

## Jürgen Stark: IT innovations and financing patterns: Implications for the financial system

Statement by Mr Jürgen Stark, Deputy Governor of the Deutsche Bundesbank, at the press conference on the release of the CGFS Report, Frankfurt, 13 February 2002.

\* \* \*

Today I am presenting to you the Report "IT innovations and financing patterns: implications for the financial system". The Report has been prepared under my chairmanship, by a Working Group of the Committee on the Global Financial System (CGFS) composed of senior central bankers from 13 central banks.

The Committee monitors and examines issues relating to the functioning and stability of financial systems with a view to developing policy recommendations in line with the responsibilities of the members of the central bank community.

Much has been said about the possible impact of information technology - computer hardware and software, telecommunication and the internet - on growth, productivity and inflation. Regarding the eventual macroeconomic outcome of the IT revolution, the jury is still out. And we will probably have to observe developments over a full business cycle before it would be prudent to draw conclusions.

However, there is little doubt that IT has fundamentally changed the way economic activity is carried out and organised. The use of IT has facilitated a shift towards flexible production processes. A very broad range of firms inside and outside the tech sector has changed business models and explored new markets using IT. This raises the question what these, in many cases fundamental changes, imply for firms' financing needs and the risks involved in financing business.

Let me start with two observations that outline the possible financial dimensions of IT innovation.

- The first is the boom and bust in equity prices of tech companies. The market capitalisation of IT firms has fallen about 6 trillion US dollar since the spring of 2000. The magnitude of losses demonstrates that the valuation of IT firms is not a *quantité négligeable* when it comes to assessments of how well financial markets have functioned in recent years.
- The second is the heavy borrowing of telecom firms, and the subsequent rapid deterioration of credit quality in the telecom sector. The mounting uncertainties about the profitability of investments in third generation mobile phone technology in Europe and fibre optic networks in the United States have shown the risks and challenges that IT financing may involve for creditors.

These two observations highlight different facets of the financial implications of IT innovation, but they have a common core: they reflect changes in the nature of firms and the character of financial investment.

One aspect is that the risk-reward profile of firms - and hence the riskiness of financial investment - may change quickly and in an unpredictable way. Again, it is important to recognise that such change is not limited to the tech sector. The general merchandise store chain that fails to adopt new IT-based methods of inventory management will likely lose out to those firms which master the use of IT.

The other aspect is that risks become more firm-specific as the success of a company is becoming increasingly dependent on "soft" factors such as information on customers' preferences.

For the financial system, these changes create the need for adjustment in three areas: The design of financial contracts, the valuation of firms and assessment of business risk, and the risk management of financial institutions.

Let me first look at the design of financial contracts. IT increases the need for capital that bears business risk, and for corporate governance structures that create incentives to adapt to new ways of production. This points to a greater role of equity and of financial contracts incorporating equity characteristics, something that has been observed over the past couple of years.

Venture capital has offered a way to combine funding of high-risk projects, and managerial support, in a flexible way for new and innovative firms. Established firms in the IT sector, but also in other industries, have increasingly relied on public equity and on debt instruments incorporating equity

characteristics. Examples are convertible bonds, issuance in the high yield segment of the bond market, coupon step-up clauses, or bank loans which link the credit spreads charged to a borrower's actual performance.

One observation relevant for public policy is the importance of venture capital for the development of new industries. Clearly, the venture capital market warrants the attention of public policy, including issues such as investment opportunities for institutional investors and the existence of market segments complementary to a functioning venture capital market. For example, a developed equity market is required as an exit route for venture capital investments, and for the provision of sufficient risk capital in the later stages of the corporate life cycle.

The second set of issues relates to the valuation of firms in the equity markets. Overshooting expectations, and swings in sentiment, are to some extent an unavoidable by-product of innovation. But in order to minimise such overshooting, looking ahead, one important issue is to identify mechanisms that support efficient equity valuation. Consistent and open reporting of corporate accounts is one central issue in this respect.

On the positive side, the huge loss in equity wealth has not triggered any major default among financial intermediaries. This suggests that the shift of risk from financial intermediaries to investors in financial markets has provided for a better, more dispersed allocation of risk.

This leads me to the third aspect, the implication of IT-related change on the assessment and management of credit risk. Banks may face a rapidly evolving credit risk environment. The credit quality of individual firms and the correlation of risk factors among sectors will change quickly in the continuing process re-positioning of firms.

As a consequence, issues related to sectoral exposures - as in the case of telecoms - or an increasing reliance on credit risk transfer tools, would become increasingly relevant. This is even more important as increasing firm-specific risk may require larger portfolios and a greater range of exposures than before.

Another fundamental issue is that technological change challenges the reliability of backward-looking indicators (such as default histories) for credit risk assessment. This would call for an intensified monitoring of high-tech sector firms, but also of "traditional" borrowers, who may be vulnerable to mistakes regarding the choice of technology.

Let me conclude. Innovation is beneficial - and it can be particularly beneficial in the case of a general purpose technology such as IT. This being said, public policy should have a genuine interest in promoting entrepreneurial spirit and innovation.

However, if one sees innovation as a process of creative destruction, it is also important to contain the destructive forces that may threaten financial stability. The general challenge in this respect is to properly understand and manage the risks involved in the financing of innovation.

From the perspective of central banks in their responsibility for financial stability, the report highlights two areas where individual central banks and the central banking community as a whole play a part:

- To employ the research capabilities and the knowledge of the financial system combined in central banks to analyse issues such as accounting and transparency, or the impact of increasing reliance on credit risk transfer through securitisation or credit derivatives.
- To use central bank expertise for the monitoring of the financial system. Changing linkages between the real and the financial sphere, and across the different segments of the financial system, in particular the re-allocation of risk across the financial system, underline the need for such systemic monitoring.