BANCO DE ESPAÑA

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**CONFERENCE "PRICES, PRODUCTIVITY AND GROWTH"**

**17 -18 OCTOBER 2003**

On 17-18 October the Conference "Prices, Productivity and Growth", organised jointly by the European Central Bank, the Banco de España and the Centre for Economic Policy Research, was held in Madrid. The aim of the conference was to bring together experts from central banks, statistical agencies and academia to discuss aspects relating to the identification and measurement of the sources of economic growth. During the conference the emphasis was on analysing productivity developments in different geographical areas, the influence of technological innovation and the consequences for public policy.

The importance of productivity developments for monetary policy conduct was highlighted by both Jaime Caruana, Governor of the Banco de España, and Eugenio Domingo Solans, Member of the Executive Board of the European Central Bank, who delivered the introductory addresses. Mr Domingo pointed out that productivity affects monetary policy decisions through its direct influence on prices, in terms of which most central banks set their final targets. Nonetheless, he indicated how general economic conditions have a bearing on the relationship between productivity and prices. And among such conditions, money in circulation plays a key role, warranting the need for central banks to pay due attention to liquidity developments. He discussed how, in periods of marked productivity increases, the economy may often have latent inflationary imbalances that are more visible in the monetary aggregates than in the actual growth of consumer prices.

The Governor of the Banco de España, for his part, talked of the difference between the European and US growth models in the second half of the 20th century, underscoring the greater increase in productivity in the case of the former and of employment in the latter. These features, he stated, might have changed since the mid-nineties since, in recent years, the US economy appears to have been capable of achieving higher growth in terms both employment and of productivity. In this respect, he posited the acceleration of technical change in the United States - compared with the apparent innovation shortfall in Europe - as a possible cause of this phenomenon and he urged academics to explore how realistic this hypothesis might be by resolving the attendant statistical measurement problems.

Professor Dale Jorgenson (Harvard University), a leading world authority in this area, provided extensive evidence in his lecture of the importance of information technologies in explaining the marked increase in productivity in the US economy in recent years. He found that approximately two-thirds of actual labour productivity growth in the United States from 1995 to 1999 was due to the increase in the capital input available per employee, and one-third to technical change, a far higher figure than the average for the last 30 years. Further, two-thirds of the capital contribution to the increase in productivity was accounted for by investment in information technology while most of the technical change contribution was, in fact, due to advances in the telecommunications and IT industry.

Several speakers and participants stressed the favourable effects accruing to the economy from innovation and the proper incorporation of new technologies into production processes and, by extension, the need to promote R&D spending. However, the paper presented by Stephen Bond (Oxford University), Diezmar Harhoff (University of Munich) and John van Reenen (University College) showed there might be considerable discrepancies in returns on innovation in several areas depending on structural aspects in the different economies concerned. It was, for instance, pointed out that the return on investment in R&D in Germany appears to be substantially lower than the estimate for the United Kingdom.

Moreover, while the effects of innovation and technical change are obviously positive for the economy in the long run, in the short term they may occasionally entail costs in terms of employment. This fact is documented in the paper by Domenico Marchetti (Banca d'Italia) and Francesco Nucci (University of Rome "La Sapienza") for the Italian economy. However, these authors stressed that those costs are only significant when there exist price rigidities in the economy. Moreover, David López-Salido (Banco de España) and Claudio Michelacci (CEMFI) showed that the short-term effects of technical change on employment are less likely to be adverse when such changes are in the form of improved capital equipment.

One area attracting much discussion was the measurement of capital and productivity, showing how the inappropriate use of available statistics may lead to erroneous conclusions. Anders Sorensen (John Hopkins University) and Bertel Schjerning (CEPR) asserted in their paper that the enormous statistical difficulties existing prevent proper comparison of the productivity levels of the various OECD countries. Nicholas Oulton (London School of Economics) and Sally Srinivasan (Bank of England), for their part, constructed capital series for the United Kingdom taking into consideration the changes in the types of capital goods demanded by companies, illustrating thereby the enormous importance of this phenomenon, especially following the expansion of new technologies. Plutarchos Sakellaris (University of Athens) and Focco Vijselaar (Dutch Finance Ministry) illustrated the need to perform quality adjustments in the prices used to deflate nominal magnitudes. These adjustments, when applied to data for the euro area, indicate that capital has grown substantially more - and the indicators of technical progress not incorporated into capital goods less - than indicated by the official statistics.

Nonetheless, Diego Comín (New York University) offered a note of optimism; through the intensive use of the available theory and statistics, he demonstrated that measurement problems did not appear to be crucial for explaining productivity developments in the United States, at least until 1997.

Measurement problems in the housing market were addressed by a round table chaired by José Luis Malo de Molina (Banco de España) in which Stephen Cecchetti (Brandeis University), Robert Gordon (Northwestern University), Steven Keuning (ECB) and John Muellbauer (Oxford University) participated. The discussion noted the difficulty of constructing a house price index comparable across the euro area members given the problems of controlling for biases due to changes in housing quality, the differences in the proportion of owner-occupied housing in each country and the heterogeneity of the methods used by each national statistical agency in compiling the information needed to construct the index. The speakers agreed that these difficulties pose a challenge to Eurostat and its proposal to include purchase prices of owner-occupied housing in the Harmonised Index of Consumer Prices (HICP).



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