Section 2 Effects of the tapering of the quantitative easing program in the United States

The monetary easing policy implemented by the U.S. Federal Reserve Board (FRB) since 2008 to respond the global economic crisis[10] has mitigated the turmoil of financial markets and played a significant role in supporting the economy. On the other hand, the negative effects of increasing money supply were pointed out. Under these circumstances, in May 2013, concerns over a dollar crunch arose, prompted by then FRB Chairman Ben Bernanke's remarks suggesting the possibility of the tapering of the third round of quantitative easing (launched in September 2012), known as QE3, and this caused serious shocks to financial markets, mainly in emerging economies.

In this section, we look mainly at the capital outflow from emerging economies and the depreciation of the economies' currencies in late May 2013 through January 2014, during the process toward the tapering of the U.S. quantitative easing program.

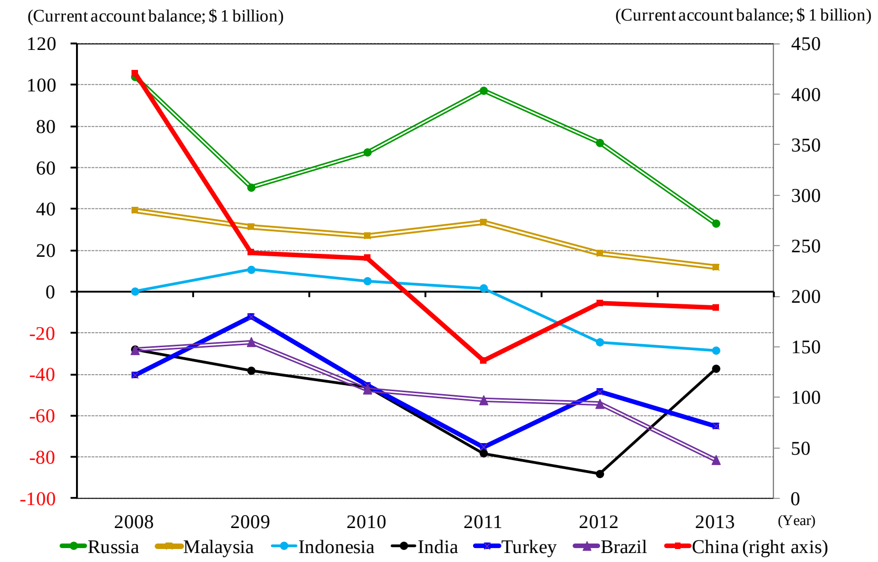
Table I-1-2-1 Quantitative easing and tapering of the third round of the easing by the U.S. FRB

	First round (QE1) (Nov. 2008-Jun. 2010)	Second round (QE2) (Nov. 2010 - Jun. 2011)	Third round (QE3) (Sep. 2012 - Dec. 2013)	QE tapering (Jan. 2014)	QE tapering (Feb.- Mar. 2014)	QE tapering (Apr. 2014)
the U.S. bonds	$ 300 billion	$ 600 billion	$ 540 billion ($ 45 billion/ month*)	$ 40 billion/month	$ 35 billion/month	$ 30 billion/month
MBS**	$ 1.25 trillion		$ 640 billion ($ 40 billion/month)	$ 35 billion/month	$ 30 billion/month	$ 25 billion/month
Others	$ 175 billion					
Total	$ 1.725 trillion	$ 600 billion	$ 1.18 trillion ($ 85 billion/month*)	$ 75 billion/month	$ 65 billion/month	$ 55 billion/month

Notes:
* During the QE3, FRB started purchasing the U.S. bonds in January 2013.
** The term "MBS" is an acronym of "Mortgage Backed Security," which is a type of asset-based security that is secured by a mortgage.
Source: Document publicized by FRB.

[10] The measures are effectively reducing the policy interest rate to zero (so-called "extraordinary low interest rate policy"), presenting a guidance as to a future exit from the "extraordinary low interest rate policy" (so-called forward guidance policy) and large-scale asset purchases (the first to third rounds of quantitative easing [QE1 to QE3]).

Figure I-1-2-2 Trends in current account balances of major emerging economies after the collapse of Lehman Brothers

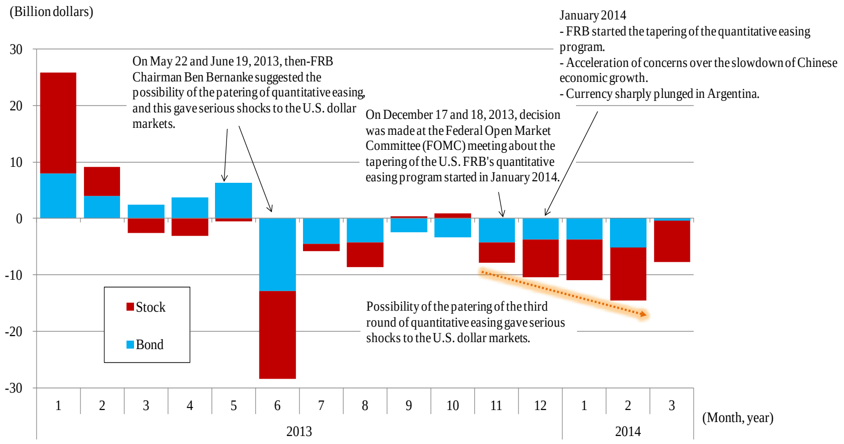


Source: *WEO, April 2014* (IMF).

	2008	2013	Changes in current account balance (unit: $ 1 billion)
China	420.6	188.7	231.9 (surplus reduction)
Russia	103.9	33.0	70.9 (surplus reduction)
Malaysia	39.4	11.8	27.6 (surplus reduction)
Brazil	-28.2	-81.4	53.2 (deficit expansion)
Indonesia	0.1	-28.5	28.6 (deficit expansion)
Turkey	-40.4	-65.0	24.6 (deficit expansion)
India	-27.9	-37.2	9.3 (deficit expansion)

Source: WEO, April 2014 (IMF).

Figure I-1-2-3 Net capital flow to emerging economies' funds



Source: *WEO, April 2014* (IMF).

1. Effects on capital flow to emerging economies

At the time of the global financial crisis, major economies implemented economic stimulus measures on a large scale through monetary measures including quantitative easing and low interest rate policies and fiscal measures[11].

In the United States, the epicenter of the global economic crisis, the FRB implemented a massive quantitative easing program to pump a total of 3,505 billion dollars (approx. 335 trillion yen) into the economy in three stages between November 2008 and December 2013 (Table I-1-2-1).

Surplus funds created by abundant supplies of money from the United States and other major economies flew into emerging economies with high growth potential and high interest rates. Such active inflows of surplus money have supported the strong economic growth of emerging economies after the global economic crisis. However, some emerging economies experienced considerable expansions of current account deficits or substantial reductions of current account surpluses (Figure I-1-2-2).

After anticipation of the tapering of the quantitative easing program grew due to remarks made by then FRB Chairman Bernanke on May 22, 2013, concerns over a dollar crunch arose in the market. As emerging economies were financing accumulating current account deficits with external funds, the concerns over a dollar crunch renewed worries about their ability to repay foreign debts. In addition, investors strengthened their risk averse behavior because investments in emerging economies would become less attractive due to the narrowing of the interest rate spread between those countries and the United States following an anticipated rise in U.S. long-term interest rates. Another concern was growing uncertainty of the future economy in China affected by increased worries about shortage of funds that could be caused by tightening of the financial market. Against this backdrop, emerging economies suffered a significant capital outflow in late May through the end of June 2013 (Figure I-1-2-3).

Capital flow to emerging economies had already been shrinking since the beginning of 2013 due to concerns over their economies, and this trend is presumed to have accelerated by the anticipated tapering of the U.S. quantitative easing program.

2. Effects on emerging economies' currencies

In response to references made on May 22 and June 19 by then U.S. FRB Chairman Bernanke to the possibility of tapering the quantitative easing program, currencies of almost all the emerging economies fell in late May to late June 2013 (Figure I-1-2-4). At that time, the FRB issued a message to the effect that even if the quantitative easing program was tapered, the zero interest rate policy would be maintained as well as that the finish of the quantitative easing program was different from monetary tightening (i.e. an interest rate hike), so the market gradually regained calm.

Around mid-August of the same year, consciousness about the tapering of the quantitative easing

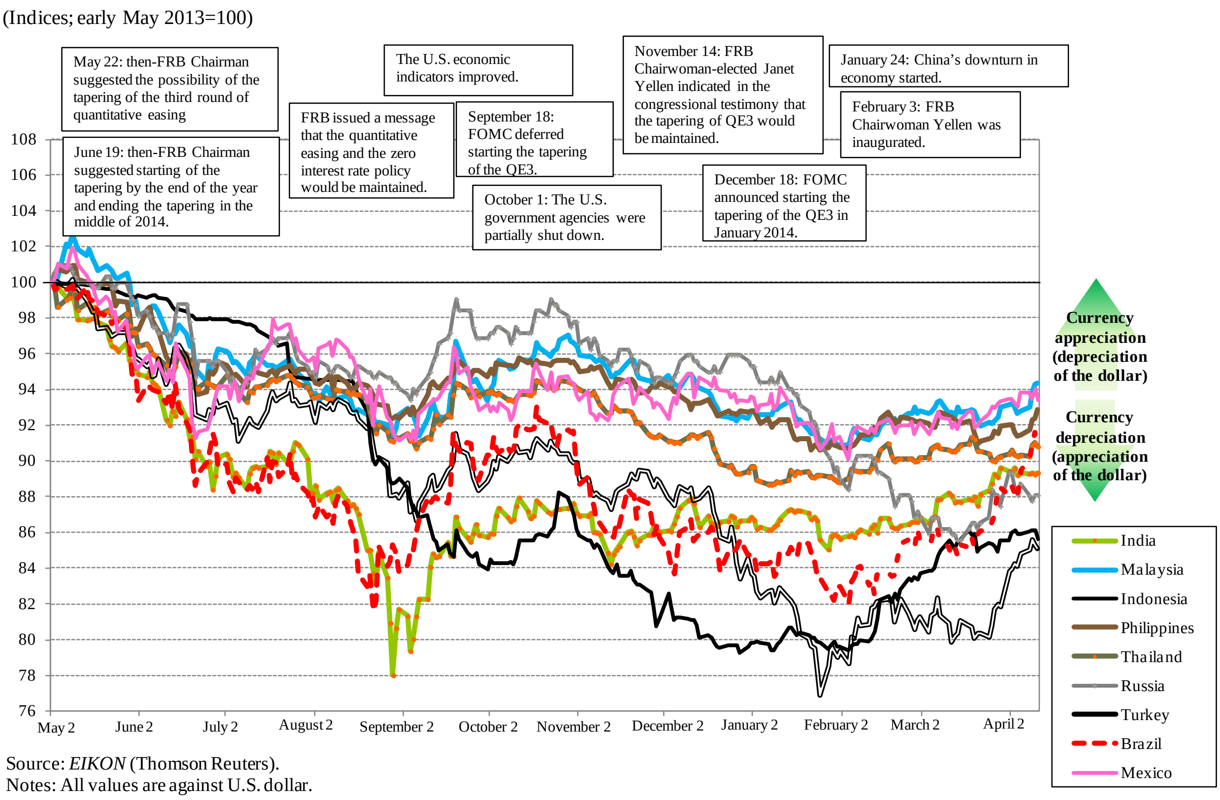
[11] *White Paper on International Economy and Trade 2010*. According to *WEO April 2010*" (IMF), the total value of economy-stimulus measures implemented by individual countries was approximately 20 trillion dollars, equivalent to around 30% of global GDP.

program grew again due to improvements in U.S. economic indicators, so emerging economies' currencies dropped. Subsequently, after the Federal Open Market Committee (FOMC) announced on September 18, 2013 that it would maintain the quantitative easing program contrary to the market's expectations, emerging economies' currencies rose before falling somewhat. On October 1 of the same year, in the United States, the ruling and opposition parties failed to agree on a provisional budget proposal and a bill to raise the debt ceiling, and government agencies were shut down. As a result, the view became prevalent that the possibility of an early tapering of the quantitative easing program had diminished, leading to a rise in emerging economies' currencies.

In late May through late June, most emerging economies' currencies dropped. However, later, the severity of the currency plunge varied from country to country, as investors became selective in accordance with the status of the current account balance, growth rates, foreign currency reserves, inflation rates, etc. (Figures I-1-2-5 to I-1-2-10). India, Indonesia, Turkey and Brazil experienced particularly steeper currency depreciation (Figure I-1-2-11).

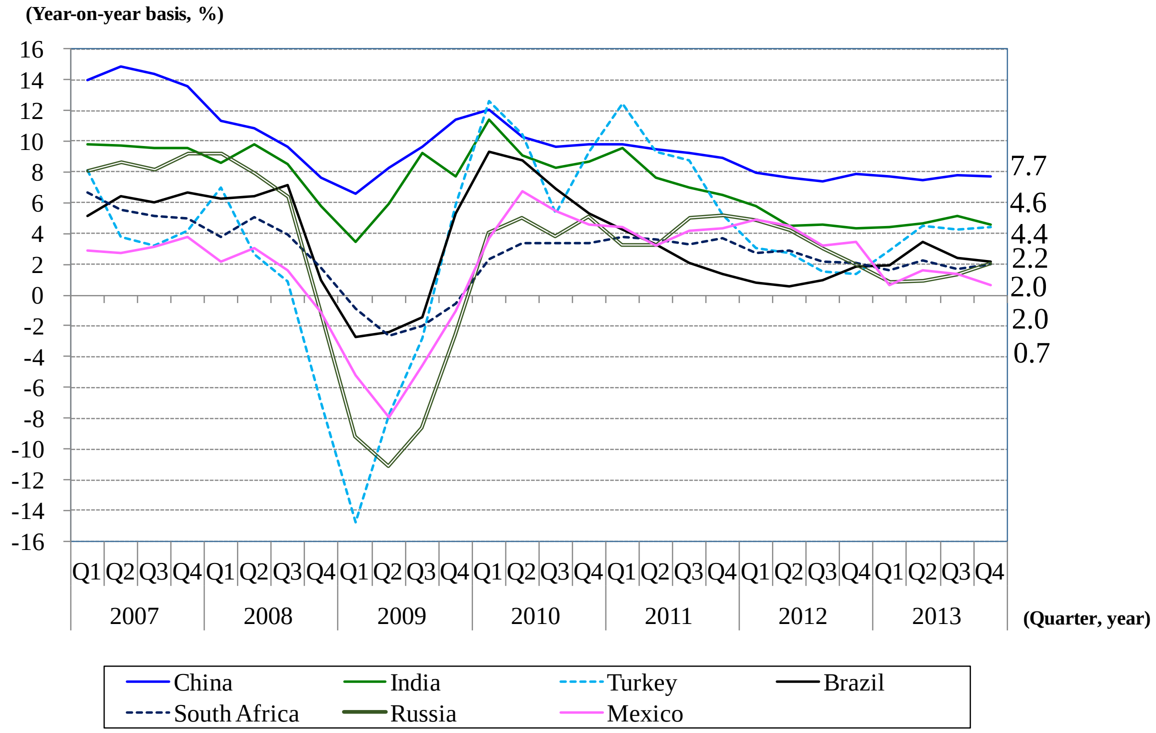
Figure I-1-2-12 shows the correlation between the range of depreciation of the currencies in emerging economies' currencies during the period covered by Figure I-1-2-11 and the ratio of the current account balance against GDP. It indicates that countries with larger current account deficits had suffered more serious currency depreciations, as they were likely to be worried about their ability to repay foreign debts.

Figure I-1-2-4　Trends in foreign exchange rates in emerging economies (against US dollar)



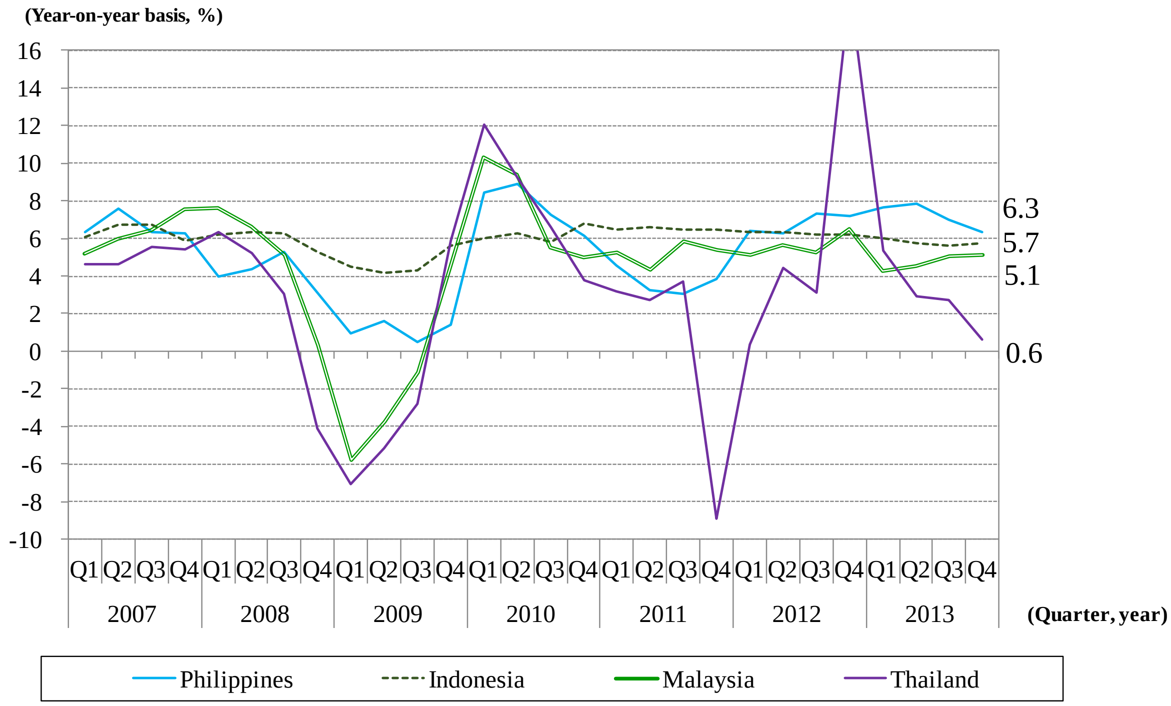
Source: *EIKON* (Thomson Reuters).
Notes: All values are against U.S. dollar.

Figure I-1-2-5 Real GDP growth rates in major emerging economies



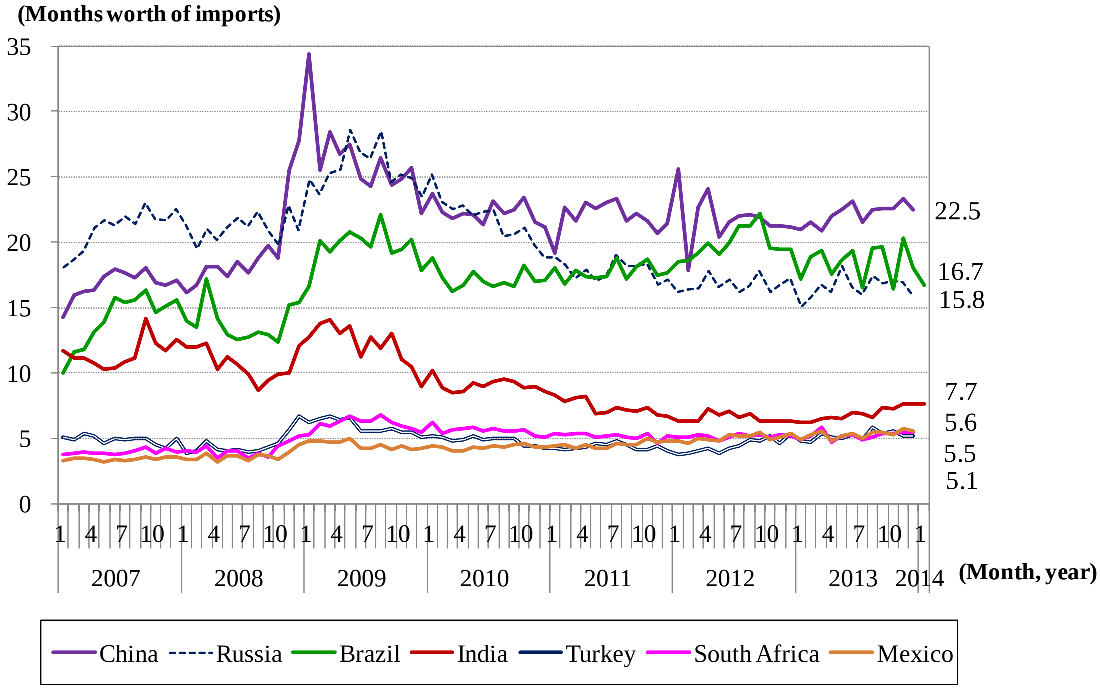
Source: CEIC database.

Figure I-1-2-6 Real global GDP growth rates in major ASEAN countries



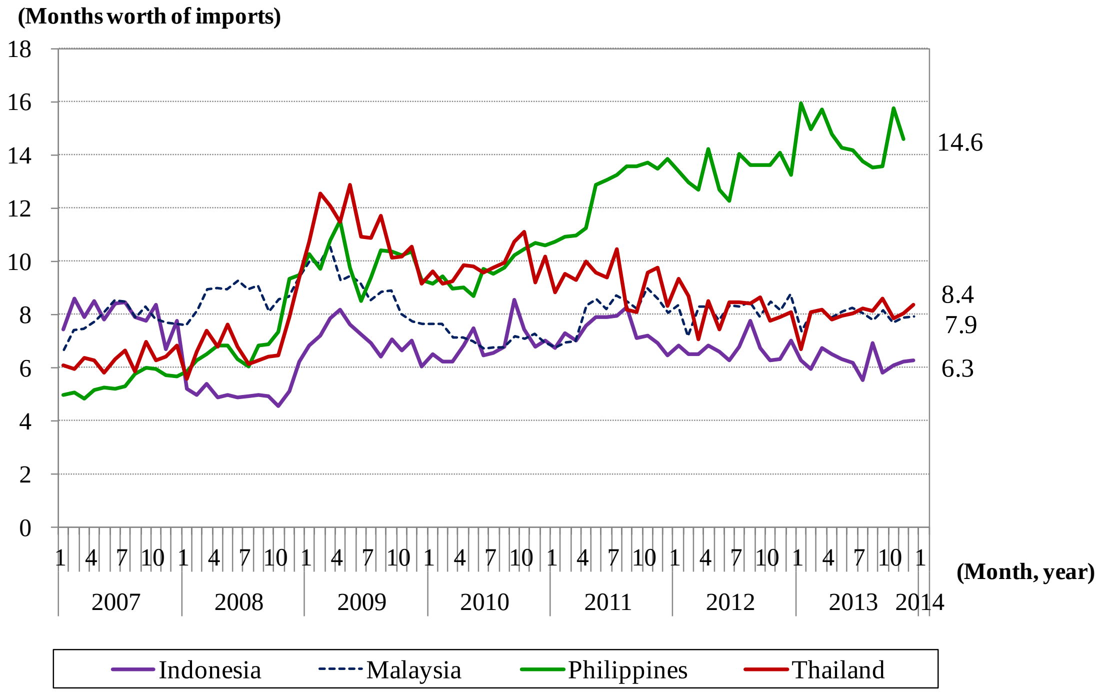
Source: CEIC database.

Figure I-1-2-7　Foreign currency reserves in major emerging economies



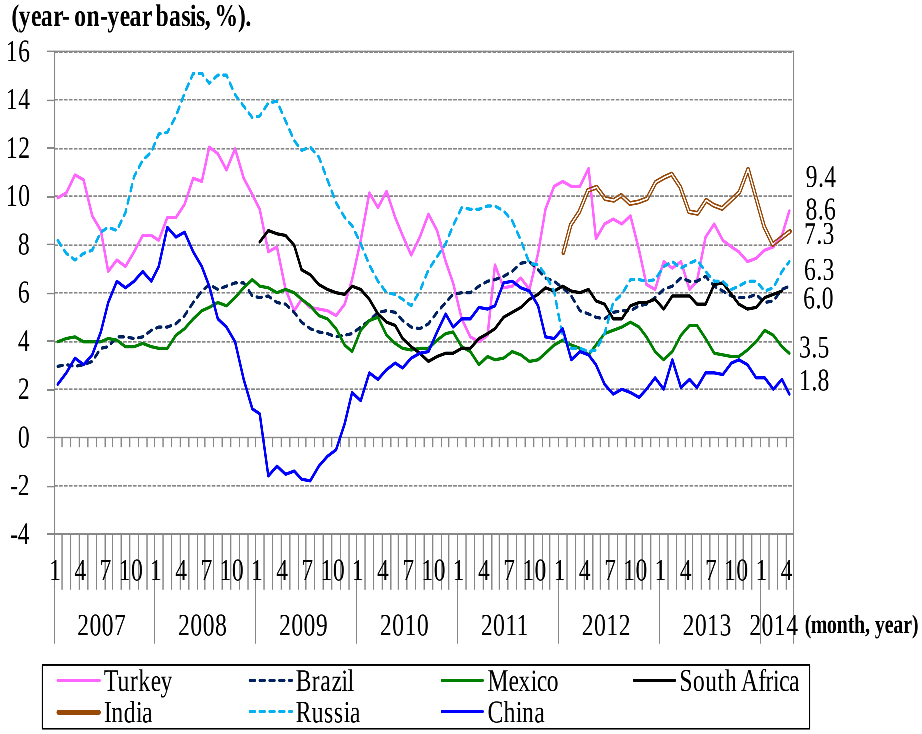
Source: *Global Economic Monitor* (World Bank).

Figure I-1-2-8　Foreign currency reserves in major ASEAN cuntries



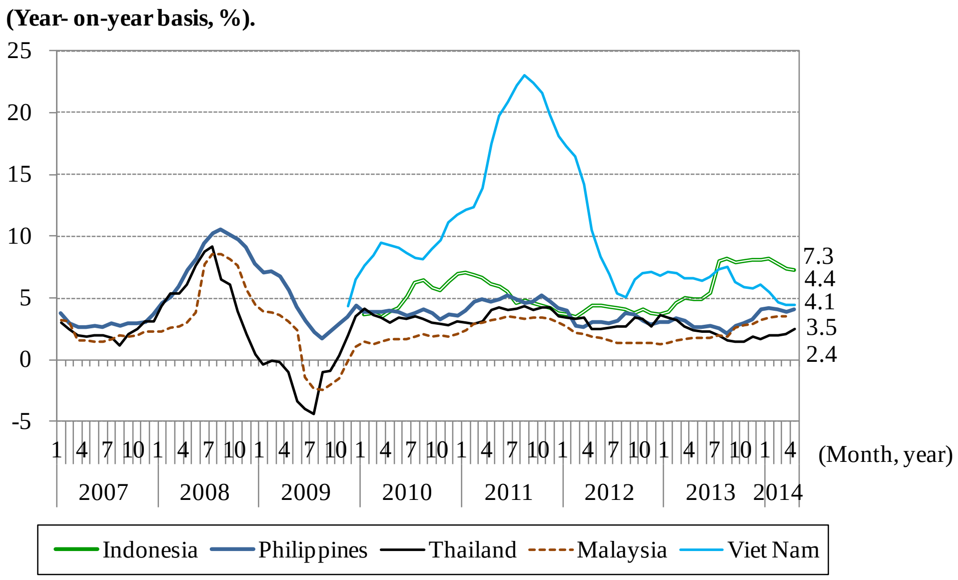
Source: *Global Economic Monitor* (World Bank).

Figure I-1-2-9　Consumer price indices in major emerging economies



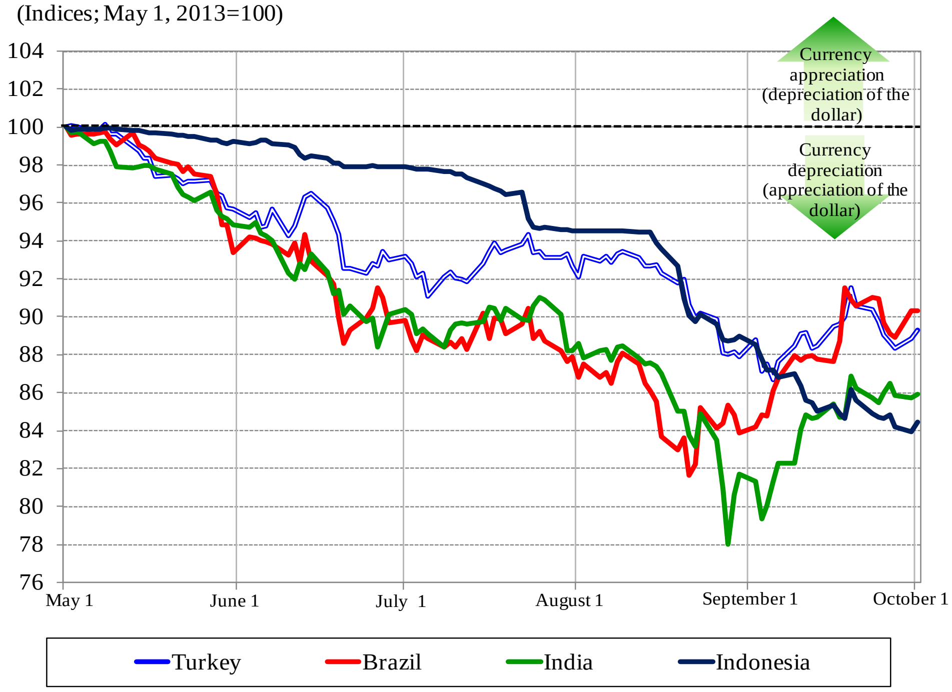
Source: CEIC database.

Figure I-1-2-10　Consumer price indices in major ASEAN countries



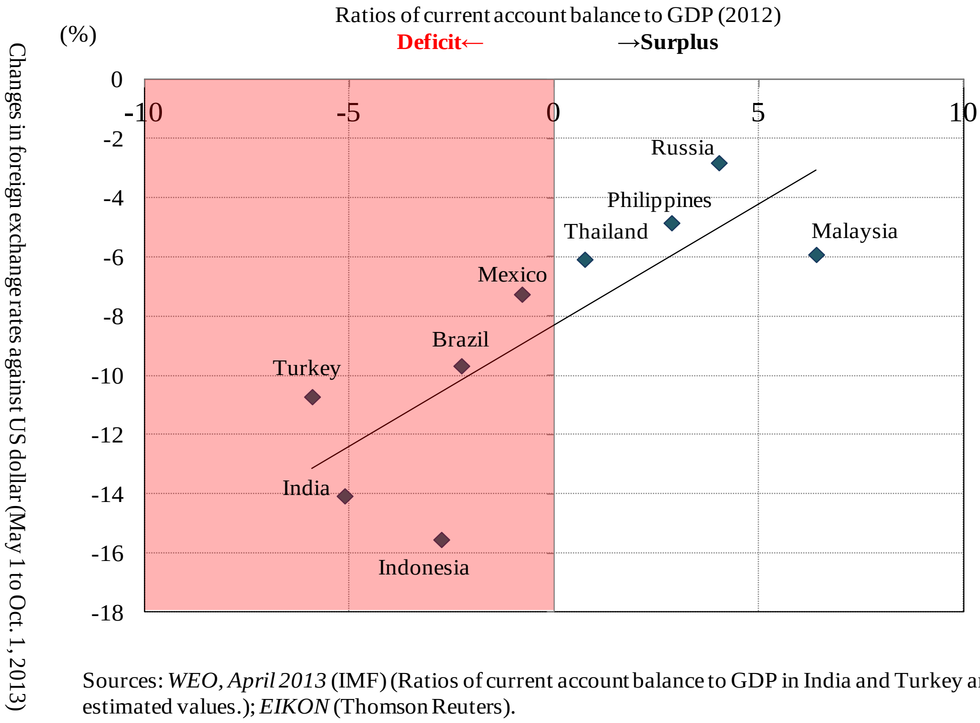
Source: CEIC database.

Figure I-1-2-11　Trends in foreign exchange rates in emerging economies with a fragile currencies (against US dollar)



Source: *EIKON* (Thomson Reuters).
Notes: All values are against U.S. dollar.

Figure I-1-2-12　Ratios of current account balance to GDP and changes in foreign exchange rates in emerging economies



Sources: *WEO, April 2013* (IMF) (Ratios of current account balance to GDP in India and Turkey are estimated values.); *EIKON* (Thomson Reuters).

While we should pay attention to the countries with large current account deficits, emerging economies have strengthened their resilience against external risks compared to the previous currency crises through such measures as building up foreign currency reserves. Figure I-1-2-13 shows the relationships between "foreign debt balance," "foreign currency reserves" and "short-term foreign debt balance" with regard to eight major emerging economies ― India, major ASEAN member economies, Brazil, Mexico and Turkey[12].

Although there are various views on the appropriate level of foreign currency reserves. Here we look at the 2 indicators, "foreign currency reserves" and "short-term foreign debt balance" whose payment is due within the current year. Then we examine the ratio of the short-term foreign debt to foreign currency reserves by adopting the view which uses "1.0" time as a benchmark to judge the ability of payment, when the country has difficulty to ensure external finance.

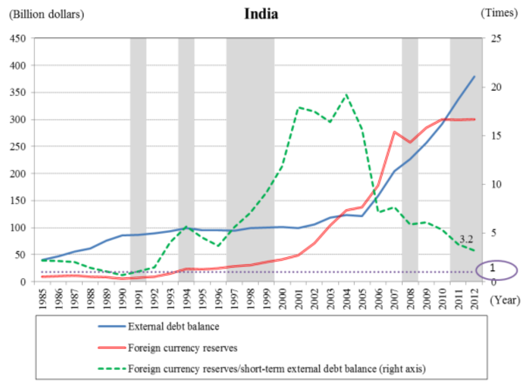
In all of the eight economies, the amount of foreign currency reserves has increased. As of 2012, the ratios of the short-term foreign debt balance in the foreign currency reserves were relatively high for Brazil at 11.5 and for the Philippines at 9.9, and all economies maintained a ratio higher than of the benchmark of 1.0.

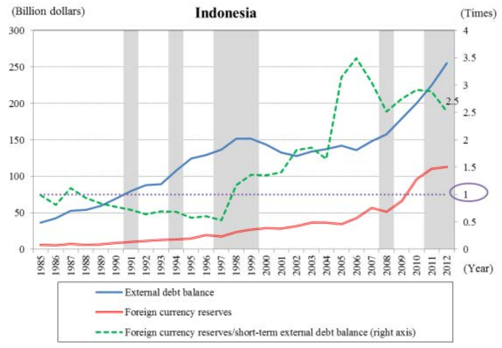
Moreover, in order to protect their currencies, emerging economies have implemented such measures including raising policy interest rates and providing incentives for investments. Table I-1-2-14 shows an overview of policy measures implemented during the period between the end of May and the end of September of 2013, when emerging economies' financial markets were severely impacted, by India, Indonesia, Turkey and Brazil, whose currencies depreciated steeply. Figure I-1-2-15 shows the political measures and their effects implemented by India and Indonesia in August and September of 2013 in response to changes in stock prices and foreign exchange rates. While attention is needed to the effects of the economic slowdown possibly caused by a rise in policy interest rates, those measures have succeeded to some degree in supporting the currencies.

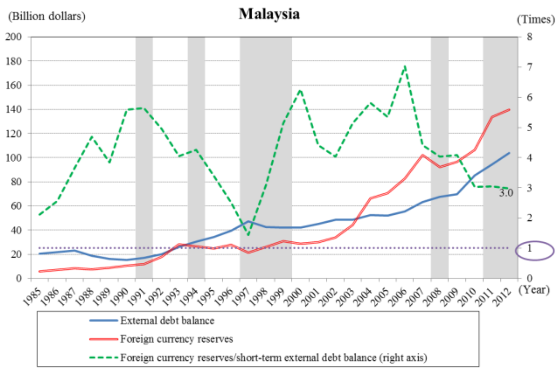
In January 2014, the tapering of the FRB's quantitative easing program started. Depending on future conditions, some emerging economies, including those countries with current account deficits, may be impacted in the short term. However, the possibility of a major turmoil arising as was the case during past economic crises is presumed to be small for reasons such as: the fact that emerging economies have strengthened their resilience against risks compared with previous crises; policy measures have been promptly implemented; FRB Chairwoman Janet Yellen has remarked that the tapering of the quantitative easing would proceed slowly and an interest rate hike would not come soon; and the U.S. economic recovery is likely to have positive effects.

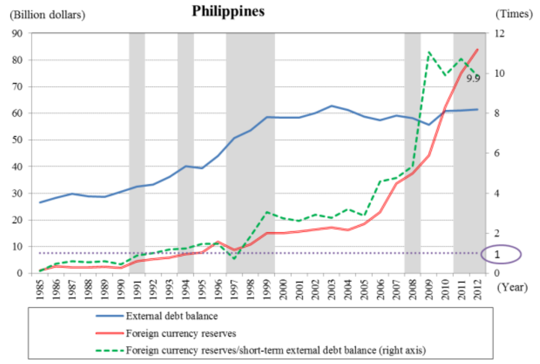
[12] The data covers only the period until 2012 due to statistical limitations.

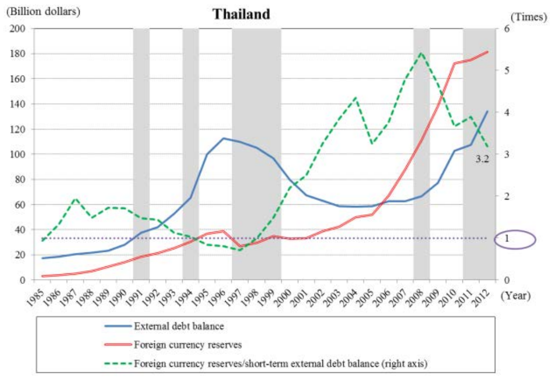
Figure I-1-2-13 Trends in external debt stocks, foreign currency reserves and short-term external debt stocks in major emerging economies

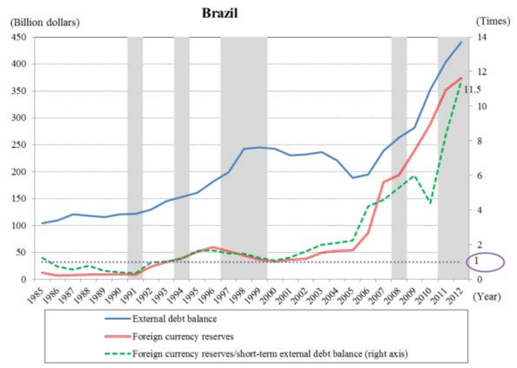


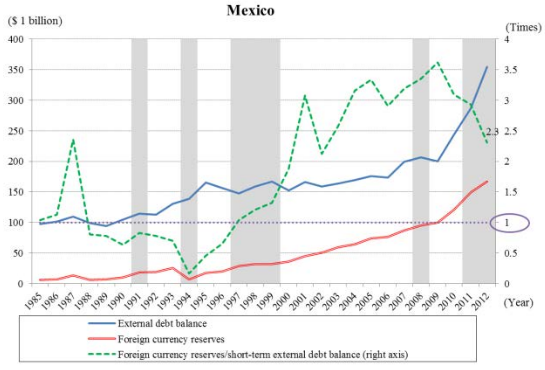


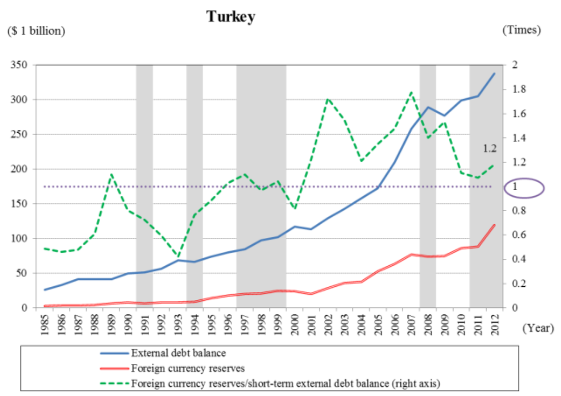












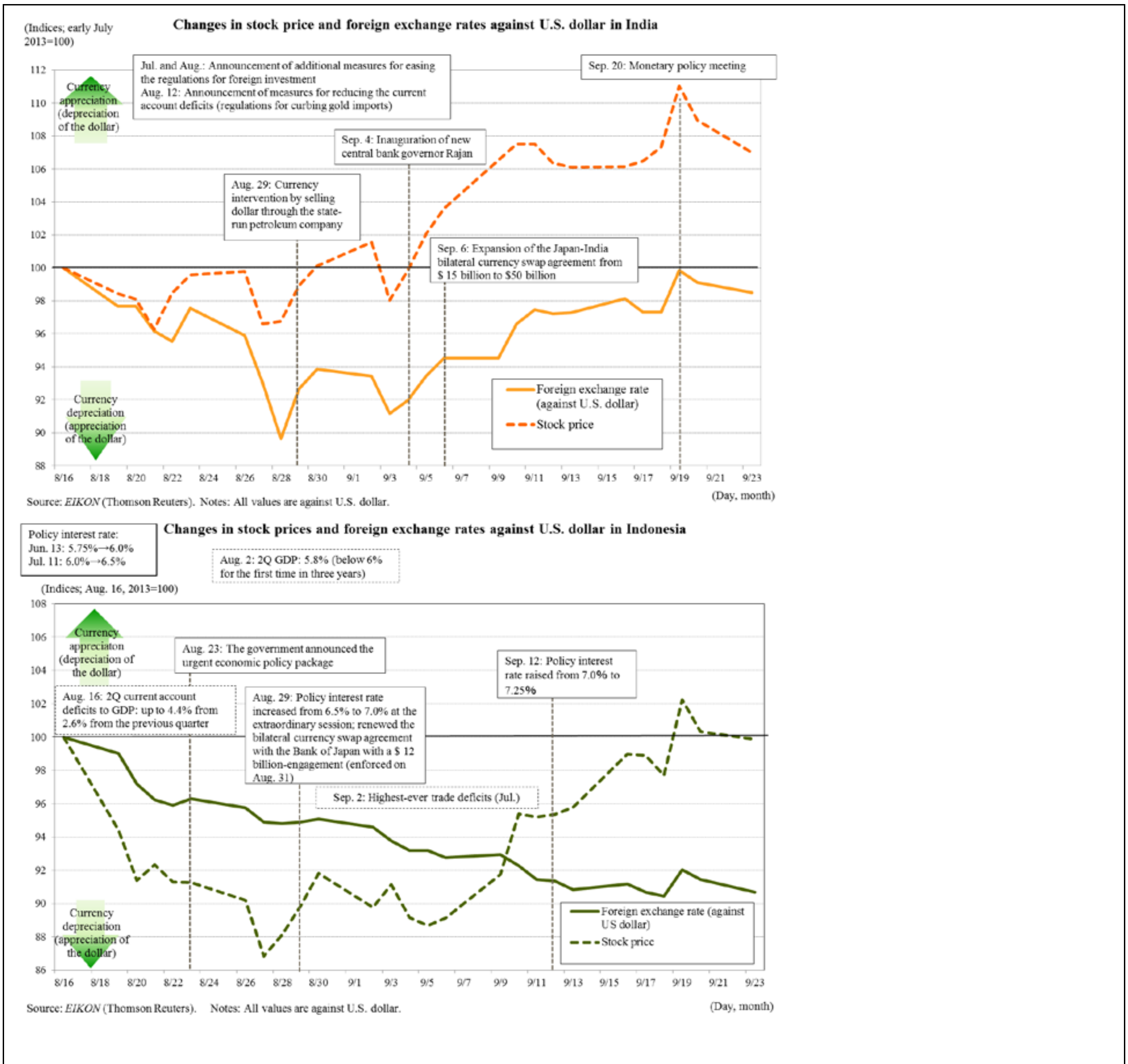
Notes : Hatching part shows: India economic crisis, 1991; Mexican monetary crisis, 1994; Asian-Brazilian monetary crisis, 1997-99; Collapse of Leeman Brothers in the U.S., 2008; European debt crisis, 2011-12.
Source : *World Development Indicator* (Would Bank).

Table I-1-2-14　Policy measures for supporting currencies in emerging economies

	Policy measures and their results
India	On July 15, the central bank announced measures for stabilizing the rupee, including the partial raising of loan interest rates to private banks. In July and August, the government announced additional measures for easing the regulations on foreign investment and for reducing the current account deficit, including the regulation for curbing gold imports. On August 29, the government intervened by selling dollars through the state-run petroleum company. On September 4, new central bank Governor Raghuram Govinda Rajan was inaugurated. On September 20, the policy interest rate rose from 7.25% to 7.50%.
Indonesia	The policy interest rate rose consecutively in June and July to 6.5%. On August 23, the government announced an urgent economic policy package. On August 29, at the extraordinary session, the government raised the policy interest rate from 6.5% to 7.0%. On September 12, the policy interest rate rose from 7.0 % to 7.25%.
Turkey	On July 23 and August 20, the government raised the upper limit of loan interest rates. However, after considering the adverse impact on exports, on August 27, it announced that it would not raise the rates further, which caused a depreciation of the lira, a decline in stock prices, and an increase in government bond yields.
Brazil	On May 29, the government raised the policy interest rate from 7.5% to 8.0%. On July 10, it raised the rate again, from 8.0% to 8.5%. On August 23, the government announced that it will make a 60 billion dollar currency intervention, at a rate of 3 billion dollars per week or 0.5 billion dollars per day. On August 28, it raised the policy interest rate from 8.5% to 9.0%.

Source: Documents and press releases publicized by the governments.

Figure I-1-2-15　Effects of supporting currencies by policy measures in emerging economies



Column 1 Market trends after the start of the tapering of the quantitative easing program

In line with the decision made at the Federal Open Market Committee (FOMC) meeting held on December 17-18, 2013, the tapering of the U.S. FRB's quantitative easing program (so-called QE3) started in January 2014. Emerging economies' currencies and stock prices fell due to the combination of such factors as concerns over a capital outflow from the countries, the worsened Chinese economic indicators[13], the occurrence of specific cases of possible default related to "wealth management products"[14] in China, a currency plunge in Argentina and political unrest in Turkey and Ukraine. In response, emerging economies implemented such measures as market intervention and interest rate hikes. Moreover, regarding the cases of possible default in China, default was avoided at the last minute.

Furthermore, thanks to the positive effects of repeated messages issued after the start of QE3 by FRB Chairwoman Yellen indicating that the tapering of QE3 would proceed slowly and an interest rate hike would not come soon, currency and stock price drops in some emerging economies subsided for the moment. Neither the kind of massive capital outflow that was observed in May and June 2013 nor the "triple weakness," which refers to simultaneous drops in stock prices, bond prices and currencies, occurred, and the impact of the start of the tapering of QE3 on emerging-country financial markets in January 2014 proved to be relatively small.

Emerging economies' currencies stayed on a downtrend from May 2013 onwards. However, since the end of January 2014, emerging economies' currencies generally have taken an upturn. In particular, since mid-March 2014, recovery has been notable in countries whose currencies are regarded as fragile, such as Brazil, India, Indonesia, Turkey and South Africa (Figure Column 1-1). As for the background factors of the recovery, in Brazil, the country's central bank raised its policy interest rates at nine consecutive meetings until the Monetary Policy Committee meeting in April 2014, starting from April 2013. In India and Indonesia, their currencies have risen against the backdrop of an increase in foreign currency reserves, control of prices through interest rate hikes, the shrinkage of their current account deficits due to an expansion of the trade balance and expectations that structural reform will be promoted by new governments after elections. In Turkey, the lira fell to a record low in January 2014 reflecting political instability caused by such factors as a suspected corruption case involving cabinet members. However, the Turkish currency rose because Turkey implemented a substantial interest rate hike and also because of expectations that the political turmoil

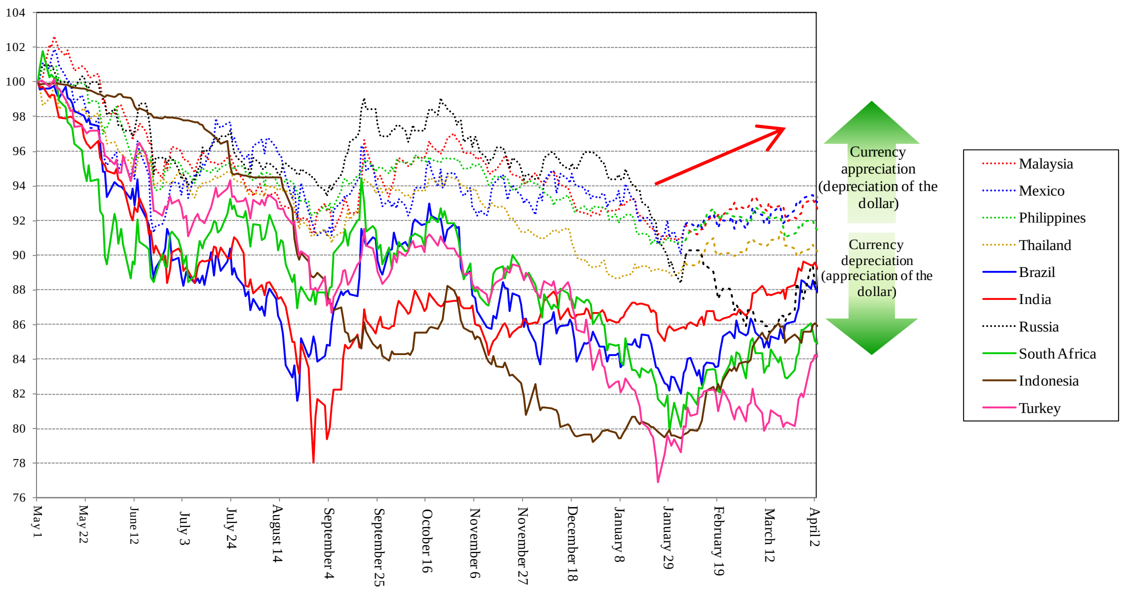
[13] Amid the slowdown of Chinese economic indicators, in particular, the Purchasing Managers' Index (PMI), compiled by a major U.K. bank, came to 49.6 on a preliminary basis, falling below the boom or bust line of 50 for the first time in six months.

[14] There was concern that a wealth management product sold by a major Chinese bank and managed by a trust company might not be redeemed at the end of January 2013 as scheduled because of a financial crunch at a private coal mining company in Shanxi Province, which was an investment target. In this case, default was averted at the last minute. However, concern over wealth management products persisted thereafter.

would be stabilized due to the victory of the ruling party (AKP) in regional elections on March 30. South Africa implemented an interest rate hike in January 2014 for the first time in five and a half years in order to protect its currency.

Figure Colum 1-1 Trends in currencies in emerging economies (May 2013-April 2014)

(Indices; early May 2013=100)



Source: *EIKON* (Thomson Reuters). Notes: All values are against U.S. dollar.

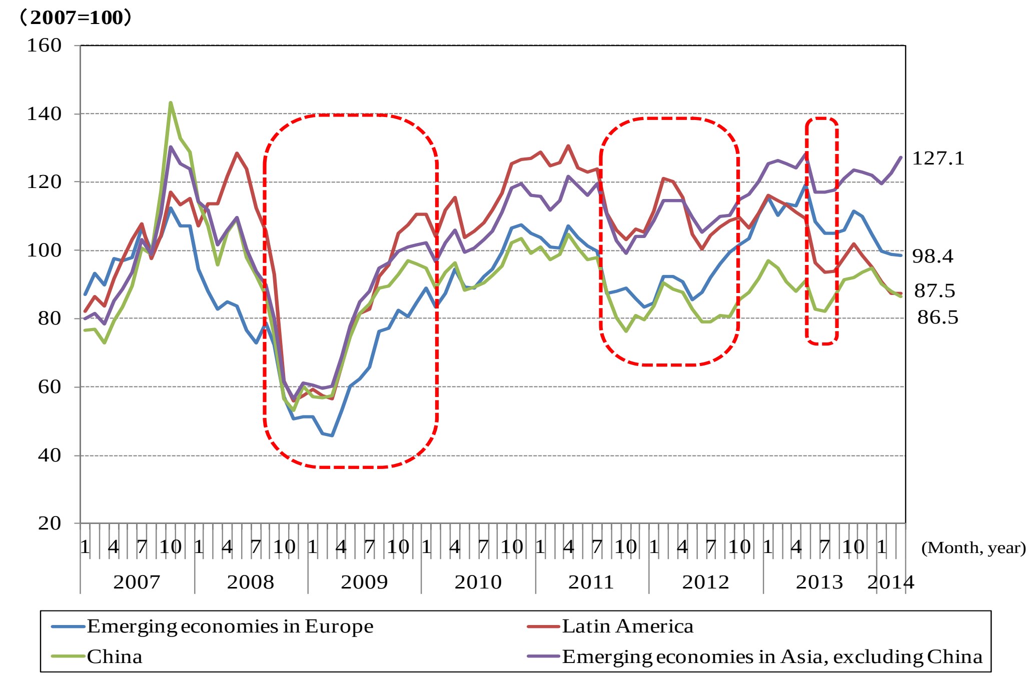
Column 2 "Triple weakness" of stocks, bonds and currencies in emerging economies

As a result of the massive capital outflow since May 2013, the volatility of stock prices and government bond spreads in major emerging economies/regions increased (Figures Column 2-1 and 2-2). Currencies also depreciated steeply, confronting emerging economies/regions with the "triple weakness" of stocks, bonds and currencies, and financial markets showed significant instability against the backdrop of the capital outflow.

However, the movements of both stock price indexes and government bond spreads have been less volatile compared with the time of the global economic crisis and the European sovereign debt crisis (Figures Column 2-1 and 2-2). By March 2014, the stock price index for emerging economies in Asia (excluding China) recovered to close to the peak before the global economic crisis (130.2 in October 2007). Government bond spreads have been declining and stabilizing in emerging economies in Asia, Latin America and China since the beginning of 2014. The IMF[15] pointed out that "developments to date do not portend a sustained reversal of capital flows. In fact, capital inflows recovered moderately in the latter part of 2013 from the lows reached in summer 2013".

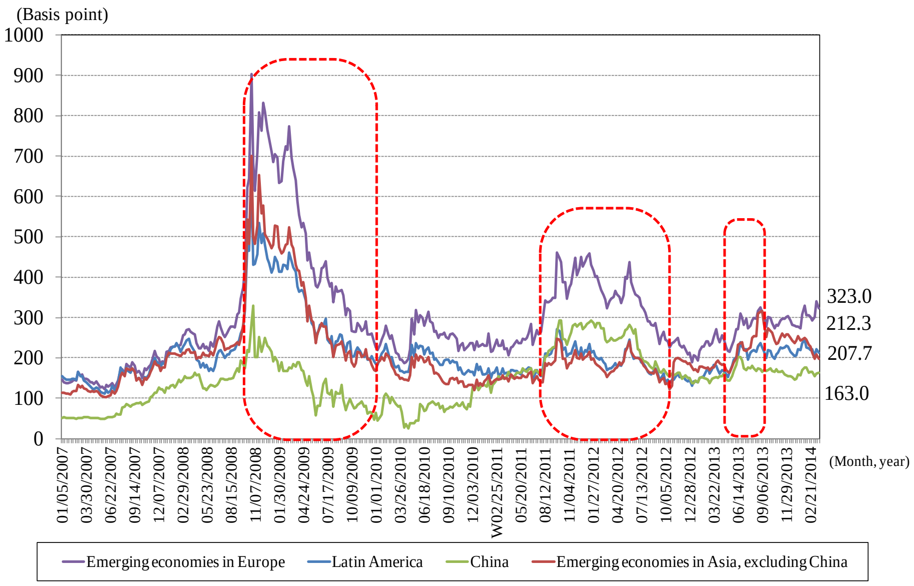
[15] *WEO April 2014* (IMF)

Figure Colum 2-1　Trends in stock indices in major emerging economies and regions



Source: *WEO, April 2014* (IMF).

Figure Colum 2-2　Trends in bond spread in major emerging economies and regions



Notes: The data is relied on the values in the J.P. Morgan Emerging Market Volatility Index
Source: *WEO, April 2014* (IMF).