

KERI **E**CONOMIC **B**ULLETIN

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Korea Economic Research Institute

Executive Summary

Amid growing global uncertainty and low yen, the September projection of Korea's economic growth at 3.7% unchanged

Midst of the dimming global outlook for growth and weakening yen, the plunging international oil prices is expected to offset the economic impact from downside risks

The Effect of change of exogenous variables on 2015 growth forecast

	'14. Sep Forecast	'14. Dec Forecast	Effect to Growth
World Economic Growth (2015)	4.0%	3.8%	-
USD/JPY (end of 2015)	¥110	¥125	-
Oil Price (Dubai, 2015 average)	\$102/bbl	\$63/bbl (about -40%)	+

For 2015, consumer price declines to 1.7% from the September estimate of 2.3%

Factors such as decline in international oil prices, slump in demand recovery, and the limited rise of USD/KRW keep the upward pressure low. One of key ascending factors that send consumer prices upward is a price hike on tobacco products. It is estimated that a price increase of 2,000 won raises the inflation rate by 0.56%p. If tobacco price hike were excluded, the inflation rate is estimated to decline at 1.1%, lower than that of 2014

Current account surplus maintains a 2014-level at US\$86.6 billion; USD/KRW at 1,071 won for 2015

Despite an expectation for a widening deficit in the service account balance, current account surplus for 2015 is forecast to maintain at US\$86.6 billion, a marginal decline from US\$87.6 billion in 2014, boosted by a decline in imports following falling oil prices and impact from growing goods balance surplus. USD/KRW is expected to show a gradual depreciation at a yearly average of 1,071 won, as the ascending pressure following the US benchmark rate rise is mitigated by a large current account surplus.

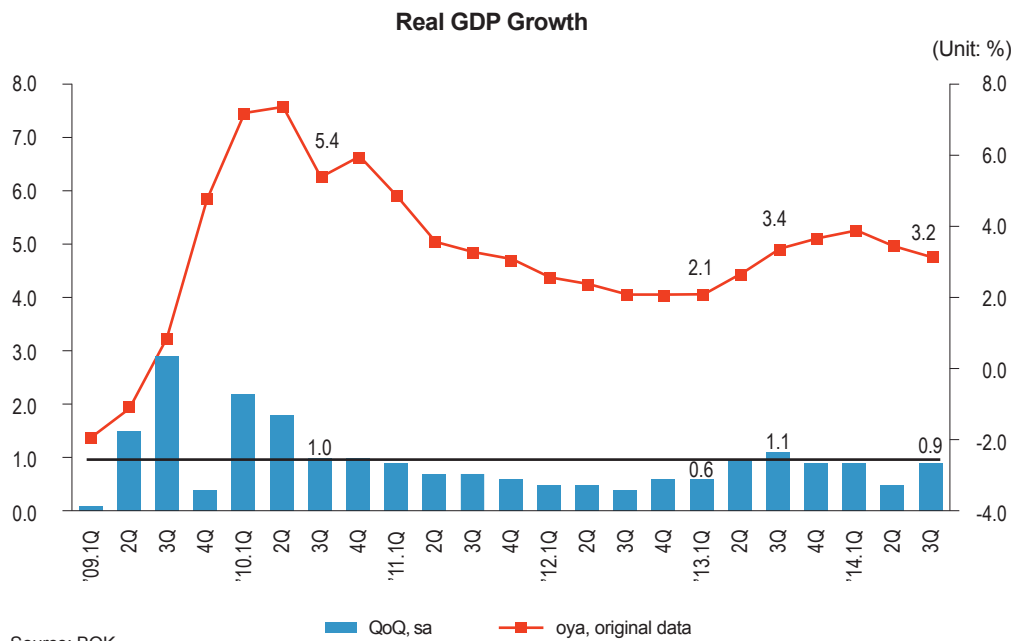
Efforts needed to minimize impacts from foreign exchange volatility on plunging oil prices

In the times when commodity prices fall, foreign exchange volatility tends to intensify in emerging markets, including Korea. In particular, weakening cooperation on monetary policy among major economies in recent times increases risks for emerging market volatility. Therefore, an orderly, planned and proactive response to counter confounding factors in the foreign exchange market is called for. In addition, efforts are needed to restore market confidence through macro-prudential measures and minimize foreign exchange volatility by strengthening Korea's global financial diplomacy.

Recent Developments

Korea GDP growth nudges up 0.9% (QoQ) in 3Q 2014; growth remains low

This is ascribable to weak recovery in private consumption and construction investment, as well as a decrease in facility investment and exports. Growth over the same period in the previous year also fell marginally from 3.5% in 2Q to 3.2% in 3Q 2014.



Domestic demand makes rapid stride; export contribution shows a poor performance

Contribution from domestic demand made a visible recovery at 1.8%p from 0.0%p in the previous quarter. Contribution from private consumption grew 0.5%p in 3Q, compared to -0.1%p in 2Q. In addition, contribution from the gross fixed capital formation which affects construction and investment grew 0.4%p in 3Q from -0.1%p in the previous quarter, backed by construction investment. However, in the midst of a strong dollar and weak yen trend, contribution from net exports to GDP sharply decreased from 0.4%p in 2Q to -1.2%p in 3Q, a sign that the GDP growth contribution from external trade was weak.

Contribution to GDP by expenditure

(Unit: %p, QoQ sa)

	2013				2014		
	1/4	2/4	3/4	4/4	1/4	2/4	3/4
Final consumption expenditure	0.0	0.6	0.6	0.4	0.1	-0.1	0.8
Private	-0.1	0.3	0.5	0.3	0.1	-0.1	0.5
Government	0.1	0.2	0.1	0.1	0.0	0.0	0.3
Gross capital formation	0.8	-0.1	1.0	1.3	-0.3	0.1	1.0
Gross fixed capital formation	1.6	0.7	0.3	-0.2	0.9	-0.1	0.4
Construction	0.9	0.7	0.0	-0.8	0.7	0.1	0.4
Facilities investment	0.1	0.1	0.2	0.5	-0.2	0.1	0.0
Intellectual property products	0.5	-0.1	0.1	0.1	0.4	-0.2	0.0
Changes in inventories and acquisition	-0.8	-0.8	0.6	1.5	-1.3	0.2	0.6
Exports of goods and services	0.1	1.5	-0.6	0.8	0.8	0.9	-1.2
(less)Imports of goods and services	0.3	0.9	-0.2	1.5	-0.4	0.5	-0.2

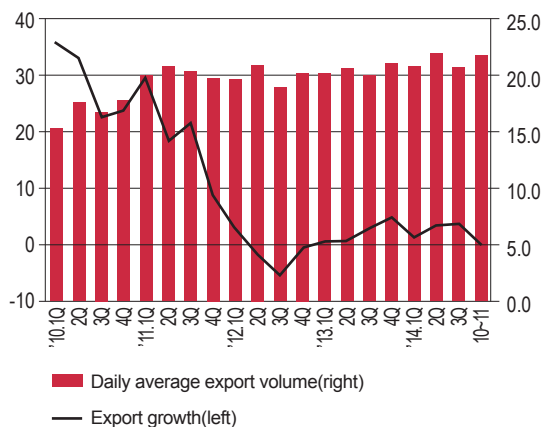
Source: BOK

Exports growth (on a custom clearance basis) shows a slowdown as it records a monthly average of 0.2% between October and November, from 3.7% in 3Q 2014

By region, the positive effect of rapidly growing exports to US and rebound in exports to China was offset by a falling exports to EU and Japan. The daily volume of exports nudged up from US\$2.07 billion in 3Q to a monthly average of US\$2.17 billion between October and November due to a fall in number of days operated (a 2.5% increase, oya, due to a decrease in number of days operated).

Export Growth and Daily Average Export Volume

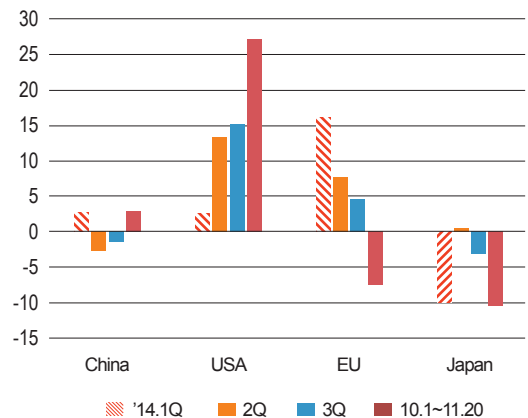
(Unit: left - oya%, right - US\$100mil)



Source: MOTIE, Korea Customs Service

Export Growth by Destination

(Unit: oya%)

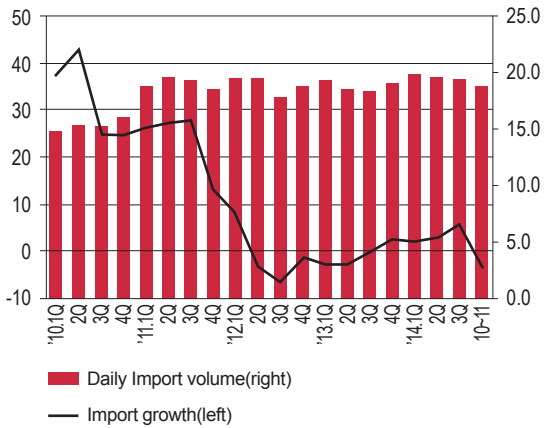


Source: Korea Customs Service

Imports growth (on a custom clearance basis) takes a nosedive as it records -3.5% (average, monthly) between October and November from 5.6% in 3Q 2014

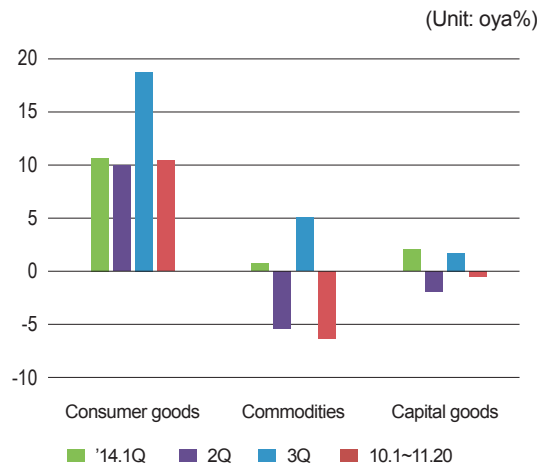
Following a sharp decrease in oil prices as well as a fall in imports of crude oil and petroleum products, raw material imports, which constitute the largest share of total imports, saw a sharp fall in imports. The daily volume of imports between October and November recorded US\$1.88 billion, a 1.3% decrease, oya, from US\$1.94 billion in 3Q 2014.

Import growth and daily average import volume
(Unit: left - oya%, right - US\$100mil)



Source: MOTIE, Korea Customs Service

Import growth by use



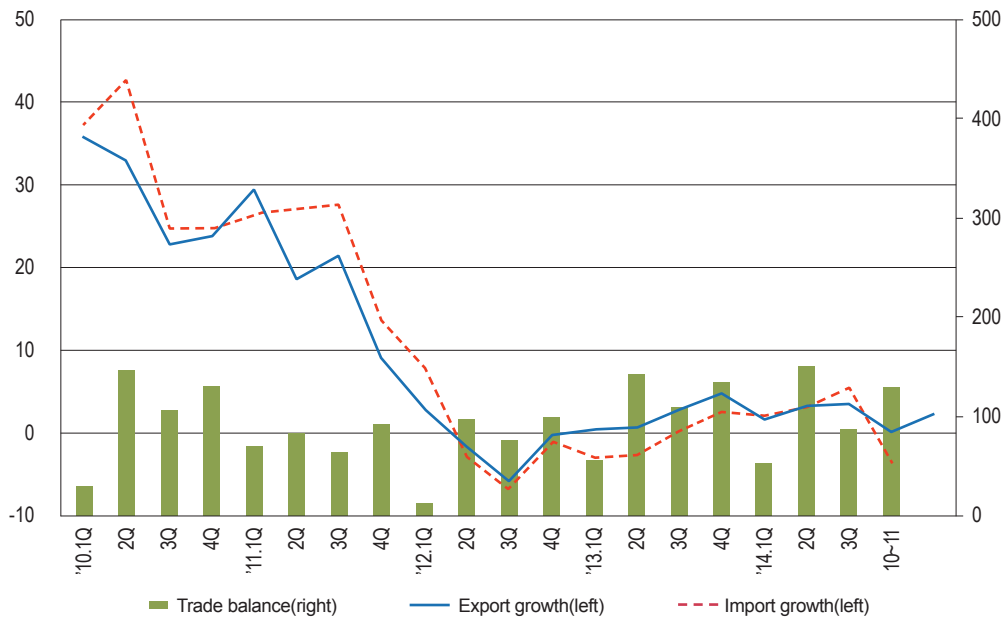
Source: Korea Customs Service

Korea's trade balance records a US\$41.87 billion surplus between January and November (a US\$1.32 billion increase, oya)

Korea's trade account surplus gap widened despite a slow export growth, compared to the same period a year ago, as export growth at 2.4% hovers just above import growth at 2.3%.

Trend of Export, import and trade balance

(Unit: left - oya%, right - US\$100mil)



Source: MOTIE

Korea's current account reached a record-high, with an accumulative surplus of US\$70.66 billion between January and October 2014

Korea's current surplus increased by US\$2.34 billion, oya, compared to US\$68.32 billion between January and October in 2013. Monthly average surplus marked US\$7.87 billion between July and October, maintaining an upward trend since 1H 2014, which stood at US\$6.53 billion.

Trend of current account

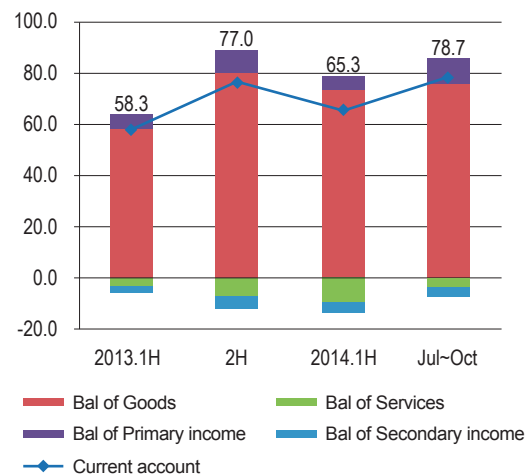
(Unit: US\$100mil)

	2013		2014	
	1H	2H	1H	7~10
Current Account	349.6	461.9	392.0	314.6
Bal of Goods	348.9	479.0	441.8	303.3
Bal of Services	-20.2	-44.8	-55.7	-12.7
Bal of Primary Income	34.7	55.9	32.4	41.2
Bal of Secondary Income	-13.8	-28.1	-26.4	-17.1

Source: The Bank of Korea

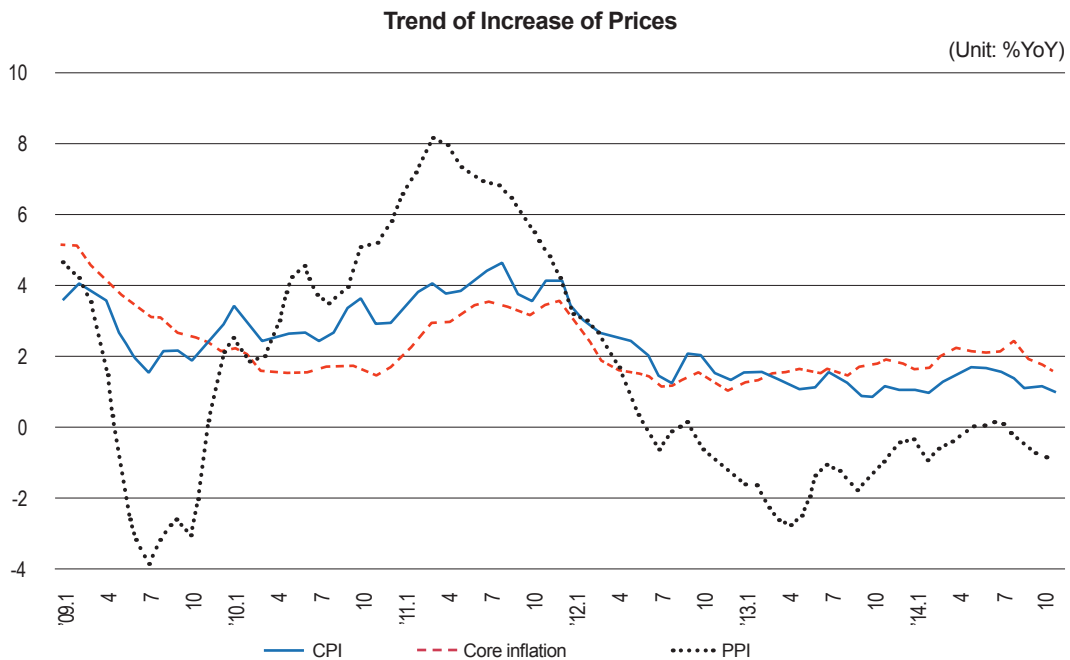
Trend of monthly average current account

(Unit: US\$100mil)



Consumer prices fluctuate before turning downward in 2H, falling to 1.0% in November 2014

Prolonged low inflation is ascribable to the downward pressure from the supply side, which was accentuated further by the lack of upward pressure from the demand side. With the signs of economic recovery abating, the demand side continues to pull the inflationary pressure downward. Despite the strong US dollar, the downward pressure from the supply side was strengthened further due to plunging oil prices which lowered import prices and prices of fresh foods. On the other hand, producer prices had a reactionary fall, dipping at -0.2% in August, but dropped further to -0.9% in November 2014.



Source: Korea Customs Service, BOK

The total number of employment continues to expand around 400,000; a fall in employment rates by certain age group and sector worsens

Continuing the pace quantitative expansion at around 400,000 each month, the net number of employed persons continued to grow as it records 517,000 in 3Q (oya), 406,000 in October, and 438,000 in November. However, the youth employment increase is narrowing from the group aged between 15 and 29, and the declining rate of number of employed from the group between 30 and 39 is accelerating. By sector, manufacturing and construction sectors maintain a positive growth in number of jobs, while a large number of jobs have been adjusted downwards following a large scale structural adjustment in agriculture, forestry, fishery sector, as well as sectors in electric, transportation, communication and finance.

Employment-related Indicators

(Unit: thousand persons change over year ago, %)

		2013	2014				
		Year	1Q	2Q	3Q	Oct	Nov
Changes in number of employed persons		386	729	464	517	406	438
Age	- 15 ~ 29	-50	97	53	102	77	49
	- 30 ~ 39	-21	-6	-42	-7	-23	-34
	- 40 ~ 49	22	99	34	15	0	10
	- 50 ~ 59	254	323	227	215	169	193
	- 60 years and older	181	218	192	192	183	221
Industry	- Agri.,Forestry & Hunting	-8	12	-54	-121	-146	-85
	- Manufacturing	79	123	136	194	142	102
	- Construction	-19	27	12	57	47	84
	- Wholesale & retail trade, hotels & restaurants	35	303	213	278	276	212
	- Business, personal, public service & others	235	209	174	187	127	169
	- Electricity, transport, communication & finance	62	56	-15	-76	-35	-38
Unemployment rate(%)		3.1	4.0	3.7	3.3	3.2	3.1

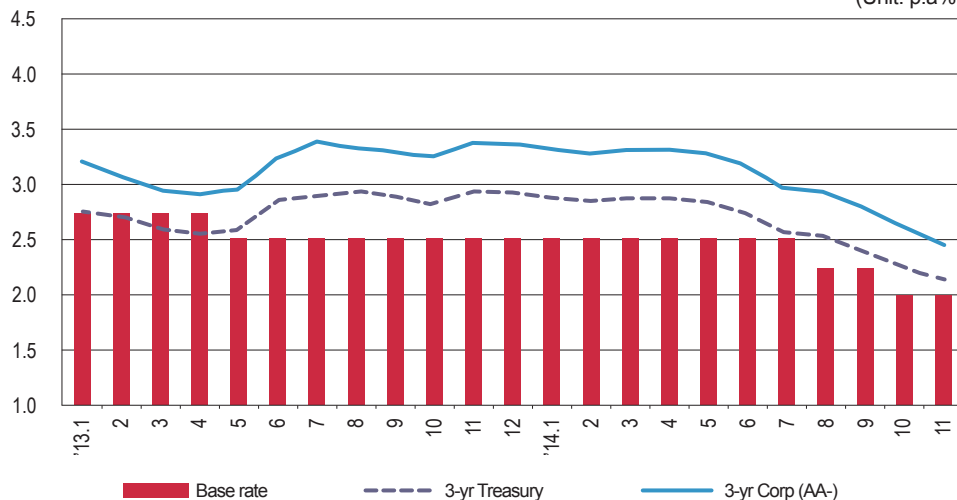
Source: Economically Active Population Survey (Statistics Korea)

Market interest rates drops in line with BOK's decision to cut its benchmark base rate in October

Witnessing Korea's overseas markets tumble on BOJ's aggressive monetary easing, BOK has cut its base rate again by 25 basis points to 2.00%, from 2.25% in October, only two months after its first cut in August 2014. In anticipation of a slow economic recovery and a low inflation, market interest rates continued a downward trend.

Interest rates

(Unit: p.a%)

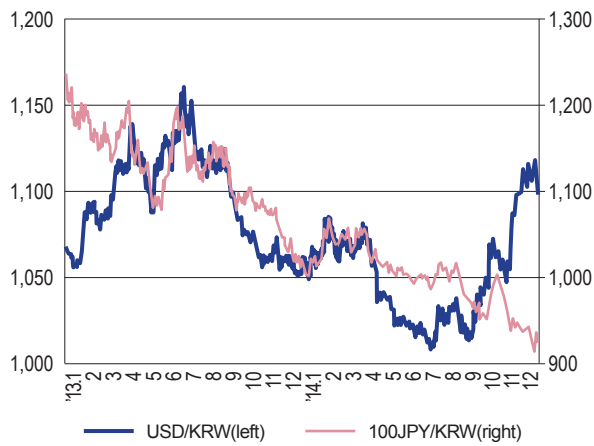


Source: BOK

USD/KRW soars on a monetary policy divergence among key economies, as US continues to recover and Japan shows a surprise fall

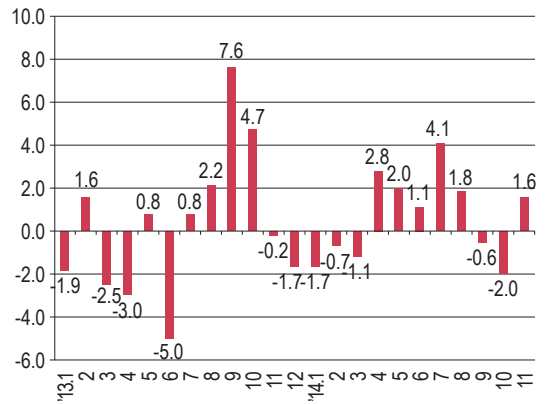
With an accelerating US economy as a notable exception, an unabated stagnation in the eurozone and ECB's quantitative easing policy, Japan's negative growth for two consecutive quarters and BOJ's aggressive easing, and emerging economies with regional variations are some of the global economic outlook; Amid the global recovery remains polarized where the US will persistently outpace the rest, USD showed a steep incline.

Exchange Rate Trend of the Korean Won
(Unit: USD/KRW)



Source: BOK

Net Foreign Purchase of Korean Equities
(Unit: Tril Won)



Source: BOK

Outlook for 2014 and 2015

1. External Environments

(World Economy) Overall global recovery marginally accelerates, led by steady recovery in the US; global growth remains in a staggered manner as policy measures and the pace of recovery differs by region

(United States) The economy is expected to maintain an upward trajectory, led by a reinvigorating private sector on low inflation following a sustainable and gradual recovery in the US labor market and a fall in energy prices.

(Eurozone) Eurozone is on a gradual path of economic recovery, attributable to gradual growth in the private sector and export recovery; however risks remain to slow down the pace due to delayed structural reforms in certain areas in the eurozone.

(Japan) Despite a delay in consumption tax hike to 2017 and BOJ's continuing quantitative easing, the economic growth is forecast to be very limited, ascribable to slow improvement in consumption and investment, as well as risks associated with uncertain political events.

(China) Due to a comprehensive reform measure, including SOE investment and PBoC's benchmark interest rate cut to countermeasure external uncertainties and boost domestic demand, the Chinese economy is projected to manage the slowdown over a prolonged period.

(Oil prices) Despite high uncertainties exist from the supply side, the dramatic collapse in the price of oil is a trend difficult to reverse; the prices expected to fall below the 2014 level

(Supply and demand) Rise in demand is expected to be low while the US and Saudi Arabia maintain their oil supplies, resulting an excess supply, with a scale similar to that of 2014.

(Geopolitical risk) Risk premium associated with tensions in Iraq and a possible breakdown in Iranian nuclear talks remains relevant.

(Speculative factor) A strong US currency and plunging oil prices pull down the relative attractiveness of oil speculation.

(Foreign exchange rates of key economies) The US dollar is projected to stay strong, amid the possibility of additional counter-measures by non-US regions (eurozone, Japan and China) against the US Fed's future exit strategy

(Euro) With high possibilities for ECB's new injections of liquidity and other monetary measures to boost growth in the eurozone, the euro is forecast to remain weak.

(Yen) The yen is expected to stay weak, as BOJ is expected to continue its monetary easing policy to buoy its economy.

(Yuan) In the midst of transition of its growth engine, the yuan is expected to moderate as the authorities may implement an additional benchmark interest rate cut to prevent a hard landing

2. Outlook for Korean Economy in 2014 and 2015

Growth: 3.4% in 2014 → 3.7% in 2015

The Korean economy in 2015 is expected to grow at 3.7%, a 0.3%p higher than that of 2014, underpinned by favorable economic recovery projections in some advanced economies and expansionary policy at home. Downside risks such as lowering of global growth trajectory and weakening yen are expected to be offset by the steep slide in the oil prices, with an overall growth projection for 2015 remain unchanged at 3.7%, from our previous projection made in September 2014.

The Effect of change of exogenous variables on 2015 growth forecast

	'14. Sep Forecast	'14. Dec Forecast	Effect to Growth
World Economic Growth (2015)	4.0%	3.8%	-
USD/JPY (end of 2015)	¥110	¥125	-
Oil Price (Dubai, 2015 average)	\$102/bbl	\$63/bbl (about -40%)	+

Private consumption: 1.8% in 2014 → 2.5% in 2015

The private consumption growth is expected to fall short of the growth rate by a large margin, albeit better than the previous year. This is ascribable to restraining factors such as household debt burden and secular downward trend of the real estate market prices. A falling trend of the consumption propensity continues as the 'debt-deleveraging' and weakening mid- and longer-term housing demand limit the pace of real estate market recovery.

Facility investment: 5.8% in 2014 → 5.9% in 2015

A slight improvement in the facility investment is expected for 2015, comparable to that of 2014 at 5.8%. This is due to positive factors such as the gradual recovery of global economy, expectations on the government's stimulus efforts to spur the economy and a tax support on facility material imports that using the weak yen. However, weakening investment capability, rising purchasing cost, and weakening investment sentiment are some downside risks that remain relevant. Further negative factors, such as a decrease in operating profits, possible global interest rate hike following the US benchmark rate rise and lower-than-optimal domestic investment sentiment indicators, may limit a large scale investment increase.

**Construction investment:
2.1% in 2014 → 2.7% in
2015**

Anticipation for policy measures to invigorate the real-estate market and an SOC budget increase are favorable conditions that expect to send construction investment upward for 2015. To meet the anticipation, the SOC budget for 2015 stands at 24.8 trillion won, a 4.7% increase over the same period last year. However, as long as structural demand-weakening factors dominating over the construction market, the pace of construction investment recovery is expected to stay low.

**Export growth (BOP basis):
1.9% in 2014 → 3.6% in
2015**

Export recovery is expected to be limited as the recovery of major economies is slower than expected. With the US economy an exception, the outlook for growth in the eurozone, Japan and China has dimmed while reduction of the size of China's processing trade is a negative factor to Korea's exports to China as exports center on intermediary goods. Ultra low yen adds woes to Korea's automobile, steel, shipbuilding and machinery sectors, as these industries compete with Japan in the global markets. Uncertainty over exchange rate fluctuation is another risk factor that pulls down the export growth. Fears that the US Federal Reserve may tighten its monetary policy are expected to increase uncertainties over the financial markets of emerging economies. Contraction in real economic activities is another threat to Korea's export growth.

**Current account surplus
(US\$ billion): 87.6 in 2014
→ 86.6 in 2015**

Korea's total current account surplus is expected to decline marginally at US\$86.6 billion in 2015, as the growing service balance deficit outpaces the goods balance surplus. With steep decline in the international oil prices, the import growth is expected to hover below the export growth, resulting in a growing surplus in goods balance. Service account balance is expected to mark a widening deficit due to lowering global competitiveness, relatively strong won and an increase in overseas consumption demands.

Consumer prices: 1.3% in 2014 → 1.7% in 2015

The consumer prices for 2015 is forecast to be limited around 1% growth, as upward pressure is kept low by factors such as steep decline in international oil prices, slump in demand recovery, and the limited rise of USD/KRW. The consumer prices are expected to rise marginally (yoy) due to a recent hike on tobacco prices. It is estimated that a price increase of 2,000 won raises the inflation rate by 0.56%p. If the tobacco price hike were excluded in calculation, the inflation rate is estimated to decline at 1.1%, lower than that of 2014.

Corporate bond yield (3-yr, AA-): 3.0% in 2014 → 2.8% in 2015

Taking into consideration the possibility of additional cut in BOK's benchmark interest rates and limited rise of US Treasury bond yield, the market interest rate is forecast to show an additional dip at a 2.4% average in 1H 2015. A gradual upward pressure on corporate bond yield is expected as a full-fledged interest rate hike in the US and improvement in the domestic growth is expected, rallying up to 3.5% in 2H 2015.

USD/KRW: 1,051 won in 2014 → 1,071 won in 2015

Upward pressure from the anticipation of US interest rate hike continues to increase, but the dominating downward pressure, underpinned by a large current account surplus, is expected to keep USD/KRW low for 2015. The strong-dollar trend following the shift in US Fed's monetary policy is projected to be the main factor that determines the USD/KRW direction. Downside risk remains relevant as the real GDP-current account surplus ratio is higher than 5% in 2015, which may become a depreciating factor on USD/KRW.

Outlook for Korean Economy in 2014 ~ 2015

(Unit: YoY(%),US\$100mil(Balance of Payment))

	2014		2015		2013	2014	2015
	1 st Half	2 nd Half	1 st Half	2 nd Half	Year	Year	Year
GDP	3.7	3.2	3.4	3.9	3.0	3.4	3.7
Private consumption	2.0	1.7	2.4	2.6	2.0	1.8	2.5
Construction investment	1.9	2.3	2.4	3.0	6.7	2.1	2.7
Facilities investment	7.5	4.2	5.3	6.6	-1.5	5.8	5.9
Export(Goods and Services)	4.1	2.9	4.4	5.3	4.3	3.4	4.8
Import(Goods and Services)	3.1	2.5	3.8	5.4	1.6	2.8	4.6
Consumer Prices	1.4	1.2	1.5	1.8	1.3	1.3	1.7
Producer Prices	-0.3	-0.4	-1.5	-0.9	-1.6	-0.4	-1.2
Current Account Bal (US\$ bill)	392.0	484.5	383.6	482.1	811.5	876.4	865.7
Bal of Goods (US\$ bill)	441.7	489.1	459.8	516.1	827.8	930.8	975.9
Export (US\$ bill, BOP basis)	3120.7	3179.8	3208.4	3320.0	6181.6	6300.6	6528.4
(Growth rate, %)	3.4	0.5	2.8	4.4	2.4	1.9	3.6
Import (US\$ bill, BOP basis)	2679.0	2690.8	2748.6	2803.9	5353.8	5369.8	5552.5
(Growth rate, %)	0.3	0.3	2.6	4.2	-3.4	0.3	3.4
Service and other balances*	-49.8	-4.6	-76.2	-34.0	-16.3	-54.4	-110.2
FX rate (USD/KRW, avg)	1049.7	1052.9	1065.0	1076.0	1095.1	1051.3	1070.5
Corp bond yield (3yrs, AA-)	3.3	2.7	2.4	3.1	3.2	3.0	2.8
Unemployment rate (%)	3.9	3.4	3.8	3.5	3.1	3.6	3.6
Employment level changes (thousands)	596.5	512.0	468.8	362.5	385.8	554.2	415.7

* Sum of service balance, primary balance, and secondary balance

Policy Issue:

The fall of oil price and volatility of foreign exchange market

The volatility of USD/KRW is determined not only by VIX (The CBOE Volatility Index) but also by rate of change of international commodity price

The volatility of USD/KRW rises if the price of international commodity falls. In reality, the volatility of USD/KRW has increased after 1990 when the price of international commodities including oil price decreased.

The Determinant of USD/KRW Volatility

Volatility of USD/ KRW (%)	1990.01 ~ 2014.08				2000.01 ~ 2014.08			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Model								
Risk assessment of Int'l Investor(VIX)	0.09 (5.10) ^{***}	0.08 (7.95) ^{***}	0.08 (7.30) ^{***}	0.08 (6.65) ^{***}	0.08 (4.21) ^{***}	0.07 (5.87) ^{***}	0.07 (5.97) ^{***}	0.07 (5.92) ^{***}
Rate of change of Int'l Commodity Price (Δ GSCI (%))		-0.06 (-2.78) ^{***}	-0.06 (-2.56) ^{**}	-0.06 (-2.48) ^{**}		-0.04 (-2.75) ^{***}	-0.04 (-3.05) ^{***}	-0.04 (-2.98) ^{***}
US Federal Fund Rate			-0.02 (-0.49)	-0.02 (-0.50)			-0.05 (-2.30) ^{**}	-0.05 (-2.43) ^{**}
US Growth rate of Industrial Production (Δ IND (%))				0.07 (0.54)				-0.08 (-0.97)
R^2	0.28	0.34	0.34	0.34	0.55	0.61	0.62	0.62

Source: Kim, Seong-Hoon(2014) "The world central bank policy diversification and Korean policy corresponding", KERI

Reference: The figures within the parenthesis are t-statistics which is calculated after the Newey-West adjustment. The pre-whitening lag is determined by Schwarz Information Criterion. The number of stars is used as conventional in level of significance. The figures are rounded off to the nearest hundredths.

In addition, it is presumed that Korean won is treated yet as emerging market currency considering the phenomena that the volatility of emerging market exchange rate enhances when oil price plummets. The emerging market here includes several oil-producing countries. By our research, the volatility of weighted average foreign exchange rate of emerging countries rose when the price of international commodity fell. The volatility of USD/KRW also climbed up as the price of international commodity went down.

The change of oil price and the Volatility of foreign exchange rate of Korea and Emerging countries

FX Volatility vs US\$ (%)	2000.01 ~ 2014.10		
Subject	<u>Weighted average foreign exchange rate of Developed countries</u> (Eurozone, Canada, Japan, United Kingdom, Switzerland, Australia, Sweden)	<u>Weighted average foreign exchange rate of Emerging countries</u> (Mexico, China, Taiwan, Korea, Singapore, Hong Kong, Malaysia, Brazil, Thailand, Philippines, Indonesia, India, Israel, Saudi Arabia, Russia, Argentina, Venezuela, Chile, Columbia)	Korea
Risk assessment of Int'l Investor(VIX)	0.023 (7.60)***	0.03 (6.69)***	0.07 (5.83)***
Rate of change of Int'l Commodity Price (Δ GSCI (%))	-0.007 (-1.47)	-0.014 (-2.84)**	-0.043 (-2.77)**
R^2	0.37	0.47	0.61

Source: Kim, Seong-Hoon(2014) "The world central bank policy diversification and Korean policy corresponding", KERI

Reference: The figures within the parenthesis are t-statistics which is calculated after the Newey-West adjustment. The pre-whitening lag is determined by Schwarz Information Criterion. The number of stars is used as conventional in level of significance. The figures are rounded off to the nearest hundredths.

Efforts to reduce the foreign exchange rate volatility needed amid the worrying short term projection of drastic FX rate change of emerging countries due to deteriorated cooperation of monetary policy among key nations

The cooperation of monetary policy of major countries is forecasted to diminish fast as US economy solely is assessed to ride the trajectory of recovery. As a consequence, the US Fed terminated the QE3(the 3rd Quantitative Easing) on October of 2014, and is projected to augment the base rate on 2nd half of 2015. United Kingdom is forecasted to enhance the base rate after the 2nd half of 2015 as well. On the contrary, the possibility of additional QE by ECB is turning up due to the insufficient effect of expansionary monetary policy. Also, Japan would be expanding the volume of asset purchasing amount while China reinforcing the expansionary monetary policy by leveling down the base rate.

The volatility of international finance market would be rising against this backdrop. If the volatility climbs up, it is harder to forecast the foreign exchange rate of emerging countries. Also, it is more likely that the dramatic currency appreciation/depreciation happens in emerging foreign exchange market.

To prevent a sudden change of USD/KRW, financial authorities should endeavor to underline the difference of Korea to other emerging countries which economically depend highly on export of petroleum and commodities on any place of international finance diplomacy.

Second, as a base line, a corresponding policy to narrow down the volatility of USD/KRW is needed. The foreign FX reserve should be stocked up sufficiently and internalization of Korean Won should be accelerated opening Japanese Yen direct transaction market up as well as Chinese Yuan direct dealing market. Currency swap between key nations and Korea should be newly created or resumed as well.

Third, an active maneuver should be conducted toward any confounder of foreign exchange market. An orderly foreign exchange market intervention should be managed on the basis of 「Coherent Conclusion to guide in the Capital Flow Management」 which was agreed by G20. In addition, the monetary policy using base rate by the central bank should be prepared to contribute to stabilization of foreign exchange rate.

Fourth, the market trust must be recovered by macro - prudential policies. Any regulations upon reckless capital inflow can be a method.

Fifth, a policy to tackle excessive current account surplus should be prepared. To rectify trade surplus derived by recession, domestic economy shall be boosted. Also, expanding foreign investment like U.S. and Japan can be another measure.

Sixth, for corporates, safety net for volatility of FX rate such as foreign exchange volatility insurance is recommended. Especially for SMEs (Small and Medium sized Enterprise) who don't possess any preparations about risks or are heavily burdened by the insurance fees, the government should support them to survive amid the FX rate turmoil.

Economic Complexity for Growth: Evidence from Productive Knowledge in Korean Value-Added Trade

Research Monograph 14-08

Choi Namsuk

This paper empirically investigates the extent to which increasing participation in global value chains affects accumulation of productive knowledge across products in the Korean manufacturing industries, and then analyzes the trickle - down effect of 10 potential export products on domestic sales.

First, the effects of global value chain (GVC) participation on productive knowledge and firm productivity are estimated as follows. Using OECD/WTO trade-in-value-added (TIVA) data and 800 different product complexity indexes (which measure the amount of productive knowledge held in a product) from 2000 to 2010, this paper finds that participation in the global value chain may increase the accumulation of productive knowledge, and consequently the improvement of product complexity increases firm productivity in the Korean manufacturing industries.

However, the effects of Korean value-added trade on product complexity differ across domestic-content and foreign-content exports. In particular, a 1-percent increase in domestic value-added exports increases product complexity by 0.30 percent, while a 1-percent point increase in foreign content share of gross exports increases product complexity between 0.02 percent and 0.03percent. In addition, a 1-percent increase in product complexity affects firm productivity by 0.52 percent.

The results show that the accumulation of product complexity associated with greater participation in global value chains statistically significantly affects firm productivity in Korean manufacturing industries. Global interdependence in the production process influences product complexity, and product complexity affects firm productivity as firms are increasingly interconnected in the global value chains.

Second, this paper selects 10 potential export products based on its possibilities of development of comparative advantage, and analyzes the effect of the evolution of comparative advantage of the products on small and medium-sized enterprises (SMEs) domestic sales in the manufacturing industries.

Using Korean SMEs' export and domestic sales data form 2009 and 2011, this paper finds that as exports of 10 potential products increase by 31.8 percent in 2011, domestic sales of small and medium-sized export firms and domestic firms increase by 39.6% and 52.8% respectively. The results show that the development of comparative advantage of prospective exports by enhancing productive knowledge in value-added trade through GVC participation may increase exports and as a result, positively affect domestic sales in the manufacturing industries that produce the prospective products.

Productive knowledge enhancement with the greater GVC participation in the Korean manufacturing industries may help increase invigoration of Korean economic growth. It is partly because easier global value chain participation positively affects firm productivity in Korean manufacturing industries. In particular, greater trade in value-added exports and international outsourcing may increase the accumulation of productive knowledge. And the accumulation of productive knowledge affects firm's productivity enhancement and may lead to manufacturing renaissance.

The development of product complexity in exports may bring export and domestic industries' competitiveness into balance. "Made in the world" associated with both domestic and foreign content exports thus should be encouraged and the interrelatedness between SMEs and large firms continually needs to be developed not only within a country but also across borders.

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