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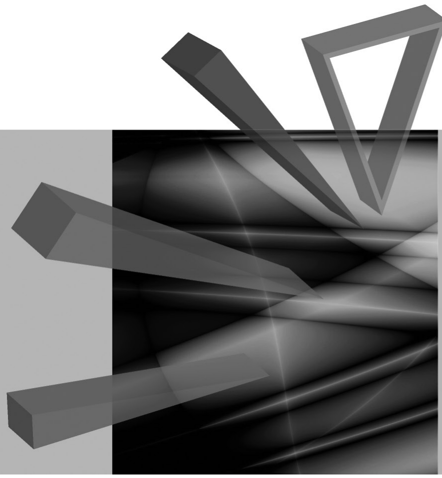
Innovation Sources of Economies in Eastern Asia



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Innovation Sources of Economies in Eastern Asia ISSN 1899-3192

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MODERN TRENDS IN FINANCIAL INNOVATIONS ON THE ASIAN MARKET. AN ATTEMPT OF ASSESSMENT

Summary: Currently, Asia is facing many challenges. In the region, there are very large savings exceeding its investment opportunities that have not been effectively invested. To accomplish that, we should face two challenges in the near future. First, it is therefore necessary to develop such instruments and methods that will respond to their needs and ensure their smooth functioning as well as the financing of retail. Second, we must also pay attention to ensure adequate financing for large companies and public sector entities. It is therefore necessary to consider how to develop and deepen capital markets in Asia so that these entities can directly make money on these markets without the need for bank loans. The further financial innovation activities in Asian countries will concentrate on the relation to these two challenges.

Keywords: innovation, financial market, financial instruments.

1. Introduction

The contemporary global economy is subject to very intensive turbulence particularly in terms of a strong economic downturn, rising international debt and insolvency of countries in the form of a debt overhang, high instability on international financial markets, crisis of national economies at the level of public finances and very large fluctuations in all major currencies. In the context of these phenomena, what becomes particularly important is the issue of innovation as a factor increasing, on the one hand, the competition, and on the other, the development of financial markets. The innovation can – in the current situation of world financial markets – become a stimulus to progress in restoring stability and further development.

The research presents an attempt to assess the financial innovation on the Asian market based on the example of flexible currency options. The analysis assumes that the Asian market consists of economies of East Asia, which are the member countries of the Association of Southeast Asian Nations (ASEAN) as well as Japan, China and South Korea.[1]

2. Modern trends on the Asian financial market and their innovation

The global financial crisis and massive bankruptcies of financial institutions around the world, especially the fall from 15 September 2008 of the fourth largest American investment bank, Lehman Brothers, made a particularly strong impact on the financial sphere of many economies in the world. It is estimated that only from 2007 to November 2008, financial institutions due to subprime loans have lost as much as 1 trillion USD on a global scale. Asian banks, especially the largest ones – Japanese institutions – seemed to be able to withstand the global turmoil. However, the third quarter of 2008 showed that East Asian banks are affected by the global crisis. The breakthrough was the information predicting loss for full fiscal year 2008, published in mid-November by the Japanese Aozora Bank.[2] Furthermore, at the end of 2008 there were huge discounts of indices. Japan's main Nikkei 225 index lost 42% during the year, South Korea's Kospi index after five years of continuous growth dropped by 40.7% and 42.2% was lost by the Hong Kong stock market index. Globally it is estimated that from July 2007 to August 2009, the average declines in Asian stock market indexes of emerging market groups amounted to 17%,[3] when the largest ones took place in Singapore (27%), Thailand and the Philippines (21%).[4] With the global crisis, ASEAN +3 countries have also started to intensify actions aimed at accelerating pre-established forms of cooperation in respect to innovation development of their markets. This particularly involved the Chiang Mai Initiative (CMI), which together with the concept of the creation of a common Asian currency unit (ACU) and a common East Asian bond market (ABMI), became the main pillar of regional discussions on the development of financial cooperation.[5] The result was the

[1] The ASEAN consists of ten countries of Southeast Asia (Burma, Brunei, the Philippines, Indonesia, Laos, Cambodia, Malaysia, Singapore, Thailand and Vietnam). The ten ASEAN countries create in total, including Japan, China and South Korea, the ASEAN +3 structure (which is why in the research these three countries are called countries "plus three"– ASEAN +3).

[2] It is worth noting that Aozora Bank has generated losses not only due to the collapse of Lehman Brothers (as the major creditor), but also by participating in the so-called Bernard Madoff's pyramid scheme, disclosed in 2008.

[3] In comparison, during the Asian crisis, from July 1997 to May 1998, the average decrease amounted to 32%.

[4] At the same time, indices of groups of countries with emerging markets in Latin America on average decreased by 7%, and the developing European countries by 42%, M. Goldstein, D. Xies, *The Impact of the Financial Crisis on Emerging Asia*, Peterson Institute for International Economics, 18–20 October 2009, p. 10.

[5] See: K. Klecha-Tylec, East Asia's financial regionalism, [in:] T. Sporek (Ed.), *The Modern Global Economy, and Its Affiliates under Conditions of Instability*, Volume 1, Scientific Papers of Karol Ad-

multilateralisation of Chiang Mai Initiative, which was the transformation of the existing network of bilateral currency swaps, a multilateral project (CMIM), with much higher financial reserve (120 billion USD).[6] The aim of CMIM is to maintain exchange rate stability and financial liquidity of East Asian countries, particularly of the smallest and weakest economies (the Sultanate of Brunei and the CLMV group).

In the global economy, there are many investment opportunities. Asia is a region which – despite the recession – still offers many opportunities in this field. Asia is divided into developed economies and developing countries. The countries with highly developed economies are Japan and the four Asian tigers: Hong Kong, Singapore, South Korea and Taiwan.

The main features and tasks of Asian financial markets in terms of their innovation are to promote growth in three areas:

– gathering scattered deposits to transform them into streams of investments so that the costs of raising more capital by enterprises are lower;
– reducing investment risk by carrying out a risk assessment of investment projects and dissipation of resources into a number of investments;
– reduce the risk of losing liquidity by the holders of securities by allowing (mediation) them to sell their securities; they improve their liquidity without having to use or withdraw capital from other investments.

To accomplish those tasks, it is necessary to maintain the stability of Asian financial markets. This stability is closely related to monetary stability.[7] Another factor of strengthening the innovation on these markets is further opening up of economies in the region in foreign financial terms, which allows for interaction in two main directions:

1) increasing the supply of finance in financially less developed economies, due to:

a) attraction of effectively operating foreign financial intermediaries (and funds available through them) to less developed areas;

b) providing companies from less developed countries with access to international financial markets (and raising capital for them);

2) increasing the efficiency of capital allocation.

The opening of Asian financial markets abroad means that foreign investors can more easily provide funds for the implementation of projects (in the form of foreign direct investments) – then the supply of capital increases. In addition, it may mean a lower cost of capital due to the fact that the costs of acquiring foreign assets (through access to foreign financial intermediaries) may be smaller than the costs of raising funds in the countries of the region. Therefore, benefits are achieved by

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amiecki University of Economics in Katowice, Katowice 2010, pp. 145ff.

[6] CMIM agreement was signed in May 2009 and entered into force in March 2010.

[7] A. Borcuch, *Global Monetary System*, CeDeWu, Warsaw 2009, p. 119.

both foreign companies and individual Asian economies. In addition, businesses (as well as households) have a chance of a better allocation of financial surpluses held when different, sometimes very profitable financial instruments (such as foreign investment funds) are available on the domestic market.

This will improve the diversification of allocation and reduce its risk.[8] The result is the cooperation of the Asian stock markets with world stock exchanges in the form of dual listing. These listings relate to pairs of exchange, such as London–Hong Kong, New York–Tokyo or Singapore–Euronext. In practice this results in the functioning of the common all-day trading platform, in which values of all the funds listed on both stock exchanges are visible in the pair. For example, at present, according to the rules already described, with great success famous brands, such as Honda (NYSE: HMC), Hitachi (NYSE: HIT), Mitsubishi (NYSE: MTU) and Sony (NYSE: SNE), are listed. This exchange is also developing cooperation in the field of development of innovation of this market as well as marketing and investor education programmes on various trading floors.[9]

Modern financial markets in Asian countries promote innovation and growth at three levels:

1) they collect scattered deposits to transform them into streams of investment, thus the cost of raising more capital by enterprises is lower,
2) they reduce the investment risk through a risk assessment of investment projects and dissipation of resources into a number of investments,
3) they reduce the liquidity risk of the holders of securities by allowing (mediation) them to sell their securities; they improve their liquidity without the need for capital, or withdrawing from other investments.

The contemporary role of Asian financial markets, which are trying to rise after the last global crisis, boils down to a more efficient use of savings by investment, which ultimately promotes economic growth.[10]

One has to remember that every financial market liberalisation brings many benefits: opening of national markets for raising capital can fill in the missing capital resources with overseas savings. This allows, among others, financing more investments, and thus contributes to a faster economic growth and improves competitiveness of domestic financial institutions.[11]The innovation of financial market contributes significantly to its stability. What is of particular importance for financial stability is the stability of the banking system. For these reasons, particularly strong emphasis is placed on the analysis and assessment of the bank stability, since, as it turned out, also on the Asian market a lot of them have insufficient liquidity buffers. The recent crisis has shown that many banks in Asia, especially active in

[8] *Ibidem*, p. 11.
[9] W. Nawrot, *Financing of Companies in Foreign Markets*, CeDeWu, Warsaw 2008, p. 32.
[10] *Ibidem*.
[11] *Ibidem*, p. 15.

cross-border and international activity, do not have sufficient liquidity buffers, and hence in the countries of the region there was a need for strengthening the capital, liquidity and capital adequacy due to the improvement of ability of the banking sector to absorb shocks resulting from financial and economic stress. This provoked a discussion on the need for an introduction of a comprehensive package of reforms, also in global terms, designed to strengthen the system of financial regulation in this area.[12]

Financial crises that have occurred in recent years have revealed a need to ensure the safety of Asian financial markets (financial safety) and the construction of a new financial architecture.[13] Today, in all Asian countries the financial stability is granted an important priority, which is reflected in the institutionalisation of the financial safety network as an important structure in the system of a state and its economy.

The cooperation between regulatory authorities in various Asian economies is very strongly bonded in order to maintain regional financial stability. Much of this work focuses on the introduction of strong and effective institutional arrangements in the region. In the decade after the Asian financial crisis, most Asian countries have accelerated the pace of financial sector development and are at the stage of the implementation of reforms, which, in addition to stability, shall also bring increased innovation and competitiveness of each market. Some of the Asian economies have made significant progress in improving the stability and efficiency of financial institutions in the development of domestic financial markets.

Based on the aforementioned concepts, in Asian countries the following solutions have been already implemented:

a) protection of the economy against excessive capital outflows, including the introduction of incentives to reinvest profits (such as tax amnesty);

b) creation of a developmental plan for government investments in infrastructure;

c) support of the small business sector, in particular by:

- reducing their tax burden (e.g., abolition of taxation on new investment to a certain amount),
- stimulation of lending to small business start-ups and the ones that make new investments.[14]

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[12] E. Fojcik-Mastalska, *Safety of the Financial Market*, Monographs No. 6 of the University of Wrocław, Wrocław 2010, pp. 7–8.

[13] The new financial architecture shall be understood as the institutions, policies, rules, policies and procedures related to the prevention and resolution of financial crises.

[14] M. Goldstein, *Strengthening the International Financial Architecture: Where Do We Stand?*, Peterson Institute Working Paper 2000, no. WP00-8, Washington 2000, http://www.petersoninstitute.org (accessed: 05.01.2012); also M. Giovanoli, A new architecture for the global financialmarket: Legal aspects of international financial standard setting, [in:] M. Giovanoli (Ed.), *International Monetary Law. Issues for the New Millennium*, Oxford 2000, p. 9.

3. Modern and new products

At the regional level, key initiatives for the development of local bond markets are taken by creating a variety of Asian bond funds and so-called ASEAN +3 initiatives. It is necessary to study the evolution of stock markets and the inflow of money that went to Asian economies in order to understand the financial crisis in1997–1998. Net equity investments in the economies of South Korea, Indonesia, Malaysia, Thailand and the Philippines amounted to USD 12.2 billion in 1994, USD 15.5 billion in 1995, USD 19.1 billion in 1996, and USD –4.5 billion in 1997 according to the Institute of International Finance in 1998. The reversal for 1997 came as a result of the financial crisis that started in Thailand, which added pressure to the currency markets of the countries considered in this article. Net equity investments and new private loans financed most of the increasing current account deficits that the SE-Asian economies, as well as most of the developing world, experienced during the 1990s. The ability of most of the developing world to import capital through securities markets was enhanced by the exponential growth in the US mutual fund industry, and low interest rates available in the US and Japan during the past decade. Finding a close relationship between exchange rate depreciations and stock returns during a crisis is consistent with Bailey, Chan and Chung. These authors demonstrate, using intraday data, that the severe downturn of the Mexican stock market in December 1994 and early 1995 can be associated with the peso devaluation that took place during the same period. In the case of the five Asian countries whose currencies experienced the sharpest depreciations during the Asian crisis (Indonesia, Malaysia, the Philippines, South Korea and Thailand) the average correlation between weekly stock market returns and currency changes (where currency is defined as the number of units of foreign currency per USD 1) between the first week of July 1997 and the first week of May 1998 is –0.63 and is significant at 1% level. My explanation for this strong association is that currency devaluations have traditionally been accompanied by declining stock markets in the developing world because they usually take place in the middle of a financial crisis and uncertainty about the future course of economic policies and outcomes. For instance, the negative impact of devaluing currencies on S.E.-Asian banks and companies that had borrowed heavily on international markets most probably surpassed the potential export gains. But an "orderly" devaluation such as that of Britain in 1992 did not have negative effects on the London stock market since it helped the British economy recover from a three-year recession via an export-boom.[15]

The last global crisis has revealed a number of omissions and deficiencies on Asian markets in terms of selling complex investment products to retail investors,

[15] W. Bailey, K. Chan, P. Chung, Depositary receipts, country funds, and the peso crash: The intraday evidence,*The Journal of Finance 2002*, Vol. 55, No. 6, pp. 2693–2717.

derivatives trading and risk trading on foreign markets. Currently to reverse these adverse trends a lot of work is underway.

The most important change in the group that is currently in progress is the creation of new financial instruments. The Asian market – next to London and US market – has always been a centre of dynamic and increased trade in such instruments. The aim of its creators was that all new instruments were characterised by high innovation and bringing above-average profits. So their design included new opportunities for arbitrage, which makes the market more competitive and efficient, risk management tools (because investors are looking for products that fit their profiles and risk in the best way as well as meet their needs in this respect), speculative character (this role can be acted –when properly secured – in order to accelerate the development of a financial market).

The phenomenon of the innovation development of new products on Asian financial markets is becoming more and more frequent. What follows, as already mentioned, is a need to offset the unfavorable impressions of the last global crisis, make up for losses as a result of this crisis and safeguard against potential losses. New financial products have a positive impact on the acceleration of financial growth; they may also be widely used as a tool for risk management. In addition, new financial products expand sources of funding, such as structured financing. Innovations are therefore subject to prospective contracts, futures, swaps and optionals. The novelty is optional warrants (options with long maturity), basket options (as the average of current assets in the basket), swaps (maturity at the date of the expiry of an option with a possibility of extension or change of a date), credit derivatives (trade of credit risk), secured debt obligations (CDOs – securitisation of the loan portfolio), structured products in a new dimension (premium that the investor can get very often depends not on the value of the underlying asset at the end of the investment, but also on its behaviour during the course of the structure – the final value is calculated based on the average of several observations), and finally flexible Asian options (withdrawal from the Asian option, also called the average-rate type option, is dependent on the average price of the underlying asset; this averaging can be carried out at the end of the option, for example, the last three days, over a longer period, for example, nine observations in recent months/quarters or over the lifetime of the option, for example, every quarter or every month; in the case of structured products, trading assets observation dates are known from the beginning). The variations in the above-mentioned financial products are mainly used to calculate the average asset price and strike price. The most common is the arithmetic mean, but in more complex cases this may be the geometric or harmonic mean. In practical applications, often taken for calculations it is the closing price of a particular asset on a given day. Theoretical considerations meet the continuous collection of listings. For example, the former observations may be less significant than those at the end of the period.

A very important activity on Asian financial markets in the scope of financial market innovation – namely financial products – was the introduction of “Capital

Markets Consolidation Act", a law that entered into force in February 2009. The Act has four main functions. First, it adopts a system of defining financial products. Products are divided into securities and derivatives based on the possibility of capital losses in excess of requirement. The second feature of the Act is a functional regulatory approach, which means that the same rules apply everywhere. Third, the Act expands the scope of financial services in terms of investment. It allows financial investment companies to do business, while covering only six-selected financial investments. Fourth, the Act is to protect investors by strengthening an obligation to apply the know-how of their client.

The Act is intended to improve efficiency and strengthen the capital market and make the role of a financial intermediary transparent. Financial investment companies are now able to design structured securities, and individual investors can incorporate new financial products to their portfolios without fear. In addition, investor protection will be upgraded to increase confidence on the capital market.

Given the weakness of the financial system in the West, due to the subprime crisis, it is the best time for Thailand and other Asian countries to introduce innovative financial products to finance local investment projects. In addition, given doubts about the effectiveness of public spending and the lack of transparency in the implementation of public investment projects without private participation in financing these projects, in Asian countries a system of revenue bonds has been introduced as a way to use funds from the private sector closely monitored by investors.

The system is suitable for building revenue-generating infrastructure. Bondholders are repaid with the revenue generated by projects, such as tolls. The funds obtained from the sale of bonds are used to finance local initiatives. This method is used successfully, for example, by the Japan Bank for International Cooperation (JBIC).

Another innovation that characterises the modern financial markets in Asian countries is the activity of the Asian Development Bank aimed at promoting and developing the bond market (increasing the creditworthiness of local bonds issued by local companies). Currently, central banks in Asia may invest only in AAA-rated bonds.

Building innovation on financial markets, various Asian economies are attempting to continue to exploit the continuing investment attractiveness of the region. Therefore, further work in the direction of innovation on financial markets is focused on the following areas:

– post-crisis regulatory reform on financial markets and its implications for Asia, taking control of reforms, from both the global and the individual national economies perspective; an analysis on the basis of the challenges for Asian financial markets; identification of measures to prevent any future impacts of the crisis for the Asian region.
– provision of Asian investment funds: an analysis of the situation in the case of financing small business (for example, in Japan for this purpose the following

institutions have been established: Turnaround Enterprise Corporation and Enterprise Turnaround Initiative Corporation), including the area of microfinance; creating an appropriate regulatory framework;
- integration of the Asian market: competition and/or cooperation: examination of specific challenges in competition and cooperation from the perspective of promoting the integration of the Asian market; answer to the question of the way Asian stock exchanges can cooperate and compete simultaneously in order to stimulate Asian financial markets, exploring the possibilities of the emission of new securities for companies (coordinated efforts in the ASEAN +3 countries have been initiated in the form of the bond market Initiative ABMI);
- innovations in the infrastructure of financial markets in Asia: advanced billing systems –an analysis of financial accounting systems for companies – for example, BOJ-NET (interbank settlement system in Japan), and on this basis, a possibility of their further development in Asian countries.

4. Summing-up

Further development of Asian financial markets in terms of their innovation will depend on:
- establishment of the current state of the post-crisis regulatory reform from a global perspective, and also from the standpoint of Asian markets;
- identification of further specific activities of Asian financial market integration;
- development of financial infrastructure and architecture, which will be tailored to the needs of regional markets as new business accounting services that use new technologies,
- development of new financial instruments and financial engineering.

The degree and pace of implementation of these elements will determine the future level of innovation and competitiveness in the Asian region.

References

Bailey W., Chan K.,Chung P., Depositary receipts, country funds, and the peso crash: The intraday evidence, *The Journal of Finance* 2002, Vol. 55, No. 6.

Borcuch A., *Global Monetary System*, CeDeWu, Warsaw 2009.

Fojcik-Mastalska E., *Safety of the Financial Market*, Monographs No. 6 of the University of Wrocław, Wrocław 2010.

Giovanoli M., A new architecture for the global financial market: Legal aspects of international financial standard setting, [in:] M. Giovanoli (Ed.), *International Monetary Law. Issues for the New Millennium*, Oxford 2000.

Goldstein M., Xies D., *The Impact of the Financial Crisis on Emerging Asia*, Peterson Institute for International Economics, 18–20 October 2009.

Goldstein M, *Strengthening the International Financial Architecture: Where Do We Stand?*, Peterson Institute Working Paper 2000, No. WP00-8, Washington 2000, http://www.petersoninstitute.org (accessed: 05.01.2012).
Klecha-Tylec K., East Asia's financial regionalism, [in:] T. Sporek (Ed.), *The Modern Global Economy, and Its Affiliates under Conditions of Instability*, Volume 1, Scientific Papers of the Karol Adamiecki University of Economics in Katowice, Katowice 2010.
Nawrot W., *Financing of Companies in Foreign Markets*, CeDeWu, Warsaw 2008.

WSPÓŁCZESNE TENDENCJE W ZAKRESIE INNOWACJI FINANSOWYCH NA RYNKU AZJATYCKIM. PRÓBA OCENY

Streszczenie: Obecnie Azja stoi przed wieloma wyzwaniami. W regionie istnieją bardzo duże oszczędności przekraczające jego możliwości inwestycyjne. Aby temu zapobiec, należy dążyć do efektywnego wykorzystania tych oszczędności. Należy więc opracować takie instrumenty i metody, które będą reagować na ich potrzeby oraz zapewniać sprawne ich funkcjonowanie i finansowanie handlu detalicznego. Konieczne jest zatem rozważenie, jak rozwijać i pogłębiać rynki kapitałowe w Azji, by podmioty te mogły bezpośrednio zarabiać na tych rynkach bez konieczności korzystania z kredytów bankowych. Należy zapewnić taki rozwój innowacji, aby przywrócić stabilizację w regionie i jak najszybciej zniwelować skutki ostatniego globalnego kryzysu. W odniesieniu do tych trzech wyzwań powinny koncentrować się dalsze działania innowacji finansowych w krajach azjatyckich.

Słowa kluczowe: innowacje, rynek finansowy, instruenty finansowe.