Masaaki Shirakawa: What is so special about financial innovation?

Keynote address by Mr Masaaki Shirakawa, Governor of the Bank of Japan, at the Netherlands Bank conference in honour of Mr Nout Wellink on "Welfare effects of financial innovation" (via videoconference) , Amsterdam, 11 November 2011.

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I. Introduction

Today I am honored to have the opportunity to appear as the keynote speaker of this conference marking the retirement of Nout Wellink. I wish I could participate physically, but thanks to innovation, which is the very topic of today's conference, I am now able to join you through videoconference from Tokyo, about 10,000 kilometers away from Amsterdam.

There is, of course no need for me to remind you of Nout's distinguished career, at the Netherlands Bank, the Basel Committee and the Bank for International Settlements, to name just a few. I would just like to thank him for his contributions on all the occasions I had the pleasure of working with him, and for his friendship outside the meeting rooms.

Central bankers, or policymakers more generally, are quite fond of innovation. It is the catalyst for growth. Innovation is the key to increasing productivity, and without it, our economies can only grow linearly with the increase in input factors. Innovation is now all the more important, especially in the developed economies, because – as our population ages and the labor force stops growing rapidly – productivity growth underpinned by innovation is the only way for us to realize growth in the years ahead.

In this sense, innovation is something we regard as inherently positive. Nevertheless, we are gathered here to examine the welfare effects of financial innovation. The fact that we can usefully discuss such things implies that not all developments described as financial innovation might be welfare enhancing. Why is it that we have to persuade other people – and perhaps even ourselves – of the merits of innovation, when we add the word "financial" in front of "innovation"? Today, I would like to explore why we are sometimes uncomfortable with certain developments in the finance industry that are labeled "innovation" by their promoters, and consider policy implications for central banks, with a view to encouraging innovation that would benefit the whole society. Fifteen minutes will not be enough to arrive at definitive conclusions, but let me give it a try.

II. Drivers of innovations in the financial industry

Innovation means changing the way business is conducted in order to better serve the clients of the business. It is a constant adaptive process, and the changes could be either incremental or discontinuous. The financial industry is no exception. In fact, the Netherlands was one of the earliest centers of innovation in finance as we know it. For example, Amsterdam was the location of the world's first stock exchange, established in 1602. The province of Holland was the first sovereign to issue bonds in the modern sense, backed by the tax revenues of the sovereign. The development of finance through these innovations contributed enormously to the subsequent development of the Western world.

Since then, innovation in finance has continued. Banks are pushing less paper around. Records are kept centrally in computer systems. ATMs have replaced most functions of bank tellers. In our wallets, plastic cards have become just as important as, or perhaps more important than, banknotes and coins. These changes, which provide the same or better service to clients at lower cost, are certainly innovations in the usual sense of the word, and we have little concern for their welfare effects.

What we worry about are those changes that are more often associated with the so-called "rocket science" side of banking. Take derivatives for example. In the early 1990s, when central banks first began to take interest in them, experts told us that derivatives enabled risks to be unbundled and shifted at a low cost to those who were most willing and able to bear those risks.[1] Given the diversity of risk preference among economic agents, the new distribution of risk after derivatives transactions was regarded as welfare enhancing. Furthermore, as a result of better distribution of risk, it was claimed that the whole financial system should become more resilient. Conceptually, this argument made sense, but in practice, there were spectacular mishaps.

Our intuition, based on such experiences, tells us that not all financial innovations are created equal. Some may be embraced wholeheartedly, while others may have to be carefully monitored and perhaps regulated or even prohibited altogether.

One possible approach is to look at the drivers of innovation.

Innovation can be technology driven or modality driven. Technology-driven innovation crystallizes when the application of technology results in a better way of doing business. The ATM may be the best example in the business of banking. On the other hand, modality-driven innovation aims at rearranging business processes for the better. Financial risks can be shifted around without derivatives, but derivatives make it more efficient to transfer risks. The two are not mutually exclusive, but are distinct enough to be the basis for sharpening our thinking.

Generally speaking, we are more comfortable with technology-driven innovations than modality-driven ones. Nevertheless, modality-driven innovations are not necessarily inherently unwelcome. One could argue that modality-driven innovations are just as welfare enhancing as technology-driven ones, and any innovation, be it technology or modality driven, could be harmful if misused. Although we cannot deny such a risk, there should be many more satisfied clients of innovative products and services than dissatisfied ones. Another argument would be caveat emptor. Alternatively, even if the risk materializes, one could attribute that to just bad luck.

Can we accept these views? If the answer is "Yes", what we need is perhaps a little more policing effort or education. But in today's forum, I do not think we could be satisfied with such a conclusion.

Are there any issues with incentive structure in modern finance that encourages the misuse of financial technology? Even if there is no misuse, should we not be concerned with incentives to create more complex instruments that can only be understood by a handful of educated people, leading to obfuscation of risks under the guise of innovation? Are we not seeing too many "once-in-a-hundred-year" accidents?

III. Who benefits from innovation?

Up to now, I have deliberately remained vague on the objectives of innovation. Why do financial institutions innovate? Innovations are better ways of doing business, but better at what?

Broadly speaking, the core function of financial institutions is intermediation. For example, if a business can obtain capital from the outside, it can invest and grow faster than when it can rely only on retained earnings. Financial institutions are ready to stand between savers who have the money and businesses that need the money. Another important function, especially for banks, is effecting payments. If a business knows that it can easily exchange foreign

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[1] See Bank for International Settlements, *Macroeconomic and Monetary Policy Issues Raised by the Growth of Derivatives Markets*, 1994.

currency to domestic currency, it can more conveniently sell its wares abroad for growth. Financial institutions are ready to facilitate the transfer of money between buyers and sellers of goods and services. By standing between economic agents, financial institutions help other economic agents overcome financial constraints in various ways, and through this process of effecting intermediation and payments, help create value and thus enhance welfare.

When we focus on this fact, we can finally understand why we are uncomfortable with some past developments in the financial industry. Problems seem to have arisen when a product or service is insufficiently anchored in intermediation or facilitation of payments. Innovation is useless or even harmful, if financial institutions lose sight of the needs of their clients, or more broadly the society. Technology-driven innovations are more likely to be beneficial, because, when the innovator is deliberating on the application of technology, the client cannot usually be ignored. On the other hand, in the case of modality-driven innovations, one can easily lose sight of the client when cutting and dicing existing businesses.

For example, securitization now has a bad name because of its perceived role in the financial crisis. Nevertheless, securitization is conceptually beneficial, because it aims to bridge the gap between the risk preferences of lenders and the actual risk profile of borrowers. The only condition is probably that the investment bank arranging the transaction must find takers for all the tranches. In this regard, some resecuritized products, which inflicted enormous pain during the recent financial crisis, are suspect because they include unsold tranches of original securitization vehicles, tranches that investment banks could not sell to willing buyers or found too unattractive for their own books.

Considering that financial institutions enhance welfare through intermediation, relevance of any developments to intermediation should be a good starting point. This perspective is particularly important for modality-driven innovations.

IV. Dealing with undesirable outcomes

Unfortunately, the world of finance is complex. As a result, one or two simple tests cannot separate all the wheat from the chaff. In this regard, one of the most difficult issues involves the claim that certain instruments or practices provide a public good, namely the better functioning of markets through enhanced liquidity or more efficient price discovery.

For example, in the case of high-frequency trading (HFT), one can argue that the increase in the speed and execution serves no socially useful purpose, because most of the HFT transactions are netted out and, therefore, very little intermediation actually takes place.[2] On the other hand, one could argue equally persuasively that trial and error carried out by HFT facilitate price discovery, performing a useful function for market participants that wish to trade in cash instruments. After all, nobody has doubts on the usefulness of the stock market, even though the market itself does not perform any intermediation between savers and firms in need of capital. If there were only long-term buy-and-hold investors, market liquidity, or the supply of immediacy, would be constrained. The fact that stocks can easily change hands facilitates the capital-raising activities of firms.

This is a difficult issue, but for policymakers, the fact that the “first-best” solution is elusive cannot be an excuse for not acting on potentially harmful activities. “Second-best” or “third-best” solutions will have to be pursued. Instead of focusing too heavily on the welfare effects of individual innovations, on which sensible people can disagree, we could consider incentive issues behind developments in the financial industry, especially purported innovations that

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[2] While HFT in equity markets has been intensely debated, that in foreign exchange markets has been little discussed. For recent discussions on the latter, see Bank for International Settlements, *High-Frequency Trading in the Foreign Exchange Market*, 2011.

are modality driven. Very often, modality-driven innovations are the result of efforts to circumvent regulations, taxes, and accounting rules imposed on the financial industry. One of the lessons learned from the recent financial crisis is that such innovations tend to mask the build-up of excessive risk in the economy with dire consequences.

V. Concluding remarks

As I said at the beginning, innovation is the key to growth. Financial innovation can also promote growth, so long as it facilitates the activities of other economic agents. The invisible hand may bring into line the interests of the financial industry and the broader society, but the recent financial turmoil has shown that too often, improperly aligned incentives in the financial industry can stand in the way. In this regard, senior management of financial institutions, each time their traders and bankers come up with innovative proposals, should at least reflect on how the new products or services could add value to activities in the broader economy and facilitate intermediation, before giving the go-ahead.

Meanwhile, central banks must better understand the incentive structures in the financial industry, and ponder if their actions might be distorting incentives, giving rise to modality-driven innovations that hardly benefit the society as a whole. Doing so should allow us to avoid those policy decisions – for example, maintaining excessively loose monetary policy for too long or offering too wide a safety net through the lender-of-last-resort function – that inadvertently add momentum to such developments.

We have, undoubtedly, made important progress in the various international fora, including the Basel Committee, of which Nout Wellink held the chair until his retirement. Still, much work remains, for example the potential for the shadow banking sector to pick up those risks pushed out of the formal banking sector as a result of recent regulatory tightening. I hope that today's discussions will give us fresh ideas on how to take on the many remaining challenges with regard to aligning incentives and practices of financial institutions with socially desirable outcomes.

Thank you for your kind attention.