		1.65		
	2002	-0.13	0.12	-0.24	0.04	0.06	0.00	-0.02	0.10	0.63	0.96	0.09	0.05			1.68	
8. Otros bienes y servicios (17.49%)	2000	0.73	0.65	0.36	0.95	0.24	0.81	1.61	0.64	-0.33	-0.56	-0.21	0.38	5.38			
	2001	0.78	0.45	0.44	0.76	0.21	0.67	1.33	0.56	-0.17	-0.51	-0.30	0.38		4.68		
	2002	0.78	0.45	0.44	0.76	0.21	0.67	1.33	0.56	-0.17	-0.51	-0.30	0.38			4.69	
IPC Madrid (100%)	2000	0.41	-0.07	0.41	0.34	0.25	0.25	0.45	0.28	0.51	0.36	0.24	0.40	3.89			
	2001	0.42	-0.14	0.26	0.33	0.17	0.15	0.40	0.33	0.39	0.25	0.16	0.40		3.16		
	2002	0.42	-0.14	0.26	0.33	0.17	0.16	0.41	0.34	0.38	0.25	0.16	0.41			3.19	
(1) Las cifras en negrita son predicciones. (2) Tasa de crecimiento de diciembre de 2000 sobre diciembre de 1999. (3) Tasa de crecimiento de diciembre de 2001 sobre diciembre de 2000. (4) Tasa de crecimiento de diciembre de 2002 sobre diciembre del 2001.																	(1) Figures in bold type are forecasted values. (2) December 2000 over December 1999 growth rate. (3) December 2001 over December 2000 growth rate. (4) December 2002 over December 2001 growth rate.

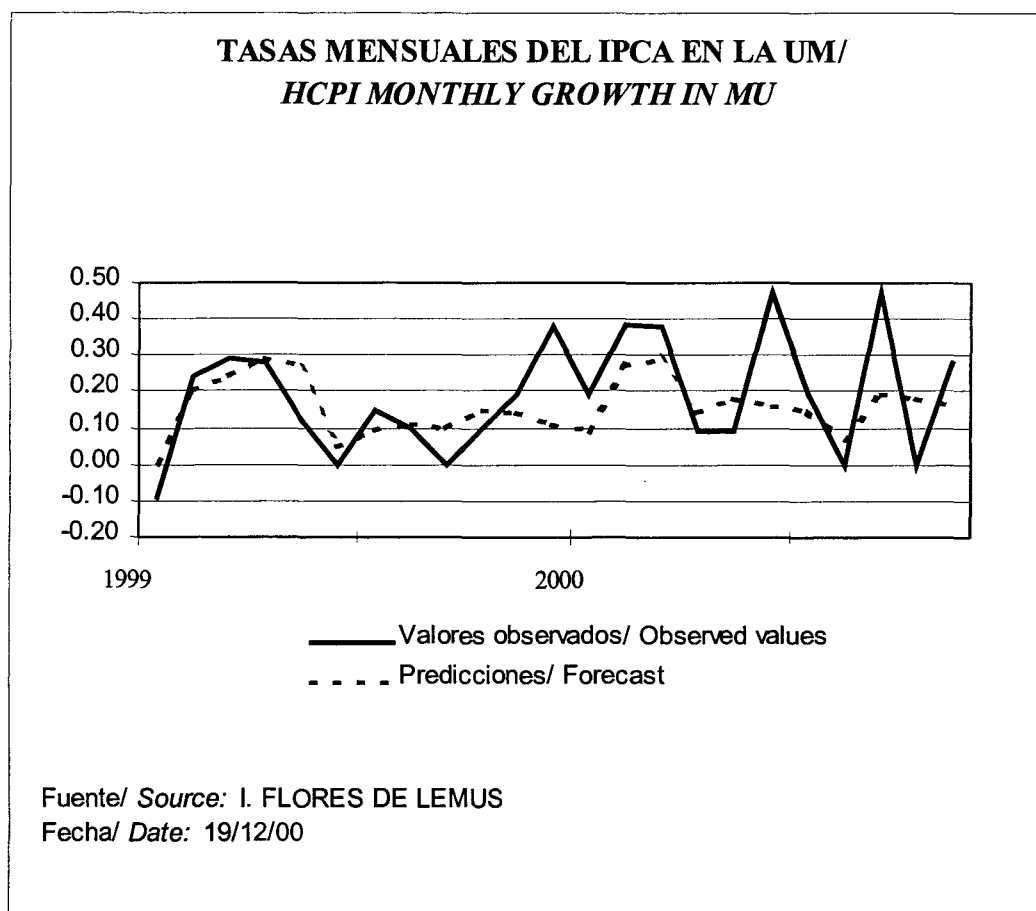
Fuente:

Source:

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Fecha de elaboración: 20 de diciembre de 2000.

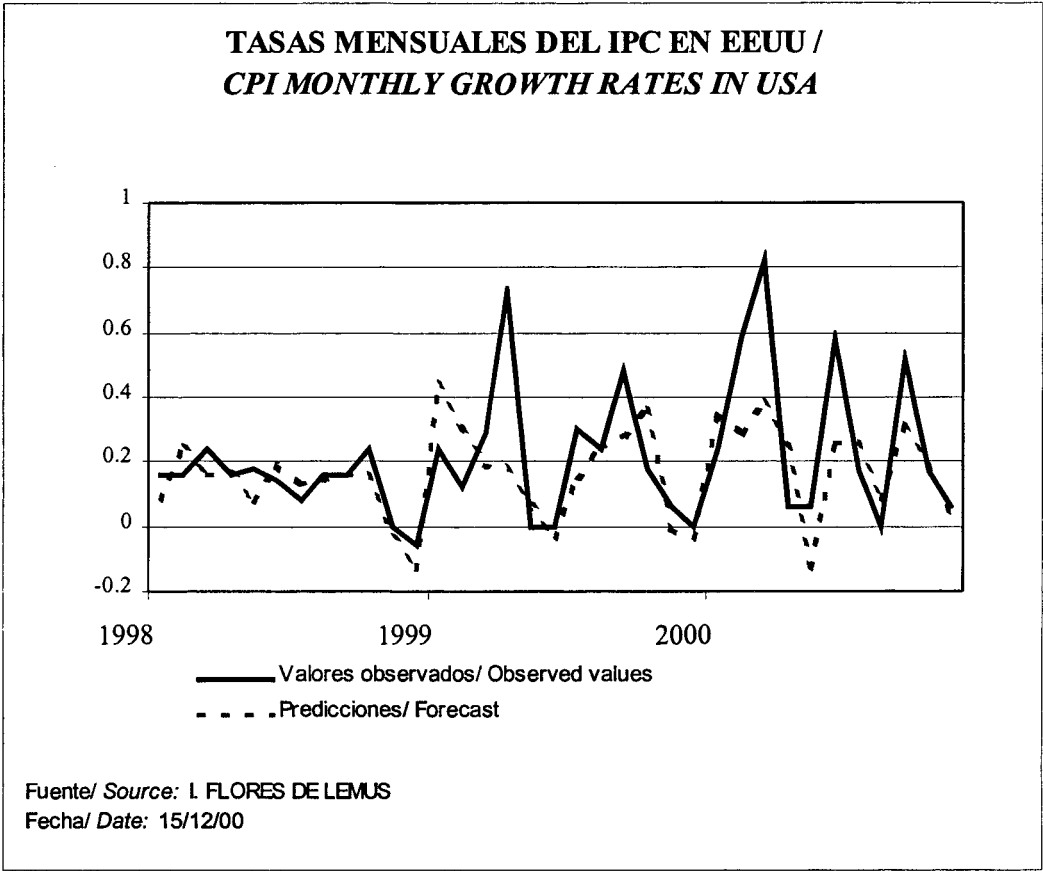
Date: December, 20th 2000



ERRORES DE PREDICCIÓN MENSUAL EN EL IPCA UEM HCPI EU FORECAST ERRORS			
	1999	2000	Total
Error Medio/ Mean Error	0.00	-0.06	-0.03
Error absoluto medio/ Mean Absolute Error	0.08	0.13	0.10
Desviación Estándar (DT)/ Standar deviation (DT)	0.11	/	0.13
Porcentaje de error/ Percent Error			
> 1 DT	16	/	/
> 2DT	8	/	/
> 3DT	0	/	/

Fuente/ Source: I.FLORES DE LEMUS

Fecha de Elaboración/ Date: 19 de diciembre de 2000/ December, 19 th 2000

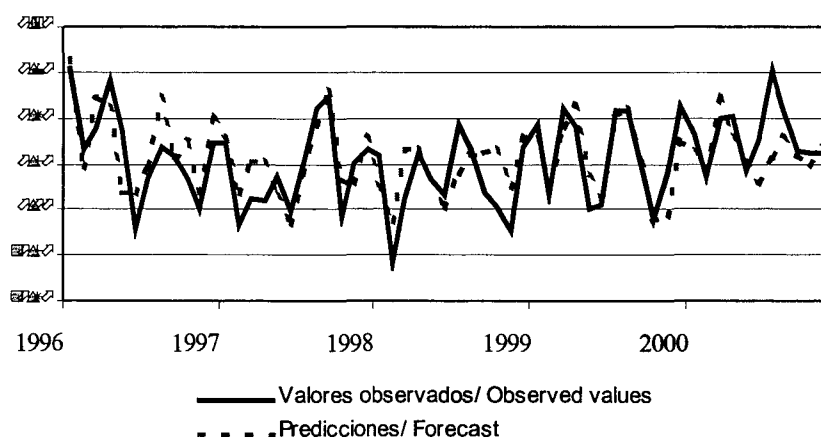


. ERRORES DE PREDICCIÓN MENSUAL EN EL IPC DE EEUU/ FORECAST ERRORS US CPI				
	1998	1999	2000	Total
Error Medio/ Mean Error	-0.02	-0.04	-0.09	-0.04
Error absoluto medio/ Mean Absolute Error	0.05	0.15	0.18	0.09
Desviación Estándar (DT)/ Standar deviation (DT)	0.06	0.21	/	0.17
Porcentaje de error/ Percent Error				
> 1 DT	42	8	/	
> 2DT	0	8	/	
> 3DT	0	0	/	

Fuente/ Source: I.FLORES DE LEMUS

Fecha de Elaboración/ Date: 15 de diciembre de 2000/ December, 15th 2000

**TASAS MENSUALES DEL IPC EN ESPAÑA/
CPI MONTHLY GROWTH RATES IN SPAIN**



Fuente/ Source: I. FLORES DE LEMUS

Fecha/ Date: 14/12/00

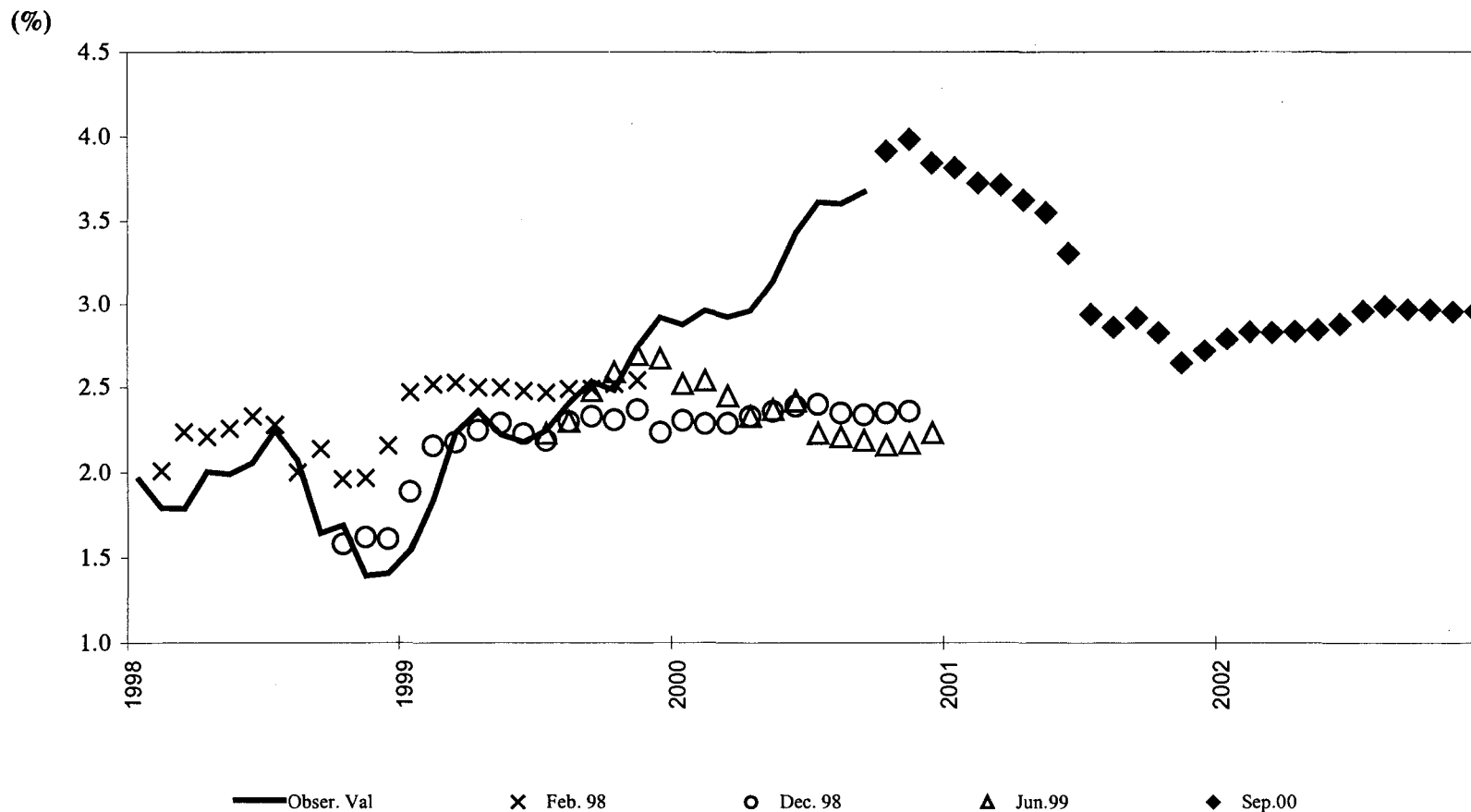
**ERRORES DE PREDICCIÓN MENSUAL EN EL IPC ESPAÑOL
SPANISH FORECAST ERRORS CPI**

	1996	1997	1998	1999	2000	Total
Error Medio/ Mean Error	0.03	0.03	0.05	-0.02	-0.07	0.01
Error absoluto medio/ Mean Absolute Error	0.12	0.09	0.13	0.07	0.10	0.10
Desviación Estándar (DT)/ Standar deviation (DT)	0.14	0.10	0.15	0.10	/	0.13
Porcentaje de error/ Percent Error						
> 1 DT	33	33	50	25	/	/
> 2DT	0	0	0	8	/	/
> 3DT	0	0	0	0	/	/

Fuente/ Source: I.FLORES DE LEMUS

Fecha/ Date: 14 de diciembre de 2000/ December, 14 th 2000

**PREDICCIONES ANUALES PARA LA INFLACION EN ESPAÑA/
ANNUAL FORECASTS FOR SPANISH INFLATON**



BUSINESS CYCLE STATISTICS FOR THE EURO-ZONE: SITUATION AND PROSPECTIVES.

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Abstract

In the recent past, Eurostat action focused essentially on structural and well-harmonised figures for the European Union. After the introduction of Euro, the situation changed considerably according to the request from European Central Bank, DG ECFIN and other institutional and non-institutional users.

Short-term statistics represent now the first Eurostat priority and different options have been made in order to supply users with a wide range of statistics able to give a general overview of the economic behaviour of both Euro-zone and EU-15 as well as all Member States.

The Euro indicators web site and the Euro-SICS (statistical indicator common site) database represent main realisations from Eurostat in the field of short-term statistics.

An analysis of the availability of short-term information evidenced some problems related to: lack of timeliness, unavailability of long time series, impossibility of building some key indicators for the Euro-zone due to indisponibility of such indicators for all Member States.

Statistical actions launched by Eurostat to improve availability and timeliness of short-term statistics will be described in some details in this paper.

In particular, we will concentrate our attention on nowcasting and backcasting techniques, on the construction of new indicators and on leading indicator techniques.

Euro-SICS is actually intensively used by a number of institutional users and it is continuously improved. The Euro-SICS quality is monitored by a number of synthetic parameters defined in the framework of a specific study made by Eurostat.

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1. Introduction

Initially, the main statistical activity of Eurostat was devoted to the harmonisation of national statistics based on a set of legal acts covering different statistical areas. These legal acts were concerning essentially structural statistics and, accuracy more than timeliness was the keyword of Eurostat action. This approach was completely justified by the need of supporting relevant political decisions like the attribution of structural funds, regional policy, agricultural policy, etc. Short-term statistics were considered as a useful complement to the structural statistics, even if, from the end of 1980s the situation started changing gradually.

The adoption of the Euro has completely changed this behaviour. Eurostat, which is now concentrating on the needs of users, the principal one being the ECB, was requested to improve concepts such as timeliness and reliability in short-term statistics for purposes of monetary policy and, more generally, for monitoring Euro zone. In addition, also financial market analysts focalised their attention on Eurostat data, their comments, critics and remarks are an helpful benchmark useful to the improvement of the quality of short-term statistics.

Eurostat was able to change quickly its attitude by producing promptly (less than 1 year) a set of projects like the implementation of the Euro-indicators web site or the Euro-SICS database. Now, it is possible to affirm that short-term statistics are the first priority of Eurostat. The situation is positively evolving but many relevant problems have to be solved (i.e. timeliness, availability of long time series, etc.). All the European Statistical System is required to make an effort concerning short-term statistics in order to improve the availability and the quality.

Eurostat, has a double challenging mission in short-term statistics:

- To provide users with a complete set of reliable short-term indicators for Member States as well as for the Euro-zone and the European Union.
- To help economic policy /decision makers as well as short-term economic analysts by focusing on main macroeconomic indicators in order to provide quasi-real time data estimates and high quality statistical analysis.

The first item is covered by the Euro-SICS project. The Euro-SICS experience has shown the availability of a wide range of short-term indicators covering all relevant areas of interest. Nevertheless some problems still have to be solved in order to obtain a set of useful indicators, such as:

- timeliness of the information with respect to its publication by national authorities;
- availability of long time series both raw and seasonally adjusted;
- calculation of EU totals (EUR-11 and EU-15 and if possible EEA);
- unavailability of some indicators for relevant countries.

The second item represents a complete new type of action for Eurostat and it is covered by a project called Euro-TREND. Even if some problems are common between Euro-SICS and Euro-TRENDS, this project presents some important specificity. The main characteristic of Euro-TREND will be represented by the fact that it will deal only with Euro-zone data.

The main statistical problems to be solved are:

- development of nowcasting strategy and tools;
- construction of indicators not yet available at Euro-Zone level;
- construction of synthetic coincident and leading indicators for main variables of interest
- business-cycle analysis of the Euro-zone

The aim of this paper is to provide a synthetic view of the actual situation. It considers Eurostat projects and problems we are confronted to. The structure of the paper is as follow: section 2 will present the Euro-SICS database and its development; section 3 is devoted to statistical problems related to the construction of Euro-zone total whereas section 4 discusses some open problems related to the construction of a Euro-zone statistical system; section 5 present some development in the field of the business cycle analysis of Euro-zone and section 6 contains some synthetic conclusions.



2. Euro-SICS

Euro-SICS supplies institutional users with a wide range of short-term indicators for both Euro-zone and the European union as well as for Member States. It is an extension of the Euro-indicators web site developed by Eurostat in 1998 and currently available to the public. The project was launched at the beginning of 1999 and the beta version of this site was presented in July 1999 during the first Euro-SICS working party. Thanks to a strong action from the Eurostat Management Committee and the Statistical Programme Committee, the site was opened to users at the end of last year.

2.1. General aspects

The series included were selected according to economic and statistical criteria in order to give an accurate picture of the short-term economic situation. Particular attention in the identification of the series was given to their relationships (leading-lagging structure) as well as to their utilisation in the construction of other aggregates (macroeconomic ones). Quarterly national accounts were considered the centre of this exercise and the usefulness of other short-term indicators in explaining the evolution of quarterly account aggregates has been evaluated.

The indicators to be included in Euro-SICS have been classified into 3 main categories:

- fully harmonised;
- national, generally available;
- country specific.

The first two categories are under the responsibility of Eurostat, the third one is under the responsibility of Member States. Fully harmonised data and national data are available on Euro-SICS, country specific indicators are not yet defined by Member States. Euro-SICS is today composed of 56 main indicators. Taking into account different breakdowns, the total number of indicators is about 450. Euro-SICS is organised into 11 domains. Table 1 below shows main Euro-SICS indicators by domain.

Two additional domains are currently in preparation: labour force surveys (quarterly) and short-term qualitative surveys (monthly and quarterly).

In order to be really interesting for short-term analysts and policy-makers, Euro-SICS must progressively achieve the following objectives, which are judged by Eurostat as “*conditio sine qua non*” for the success of the project:

- to be quasi real-time updated
- to contain long time-series
- to be fully documented
- to be continuously improved

Starting from this year, Eurostat is periodically monitoring the state of Euro-SICS. In this way it is possible to follow-up the process of achievement for the Euro-SICS objectives and to improve the quality and the reliability of the site. In the following sections we will present a synthetic view of the actual state of Euro-SICS mainly based on the main requirements of the project.



Table 1: Euro-SICS classification scheme

Domains	Indicators	Breakdown 1	Breakdown 2
Balance of payments (quarterly)	Trade in Goods	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Trade in Services	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Transportation	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Travel	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Income Flow	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Compensation of Employees	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Investment income	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Current transfers	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
	Current and Capital account	Credit/Debit/Net	Extra EUR11/ EU15/ R.o.w.
Energy (monthly)	Consumption	Electrical /Total	-
	Production	Electrical /Total	-
	Imports	Electrical /Total	-
External trade (monthly)	Exports	STC (7commodities group)	Extra EUR11/ EU15/ R.o.w.
	Imports	STC (7commodities group)	Extra EUR11/ EU15/ R.o.w.
Industry (monthly)	Industrial order index	Nace Rev1 (14 industries)	
	Industrial production index	Nace Rev1 (29 industries)	
	Industrial turnover index	Nace Rev1 (25 industries)	
	New car registration	-	
	Conventional earnings index	Industry whole economy	
Labour Cost (quarterly)	Labour cost index	NACE Rev 1(6 industries)	
Employment (monthly & quarterly)	Employed persons	Total Industry and construction	
Monetary and Financial Indicators (monthly)	Money Supply	M1, M2, M3	
	Interest rates	3 months / long term gov.ment yield	
	Euro yield maturity rates	1/ 5/ 10 years	
	Stock market capitalisation	-	
	Harmonised price index	Coicop (18 commodity groups)	
Prices (monthly)	National consumer price index	-	
	Producer price index	NACE Rev1 (38 industries)	
	Retail sales turnover	NACE Rev1 (6 industries)	
Retail sales (monthly)	Retail sales volume index	NACE Rev1 (6 industries)	



Table 1 (follows): Euro-SICS classification scheme

Domains	Indicators	Breakdown 1	Breakdown 2
National Accounts (quarterly)	Gross Value Added	(6 main industries)	
	Financial intermediation services indirectly-measured (FISIM)		
	Taxes	Net taxes - subsidies	
	Gross Domestic Product	-	-
	Final Consumption	Sector (households, npish and general government)	Actual/expenditure
	Gross capital formation	-	-
	Gross Fixed Capital Formation	NACE Rev 1 (6 products)	-
	Inventory Changes	With / without valuables	
	Acquisition less dispositions of valuables	-	
	Exports	Goods / Services/Total	
	Imports	Goods / Services/Total	
	External Balance	Goods / Services/Total	
	Primary income	Payable to / receivable from the rest of the world	
	Consumption of fixed capital	-	
	National Income	Gross/net	
	Disposal Income	Gross/net	
	National Saving	Gross/net	
	Capital transfers	Payable to / receivable from the rest of the world	
	Acquisition less dispositions of non-financial non produces assets	-	
	Net Lending or Borrowing	-	
	Compensation of Employees	NACE Rev 1(6 industries)	
	Gross Wages and Salaries	NACE Rev 1(6 industries)	
	Gross operating surplus and mixed income	NACE Rev 1(6 industries)	
	Population	Total/ active	
	Employment	NACE Rev 1(6 industries)	
Unemployment (monthly)	Unemployment (ILO)	Men/ women/ total	Over / under 25 years / total



2.2. Coverage

The 56 main indicators define a theoretical number of 15,000 time-series that should be in Euro-SICS. Unfortunately not all the countries are able to provide the requested indicators. Table 2 shows the distribution between active series (regularly updated), non-active ones (not updated during the last 12 months) and missing series (non-computed by Member States or by Eurostat due to a lack of information).

**Table 2: Number of time series in the Euro-SICS database by domains and state
(27/11/2000)**

Series Domain	Missing		Active		Inactive		Total
	N	%	N	%	N	%	N
Balance of Payments	630	57.1	474	42.9	.	.	1104
Energy	.	.	85	100.0	.	.	85
External Trade	28	7.4	332	87.8	18	4.8	378
Industry	435	18.7	1799	77.2	95	4.1	2329
Labour Cost	17	12.5	105	77.2	14	10.3	136
Employment, Construction, M	.	.	16	100.0	.	.	16
Employment, Construction, Q	.	.	26	86.7	4	13.3	30
Employment, Industry, M	26	5.0	478	91.6	18	3.4	522
Employment, Industry, Q	143	14.5	668	67.7	175	17.7	986
Monetary and Financial Indicators	88	40.7	66	30.6	62	28.7	216
National Accounts	4045	60.4	2619	39.1	34	0.5	6698
Prices	266	23.3	750	65.8	124	10.9	1140
Retail sales Index	60	14.7	334	81.9	14	3.4	408
Unemployment	.	.	152	95.0	8	5.0	160
Total	5738	40.4	7904	55.6	566	4.0	14208

Since Euro-zone and EU-15 totals are obtained by starting with Member States figures, it is clear that European totals suffer, particularly due to the lack of national information especially when this concerns main countries. Table 3 below presents the distribution of active series by domain and frequency.

**Table 3: Distribution of series in the Euro-SICS database by domain and frequency
(27/11/2000)**

Frequency Domain	Quarterly	Monthly	Total	
	N	N	N	%
Balance of Payments	474	.	474	5.6
Energy	.	85	85	1.0
External Trade	.	350	350	4.1
Industry	.	1894	1894	22.4
Labour Cost	119	.	119	1.4
Employment, Construction, M	.	16	16	0.2
Employment, Construction, Q	30	.	30	0.4
Employment, Industry, M	.	496	496	5.9
Employment, Industry, Q	843	.	843	10.0
Monetary and Financial Indicators	.	128	128	1.5
National Accounts	2653	.	2653	31.3
Prices	.	874	874	10.3
Retail sales Index	.	348	348	4.1
Unemployment	.	160	160	1.9
Total	4119	4351	8470	100.0



Table 3 shows clearly that the majority of series are available on monthly basis. Improvements could be made for balance of payments (monthly data are already available in many countries and also for the Euro-zone) and national accounts (the estimation of a monthly indicator of GDP is now considered by many countries). Eurostat is also working on this direction (see Ladiray and Mazzi 2000a and 2000c).

2.3. Availability of long times series

One of the main requirements from the users of short-term statistics is their availability over a fairly long time-period. Short series are completely useless for analytical purposes. A minimum requirement in terms of length can be identified in the possibility of covering at least two economic cycles. In other words, time-series should be available over a period of about 15 years. Clearly for econometric modelling or for analysis based on non-linear techniques, longer time-series should be needed.

The following table presents the actual distribution of time-series in Euro-SICS by length and domain.

Table 4: Distribution of series in the Euro-SICS database by domain and length

Length of the series	from 1 year to less than 5 years		from 5 years to less than 10 years		from 10 years to less than 15 years		15 years and more		Total
Domain	N	%	N	%	N	%	N	%	N
Balance of Payments	42	8.9	6	1.3	6	1.3	420	88.6	474
Energy	.	.	.	.	25	29.4	60	70.6	85
External Trade	36	10.8	28	8.4	62	18.7	206	62.0	332
Industry	111	6.2	353	19.6	596	33.1	739	41.1	1799
Labour Cost	.	.	82	78.1	11	10.5	12	11.4	105
Employment, Construction, M	.	.	6	37.5	4	25.0	6	37.5	16
Employment, Construction, Q	.	.	6	23.1	10	38.5	10	38.5	26
Employment, Industry, M	38	7.9	114	23.8	94	19.7	232	48.5	478
Employment, Industry, Q	37	5.5	192	28.7	183	27.4	256	38.3	668
Monetary and Financial Indicators	21	31.8	5	7.6	21	31.8	19	28.8	66
National Accounts	55	2.1	947	36.2	133	5.1	1484	56.7	2619
Prices	12	1.6	245	32.7	231	30.8	262	34.9	750
Retail sales Index	34	10.2	135	40.4	141	42.2	24	7.2	334
Unemployment	.	.	12	7.9	36	23.7	104	68.4	152
Total	386	4.9	2131	27.0	1553	19.6	3834	48.5	7904

Table 4 shows how far along the objective of long time-series in Euro-SICS is. All Member States have to go through the European Union's regulations and directives to accelerate the process of back-recalculation of their data (see section 4 and Ladiray and Mazzi 2000d). At the same time, back-recalculation of Euro-zone figures is a Eurostat priority (see Ladiray and Mazzi 2000a, 2000b, 2000c).

2.4. Timeliness

This requirement is judged by many users to be a first priority. If the information becomes available not in real time, its usefulness is considerably reduced. For the first time, the need for timeline short-term statistics was addressed by the Statistical Program Committee in the context of a joint initiative with the European Monetary Institute (now ECB). In this initiative, Eurostat was required to supply to the EMI about 50 main economic indicators no later than 24 hours after their national publication. The same principle has been adopted in Euro-SICS and there is a strong recommendation to Member States and to Eurostat producers for the respect of this principle (same day delivery). Even if the situation has improved in the last few years, it cannot be judged satisfactory. In addition, it must be stressed that it is very difficult to test this requirement with the information at present available on Euro-SICS. The following table displays the maximum of information currently available from Euro-SICS on this topic:



Table 5: Distribution of series within the ESICS database by frequency and delays in number of days (as of 27/11/2000)

Delay of the series	Under 30 days		From 30 days to less than 60 days		From 60 days to less than 90 days		From 90 days to less than 180 days		Over 180 days		Total
Frequency	N	%	N	%	N	%	N	%	N	%	N
4	.	.	245	5.9	.	.	3454	83.9	420	10.2	4119
12	432	9.9	1804	41.5	765	17.6	854	19.6	496	11.4	4351
Total	432	5.1	2049	24.2	765	9.0	4308	50.9	916	10.8	8470

Concerning delays, we have to distinguish between 2 measures:
The first one concerns the timeliness of the publication of national and European series with respect to the reference period. The second one is the delay between the publication of data and its updating in Euro-SICS (ideally, this second value should be always 0).

Unfortunately, in Euro-SICS it is currently impossible to distinguish between the 2 measures listed above and the only one we are able to supply is the delay between the reference period and the last update of the database. It is important to improve this measure in order to be able to monitor more accurately this important requirement. Anyway, it is clear that timeliness of data should be improved. This problem will be analysed in more detail in section 3 and section 4.3.

2.5. Documentation

In order to help users reach a better understanding of which data they want to use, it is important to provide a clear and complete set of metadata related to each indicator or to a family of indicators. In this view, Eurostat decided to adopt the IMF standard (SDDS). By using SDDS format, it is possible to supply all administrative and methodological information related to a particular category of data.

In the first step, Eurostat concentrated its attention on Euro-zone and EU-15 aggregates. Table 6 shows the availability of administrative information (base pages) and methodological ones (summary methodological pages) for European aggregations.



Table 6: European Metadata as of October 25, 2000

Table	Subject	Basic Info	Dissemination format	Summary Method	Release Calendar
c_na_q	National Accounts - quarterly	e_sics	e_sics	e_sics	web-site
c_mf_m	Euro Bond Yields - monthly	e_sics	e_sics	e_sics	web-site
	Stock Market Capitalisation - monthly	e_sics	e_sics	e_sics	web-site
	Money Supply - monthly	e_sics	e_sics	e_sics	web-site
	3-month Interest Rates - monthly	e_sics	e_sics	e_sics	web-site
	Long-term interest rates - monthly	e_sics	e_sics	e_sics	web-site
c_bp_q	Balance of Payments - quarterly	e_sics	e_sics	e_sics	web-site
c_et_m	External Trade - monthly	e_sics	e_sics	e_sics	web-site
c_pr_m	Harmonised Price Indices - monthly	e_sics	e_sics	e_sics	web-site
	Producer Price Index - monthly	e_sics	e_sics	e_sics	web-site
c_ip_m	Industrial Production Index - monthly	e_sics	e_sics	e_sics	web-site
	Industrial Orders Index - monthly	e_sics	e_sics		web-site
	Industrial Turnover Index - monthly	e_sics	e_sics	2nd draft	web-site
	New Car Registrations - monthly	e_sics	e_sics		web-site
c_se_m	Retail Sales Index - monthly	e_sics	e_sics	e_sics	web-site
c_lmi_m	Employment in Industry - monthly	e_sics	e_sics	e_sics	
c_lmi_q	Employment in Industry - quarterly	e_sics	e_sics	e_sics	
c_lmc_m	Employment in Construction - monthly	e_sics	e_sics	e_sics	
c_lmc_q	Employment in Construction - quarterly	e_sics	e_sics	e_sics	
c_lc_q	Conventional Earnings Indices - quarterly	e_sics	e_sics	e_sics	web-site
	Labour Cost Index - quarterly	e_sics	e_sics	e_sics	web-site
c_un_m	Unemployment - monthly	e_sics	e_sics	e_sics	web-site
c_en_m	Energy - monthly	e_sics	e_sics	e_sics	

E-sics: file available in NewCronos/theme1/euro-sics

Web-site: info available through the web-site (hyperlink from "basic info")

2nd draft: draft document, revised and sent back to the domain manager for validation



As it is possible to notice, all basic information is available in Euro-SICS whilst summary methodological ones are missing or not yet finalised for 'new car registration' and 'industrial turnover'. 'New industrial orders' is also missing due to the fact that at this time it is impossible to compile Euro-zone and EU-15 totals.

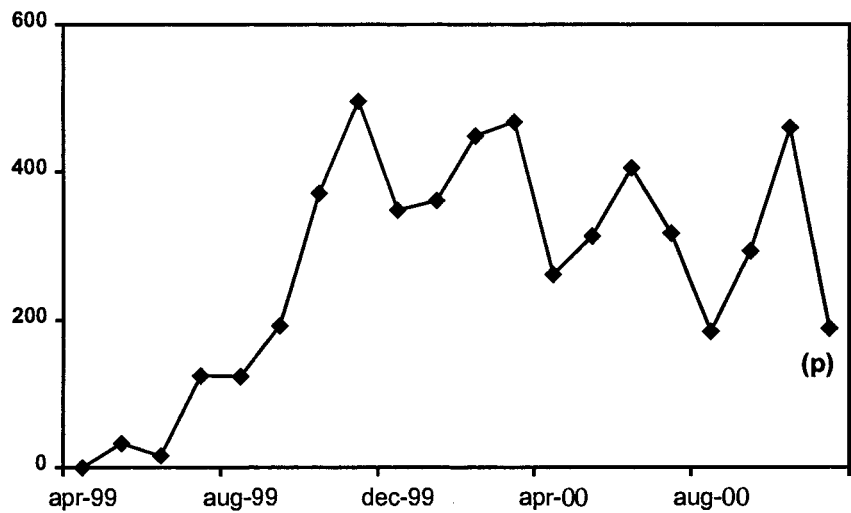
The next step through a complete documentation of the Euro-SICS site is represented by the compilation of the same pages for national series. In this context it is planned to use information already sent by Member States to the IMF integrated with all methodological information available at Eurostat and, where needed, at the OECD in the main economic indicators database. By contrast, for so-called country specific indicators, metadata in SDDS format should be directly supplied by Member States.

2.6. Dissemination

Euro-SICS is actually opened to a restricted number of privilege users including national statistical institutes, national central banks, the ECB, DG ECFIN of European Commission and other institutional users agreed by Member States, international organisations such as the IMF and OECD. At this time there are about 200 agreed users.

Figure 1 below gives an idea of the number of monthly extractions from the Euro-SICS database

Figure 1 Evolution of the number of extractions from the Euro-SICS database



(p): preliminary figure for November 2000 (189 extractions as of 27/11/2000).

It is possible to see how the number of extractions is substantially increasing which shows a greater interest from the privilege users in this product.

Euro-SICS is now available both in the New-Cronos environment as well as on the Circa one, where a "Euro-SICS interest group" has been created. Figure 1 above takes into account only New-Cronos consultations.

Euro-SICS is not a Eurostat product but one from the European Statistical System. Eurostat and the Member States agreed on the possibility to open Euro-SICS to the public by the year 2001 . A specialised site for short-term analysts and media is currently in preparation. This site call Euro-indicators will containe the Euro-Sics database.

3. Open problems for the Euro-zone short-term statistical system

Euro-zone is a new economic subject. This trivial consideration has, in the reality of every day, important consequences. If the Euro-zone wants to play an active role in the world economy it needs reliable and timely statistical information to support economic and monetary policy decisions.



In the context of globalisation and integration characterising the world economy, the leadership of different actors is defined, among others, by the capability of supplying information on their economy before the others. In this sense, timeliness can be viewed as a synonymous of credibility without the case where users discover that some timely information are not particularly reliable.

When Eurostat started to produce first information about the Euro-zone (see April 1998) the situation was quite complex. Many data were unavailable or available with long time lag and by consequence completely useless to the ECB purposes as well as for those of our politicians already confronted, in international meetings, fresher information coming from main economic partners of Euro-zone. The situation is progressively improved during those two years due to a considerable effort made by Eurostat actively supported by the ECB. Nevertheless, the situation cannot be judged completely satisfactory. The main areas where improvements are needed are:

- timeliness of Euro-zone figures
- availability of synthetic coincident and leading indicators
- analysis of business cycle characteristics of the Euro-zone

Those points will be synthetically discussed in section 5 below. Before to conclude this section it is important to analyse in some details the existing situation in terms of timeliness. The Eurostat objective should be to produce main statistical indicators for the Euro-zone not latter than its main economic partners (United States and Japan).

Table 7 shows the existing situation for 21 main selected indicators.



Table 7: Comparison of timeliness between Euro-zone, United States and Japan

Indicator *)	Euro-zone (ECB)		USA (Fed)		Japan (BoJ)	
		Delay	**)	Delay		Delay
	Frequency	Days	Frequency	Days	Frequency	Days
1) Price climate						
• Consumer prices	Monthly	20	Monthly	19	Monthly	29
• Producers prices	Monthly	42	Monthly	15	Monthly	8
• Hourly wages	Quarterly	106	Monthly	3	Monthly	29
• Import prices	-	-	Monthly	14	Monthly	8
2) Money creation						
• Cash in circulation	Monthly	27	Weekly	-4	Monthly	4
• Money supply M3	Monthly	27	Weekly	-4	Monthly	19
• Bank lending	Monthly	27	Weekly	-3	Monthly	14
3) Economic activity						
• Consumer confidence	Monthly	7	Monthly	-4	Quarterly	11
• Industrial confidence	Monthly	7	Monthly	-10	-	-
• Order intake (New orders)	-	-	Monthly	6	Monthly	42
• Building permits ***)	-	-	Monthly	17	Monthly	30
• GDP	Quarterly	75	Quarterly	28	Quarterly	93
• Private saving	-	-	Monthly	31	Monthly	35
• Industrial production	Monthly	59	Monthly	15	Monthly	49
• Retail sales	Monthly	101	Monthly	14	Monthly	26
• Unemployment rate	Monthly	37	Monthly	8	Monthly	29
4) Public finances						
• Budget balance (total)	Annually	100	Quarterly	28	Annually	> 200
• Debt (total)	Annually	100	Quarterly	28	Annually	> 200
5) External economy						
• Trade balance	Monthly	50	Monthly	50	Monthly	42
• Balance of payments	Monthly	50	Quarterly	75	Monthly	42
• Official reserves	Monthly	27	Weekly	-5	Monthly	1

*) The delay shows the number of days from the end of the reporting period. The figures refer to the latest available data (15.10.1999).

**) Negative figures show that the data is collected during the reporting period.

***) In Japan: housing starts.

This table evidences the well-known fact that United States is able to provide generally figures before as Japan anticipates also Euro-zone in many cases, even if the differences are less important. The only statistical field where we are able to anticipate United States and Japan is the balance of payments. The situation is also positive in the context of consumer prices in particular taking into accounts the reduction of the delays agreed between Eurostat and Member States. Main problematic areas are represented by national accounts, industrial statistics and services. Finally, some key series like import prices, new orders and building permits are, for the moment, unavailable at Euro-zone level and their calculation according suggestions made in section 3.1 must be one of the major priority of our activity during next month.

4. Some statistical problems related to the construction of Euro-zone indicators

The usual strategy is to define a harmonised indicator, to collect harmonised data from Member States and then to aggregate them. Unfortunately, this strategy can not be considered as a perfect one in the context of short-term statistics. It privileges accuracy instead of timeliness. Moreover, each harmonisation process creates breaks in the existing series so that harmonised data are frequently too short for purposes of short-term analysis. Clearly harmonisation is an important requirement of statistics because it improves their comparability and makes possible more robust analysis. Our strategy must be to produce reliable, accurate and long-time series with a short time lag.



Estimation procedures must be used in order to achieve this objective. Quarterly national accounts can be viewed as a good example of complementarity between harmonisation and estimation.

4.1. Backcasting

Some harmonised indicators exist but the series is still short. For the short-term analysis of such an indicator, the Labour Cost Index the economist needs to have two cycles (e.g. more than 15 years of data). In that case, the statistician should provide him/her with some historical data. A solution would be to ask to the Member States to compute national data but this process would take time. This is the case of different very important statistics: industrial production index, GDP, etc (see Ladiray Mazzi 2000d). Meanwhile, we could try to compute a likely history by using econometric and statistical methods (state space models, multivariate regression, ...). This problem is quite complex (see Ladiray Mazzi 2000b and 2000c). Different study cases are presented in the following paragraphs.

4.1.1. Unavailability of any high frequency information

Suppose that the indicator y_t is defined in the interval $\{k, k+1, k+2, \dots, T\}$ and no high frequency information is available before time k . The backcasting exercise or the extrapolation techniques become problematic in terms of accuracy of short-term past movements. The only possibility is if some low frequency information concerning the same indicator can be available.

In this case, it should be possible to recalculate past values of y e.g. $(y_{k-1}, y_{k-2}, \dots)$ by using some temporal disaggregation techniques based on a relation between a known low frequency ARIMA model and its unknown corresponding high frequency model. Such methods have already been proposed by Wei and Stram (1990) and by Al'Osh (1989). They are based on the theoretical relationships between the covariance matrix of unknown low frequency series and of the known low frequency one. The main difference between the two approaches is the method of estimation: generalised least squares in the Wei and Stram approach has proposed by Barcellan and Di Fonzo (1993) and the Kalman filter in the Al'Osh one.

The estimated path will be quite smooth and without any seasonal fluctuation. If the construction of seasonal past movements are also a priority it will be possible to simulate a past seasonality by forecasting the seasonal part of the y series in its interval of definition. This combination can be obtained by using structural time series methods.

In this area main improvements may concern the algorithms of estimation with particular attention to these based on Kalman filter and the development of adequate structural time series framework to combine different parts (e.g. seasonal and non seasonal) of the series.

4.1.2. Availability of some related information

Suppose that new series y_t ($t = k, k+1, k+2, \dots, T$) is the result of a process of harmonisation. Our objective is to estimate past values of y_t ($t = k-1, k-2, \dots$) by using all the available information. We suppose now that at national level figures are available, which can be more or less strongly related to it. The main assumption is that, at least for a certain period, both series are simultaneously computed. This can be the case of the Labour Cost Index where national data are represented by earnings. Let's indicate by x_t ($t = 1, 2, \dots, k, k+1, k+2, \dots, T$) the non-harmonised indicator. Clearly both y_t and x_t are available in the time interval $t = k, k+1, k+2, \dots, T$. If some empirical analysis indicate that x_t has a certain explanatory power of y_t it is possible to write the following general model: $Y_t = f(x_t, \beta, u_t)$, where β is a vector of parameters to be estimated, u_t is an error term $u_t \rightarrow NID(0, \sigma^2)$ and f is a generic algebraic function estimated over the interval of common availability. Starting from this model it will be possible to compute past expected value of y_t , $E[y_t / x_t, t = 1, 2, \dots, k-1]$.



Following the characteristics of x_t , the statistical hypothesis made and the number of available common observations, the function f can assume different forms:

- Simple backcasting model: $\nabla y_t = \nabla x_t$ or, in the seasonal case, $\nabla^s y_t = \nabla^s x_t$. This is a very simple model with quite restrictive hypothesis. It is useful when the main differences between y_t and x_t is represented by a level shift.
- Regression model: $y_t = \alpha + \beta x_t + u_t$. This model incorporates both level shift effects and changes in the short-term pattern. Its main limit is represented by the fact that we use an average change to recalculate the past.
- Dynamic model: $y_t = \alpha y_{t-1} + \beta x_t + u_t$ or more generally $y_t = \frac{\beta(L)}{\alpha(L)} x_t + u_t$ where $\alpha(L)$ and $\beta(L)$ are polynomial expression in the lag operator L . This model is much more flexible than the previous ones but it requires a high number of common observations.

Relevant extensions can be represented by the utilisation of state space model with measurement errors. Main areas of development can be the comparative analysis of different models taking into account the reliability and the explanatory power of x_t . Another relevant field of research can be represented by the utilisation of non-linear model (neural network, etc.) which could increase the precision and accuracy of the recalculation due to their flexibility. The main problem of this approaches is that they require a high number of common observations to be stable and really useful.

4.1.3. Backcasting with benchmark

Another way to approach this problem is to imagine that the new indicator y_t , $t = [k, k+1, k+2, \dots]$ is recalculated for any specific point in time before the period k y_{k-i} where i is a discontinuous sequence of numbers. In this case, the observations y_{k-i} are recalculated according to the new methodology and they represent a benchmark for our backcasting exercise, a typical one encountered in the context of national accounts being generalised also to other domains. Clearly, backcasting procedures can be considered as interpolation techniques between some known points in the time. This approach increases the reliability of recalculated data. Eurostat is currently testing a procedure of backcasting with benchmark based on a state space model. This model links the new variable y_t and the old one x_t of the accounting system before revision. Starting from this model, the values of intermediate years coherent with the new variable are calculated as the conditional (or linear) expectation of the non-observed variables as a function of the set of available values of the old variable. Dynamic relationships, non-accounting variables and qualitative indicators can be, if necessary, inserted in the retrapolation model. Relationships between the variables in the model have to be tested and identified in order to achieve the most suitable model to be used in the backward calculation process. The estimates are obtained via the Kalman filter algorithm.

4.2. Construction of unavailable indicators

Sometimes, indicators do not yet exist due to a lack of information concerning one or more Member States. In other cases indicators are not available at a desired frequency but they exist at lower frequencies. Both cases can be considered as examples of construction of unavailable indicators even if statistical problems involved are different. For this reason, we prefer to make a clear distinction between the two cases.

4.2.1. Lack of information

Some relevant indicators are not compiled by all Member States (i.e. of new order index). Nevertheless, the importance of those indicators calls for an estimation at Euro-zone level. The problem is relatively easy if the



weight of missing countries is quite small. In this situation we can assume that the evolution of Euro-zone aggregate can be adequately approximated by the aggregation of existing Member States. This is the case of quarterly national accounts where the Euro-zone totals are obtained by using temporal disaggregation techniques. Annual data, available for all Member States are disaggregated into quarterly ones by using as indicators the sum of available Member States. In this case, the procedure used is the one proposed by Chow and Lin (1971) based on a linear regression model with auto-regressive error term. For more detail on this approach, see Barcellan and Mazzi (1998). By contrast, if missing countries have a considerable weight (i.e. France, in the case of new order index), the previous approach cannot be used. In this case, it is important to find new sources of information for missing countries.

The sequence of problem we are facing to can be synthesise as follow:

- Find a proxy at national level
 - test the reliability of the proxy
 - testing its forecasting performance
 - study statistical relationship between proxy and national indicators (i.e. new order index) available in other Member States.
- Aggregation and/or estimation problem to build Euro-zone aggregate
 - verify if and how it is possible to apply usual aggregation procedures
 - modify if necessary those procedures to take into account specificities of our proxy (i.e. a qualitative proxy)
 - build an estimation model combining different type of data if traditional aggregation techniques cannot be applied or give unsatisfactory results.

4.2.2. Construction of high frequency indicator

In this specific case the objective is to build an indicator at a higher frequency than the one currently available. This need is generated by the exigency of final users to dispose of series more and more defined at higher frequency than possible in order to have a better description of the short-term economic behaviour. The counterpart of this exercise could be an increasing volatility of the series which would complicate a correct identification of short-term movements. For this reason particular attention have to be paid in the estimation procedures in order to avoid this risk.

Suppose now that an indicator $y_s^1, s = 1, 2, \dots, S$ is available at a lower frequency than the one desired. The objective is to estimate the corresponding high frequency indicator $y_t, t = 1, 2, \dots, T$ and $s = kt$.

We suppose that a temporal constrain links y_s^1 and y_t which can be formalised in a matrix form by $y^1 = By$. To obtain reliable estimates of the short-term pattern, we need some high frequency related information which could be represented by some proxies. Let suppose that $x_t, t = 1, 2, \dots, T+1$ is an adequate proxy available both high and low frequency. In this case, the most appropriate procedure derives from the Chow and Lin (1971) approach based on linear regressions model $y^1 = x^1\beta + u^1$ where x^1 represent low frequency observations of our proxy and u is an error term which can be auto correlated. By estimating β by generalised least squares we obtain $y^1 = x^1\hat{\beta} + \hat{u}^1$ high frequency unknown observations are derived by the following expression $\hat{y} = x\hat{\beta} + L\hat{u}^1$.

Main variants of this model following the structure of error term are:

- AR(1) as proposed by Bournay and Laroque (1978)
- Random walk as proposed by Fernandez (1981)
- Random walk Markov as proposed by Littermann (1983).

The form of error term is strongly related to the reliability and to the explanatory power of the available proxy. In this area main development can concern:

- Dynamic formalisation of the Chow/Lin model as proposed firstly by Grégoir (1994)
- Non-linear transformations proposed by Pinheiro and Coimbra (1993)
- Non-linear transformations with dynamic specification of the model as proposed by Weale et al. (1994).



An interesting additional development area not sufficiently explored until now is represented by time series models using indicators. This is the case of Stram and Wei (1986) which is a variant of the model presented above.

4.2.3. Eurostat approach to monthly GDP estimate

Eurostat is currently working in co-operation with NIESR (National Institute of economic and social research) to produce a monthly indicator of GDP (MIP) for the Euro-Zone.

This approach could be applied also in other domains of relevant interest where higher frequency data are judged useful for the analysts purposes. The proposed approach is synthetically described below. For a more detailed analysis see also Astolfi, Ladiray and Mazzi (2000a) and Ladiray and Mazzi (2000c).

The estimation method involves using indicator variables to represent movements in components of output. Regression equations are estimated linking those indicators to the interpolands. The data are then interpolated with the constraint that the monthly figures add up to the known quarterly data. Unlike other techniques known in the literature, our methods allows a non-linear transformation in order to reduced estimate volatility.

Two quite distinctive approaches to the problem of interpolation have been tested in our activity. The first method relies on the estimation of a regression equation linking low frequency to high-frequency data. This approach was developed from the early work of Friedman (1962) by Chow and Lin (1971), Ginsburgh (1973) and Fernandez (1981) with the question of the estimation process being considered by Palm and Nijman (1984). It has the attraction that regression equations similar to those used in conventional econometric research and macroeconomic models are estimated. An underlying regression equation is produced explaining the low-frequency data by means of suitable aggregates of high-frequency data. Interpolands of low-frequency data can then be produced by means of the regression equation using coincident information about the high-frequency data. In producing coincident data, of course, extrapolation is required until low frequency data become available. Corrado (1986) describes an application of Fernandez's method to the United States' national accounts.

The second approach, suggested by Harvey and Pierce (1984) and Harvey (1989a) relies on a state-space model, estimated by means of a Kalman filter. This method is often difficult to apply when there is a large number of possible interpolators, and a regression-based method has the advantage of clarity provided that it can deal adequately with dynamic issues.

Moreover regression methods are used by some statistical offices (e.g. in France, Spain and Italy) in the construction of quarterly data. For these reasons we decided to concentrate our attention on the first approach. Chow and Lin (1971) suggested that the quarterly estimates of the interpoland should be regressed on the quarterly aggregates of monthly data which would then be used to interpolate the quarterly variable. The regression equation can be used to 'forecast' the interpoland on a monthly basis and least-squares adjustment of the type suggested by Stone, Champenowne, and Meade (1942) is then used to make the monthly forecasts of the interpolands consistent with the known quarterly data. The extension of this method by Fernandez (1981) did not change this basic approach.

The basic method consists of explaining the unknown variable of interest (eg. Monthly GDP) by means of indicator variables (E.g.: Industrial Production Index, Retail Sales Index, etc). The model can be written as follows:



$$\alpha(L) \begin{bmatrix} f(y_{1,1}) \\ f(y_{1,2}) \\ f(y_{1,3}) \\ f(y_{2,1}) \\ f(y_{2,2}) \\ f(y_{2,3}) \\ \vdots \\ f(y_{T,1}) \\ f(y_{T,2}) \\ f(y_{T,3}) \end{bmatrix} = \begin{bmatrix} 1 & x_{1,1,1} & x_{2,1,1} & x_{j,1,1} & \cdots & x_{k,1,1} \\ 1 & x_{1,1,2} & x_{2,1,2} & x_{j,1,2} & \cdots & x_{k,1,2} \\ 1 & x_{1,1,3} & x_{2,1,3} & x_{j,1,3} & \cdots & x_{k,1,3} \\ 1 & x_{1,2,1} & x_{2,2,1} & x_{j,2,1} & \cdots & x_{k,2,1} \\ 1 & x_{1,2,2} & x_{2,2,2} & x_{j,2,2} & \cdots & x_{k,2,2} \\ 1 & x_{1,2,3} & x_{2,2,3} & x_{j,2,3} & \cdots & x_{k,2,3} \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 1 & x_{1,T,1} & x_{2,T,1} & x_{j,T,1} & \cdots & x_{k,T,1} \\ 1 & x_{1,T,2} & x_{2,T,2} & x_{j,T,2} & \cdots & x_{k,T,2} \\ 1 & x_{1,T,3} & x_{2,T,3} & x_{j,T,3} & \cdots & x_{k,T,3} \end{bmatrix} \begin{bmatrix} \beta_0 \\ \beta_1 \\ \beta_2 \\ \beta_j \\ \vdots \\ \beta_k \end{bmatrix} + \begin{bmatrix} \varepsilon_{1,1} \\ \varepsilon_{1,2} \\ \varepsilon_{1,3} \\ \varepsilon_{2,1} \\ \varepsilon_{2,2} \\ \varepsilon_{2,3} \\ \vdots \\ \varepsilon_{T,1} \\ \varepsilon_{T,2} \\ \varepsilon_{T,3} \end{bmatrix}$$

Where $y_{t,m}$ is the monthly series of GDP, with $t=1,2,\dots,T$ being the quarter and $j=1,2,3$ the month within each quarter; $\alpha(L)$ is a polynomial of the lag operator, $x_{j,t,m}$ represents the exogenous variables with $j=1,2,\dots,k$, including lagged values and t and m are again the quarter and the month within each quarter. We introduced a non-linear transformation of the dependent variable $f(y_{t,m})$, such as logarithmic transformation, in order to reduce heteroscedasticity. We assume that the relationship linking the variables at monthly frequency is valid at quarterly frequency as well. Therefore we need to transform the model expressed by equation above so that all the variables are expressed at quarterly frequency. In this way we can estimate the vector of parameters and use it to derive monthly GDP.

The method described has been developed using seasonal adjusted data. It can also be generalised so as to allow us to use rowed time series. In this case the model has to be modified: a quarterly fourth difference operator of the form $(I + L + L^2 - L^{12} - L^{13} - L^{14})$ could be used to produce estimation as in the standard method based on the quarterly first difference.

Figure 2 and table 8 show an initial example of monthly estimation of the Value Added variable in Industry (excluding construction) for the Euro-zone. Here monthly figures are derived by means of Industrial production index (Ipi). Though the results can be considered satisfactory, we feel that further improvements could be obtained before estimates of monthly GDP are released.



Figure 2: Regression results Monthly interpolation of V.A. Industry excl. construction Euro-zone

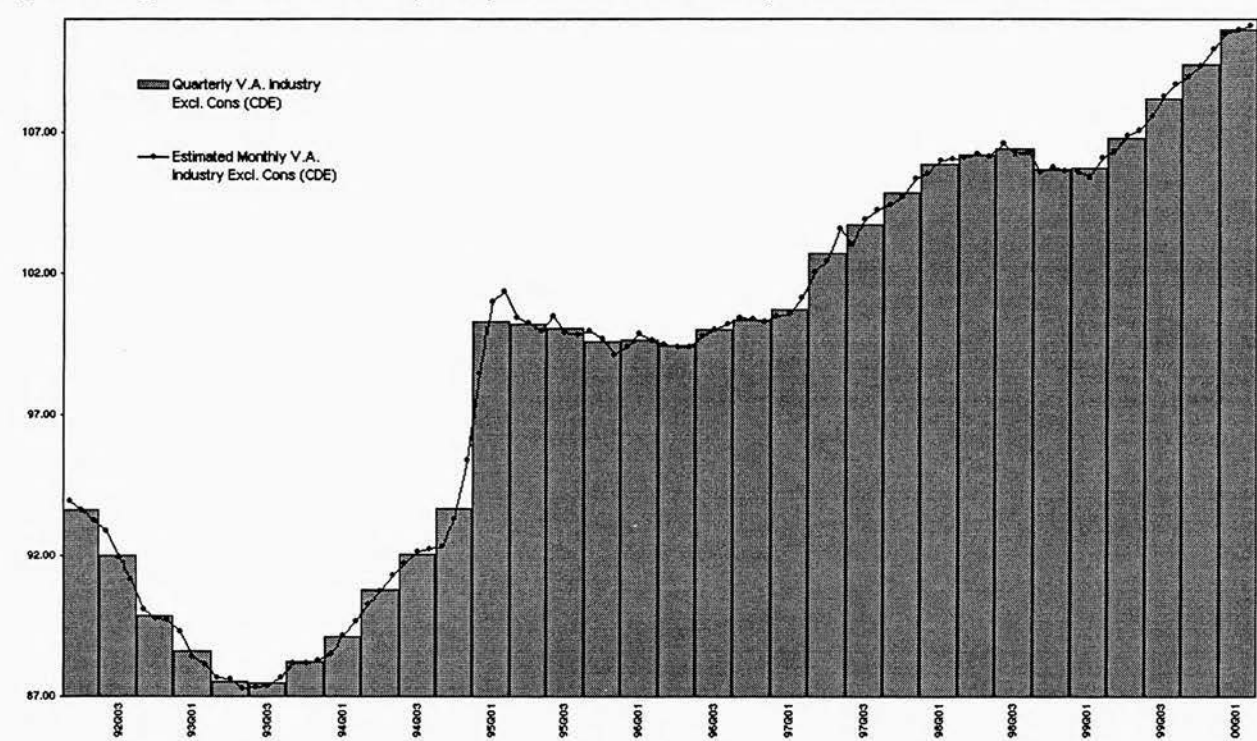


Table 8:Regression results Monthly interpolation of V.A. Industry excl. construction (CDE) Euro-zone
Dependent Variable is $\ln$ Quart. V.A. Industry excl. construction (CDE)

Variable	coef.	t-val.	s.e.	DW	R ²	s.e.
				2.349	0.7714	0.007907
				Sample Period: 1992Q2 to 1999Q4		
				Extrapolation Period: 2000M1 to 2000M5		
				Chow Test (forecast adequacy) F(4,25) = 0.09319 [0.9837]		
$\ln$ Ind. Prod. index (t)	0.163	0.526	0.310	Theil test based on forecast mean = 0.3097		
$\ln$ Ind. Prod. index (t-1)	0.874	2.961	0.295	Theil test based on lagged value = 0.3402		
				Bera-Jarque normality test = 270.7 [0]		
				Serial correlation: F(1,28) = 1.201 [0.2825] F(4,25) = 0.4349 [0.7821]		
				ARCH test: Chi(1) = 0.04108 [0.8394] Chi(4) = 0.2331 [0.9937]		
				Chow test (parameter stability), F(2,27) = 0.09188 [0.9125]		

Source: Eurostat (2000)

4.3. Nowcasting

The use of nowcasting¹ methodologies allows estimating the most recent value of indicators within a short length of time after the end of the period (e.g. within 45 days). Nowcasting problem is very similar to forecasting and backcasting ones also because statistical tools needed are more or less the same(see Ladiray and Mazzi 2000b).

¹ The term nowcasting can be seen in this context as “forecasting” the present value of an indicator. The need for performing such estimation is due to the length of time required to collate source data. For example, on March 15th, we now that nothing special happened during the month of February and we already have the data from some Member States and some other indicators (i.e. qualitative business surveys). Therefore, we could probably construct a first estimation of the indicator for the month of February. Our politicians, ECB, but also national and private users ask more and more for timeline information in order to reduce the existing gap with the United States. In this case statisticians have to do their best to provide these data.



The availability of such estimated values becomes then crucial when applying advanced techniques in the field of flash estimates or temporal disaggregation, because it consent the employ of the most recent figures.

Eurostat is currently working together with NIESR in a comparative analysis of different nowcasting strategies. In this context, we are studying forecasting properties of VAR models, state space models and structural models. Variables used in this exercise are: industrial production, producer prices and retail trade (in volume terms) indices. Data are used generally without any correction for seasonal variations in order to avoid any possible spurious correlation and misspecification effect due to the application of seasonal filters.

In this study we attempt to forecast four measures of Euro-11 industrial production on a monthly basis to a horizon of one, two and three months. This is done by means of a number of competing forecasting methods, based on regression techniques and neural networks. Some models involve the use of indicator variables while others use only lagged values of the series to be forecast. Three business survey indicator variables were employed in the first set of model. We also considered the lagged value of the series to be forecast as a fourth regressor, and added the short-term interest rate as a fifth potential indicator.

We simulate the use of the various methods in 'real time' beginning with a period about half-way through our data set. Each model is used to forecast at three horizons and then, with each extra observation re-estimated and used to construct a new forecast. These forecasts are then used to provide our indicator of forecast performance. For some of our models we pre-select the indicators and lags at which they are most strongly correlated with the series to be forecast. We then search over all possible combinations of pre-selected variables in order to find the best regression equation. We then rank the performance of the indicator variables (treating each lag of each indicator as a separate variable) and assess the performance of each indicator first by the number of times it appears in the best fitting equation estimated up to each point in the forecasting period and secondly weighting it by the performance of each equation in which it appears.

The preliminary results seems to indicate that seasonally adjusted industrial production can be forecast best with a model which assumes the growth rate is the same as that in the previous month. This has a RMSE well below the standard deviation of the series. It suggests that, if the forecasting model is used to predict the third month's data of the quarter, the standard error of the quarterly growth rate will be 0.06% per quarter. Models which make use of other variables as well as the lagged movement of the series have a slightly worse performance but may tend to do better in periods of economic volatility. As a very minimum, if this series is to be forecast with the aim of completing the quarter, both this model and a recursive 'best fit' model should be used with the eventual choice between them made in the light of further experience.

The country-specific industrial production figures are not particularly more helpful than the business survey indicators.

Manufacturing output seems to be forecasted best by the autoregressive model. For a lead of one month, models which make use of the additional indicators do very little worse and may be preferred on the basis of their likely performance at times of economic volatility. The RMSFE of a quarterly estimate of this series if the last month of the quarter is predicted, is likely to be about 0.09%.

Further analysis have to be performed in order to assess the usefulness of business survey in the nowcasting exercise. In particular the use of synthetic indexes, like climate ones or common factors, could be tested in order to verify their forecasting power.

5. Some statistical problems related to the Euro-zone business cycle analysis

The problems related to the statistical analysis of the Euro-zone business cycle are similar to them addressed in the study of the short-term behaviour of each economy. They involve problems like:

- analysis of revisions
- seasonal adjustment,
- business cycle extraction,
- leading indicators and turning points.



Following sections will be devoted to a synthetic presentation of the above mentioned items.

5.1. Analysis of revisions

Time-series of revisions must be tested in order to discover if they show any systematic behaviour. Eurostat is attaching a remarkable importance to this type of analysis.

In chapter 15 of the Handbook of Quarterly National Accounts (Eurostat, 1999) a strategy for the analysis of revisions is described. This strategy can be generalised to all types of series either than national accounts. The proposed approach derives from the studies of Patterson (1992), Di Fonzo, Pisani and Savio (1994) and many others.

The analysis of revisions is structured in to steps:

- statistical analysis
- econometric analysis.

5.1.1. Statistical analysis of revisions

Summary statistics can be used for various comparisons between preliminary and final estimates. In the chapter 15 of the Handbook of quarterly national accounts (Eurostat, 1999) two types of errors are considered:

- relative errors, giving information on the accuracy of preliminary estimates of levels
- absolute errors, used to evaluate the accuracy of preliminary growth rates.

Proposed indices of accuracy of the preliminary estimate of levels are:

- i) Mean relative error
- ii) Mean absolute relative error
- iii) Standard deviation of the relative error
- iv) Square root of the mean quadratic relative error
- v) Bias component of the mean quadratic relative error.

Proposed indices of the accuracy of the preliminary growth rates are:

- 1) Mean error
- 2) Mean absolute error
- 3) Standard deviation of the absolute error
- 4) Square root of the mean quadratic error
- 5) Bias component of the mean quadratic error.

Clearly these measures can not be considered as reliability measures of provisional estimates. However they permit to evaluate if revisions are always (or almost always) of the same sign. If it would be the case, a correction of preliminary estimates should be needed.

5.1.2. Econometric analysis of revisions

Econometric analysis and test can be conducted on both successive versions of vintages of data. In our approach it is recommended to conduct the analysis on vintages. Further, it is assumed that the last available vintage of data could be considered as the final one.

Most econometric techniques for our purposes use tests borrowed by the rational expectation theory. In this context preliminary estimates are considered as different forecasts of the final one, conditional on the available information at the time they are made. By consequence tests of the rationality of the expectations can be used to asses the accuracy of provisional estimates.



The following tests are proposed in our approach:

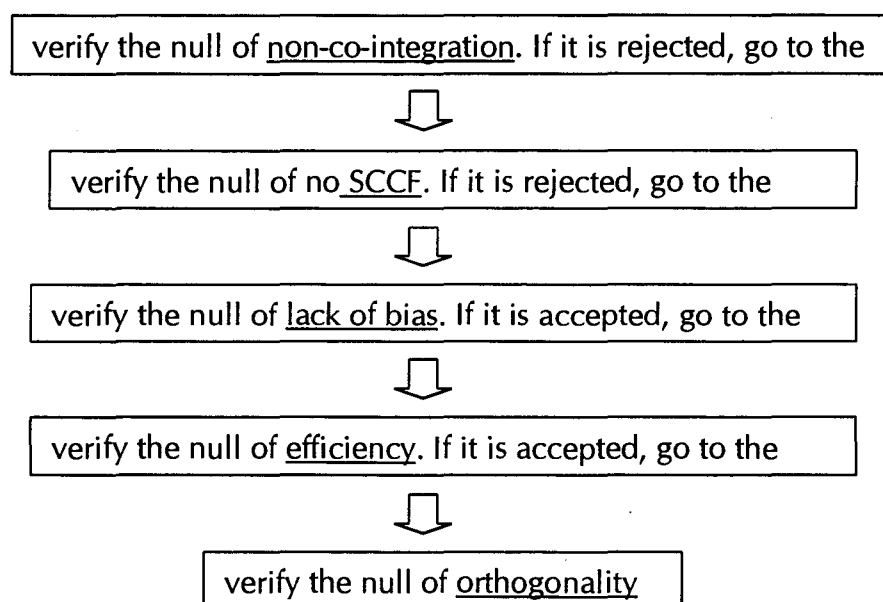
- 1) Test for lack of bias which means that the mean of revisions should be zero;
- 2) Test for weak efficiency which means that revisions should be unforecastable from the information available at time t . This information comprises the preliminary vintage itself and a constant term. Hence, efficient use of this information would improve the initial vintage as a predictor of the final one. Weak efficiency is a sufficient but not a necessary condition for unbiasedness.
- 3) Test of orthogonality which means that revisions should be unforecastable from all the relevant variables available at time t . All the available information can include: past history of the revisions process, the phase of business cycle, the dynamic of the inflation process, the period in which the preliminary estimate is made, etc. Since orthogonality is a particular case of weak efficiency, it is the most restrictive test proposed.

These tests permit to access the randomness of the revision process but they can not be considered as exhaustive. In fact another relevant and advisable property is the co-integration of successive vintages of data. The absence of co-integration means that a non stationary variable (or a combination of these) has been omitted between the preliminary and the successive vintage. This omission can be due to different factors like: measurement errors in the preliminary estimates, their accumulation over the time, use of unrepresentative data, incomplete sampling, etc. This explains the importance of testing the hypothesis that there exists a stationary linear combination of two vintages. At this point it is important to clarify the relationship between cointegration and rationality. The preliminary vintage could be a biased and inefficient predictor of the final one, but the two could well be co-integrated. Thus, co-integration is necessary, but not sufficient, for unbiasedness and efficiency. This is obvious because co-integration pertains with long-term movements. Two series could be co-integrated but they could have different business cycle behaviours. This consideration leads us to the last important point of our scheme for the analysis of revisions. We need to investigate the similarity of vintages in terms of serial correlation common features (SCCF). Successive vintages will have SCCF if it is possible to define a linear combination of their cycles which does not contain any cyclical component. In other words we need to test if a linear combination of the first differences of vintages is a white noise.

Table 9 will present our sequential strategy for the econometric analysis of revisions.



Table 9: Sequential strategy for an econometric analysis of the revisions



5.1.3. Conclusions

The analysis of revisions presented above is quite complete and of easy application. It is recommended to use this strategy in all the domains of short-term statistics inside Eurostat and with particular attention the Euro-Zone data. Many relevant information can be obtained from this analysis: it will be possible to identify and correct inconsistency between preliminary and normal estimates of the same variable; it will also be possible to identify and, where possible to correct, missing relevant variables during the process of preliminary estimates. Anyway the major contribution from this analysis is expected in terms of improvement of our preliminary estimates and nowcastings.

If there are evidences of any systematic behaviour past revisions can be used to correct our preliminary estimates as derived in section 5.1: $\hat{y}_t^p = E(y_t / \omega_t') + h_t$, where h_t can be a linear process of past revisions. More complex forms of h_t can be considered. In particular h_t could contain information related to the following relevant aspects:

- 1) the phase of the business cycle
- 2) the dynamic of the inflation
- 3) other aspect related to the period in which the preliminary estimate has been made.

5.2. Seasonal adjustment

The ECB and Eurostat have recently published their recommendations for seasonal adjustment in two important reports :

- “Eurostat recommendations concerning seasonal adjustment policy”, a report of the internal task force on seasonal adjustment, Eurostat, January 2000.
- “Task Force on Seasonal Adjustment, Final Report”, European Central Bank, January 2000.

These recommendations have now to be tested and applied and two main problems can be highlighted.

In these reports TRAMO/SEATS and X12-ARIMA are recommended as standard methods for seasonal adjustment. These two softwares must be compared in terms of revisions and accuracy as far as the main European economic indicators are concerned. Empirical studies show that the choice is not clear and can vary according to the analysed



series. As an example, for the M1 monetary aggregate X-12-ARIMA shows clearly less revisions and a slight advantage of TRAMO-SEATS can be detected for M3.

Euro area series are mainly compiled by aggregation of national data. For the seasonal adjustment of these data, there are four options:

- a) seasonal adjustment of aggregated raw components (direct approach)
- b) aggregation of seasonally adjusted components (indirect approach)
- c) aggregation of seasonally adjusted data from Member States
- d) simultaneous derivation of seasonally adjusted series (multivariate approach)

The differences in the four approaches, and in the derived components, correspond to the differences in the information set which is considered in the information process (see Campolongo and Planas (2000), for a theoretical overview on this subject). Some empirical studies have shown that differences in multivariate vs. univariate approaches are relatively small. The empirical results show that direct and indirect approaches produce equivalent results only under very restrictive assumptions, i.e. when no trading day or outlier correction is made, the decomposition is additive and no forecast is produced. In practice, such conditions are met rarely and the differences in the series produced under the two rules can be significant depending on the series concerned. Some criteria to discriminate between direct and indirect approach can be put forward : smoothness of seasonally adjusted series, minimisation of revision errors, stability of seasonal component and out-of-sample forecast accuracy.

A comparison between direct and indirect approach has been presented by Astolfi, Ladiray and Mazzi (2000b) with the reference of the Euro-zone GDP. The results obtained show that the direct approach produce smoother figures than indirect one. This comparative analysis will be extended in all relevant areas to assess a common seasonal adjustment strategy for Euro-zone figures.

Among all other theoretical considerations, direct approach seems to be preferred in particular when estimation and nowcasting are made. The use of direct approach implies the lost of the additivity between national data and Euro-zone totals. Users should be aware of this situation. From the producers point of view it will be essential to verify continuously that Euro-zone seasonal adjusted figures, directly obtained, are consistent with national data.

5.3. Business cycle extraction

Is there an Euro-Zone business cycle emerging from the EMU construction and, if there is one, can we explain it from national cycles?

This is a crucial question to be answered in order to be able to build a business cycle analysis at Euro-zone level by using, in an optimal way, all the available information. Eurostat has recently concentrated its attention on this topic (see Ladiray Mazzi 2000c). A methodology, which is currently tested, has been defined and it is presented below.

5.3.1. A Common European Business Cycle

The aim of Eurostat project is to investigate in statistical terms the issue of whether the individual business cycles of the Euro-zone countries have become more synchronised. In order to do that, a model of gradual change of finite duration is considered appropriate.

This issue is analysed in statistical terms, comparing a number of competing methodologies. A major problem we faced undertaking this research is that standard statistical models are designed to model processes, which are stable in the sense that their underlying structures do not change over time. The major exception to this rule is unit root models where the characteristics of the processes change over time but at a steady rate. Unfortunately neither of these two paradigms is suited for the investigation of cyclical convergence in the Euro-zone. The shift in the cyclical pattern we are looking for will not continue indefinitely. On the other hand any changes caused by or co-incident with the European Monetary Union (EMU) are bound to take some time to be completed. Therefore a model of gradual change of finite duration is considered appropriate.



The paper is organised as follows: Section 2 presents a number of complementary statistical methodologies aimed at identifying the cycle in each country. In Section 3 we explore the interrelationships between the cyclical indicators obtained in the previous section using a number of competing statistical methodologies. Section 4 concludes.

5.3.1.1. Identifying the cycle

The first issue we faced concerns how to identify the cycle. We use four different methods of doing this. The first uses a state-space model to remove the stochastic trend from the logarithm of each series. The model we use has the following form:

$$\begin{aligned} (1) \quad & y_t = y_t^r + \varepsilon_t \quad t=1,2,\dots,T \\ (2) \quad & y_t^r = y_{t-1}^r + \kappa_{t-1} + \eta_t \quad \eta_t \sim N(0, \sigma_\eta^2) \\ (3) \quad & \kappa_t = \kappa_{t-1} + \zeta_t, \quad \zeta_t \sim NID(0, \sigma_\zeta^2) \end{aligned}$$

where the equation 1 is the measurement equation and equations 2 and 3 are the transition equations. The parameters of the model are obtained through maximum likelihood estimation and the estimates of the states are obtained through a recursion of the Kalman filter. The residue is a stationary series which can be regarded as the cycle. It is obviously very erratic but it can be smoothed by means of a moving- average filter.

Secondly, we difference the data. This also removes the effect of the stochastic trend, but it combines the difference of this with the difference of the cyclical term identified by the first method. Differenced data are likely to be even more erratic than de-trended data.

Thirdly, we explore a non-linear transformation which categorises each observation as being part of an upswing or part of a downswing. The upswing observations are set to 1, while the downswing observations are set to zero. The result is a stationary series which distinguishes upswings from downswings but does not, otherwise return any characteristics of the original data.

The fourth method exploits a trend-cycle decomposition which relies on identifying common trends and common cycles from the industrial production data of the Euro area members. This decomposition is discussed in Vahid and Engle (1993) and Engle and Issler (1995) and follows from an extension of co-integration analysis of non-stationary multivariate time series.

Of these methods, we should note that the first method, the state-space decomposition will generate estimates of the cycle which are revised as the data set is extended. The third and fourth methods will also produce an indicator which is subject to revision, while differencing is robust to the inclusion of extra data.

We found, in practice, that the fourth method could not be used satisfactorily. The statistical tests used to identify the number of common cycles suggested that there were too few to make an unambiguous trend/cycle decomposition possible for the whole of the period. We were, however, able to make a decomposition for sub-periods and use this to explore, in a qualitative sense, the interrelationship among the cyclical components which the method identifies. This suggested that the number of factors needed to explain these cyclical components was tending to decline over time.

5.3.1.2. Studying the interrelationships between individual business cycles of the Euro Area countries.

We explored the interrelationships between the three cyclical indicators mentioned above in a number of ways. Two main approaches were considered. One is based on time-varying coefficient models. Such models assume that the coefficients of the process change continuously and are stochastic rather than fixed. The model can be written as:

$$\begin{aligned} (4) \quad & y_t = x_t' \beta_t + \varepsilon_t \quad \varepsilon_t \sim iid(0, \sigma^2) \quad t=1 \dots T \\ & \beta_t = a \beta_{t-1} + \eta_t \quad \eta_t \sim iid(0, \Sigma) \end{aligned}$$



where the two equations are the measurement and the transmission respectively in a classical state-space model. Here x_t is assumed to be linear but not structurally stable over time. Instead it is assumed that the coefficient β varies stochastically. β is estimated via the Kalman Filter.

First, for the de-trended and differenced data, we fitted a model with time-varying coefficients explaining the cyclical component of each Euro Area country's industrial output in terms of the cyclical component of aggregate Euro Area output and also of UK output. This model needs initialising; we initialised it in two ways. First we set the initial coefficients at the values which would be found if the cycles in the Euro Area countries were orthogonal (method A). A tendency for the coefficient to rise above this over time, which is generally observed on the de-trended data indicates either i) that the coefficient takes a while to rise to its true value at which it implies that the cycle in each individual country is correlated with the cycle identified in the aggregate data or ii) that even if the cycles were initially uncorrelated, they have become correlated to some extent. Either explanation supports the existence of the European cycle. The differenced data gave a much more volatile pattern which we attribute to the fact that differenced data are themselves more volatile than de-trended data. The second initialisation (method B) yields implausible initial values and did not let us reach any conclusions.

The second approach is recursive modelling. Here, standard statistical models are recursively estimated over time. The relevant quantities of these models are then monitored for possible shifts over time. Some indicators of the inter-relationship between the series, or between each series and Euro Area industrial production were estimated over a window of 50 months; this window was moved along each data set. An increasing correlation is indicative that the interrelationships between the data have become stronger over time. With the categorised data we examine not the correlation but the t-statistic on the coefficient of each country's specific indicator found when regressing that on the indicator for the aggregate Euro Area. This tells us whether there is significant synchronisation between the two.

An alternative means of exploring the information content of the de-trended or differenced data is to estimate a dynamic factor model. This identifies how many latent variables or factors drive the national data; a small number of factors indicates a small number of causes driving the data. The result does, however, depend on the lag structure which is specified as well as on the data set used. Looking at de-trended data, with a parsimonious lag structure we find that there is a single factor which can be interpreted as a European cycle. A richer lag structure generally points to more cycles and the number of cycles does not appear to decline over time as the window rolls forward. On the other hand one method of determining the number of factors still points to the existence of a single cycle. When the method is applied to differenced data the results again depend on the test used to determine the number of factors. The number of factors does, however, appear to decline as the window moves forward, perhaps indicating increasing cyclical coherence.

Finally we look at cluster analysis. This method groups each of the three sets of cyclical data into groups which are similar to each other. A declining number of clusters can be regarded as evidence for increasing cyclical cohesion of the Euro Area economy. When this method is applied to the de-trended and difference data the number of clusters seems to decline in the 1990s as the window rolls forward. The largest clusters increasingly include the core economies as constituents. Clustering does not yield any clear results when applied to the categorised data.

5.3.1.3. Conclusions

We summarise our findings in

Table 10. We take these as evidence that the Euro Area economies are becoming increasingly coherent. De-trended output gives clearer evidence of this than the differenced output does, while the information from the categorised data we regard as confirmatory rather than as suggestive of an alternative form of indicator.

However, the use of de-trended data has two problems. First there is the question of revisions mentioned above. Secondly, there is the fact that the data include erratic components. For practical application a smoother variable is likely to be more useful and we therefore advocate the use of a moving-average filter to smooth the series. When this is used in real time, post-sample data must be forecast in order to produce a centred moving average for the terminal date of the series. This generates a second source of revisions as the forecasts are replaced by fact. We indicate, by estimating the cyclical variable for the Euro Area both in real time and recursively the degree of



revision which the cyclical variable is likely to face. We find an R^2 of 0.5 between the initial estimate and the final value.

It is important to note that whilst we see the alternative methods used as useful diagnostics in indicating greater cyclical coherence, most of them are unable to estimate the cycle itself satisfactorily. This is partly because some methods applied are only appropriate for estimating a constant cycle.

We can conclude that to produce an indicator of the state of the business cycle in the Euro Area the best method is the adoption of a de-trended estimate of Euro Area industrial production, smoothed using the 7-period centred moving average.

Although the results are tentative at this stage due to the shortness of available data, the research indicates that the business cycles of the Eurozone are becoming increasingly synchronised.

Table 10: Summary of Main Results

Inter-relationship methods:		Cycle identification methods		
		Detrended	Differenced	Categorised
Time-Varying Coefficients	A	Increasing Synchronisation	Unclear	N.A.
		B Unclear	Unclear	N.A.
	Correlation/ Synchronisation	Increasing correlation	Unclear	Increasing Synchronisation
Recursive	Dynamic Factors	C Single Factor	Multiple Factors	N.A.
		D Multiple Factors	Multiple Factors	N.A.
	Cluster Analysis	No of clusters falls in 1990s	No of clusters falls in 1990s	Little evidence of clusters

- A. Initialised consistent with no cross country correlation of cycles.
- B. Initialised using OLS regression at start of sample.
- C. Parsimonious lag structure (correlations between current and one lag only) used to determine number of factors.
- D. Rich lag structure (correlations between current, one and two lags) used to determine number of factors.

5.4. Leading indicators and turning points

Considering the Euro-zone these indicators can be of particular interest to satisfy a lack of information or timeliness in specific sectors. Leading indicators can give a synthetic view of the economic situation or can be related to main economic indicators (i.e. GDP, industrial production, consumer and producer prices, etc.). Eurostat is envisaging the construction of leading indicators for the most useful short-term indicators. The first step on this direction has been made in the context of GDP and its main aggregates. The resulting methodology will be extended and modified, if it is needed to other domains. There are two main categories of leading indicators:

- traditional leading indicators
- statistical indicators.

The first category is essentially based on the approach proposed by BEA (Bureau of Economic Analysis) and actually used by the OECD. The second one is based on stochastic models using most sophisticated time series techniques. The Eurostat approach described below is based on the second approach.

5.4.1.Eurostat approach

Our approach consist essentially in constructing different types of leading indicators (see Ladiray and Mazzi 2000a). Each model of leading indicators can be used independently. It is possible to choose the model giving the best



results in terms of our target criteria (i.e. forecasting min. square error, etc.). It is also possible to combine different models in order to improve the reliability of forecasts are demonstrated recently by Blake and Kapetanios (1999).

The different type of models investigated are:

- automatic leading indicator (ALI) model
- automatic cointegrated leading indicator (ACLI) model
- neural network leading indicator model

5.4.2. Automatic leading indicator (ALI) model

In constructing leading indicators, factor analysis can be used to deal with the problem of an excessive number of explanatory variables avoiding the issue of variable selection. Factor analysis explains a set of n variables as linear combinations of f stochastic factors; where f is smaller than n . This is consistent with the co-movement among certain macroeconomic series, and therefore a reduced number of underlying forces (factors) behind the fluctuations of macroeconomic series. Due to the presence of serial correlation often displayed in macroeconomic series, Dynamic factor (DF) analysis has to be considered more appropriate.

The dynamic factors are intended to summarise the information content of a group of possible leading indicator variables that would be too numerous to be used directly in a VAR model. We describe this model as an Automatic Leading Indicators (ALI) model because the information is selected automatically from the group of indicators. We can then assess the performance of the ALI model by means of out-of-sample forecasting, and compare its performance with other possible approaches.

Since some of the leading indicator variables employed display a unit root, it has been chosen to make those series stationary by taking first differences. Logically one might wish to take account of co-integration in such a structure, adopting a model with error-correction terms. This is also undertaken by what we called the ACLI model.

The construction of the forecasts using the ALI model is carried out in two stages:

- a) extraction of the factors
- b) forecasting

a) In the extraction of the factors consider the following dynamic factor model for the n -vector of exogenous variables x_t :

$$x_t = Bs_t + u_t$$

$$C(L)s_t = \eta_t$$

where B is a (n, k) matrix of unknown parameters and u_t a n -vector of disturbances with $k \leq n$. The k -vector of

factors s_t follows a stationary AR(p) process described via the p th order matrix polynomial $C(z) = I_k - \sum_{i=1}^p C_i z^i$

and the k -vector of disturbances η_t ; thus, $\det[C(z)] = 0$ has all roots outside the unit circle $|z| = 1$. It is assumed

that the error processes $\{u_t\}_{t=1}^{\infty}$ and $\{\eta_t\}_{t=1}^{\infty}$ are mutually and serially uncorrelated, conditionally homoskedastic with mean zero and positive definite variance matrices. The estimation of the unknown parameters B and $C(L)$ and extraction of the factors s_t may be combined in the following step-wise fashion. Firstly, given knowledge of B , $C(L)$ and the variance matrices of u_t and η_t , the above equation may be written in state space form with the Kalman filter used to extract s_t from observations on x_t . Secondly, given the factors s_t the parameter matrices B , $C(L)$ and the variance matrices of u_t and η_t may be estimated by quasi-maximum likelihood. This step-wise procedure may be iterated until convergence; see Harvey and Jaeger (1993) for further details.



b) The factors s_t obtained above are incorporated into a VAR model to forecast y_t via

$$A_y(L)y_t = A_s(L)s_t + \varepsilon_t$$

where $A_y(z) = I_p - \sum_{i=1}^{p_y} A_{yi} z^i$, $A_s(L) = \sum_{i=1}^{p_s} A_{si} z^i$ and $\{\varepsilon_t\}_{t=1}^{\infty}$ a p-vector zero mean, conditionally homoskedastic and serially uncorrelated error process with positive definite variance matrix uncorrelated with the error processes $\{u_t\}_{t=1}^{\infty}$ and $\{\eta_t\}_{t=1}^{\infty}$. Given the estimated factors $\{s_t\}_{t=1}^T$ from above, the (p, p) and (p, k) matrices of unknown coefficients $\{A_{yi}\}_{i=1}^{p_y}$ and $\{A_{si}\}_{i=1}^{p_s}$ may be estimated over the sample period, $t = 1, \dots, T$, by LS (quasi-ML). Note that when forecasting more than one period ahead it will also be necessary to forecast s_t . This approach differs from that suggested by Stock and Watson (1989) who treat the estimation of the (single) factor and its forecast as two quite separate exercises

5.4.3. Automatic cointegrated leading indicator (ACLI) model

In order to deal with non-stationary variables we extend the ALI model in order to analyse non-stationary cointegrated series. In analogy to the specification of the ALI model we suggest the following state space model for constructing composite leading indicators while dealing with cointegration among the non-stationary original leading indicators. We investigate a set of variables $\{x_t\}$. We distinguish two subsets, $x_t = (x'_{1,t}, x'_{2,t})$ where $x_{1,t}$ are assumed to be $I(0)$, possibly after removing a deterministic trend and $x_{2,t}$ are assumed to be $I(1)$ as a result of stochastic trends.

$$\begin{pmatrix} x_{1,t} \\ x_{2,t} \end{pmatrix} = \begin{pmatrix} A_{11} & 0 & a_{31} & a_{41} \\ A_{21} & A_{22} & a_{23} & a_{24} \end{pmatrix} \begin{pmatrix} s_{1,t} \\ s_{2,t} \\ \tau_t \\ c_t \end{pmatrix} + D\varepsilon_t$$

$$\begin{pmatrix} s_{1,t} \\ s_{2,t} \\ \tau_t \\ c_t \end{pmatrix} = \begin{pmatrix} B_{11} & 0 & 0 & 0 \\ 0 & I & 0 & 0 \\ 0 & 0 & I & 0 \\ 0 & 0 & 0 & I \end{pmatrix} \begin{pmatrix} s_{1,t-1} \\ s_{2,t-1} \\ \tau_{t-1} \\ c_{t-1} \end{pmatrix} + \begin{pmatrix} I & 0 & 0 & 0 \\ 0 & I & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix} \eta_t$$

c_t is the intercept term and τ_t is the trend. We propose techniques for specifying the number of stationary and nonstationary states, $s_{1,t}$ and $s_{2,t}$ respectively.

Forecasting with the ACLI model is carried out in a vector error correction framework, similarly to the stage b) of the ALI model, where the possibility of cointegration between the variable to be forecast and the non-stationary states is allowed. The evaluation of the forecasting ability of the ACLI model is based on a comparison of its forecasting performance to that of a set of cointegrated VAR models obtained by considering different subsets of the non-stationary original leading indicators.

The use of unrestricted VAR models in macroeconomic research as suggested by Sims (1980) presents difficulties due to the sample length of most macroeconomic time series. The bad forecasting performance of VAR models has been blamed on parameter uncertainty arising from the need to estimate a large number of parameters. Reduced rank methods can be used to obtain a parsimonious representation of a general VAR model. The issue is to propose a reduced rank VAR model with superior forecasting performance than an unrestricted VAR. Two new bootstrap testing procedures based on existing tests are provided. The testing procedures evaluated are then applied to provide reduced rank VAR models of leading indicators and output. Results showed that the parsimonious



representation obtained through rank reduction provides an appropriate setting for forecasting macroeconomic variables.

5.4.4. Artificial Neural Network Models

A further class of models considered were artificial neural network (ANN) models. These are not structural in any way, but are universal nonlinear function approximators, and as such can be very powerful as a predictive tool. Our model is a single hidden-layer radial basis function (RBF) feedforward network. This indicates that there is a set of constructed variables in between the explanatory and dependent variables which do not feedback on themselves. The choice of a single layer is a function of our adopted functional (RBFs) and estimation strategy. As before, the set of leading indicator variables are used to predict, say, output growth using a model estimated from the data.

The model can be written as:

$$y_t = \beta_0 + \sum_{j=1}^m \beta_j \phi_j(\alpha_{j0} + x_t' \alpha_j)$$

where y_t is growth in period $t + i$, i is the forecast horizon and x_t is the vector of p leading indicator variables available at time t . α and β are coefficients to be determined. We need to choose a suitable function ϕ .

Define m centres by c_j , $j = 1, \dots, m$, and a radius vector r . A Gaussian RBF can be written:

$$\exp\left(-\frac{\|x_t - c_j\|^2}{r^2}\right)$$

This is monotonic about its centre, so the j^{th} RBF has maximum activation when the input vector coincides with the j^{th} centre. By choice of centres and radii for the individual time series, the individual centres give weight to combinations of inputs that can then be associated with certain target outcomes. Estimation for ANNs usually consists of using an updating rule for the parameter vector to minimise a chosen criterion function. For a prediction problem such as ours the output of the network is trained to minimise a criterion function such as the squared deviation from the dependent variable. This is often carried out by the method known as back-propagation (see White (1989) or Kuan and White (1994)). A drawback of this (or other methods) is the cost involved. The advantage of the RBF framework for estimation can be seen from writing the model:

$$y_{t+i} = \beta_0 + \sum_{j=1}^m \beta_j \exp\left(-\frac{\|x_t - c_j\|^2}{r^2}\right)$$

or

$$y_{t+i} = \beta_0 + H_t' \beta$$

where H_t is an m vector of outputs from the RBFs in each period. If the criterion function is a least squares one then OLS can be applied to the model above: modelling is reduced to the appropriate choice of m basis functions, their associated centres and radii, with α is set everywhere to unity.

For centre selection we follow Orr (1995). For a given population of centres and fixed radii we use forward selection to add basis functions. Forward selection in this context is to use a straightforward variable addition test; a potential basis function is added as a regressor if it contributes most to variance reduction. This limits the number of basis functions chosen, but allows them to perform the function of dummifying outlying observations as well as providing explanatory power. Such a system is simple to implement. The number of parameters is small, and estimation approached by standard econometric methods, although it does require us to make a number of choices about some underlying parameters. For the ANN leading indicator model we are able to treat the input data slightly different than for the other models. Data inputs need to be scaled, and we scaled all the inputs by their sample variances even when an individual time series could not reject a unit root. Only deterministically trended time series were differentiated, rather than all with a unit root. Twice the maximum distance between observations was used as the radii and the scaled data points used as the potential centres in the forward selection exercises. All



models include the current value of GDP growth as an explanatory variable. We then estimated by forward selection individual models for each of eight forecast horizons and for stopping criteria for percentage of data variance explained up to 0.975%. We allow the number and 'time location' of the radial basis function centres to vary, but only from within the relevant sample, so that the number of basis functions increases not only as the percentage explained rises but also as the time series lengthens.

5.4.5. Forecast Combination and Leading Indicators

Due to structural shifts in the economy, forecasting models turn out to be inadequate at some point. In addition linear models are inadequate to forecast non-linearities existing in the economic variables but non-linear models are frequently less robust than linear ones. A forecasting combination can increase the precision of our estimates and can improve the identification of the short-term economic pattern.

Following the seminal work of Bates and Granger (1969), a widely used method of alleviating this problem involves forecast combination where a number of competing forecasts are used together to provide a better joint forecast.

Two competing forecasting models (i.e. of output growth) are considered here: the first is a standard univariate autoregressive model. Despite its simplicity, this model has been found in many empirical macroeconomic applications to have impressive relative forecasting performance. For example, it is well known that despite their theoretical appeal most reduced form non-linear econometric models fail to beat the simple autoregressive model when forecasting output growth (see for example Pesaran and Potter (1997). Similar results have been found when multivariate models such as VARs have been used. We choose to consider this model because it can summarise effectively and parsimoniously the dynamics of a wide variety of times series.

The second model we consider is an artificial neural network (ANN) model in the context of macroeconomic leading indicators, following work by Blake (1999). In particular, we use a radial basis function network estimated using forward selection of potential basis functions selected from sample data points. This approach is fast (as it is based on linear estimation) whilst still retaining the advantage of being a universal function approximation method.

In so doing, we impose as little economic structure as possible as far as causation is concerned, but instead try to uncover the forecasting properties of a set of explanatory variables using a very general approach. As there is little implicit structure in a leading indicator model this is a more than usually appropriate method.

Several methods have been proposed as tools for combining existing forecasts in order to obtain a single forecast with superior out-of-sample performance. Four different methods are considered here:

- i. Variance-covariance method
 - ii. Regression
 - iii. Regression with serial correlation
 - iv. Nonlinear combination methods
- i. This method was the first to be developed in a groundbreaking paper by Bates and Granger (1969). The combined forecast is given by
- $$f_{c,t} = f_t \phi$$
- where ϕ is a vector of weights to be determined and $f_t = (f_{1,t} f_{2,t})$. The weights are determined by minimising the forecasting error of $f_{c,t}$. They are given by $\phi = \Omega^{-1}i/(i'\Omega^{-1}i)$ where Ω is the covariance matrix of the first step forecast errors of the available forecasts and i is a comfortable vector of ones.
- ii. Granger and Ramanathan (1984) pointed out that the variance-covariance method has an alternative representation, since regressing the actual series on the forecasts with no constant term under the restriction that the coefficients sum to unity gives the same weights as the variance-covariance method. By considering the following regression

$$y_t = \tilde{\phi}_0 + f_t \tilde{\phi} + e_t$$



where the coefficients are not restricted to sum to unity, an alternative combined forecast may be constructed using the regression coefficients as weights. This combined forecast is guaranteed to have better in-sample performance in terms of root mean square forecasting error (RMSFE). Nevertheless, this guarantee does not carry over to out-of-sample performance.

iii. Unless highly stringent conditions hold, the combining regression of the previous model will suffer from serial correlation. This leads to suboptimal estimates of the weights. As Diebold (1988) suggests it is convenient to approximate the correlation structure of the disturbances of the combining regression by a finite order AR process. The combining regression may then be estimated by standard methods such as the Cochran-Orcutt procedure.

iv. Recently, Deutsch, Granger, and Terasvirta (1994) have suggested combining forecasts using switching regression models. Their preliminary results indicated that such methods may provide a significant improvement beyond that of a purely linear combination. We consider the methods in which the switch between alternative regimes is controlled by lagged forecast errors. They only consider cases where two alternative forecasts are available although we could generalise. In particular the combined forecast $f_{c,t}$ is given by

$$f_{c,t} = I(t \in I_1)(\beta_1 f_{1,t} + \beta_2 f_{2,t}) + (1 - I(t \in I_1))(\beta_3 f_{1,t} + \beta_4 f_{2,t})$$

where $I(\bullet)$ is the indicator function taking the value 1 if its argument is true and 0 otherwise, depending on an indicator set I . We consider four different specifications for I from the six univariate ones proposed by Deutsch, Granger, and Terasvirta (1994). The other two are not considered since they involve a constant whose determination is not detailed in the paper. Denoting the forecast error associated with each model by $z_{i,t} = y_t - f_{i,t}$, $i = 1, 2$ respectively, the specifications are:

$$I_1 = \{t: z_{1,t-1} \leq 0\}$$

$$I_2 = \{t: z_{2,t-1} \leq 0\}$$

$$I_3 = \{t: \beta_1 z_{1,t-1} + \dots + \beta_p z_{1,t-p} \leq 0\}$$

$$I_4 = \{t: \beta_1 z_{2,t-1} + \dots + \beta_q z_{2,t-q} \leq 0\}$$

The coefficients β_i and β_j are determined by fitting autoregressive models to the forecast errors. Unlike Deutsch, Granger, and Terasvirta (1994), the Akaike information criterion has been used to determine the lag order (p and q) of the ARs.

6. Conclusions

The development of short-term statistical system is an essential requirement for an efficient definition of economic and monetary policy. In the recent past, many progress have been made by European countries in this context but the situation can not be considered completely satisfactory in particular in comparison to the United States.

There are some Member States which are more or less in line with the United States but if we consider the average behaviour of Member States the objective seems to be quite far. Euro-zone data suffer of this situation if they are intended as an aggregation of national figures. If we are unable to obtain a considerable increasing in timeliness and reliability of national data we can not expect an improvement of Euro-zone statistics. At this point, it is needed to follow another way to obtain Euro-zone aggregates. This way is represented by a process of direct estimation of Euro-zone totals by using statistical and econometric methods.

The two solutions are not in contradiction and they can be pursued at the same time. Euro-SICS and Euro-TREND Eurostat's projects described in this paper, can represents the two approaches mentioned above.

Eurostat activity in the field of short-term analysis is intended to satisfy user needs (in particular those of ECB and DG ECFIN) by adapting the characteristics of Euro-zone statistics to their requirements. Clearly, it is important that Eurostat will be recognised as the supplier of Euro-zone official statistics and our credibility is strongly related to this point. Clearly, Eurostat credibility will progressively increase together with the timeliness and the reliability of Euro-zone figures. Suggestions, critics and remarks coming from user side and a continuous comparison between our figures and those produced by other institutions (mainly private ones) will constitute an essential element of development for our short-term system.



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EMPRESA Y COMERCIO ELECTRÓNICO: ALGUNAS REFLEXIONES

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Se está produciendo una revolución que está cambiando la economía global. La introducción de la tecnología "web" está convirtiendo todos los aspectos de la empresa y los negocios en actividades basadas en la información. El ratio de cambio tecnológico es tan rápido que el comercio electrónico, aun en etapa emergente, ya ha producido cambios fundamentales en el contexto económico, afectado a todos los aspectos de la dirección de las empresas. A pesar de la creciente importancia de este fenómeno poco sabemos sobre las consecuencias profundas que Internet y las nuevas tecnologías de las comunicaciones tendrán sobre las estrategias de las empresas y las prácticas de gestión. En este artículo se describen someramente los aspectos centrales relacionados con las implicaciones futuras del comercio electrónico.

There is a revolution changing the global economy. Web technology is transforming all business activities into information-based. The rate of technological change is so rapid that emerging electronic commerce already is making fundamental changes in the economic landscape, affecting every aspect of how business is and will be conducted. Despite the growing importance of this phenomenon little is known about how the Internet and the new communications technologies bring about business strategies and management practices. In this article we briefly describes the emerging key issues concerning the future implications of electronic commerce.

Estamos asistiendo a una revolución en el comercio y la sociedad en su conjunto, cuya génesis está en la explosión en las tecnologías de la información y que ha derivado en el rápido desarrollo del comercio electrónico.

El comercio electrónico se puede entender en sentido restrictivo como "la compra y venta de información, productos y servicios a través de redes de ordenadores" (Kalakota y Whinston, 1996), o en un sentido más amplio, considerando que comercio electrónico consiste en compartir información usando una amplia gama de diferentes tecnologías digitales entre organizaciones que hacen negocios entre ellas, incluyendo los procedimientos, políticas y estrategias para sostener la incorporación de este tipo de tecnologías en el entorno competitivo de las empresas (Sokol, 1989). En pocas palabras, el comercio electrónico se fundamenta en la idea simple de "hacer negocios electrónicamente" (Timmers, 1999).

Aunque la divulgación del comercio electrónico se ha producido en fechas recientes, formas primarias de comercio electrónico ya existían hace 20 años. En algunos sectores tales como el de automoción o ventas al mayor, el *Intercambio Electrónico de Datos* (EDI) para las interacciones entre aplicaciones era de uso generalizado. También se habían desarrollado sistemas en el ámbito de las operaciones para el diseño y el mantenimiento que integraban información en amplias partes de la cadena de valor. Estas formas incipientes de comercio electrónico han tenido una difusión limitada. Ha sido en los últimos cinco años, sin embargo, cuando hemos observado un



desarrollo exponencial del comercio electrónico. Las causas hay que buscarlas en el desarrollo de Internet y del World Wide Web (WWW), que ha hecho el comercio electrónico mucho más accesible. Estas tecnologías prometen una utilización fácil y formas de bajo coste de comercio electrónico. Internet no solamente soporta electrónicamente las interacciones entre las aplicaciones que se utilizan en la empresa, de forma similar a la que ya hacía EDI, si no que además, y especialmente, facilita formas de conexión de persona a persona y entre personas y aplicaciones. Esto se hace posible a través de la combinación de interactividad, comunicación, multimedia y procesamiento de datos. Por eso, el comercio electrónico basado en Internet se convertirá en una importante vía de hacer negocios.

Las transacciones en las que se basan las actividades empresariales tales como la adquisición de información, compra, comercio, intermediación, banca, contabilidad, auditoría, subastas, negociación, cooperación, marketing, aprovisionamiento, formación, planificación, fabricación, distribución, prestación de servicios y venta al por menor, están experimentando un cambio rápido debido al impacto de las tecnologías de la información. En pocas palabras, muchos de los aspectos de lo que hoy conocemos acerca de la dirección de un negocio continuarán cambiando. Todas las compañías, grandes o pequeñas, tendrán que afrontar los retos que representan todos estos profundos desarrollos tecnológicos. Afortunadamente, este cambio conlleva tanto riesgos como oportunidades. El comercio electrónico es en muchos sentidos una “nueva frontera inexplorada” (Shaw, 2000). La adecuada gestión de operaciones, el desarrollo estratégico y la investigación se convierten en importantes para entender todos los cambios en las reglas y para identificar la aparición de oportunidades para desarrollar nuevas ventajas competitivas.

El contexto necesario para el comercio electrónico

El comercio electrónico representa una nueva forma de hacer negocios que no se podría explicar completamente sin un entorno de referencia. Por ello, para una comprensión del fenómeno es necesario estudiarlo en relación con los tres mayores cambios en el mundo de los negocios de los últimos años. Bean y Segev (1996) sintetizaban los principales cambios en el entorno que han favorecido el desarrollo del comercio electrónico en tres: la evolución de las tecnologías de la información, los cambios en la cadena de valor y las transformaciones de las estructuras organizativas de las empresas. Los tres cambios están muy interrelacionados entre sí, y sin alguno de ellos sería difícil concebir el auge del comercio electrónico. En primer lugar, era imprescindible el desarrollo de unas infraestructuras tecnológicas que soportaran este comercio, a saber, las tecnologías de la información. En segundo lugar, era preciso que los empresarios evaluaran positivamente las ventajas que podía proporcionar el comercio electrónico a sus empresas (cadena de valor), pues aún siendo técnicamente factible, debía ser además económicamente rentable. Finalmente, para tener éxito en el ámbito del comercio electrónico y explotar todas las oportunidades que ofrece, se han de modificar las estructuras organizativas, teniendo presente que convertir un negocio en “electrónico” es mucho más que instalar una página web.

1.1 Tecnologías de la información disponibles

Se ha pasado de disponer de unas tecnologías de la información que hacían difícil recopilar, almacenar, recuperar y compartir información o conocimiento en los años sesenta, a contar en la actualidad con una infraestructura que permite a las empresas de manera relativamente fácil y barata duplicar, organizar y compartir información y conocimiento. Negroponete (1995) describe de una forma simple cómo dichas tecnologías modifican nuestro entorno, pasando del intercambio de “átomos” al intercambio de “bits”. Los negocios se basaban en el comercio físico (intercambio de átomos) y a mediante las nuevas tecnologías de la información nos adentramos en un comercio que facilita el intercambio de información sin comercio físico (intercambio de bits). En consecuencia, es posible desarrollar nuevos mercados y productos virtuales (marketspace) en el que los bits hacen innecesarios el movimiento de átomos. En esta misma línea se encuentra la idea de Sampler (1998) de que es posible separar la información del producto o servicio en sí, y ser transmitida sin necesidad de enclaustrarla en un soporte físico. La importancia estratégica de este hecho radica en que la información es separable de la transacción, y en esta dinámica de creación de valor, el papel de la información y su gestión ha dejado de ser un mero elemento de soporte del proceso de creación de valor a ser una fuente de valor por sí misma. Sin duda, el comercio físico –el intercambio de “átomos”– nunca desaparecerá, pero el soporte documental asociado al mismo (albaranes, facturas, etc.) se está transformando progresivamente en intercambio de “bits”. Estaremos, por tanto, ante un comercio mixto que combinará una dimensión física, donde la logística será el factor clave, y una dimensión electrónica, donde los aspectos ligados a la seguridad informática, medios de pago electrónicos, etc., constituirán el foco de atención.



1.2 Cambios en la cadena de valor

En los últimos años se ha producido un cambio drástico en la forma que las empresas aportan valor añadido a sus productos. Desde una economía centrada en los bienes físicos propia de los años sesenta, a la economía orientada a los servicios de los setenta y ochenta, hemos alcanzado una economía en la que los elementos diferenciadores se encuentran en la aportación del conocimiento y en la propiedad intelectual, esto es, en la información. Las empresas actuales se encuentran que tienen que ser capaces de competir en un mundo físico y cada vez más en otro virtual creado a partir de información. Este nuevo entorno competitivo, donde se superan las limitaciones geográficas y temporales, cambia la forma tradicional de generar valor de las empresas en el mundo físico, dando lugar a la existencia de dos cadenas de valor, una virtual y otra que podríamos denominar física. La consecuencia inmediata es que las empresas han de aprender a gestionar y obtener ventajas en esta nueva área, sobre todo si se tiene en cuenta que la dinámica de creación de valor en estos dos mundos no tiene por qué ser similar (Rayport y Sviokla, 1995). Es en este nuevo contexto virtual donde el comercio electrónico se convierte en una herramienta esencial, a la vez que en un nuevo reto que las empresas deben superar.

1.3 Transformación organizativa.

La revolución en las tecnologías de la información y los cambios en la cadena de valor de las empresas, han tenido su respuesta en el cambio en las estructuras organizativas de las empresas. A mediados de siglo las empresas enfatizaban las estructuras funcionales, y se estructuraban en su mayoría sobre jerarquías bien definidas. El desarrollo posterior vino de la mano de la implantación de divisiones descentralizadas, sobre todo de las empresas multinacionales, para dar respuesta a los problemas de crecimiento y gran tamaño que muchas empresas habían llegado a tener. Tanto en las estructuras funcionales como en las divisionales el tipo de gestión se hacía “alrededor de una función”. A finales de los setenta, y en buena medida, por la influencia de las técnicas de gestión japonesas, se comienza a abrir paso la idea de que el éxito de un negocio se asienta, principalmente, en la gestión de sus procesos. Se empiezan a defender la utilización de las tecnologías de la información y el profundo conocimiento de las capacidades de las empresas, para rediseñar completamente los negocios. En esta fase, las tecnologías de la información no apoyan exclusivamente las operaciones automáticas básicas, sino que simultáneamente generan información sobre los procesos productivos y las tareas administrativas que sustenta la empresa. Es en este momento del tiempo donde tiene su origen la tendencia actual de organizar las empresas alrededor del concepto de tarea. El conocimiento y la información se perfilan como los elementos fundamentales, mientras que la geografía se relega a un segundo plano. Las grandes empresas centran sus esfuerzos en la eficiencia de sus tareas y, a la vez, se estructuran internamente en red de tareas. Las pequeñas empresas han de desarrollar las competencias para establecer alianzas con las grandes organizaciones, conformando lo que Castells (1996) denomina una “red de redes”. En este contexto, el concepto clásico de empresa se transforma y, la empresa actual se ha de concebir como un “proyecto de negocio” dentro de una red.

Tipos de comercio electrónico

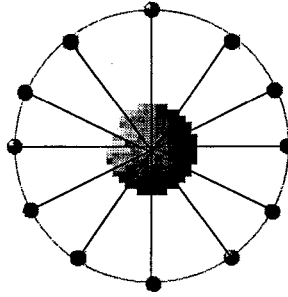
Internet y las nuevas tecnologías tienen aplicación tanto para el comercio minorista (*Business to Consumer* o B2C en la jerga proveniente del mundo anglosajón) como para el comercio entre empresas (*Business to Business*, B2B). Aunque los planteamientos tienen mucho en común, cada uno de estos tipos de comercio electrónico tiene una problemática específica.

Así en el contexto del B2C, una empresa pretende presentar unos productos a un consumidor inicialmente desconocido con la intención de que los compre. Por ello adquieren importancia aspectos como

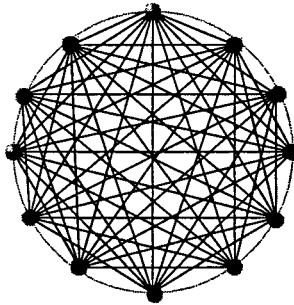
- la presentación misma (utilizando tecnologías avanzadas para conseguir que ésta sea lo más atractiva y completa posible, que van desde simples animaciones a modelos tridimensionales; buscando la omnipresencia del acceso a la transacción, a través de teléfonos móviles o televisores además de PCs, y potenciando la personalización de contenidos para fidelizar al cliente y darle mayores facilidades),
- la seguridad en su sentido más amplio (recordemos que ambas partes posiblemente no hayan realizado transacciones con anterioridad y que tienen que superar una barrera de desconfianza mutua),
- los medios de pago (el dinero como información que transita por la red; aquí los temas de seguridad adquieren nuevamente protagonismo),
- la distribución (si el bien no es intangible, habrá de ser finalmente llevado al consumidor por medios tradicionales).



En el caso del B2B los problemas son de distinta índole. Las empresas que interactúan por medios electrónicos típicamente ya tienen relaciones comerciales establecidas. Por tanto no hay problemas de desconfianza respecto de la identidad y además las formas de pago posiblemente transcurran a través de otros cauces ya consolidados. El reto proviene de conseguir la interoperabilidad de los sistemas de información. EDI como tecnología de comercio electrónico ya está presente en muchas empresas. Sin embargo, sólo las grandes empresas han podido acogerse a esta tecnología debido a los grandes costes asociados y a la complejidad de los sistemas. Estos no ha tenido éxito en las pymes. Las tecnologías como por ejemplo XML, suponen una oportunidad para que pequeñas y medianas empresas puedan también utilizar medios electrónicos en sus relaciones comerciales. Es por ello que se están definiendo nuevos formatos para la comunicación entre empresas a través de Internet, la puramente tecnológica provocando nuevos modelos de negocio y nuevas formas de actuación de las organizaciones.



La relación comercial de una empresa con otra se realizaba uno a uno en el modelo tradicional. Las nuevas tecnologías propician ahora la aparición de *e-marketplaces*. Un *e-marketplace* se puede definir como un punto de encuentro entre empresas compradoras y vendedoras, o comunidades de ellas, en el que, a través de Internet, pueden llevar a cabo sus relaciones comerciales mediante soluciones globales de software. Un *e-marketplace* es en definitiva un facilitador del comercio electrónico entre empresas. Según Forrester Research se crearán en la Unión Europea en los próximos 5 años, aunque sólo sobrevivirá controlen el 6% del comercio B2B moviendo sectores pioneros en este campo son la electrónica, seguidas de la construcción y las firmas industriales. Destaca en la actualidad la iniciativa *COVISINT*, que ha unido a empresas competidoras del sector de la automoción, como son Ford, General Motors, Daimler-Chrysler, Renault forma electrónica. Existen otros muchos casos notables en otros sectores (Transora, e2open, Global Net Exchange, CPG Market, etc.). En España merece la pena resaltar ejemplos como *build2build* en el sector de la construcción.



Además de B2C y B2B, existen otras formas de comercio electrónico, que mencionamos brevemente:

- B2A o B2G: Comercio electrónico con la administración (o el gobierno), en el que se tiene en cuenta la especificidad de la administración como organización.
- C2C: Comercio electrónico entre consumidores. Aquí se engloban las subastas, en las que particulares venden a particulares, a través de un intermediario que da soporte al sistema de puja.
- B2E y E2E: Comercio electrónico B2C y C2C aplicado a empleados de una organización. Se cuenta aquí un entorno más controlado y menos hostil, ya que la identidad de los consumidores es conocida.
- D2D: Comercio electrónico entre dispositivos. Se resalta aquí la capacidad programada de ciertos dispositivos que realizan transacciones comerciales por nosotros.

Nuevos desafíos

La aparición del comercio electrónico y la irrupción de Internet en el mundo de los negocios, aunque creciente de forma imparable, no dejaría de ser un fenómeno menor si lo comparamos con la transformación más profunda que se va a producir en los sectores de la economía tradicional. El incremento de la competencia con la aparición y desarrollo de empresas de la llamada "nueva economía" obligará a todas las empresas a modificar, al menos parcialmente, sus procesos, políticas y estrategias. Se puede vaticinar que en un futuro próximo nos será difícil tratar de forma diferente los problemas de las empresas surgidas en la era Internet, y que han basado en esta tecnología su ventaja competitiva, y las empresas tradicionales que han tenido que introducir de forma ineludible Internet, al menos, en parte de sus operaciones. Es decir, realmente estamos asistiendo a la introducción progresiva de las reglas de la "nueva economía" en los viejos sectores de actividad. Ante este fenómeno, las viejas reglas económicas son válidas aunque hay que aplicarlas en un contexto más específico. Las empresas que se resistan a este hecho, están llamadas inexorablemente a desaparecer.



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ESTIMACIÓN E IDENTIFICACIÓN DE MODELOS DE VOLATILIDAD ESTOCÁSTICA CON MEMORIA LARGA*

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El objetivo de esta tesis es analizar dos problemas relacionados con la estimación e identificación de modelos de Volatilidad Estocástica, SV, y en particular, con los modelos de Volatilidad Estocástica con Memoria Larga, LMSV. En relación con la identificación, en primer lugar, se derivan las propiedades asintóticas y en muestras finitas de las correlaciones muestrales de series generadas por modelos SV y se demuestra que su distribución asintótica no es la habitual. En consecuencia, se proponen correcciones por volatilidad y se comprueba que los contrastes de incorrelación que utilizan dichas correcciones proporcionan resultados adecuados en muestras finitas. En segundo lugar, se derivan las propiedades de las correlaciones muestrales de diversas transformaciones de dichas series, en concreto de las series de los cuadrados y del logaritmo de los cuadrados. En los modelos LMSV se comprueba que dichas correlaciones presentan un sesgo importante que cuestiona su validez como herramienta de identificación y validación de estos modelos.

El segundo problema analizado es la estimación de los modelos LMSV y se aportan resultados originales sobre las propiedades en muestras finitas de algunos estimadores de los parámetros de dichos modelos. Por ejemplo, se comprueba que el estimador *pseudo-máximo* verosímil de Whittle en el dominio de las frecuencias no tiene buenas propiedades cuando los parámetros toman valores próximos a las fronteras de la no estacionariedad y/o de la homocedasticidad. Se comprueba también que en el modelo SV Autorregresivo y con Memoria Larga (ARLMSV) con “casi” una raíz unitaria en la volatilidad, este estimador no es capaz de distinguir la causa de la no estacionariedad y puede estimar un modelo erróneo. Además, se implementa un método que permite obtener la estimación suavizada de la volatilidad en modelos LMSV, incluso con tamaños de muestras grandes.

Finalmente, todos los resultados obtenidos se ilustran con una aplicación empírica sobre la modelización de la volatilidad de una serie de rendimientos diarios del índice de la bolsa española IBEX-35, en el periodo comprendido entre enero de 1987 y diciembre de 1998.

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