Bruno Gehrig: Global economic trends and their implications for financial market infrastructures

Speech by Prof Bruno Gehrig, Vice-Chairman of the Governing Board of the Swiss National Bank, at the 11th International Securities Services Association (ISSA) at the UBS Executive Development Center, Wolfsberg, 12 June 2002.

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Ladies and Gentlemen,

It is an honour and a pleasure for me to have the opportunity to give the opening speech at the 11th ISSA Symposium. I am delighted that you have chosen Switzerland as a venue for your conference and hope that you feel comfortable and relaxed in this beautiful spot on the Lake of Constance. I gladly accepted your invitation although I am not an expert in your professional field. But I was, and still am, using your services rather intensively: in the 1980s as Head of Securities Sales and Trading at UBS, later on as CEO of an asset management bank, and now as investor of the currency reserves of the Swiss National Bank (SNB). I would like to use the time allocated to me to reflect on global economic trends and their implications for financial market infrastructures. Afterwards, I will outline the consequences these changes have on oversight authorities, which face similar challenges as you in your capacity as commercial service providers.

Global economic trends

What are the global economic trends that we all perceive in our daily business? Let me focus on some of the most prominent ones: the alleviation of barriers to trade in goods and financial assets, and factors affecting the overall demand and supply of securities.

Alleviation of barriers to trade in goods and financial assets

Barriers to trade in goods, services and financial assets have been progressively lifted during the last few decades, leading to a growing interaction among national economic systems. This growing interaction and connectedness is what people commonly refer to as globalisation. Countries participating in this process have seen their domestic financial markets become more integrated with markets abroad.

Two factors shape and characterise this process. First, technological innovation has sharply reduced transportation and telecommunication costs. Some figures taken from an IMF study illustrate this impressive change[1].

Table 1

Communication and computer costs, 1960-2000

	Cost of a 3-minute phone call, New York to London (in 2000, USD)	Price of computers and peripheral equipment relative to GDP deflator (year 2000=1000)
1960	60.42	1,869,004
1970	41.61	199,983
1980	6.32	27,938
1990	4.37	7,275
2000	0.40	1,000

Source: IMF.

[1] P. Masson (2001): "Globalization: Facts and Figures", *IMF Policy Discussion Paper* 01/04, International Monetary Fund, Washington D.C.

In only 40 years, telecommunication costs shrank by a factor of about 150, while computer costs became around 1900 times cheaper. As a consequence, information is now disseminated almost in real-time and at low cost.

Second, financial crises have become more frequent. Most of the time, they are driven by rapid inflows and outflows of capital. We still vividly remember the crises in Mexico, Asia, Russia and Argentina. Obviously, these crises have not been restricted to the financial sector, but have had a profound impact on the real economy as well.

The lifting of restrictions to cross-border holding and trading of financial assets has unleashed massive capital flows. According to World Bank figures, global debt and equity flows (excluding foreign direct investment) expanded by more than five times since 1991, from USD 794 billion to USD 4.3 trillion[2]. Without doubt, this development reflects a long-term trend. More and more investors decide globally and on the basis of risk-adjusted expected returns. Taking place in a system of increasingly integrated capital markets, capital allocation has become more efficient.

The other side of the coin, however, is the increased volatility on financial markets. Indeed, portfolio investments, in particular those in markets with relatively high liquidity, have become more erratic, as fund injections and withdrawals respond very quickly to new information. According to the IMF, assets managed by institutional investors on mature markets are estimated at about USD 30 trillion in 1998. Thus, any shift in such a huge portfolio is very likely to exacerbate economic cycles and will possibly lead to contagion among financial markets. The impact of portfolio re-balancing will be all the more powerful as macroeconomic policies seem to be unsustainable and as financial institutions show fundamental weaknesses, often with regard to financial strength, supervision and transparency.

Experience has shown that enhanced financial integration has, on the whole, resulted in higher growth and greater convergence among economies. Admittedly, not all sectors have gained in this process; there have also been losers in practically all countries involved. Nevertheless, the benefits of liberalisation have exceeded its costs. The call for a return raised by some voices therefore seems inappropriate. On looking ahead, the path and success of the liberalisation process will depend on how the effects of inequality gaps within and between countries, and the effects of increasing volatility on financial markets, are dealt with.

Securities: demand and supply

Integrated capital markets operate primarily on the basis of supply of, and demand for, securities. This has not always been the case. Bank deposits and loans used to play a much more significant role. Yet with deregulation and the rise of institutional investors, securities have become the central tool of capital allocation.

The United States' strong net import of capital illustrates this fact. Let's have a look at some figures taken from an IMF report[3].

The net foreign purchase of US long-term securities almost doubled between 1995 and 2000, rising from USD 232 billion to USD 456 billion. Taking a closer look reveals some interesting facts. During the same period, the net foreign purchase of corporate bonds and stocks increased by 3 and 15 times, reaching USD 182 and 175 billion respectively. The net foreign purchase of corporate securities amounted to 30% of the entire net purchase of US long-term securities in 1995. In 2000, it accounted for about 80%. During the same five-year period, the net foreign purchase of agency bonds increased by 5 times, while the net foreign purchase of US government bonds shrank massively due to a strong supply reduction as well as the investors' move towards higher-yielding financial assets.

One major consequence is that demand for securities issued by the corporate sector has been increasing impressively over the last few years. This strong demand reflects diversification needs and the enhanced capacity of investors to apply sophisticated portfolio management strategies. In addition, there has been a clear trend towards collateralisation of financial claims as a risk mitigation technique. Indeed, collateral is widely used today in the underlying and derivative markets for financial assets, including gold. Collateralised transactions have also gained momentum in payment systems with the

[2] World Bank (2001): "Trends in private capital flows" (Table 2.3), *Global Development Finance*, Chapter 2.

[3] D. Mathieson and G. Schinasi (2001): "International Capital Markets: Developments, Prospects and Key Policy Issues", *World Economic and Financial Surveys*, International Monetary Fund, Washington D.C.

purpose of not only reducing credit risk, but also facilitating access to liquidity through readily available collateral.

Table 2

Net foreign purchase of US long-term securities

	Government bonds	Government-sponsored agency bonds[1]	Corporate bonds	Corporate stocks	Total
1995	134,115	28,729	57,853	11,240	231,937
1996	232,241	41,723	83,743	12,511	370,218
1997	184,171	49,853	84,358	69,597	387,979
1998	49,039	56,802	121,930	50,020	277,791
1999	–9,953	92,200	160,392	107,522	350,161
2000	–53,790	152,841	182,403	174,890	456,344

[1] Includes bonds issued by U.S. government corporations and federal agencies.

Source: IMF.

Central banks around the world have been a driving force behind the trend toward collateralisation. First, they have been relying increasingly on repo transactions to implement their monetary policy. Like many of its peers, the Swiss National Bank, which traditionally operated exclusively on the basis of foreign exchange swaps, now steers the liquidity supply primarily through repo transactions. Second, central banks typically grant intraday credits, which are relevant for smoothing settlement in payment systems, against collateral. Intraday repos have been available from the Swiss National Bank since 1999, on demand and at zero interest.

The trend toward collateralisation creates additional business opportunities for providers of financial market infrastructure, but it also increases their systemic relevance. Indeed, since the linkages among cash, securities, and derivatives markets have become so close, a failure - either by a provider itself or by a major participant - is very likely to cause disturbances affecting different markets at the same time.

In addition to collateralisation, the appetite for securities has been forcefully stimulated by the changing needs of private and public wealth owners: the ongoing institutionalisation of the savings process, the facilitation of direct market access through internet technology, the disintermediation of the banking system due to credit risk considerations and the relative decline in attractiveness of bank deposits.

On the supply side, the corporate sector has been increasingly relying on bond financing rather than on traditional bank borrowing. In the US, private debt securities amount to about USD 7 trillion. The ratio of bank credits to GDP has remained more or less stable at around 10% for the last 50 years, while the ratio of bond financing to GDP has risen sharply from 15% in 1985 to 25% in 2000. Bond financing within the European corporate sector has also caught up, strongly supported by the inception of the euro at the beginning of 1999.

In short, the supply of securities is bound to grow further; cyclical ups and downs are likely, but the trend will point upwards. Notwithstanding obvious differences between economies, it is generally true that the corporate sector will make further progress in exploiting the potential advantages offered by open capital markets. The European corporate bond market seems an especially interesting case. Since the inception of the euro, it has staged an impressive take-off, even though its institutional, legal and accounting environment is still far from optimal.

Central bankers have good reason to welcome such developments. Not only because they probably make the saving-investment process more efficient, but also because they allow for a better distribution of credit and market risk which should - if anything - enhance the stability and robustness of financial systems.

Financial processes and markets will continue to become more and more internationalised with obvious impacts on securities operations, liquidity and collateral management procedures. What kinds of challenges will this create for market infrastructures on the one hand, and for oversight authorities on the other hand? Let me address these two questions in the following.

Implications for financial market infrastructures

A first requirement for financial market infrastructures is that they must be capable of coping not only with an increase in cross-border securities operations, but also with their time-critical nature. Therefore, particular efforts should be made to ensure intraday finality, to shorten settlement cycles, to co-ordinate operating hours among the individual systems and to standardize communication procedures as well as message formats. As you know better than I, this is easier said than done, since we still rely heavily on technologies and systems that are tailored to domestic needs and peculiarities. The current coexistence of several non-interoperable platforms implies an extensive amount of costly manual intervention.

A second requirement - which is linked to the first one - relates to the objective of reducing clearing and settlement costs, especially the costs of cross-border securities operations. As discussed in the Giovannini report[4] mandated by the EU, domestic clearing and settlement arrangements within member countries seem to have reached a level of cost efficiency, which is - by and large - comparable to what DTCC (Depository Trust & Clearing Corporation) in the US has achieved. By contrast, the whole cross-border domain is far from being cost-efficient, mainly due to fragmentation in terms of market infrastructures and practices, as well as differing legal, tax and accounting frameworks.

The obvious question is, therefore, how to realise efficiency gains in the cross-border context. One way - and probably the most appealing one - is to consolidate market infrastructures. Within the European Union, there are currently more than 20 Central Securities Depositories. Although consolidation seems unavoidable, it is less clear how to achieve it and which model best suits integrated financial markets. Should priority be given to vertical or to horizontal integration? On the one hand, vertical integration presents some advantages. Since trading, clearing and settlement occur within the same organisation, this reduces legal and operational risks. On the other hand, vertical integration may entail cross-subsidies, which disguise the effective costs of trading, clearing and settlement. In addition, this model may also tend to rely on rents, as it is impossible for users to switch between providers. Horizontal integration, however, allows users to select between interlinked providers, exposing them to ongoing competition. Yet the feasibility of this model depends on whether there is a cost-efficient way for users to route transactions to their preferred provider. In any case, the emergence of poles around Euronext and Deutsche Börse shows that the consolidation process has begun. From a Swiss perspective, both SWX and SIS are engaged in the race - not really as hunters, given their relative size, but as partners with proven technology and know-how.

Financial market infrastructures are also subject to higher competitive pressures. The driving forces behind these pressures are, without doubt, technological innovation and the expected profits resulting from the achievement of economies of scale and, possibly, economies of scope. Three kinds of competitors can be distinguished. First, competition among exchanges, clearing and settlement organisations within and across countries has increased. Indeed, for trading, clearing and settlement, physical location has become less and less relevant. As you are confronted with these pressures in your daily business, you certainly know better than any central banker what I am referring to. Second, non-financial institutions may provide trading, clearing and settlement services to financial markets. More precisely, I think here not only of alternative trading systems, but also of outsourcing partners such as payment and securities processing centres. Third, and maybe less visible, but of growing significance, are competitive pressures exerted by large custodians, especially by global custodians. Indeed, global custodians not only rely on a worldwide network of sub-custodians offering easy access to all markets, but they also develop in-house clearing and settlement procedures with very competitive costs.

Without any doubt, financial market infrastructures are facing great challenges in terms of higher technical requirements, the necessity to achieve efficiency gains, and higher competitive stakes. I believe that market forces - rather than political pressure - should drive the consolidation process. The

[4] The Giovannini Group (2001): *Cross-Border Clearing and Settlement Arrangements in the European Union*, Brussels.

many changes taking place also challenge oversight authorities. It is their task to analyse the systemic implications of what goes on particularly at the cross-border level, and to make sure that these changes will enhance, and not endanger, the soundness of the financial system. Let me address these issues in the concluding part.

Implications for oversight authorities

I begin by quoting Alexandre Lamfalussy, Chairman of the Committee of the Wise Men, which, more than a year ago, published the famous report on securities regulation within the EU[5]. Lamfalussy was very clear when he asserted that "*the current [securities] regulatory system is not working*"[6]. Indeed, unclear and sometimes even contradictory regulations or inconsistent implementation of regulations among countries impair the creation of a single capital market within the European Union.

Starting from this premise, I would like to specify what kind of challenges oversight authorities face and share with you some ideas on what the role of an institution like the Swiss National Bank should be. But first of all, I would like to clarify a fundamental point. Some people claim that the oversight authorities' objective of promoting the stability of the financial system hides an undue interventionist activism. Well, these claims are beside the mark. Let me quote Andrew Crockett, BIS General Manager and Chairman of the Financial Stability Forum[7]: "[…] *systemic stability is critically determined by the collective behaviour of individual market players.* […]. *And supervisors need to analyse the interaction between individual incentives and systemic outcomes.*" In other words, systemic stability depends on how negative externalities, which are not priced or internalised by the market, are dealt with. Thus, we should not waste our time discussing ***whether*** regulatory intervention is necessary or not, but rather ***how*** oversight authorities, focusing on systemic risk, should shape the process.

Keeping this in mind, the challenges oversight authorities face are numerous and well-known. The Giovannini Group lists no less than 15 barriers to efficient cross-border and settlement procedures within the European Union. These barriers are categorised according to their technical nature, their fiscal implications and their legal aspects. A remarkable feature of this report is the distinction between what market forces can achieve and what regulatory authorities should do. In particular, there are several issues that cannot be tackled by the private sector, e.g. the harmonisation of the legal, regulatory, taxation and accounting frameworks.

A first challenge is the need for global oversight. This need arises from several factors. In terms of the so-called horizontal approach, trading, clearing and settlement of securities operations already occur in different institutions located in several different jurisdictions; virt-x and SIS-clear are just two examples. For the time being, cross-border infrastructures deploy their activities in complement to domestic systems, but it is very likely that they will play a significantly more powerful role in the future. Oversight authorities tend to prefer a pragmatic approach, where one regulatory authority takes on the role of a lead overseer and consults with other relevant authorities. Such a model has already been put in place among central bankers in the context of the Continuous Linked Settlement system.

A second challenge that oversight authorities face lies in the risk dimension of cross-border securities operations. Indeed, whereas the nature of the risks remains basically the same, both the probability of occurrence of an adverse event and the risk exposures themselves have clearly increased. The added dimension of cross-border activities lies in spill-over effects due to direct links between systems. Credit, liquidity and operational risk events occurring in one jurisdiction may indeed trigger a systemic crisis by spilling over to foreign financial markets. These kinds of linkages among different systems explain why oversight authorities have recently focussed not only on payment systems, but also on securities clearing and settlement systems.

A problem that is potentially relevant in systemic terms is the availability of intraday liquidity in foreign currencies, which is typically restricted, if not non-existent. This restriction hampers liquidity management in an integrated multi-currency environment. Nowadays, there is a much more urgent need for market participants to make time-critical payments than previously. Moreover, they must be

[5] The Committee of Wise Men (2001): *Final Report of the Committee of the Wise Men on the Regulation of European Securities Markets*, Brussels.

[6] A. Lamfalussy (2001): "Reflections on the Regulation of European Securities Markets", Société Universitaire Européenne de Recherches Financières, *SUERF Study* N° 14, Vienna.

[7] A. Crockett (2002): *Introductory speech at the Third Joint Central Bank Research Conference on Risk Measurement and Systemic Risk*, Basel.

able to react simultaneously in several currencies even in troubled circumstances. Their liquidity management could be facilitated and strengthened significantly if they were able to obtain short-term liquidity in the required currency through a cross-border collateral pool. Such a collateral pool would boost the ability of the large market participants to react, thereby reducing the system's vulnerability to disturbances. In addition, this would result in efficiency gains, as maintaining a pooled collateral portfolio would certainly be less costly than keeping several currency-specific portfolios. In view of the manifold legal and technical obstacles, one is tempted to deem such a collateral pool a vision. However, visions can come true: take CLS, the Continued Linked Settlement system, which will go into operation in the near future. Central banks and the private sector must direct their joint efforts at researching the feasibility of a collateral pool, as does the Payments Risk Committee in New York[8].

A third challenge relates to in-house clearing and settlement mechanisms at global custodians. This commercial function has undergone a remarkable process of concentration in the last few years. Some of these service providers have become very significant for the stability of the system as we have seen after September 11 of last year. Independent of specific events the question arises whether regulatory control has kept up with this development everywhere. From an organisational point of view, it is problematic that custody activities lie in a grey area between banking supervision and system oversight. In some countries - such as Switzerland - where the tasks deriving from banking supervision and system oversight are performed by separate authorities, the regulatory framework risks being incomplete or at least suboptimal unless the two authorities succeed in establishing a strong cooperation link. This aspect seems all the more important as global custodians tend to become direct competitors to traditional financial market infrastructures.

In view of these challenges, there is good reason to critically reassess rules and regulations related to securities clearing and settlement as well as to the way oversight responsibilities are implemented in practice. A predominantly national approach does not serve market needs any longer. And an essentially sectoral solution, where payment system regulators and securities regulators do not cooperate in an integrated way, is inappropriate. Indeed, all official and private sector initiatives that can give an impetus to this debate are highly welcome. The CPSS-IOSCO Recommendations for Securities Settlement Systems, the ISSA Recommendations 2000, and the Group of Thirty's ongoing work all contribute to improving our understanding of the challenges we face. And it is only when issues are really understood that appropriate responses can be formulated and implemented.

In Switzerland, as in several other countries, supervision of the securities clearing and settlement system is still work in progress. A draft of the revised National Bank Law has been submitted and will be discussed by Parliament in the near future. The revised law will presumably enter into force around 2004. It is intended to explicitly vest the responsibility of overseeing payment systems as well as securities clearing and settlement systems in the Swiss National Bank. The revised law will thus formally express that an efficient and secure financial market infrastructure is imperative for the implementation of monetary policy and for the stability of the financial system. The inclusion of clearing and settlement systems follows from the obvious fact that, given their linkages, these infrastructural functions are of considerable systemic importance. This is all the more true since the SNB has, for a few years now, implemented its monetary policy exclusively through repo transactions.

The SNB can fulfil this expanded mandate only by closely cooperating with other authorities. Domestically, the SNB will work hand in hand with the Federal Banking Commission (FBC). The SNB will focus on systemic issues, while the FBC - our bank supervisor - will deal with institutional aspects. This job-sharing is based on the premise that each authority will be able to make use of its comparative advantage. Internationally, market developments foster cross-border cooperation between oversight authorities. For instance, institutions such as Sega Intersettle (SIS) through "The Settlement Network" are heavily involved in the current reshaping of Europe's financial market infrastructure.

However, as the legal reform is not yet in place, there are many open questions as to what exactly the modus vivendi of the oversight function should look like. We will address them step by step in a pragmatic way. Many issues such as the set-up of mechanisms for information sharing, the need for on-site examinations, or the disclosure of oversight proceedings have still to be discussed and clarified. We are in the process of defining basic principles and implementation tools pertaining to our new oversight responsibilities.

[8] The Payments Risk Committee was established by the Fed New York in 1993 as a means to integrate the input of leading US commercial banks in discussing and implementing recommendations for improving the quality of risk management in payment and securities settlement systems.

Conclusion

I would like to conclude my speech with a fundamental remark. In the field of financial market infrastructure, there is no alternative to close cooperation between private market players and oversight authorities. On the one hand, it makes sense in this field as well to rely on market forces to stimulate, as energetically as possible, an eagerness for progress and innovation. On the other hand, we have to take into consideration that there are economic forces working in this area that limit the free play of market forces and require oversight authorities to take on a more active role. First, clearing, settlement and payment systems entail network characteristics with potentially negative externalities not internalised by individually optimising market players. It is thus the aim of oversight authorities to take into account the financial infrastructure as a whole, thereby focussing on the links between all components. In other terms, some of these systems are "too interlinked to fail" and must therefore be overseen with special care. Second, since clearing, settlement and payment services are based on production processes with very high fixed costs, there is a risk that consolidation may lead to a monopolistic market result. Oversight authorities must therefore also make it their goal to prevent potential abuses of market power.

Against this background, a trust-based cooperation between financial service providers and oversight authorities remains the key to a continued successful development of an efficient and secure financial market infrastructure that meets the fast-changing needs of the future.