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Korean Current Account Surplus and the Transmission of the Won-Dollar Exchange Rate

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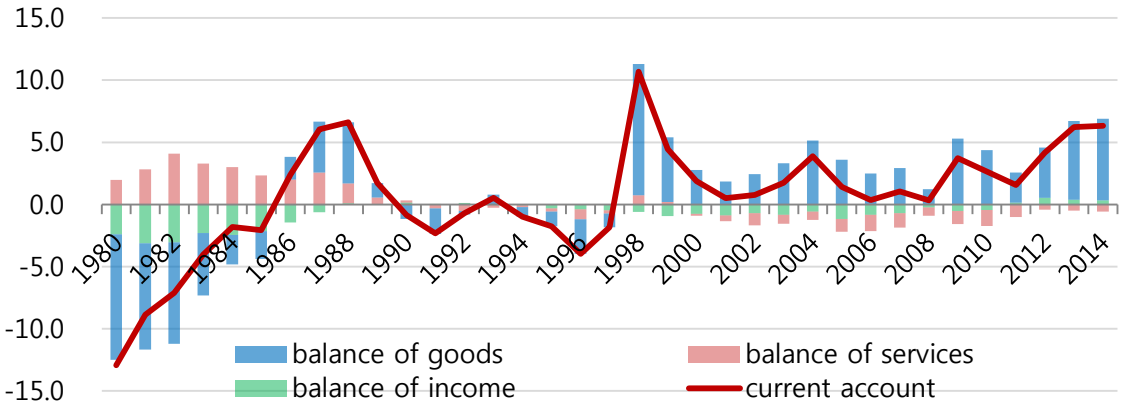
The Korean economy has maintained a current account surplus since 1998, right after the Asian financial crisis, as shown in Figure 1. Over those 15 years, the average current account to GDP ratio was 0.6 percent. In particular, the ratio significantly increased in the last four years: the four-year average being 4.6 percent. The major portion of the Korean current account surplus is from the surplus in goods-trade-balance. Interestingly, the net factor income also contributed to the surplus of the current account in the last three years, although to a small extent. In this note, we investigate how exchange rates, whose effects have been well discussed among policymakers and in the literature, affect the current account surplus.

Figure 1. The Korean Current Account



According to the exchange rate transmission mechanism in the traditional Mundell-Fleming model, the depreciation of one country's currency will make the country's exports cheaper relative to foreign goods and thus boost the foreign demand for its exports. On the other hand, this relative price change will reduce the demand for imports to the country. Consequently, this relative price change will induce a surplus in the country's trade balance. In this sense, the evidence on the role of exchange rates in the transmission mechanism is directly related to policymaking: If the depreciation of the domestic currency leads to a trade balance improvement, then a country with trade deficits may attempt to use various foreign exchange market intervention policies to improve its trade balance.

In light of this well-known hypothesis, we empirically investigate the effects of exchange rate shocks on the variables of primary interests, such as trade balance and current account, using Korean data. One typical way to study this issue is to calculate the impulse responses of those variables to an exchange rate shock in a VAR (Vector Autoregression) model.

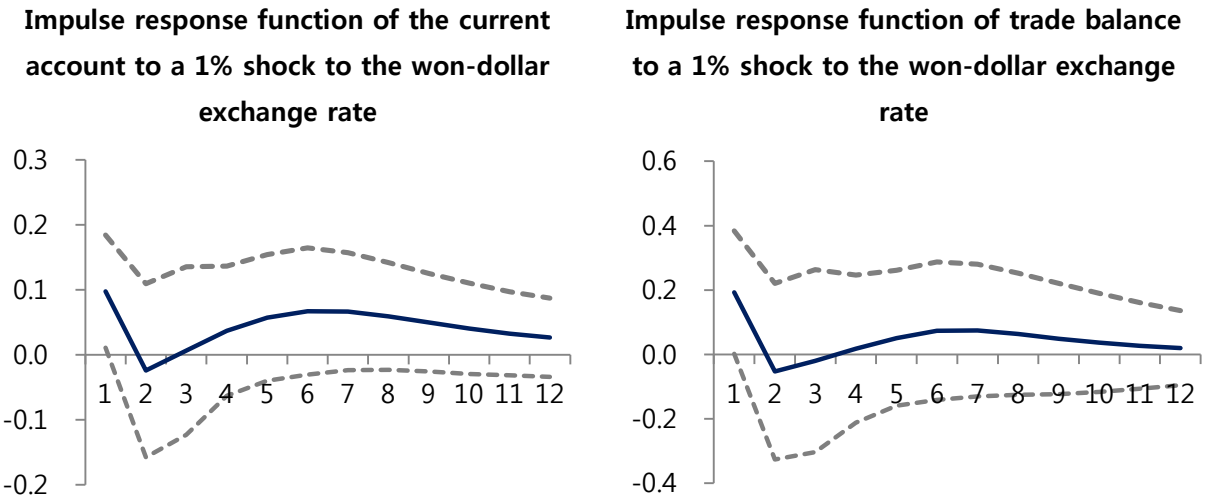
To examine the role of exchange rate shocks in driving current account fluctuations, we construct a benchmark VAR model: comprising oil price, world trade index, Korean domestic demand (or Korean GDP), the Korean won-US dollar exchange rate, and the ratio of the Korean current account to GDP.[1] We follow the traditional open economy VAR literature, in that a standard recursive structure is identified between world-wide and domestic macro variables and the exchange rate, so that world-wide variables such as oil price and the world trade index as well as domestic demand do not react contemporaneously to exchange rate shocks, while the current account, the variable of our primary interest, does react contemporaneously to exchange rate shocks.

The left panel of Figure 2 shows the impulse responses of the current account in response to a 1 percent won-dollar exchange shock (that is, the depreciation shock of the Korean won). Overall, the effect of the won-dollar exchange rate on the current account is weak in that the responses are not statistically significant over all the time horizons except for the impact period at the 10 percent level. Specifically, the current account increases about 0.1% on impact in response to the 1% won-dollar exchange rate shock and then immediately re-

[1] The data is from the ecosys database in the Bank of Korea. We take logs for all variables except for the ratio of the Korean current account to GDP.

turns to the long run value. Then, it becomes positive again beyond the fourth quarter. We further investigate the effects of exchange rate shocks on the trade balance by replacing the log of the ratio of exports to imports with the ratio of the current account to GDP in the VAR. The trade balance shows a similar dynamic response to the current account (see the right panel of Figure 2). This is natural since the trade balance is the major component of the Korean current account.

Figure 2. The effect of the won-dollar exchange rate (current account and trade balance)



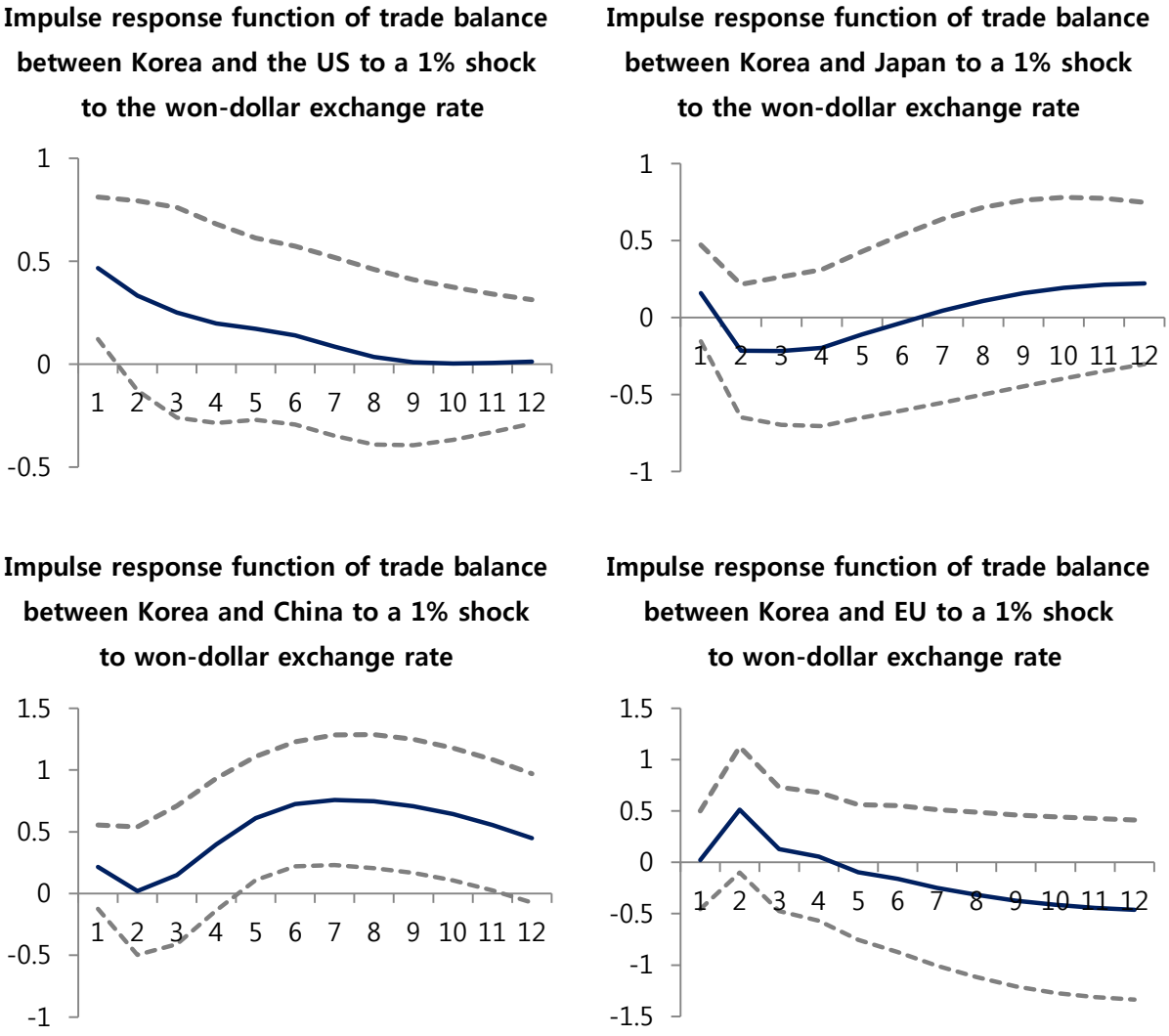
International trade in Korea is overwhelmingly settled in the US dollar. For example, in 2013, 85.2 percent (84.2 percent) of Korean exports (import) are settled in the US dollar, while only about 2.2 percent (3.4 percent) of its exports (imports) are settled in the Korean won. This suggests that price competitiveness in Korea's exports due to the depreciation of the won-dollar exchange rate is likely to be present not only in US markets but also in other markets across the world, holding other things being constant. Further, the change in the relative price between Korea's exports and imports due to the depreciation would affect not only the Korea-US trade balance but also Korea's trade balance with other countries. Considering this, we now examine the effect of the won-dollar exchange rate shock on the trade balance with Korea's major trading partners such as the US, China, Japan, and the European Union, separately.

Table 1. Korea's major trading countries (2014)

Major exporting countries of Korea		Major importing countries of Korea	
China	25.4%	**China**	17.1%
United States	12.3%	**European Union**	11.9%
EU	9.1%	**Japan**	10.2%
Japan	5.6%	**United States**	8.7%

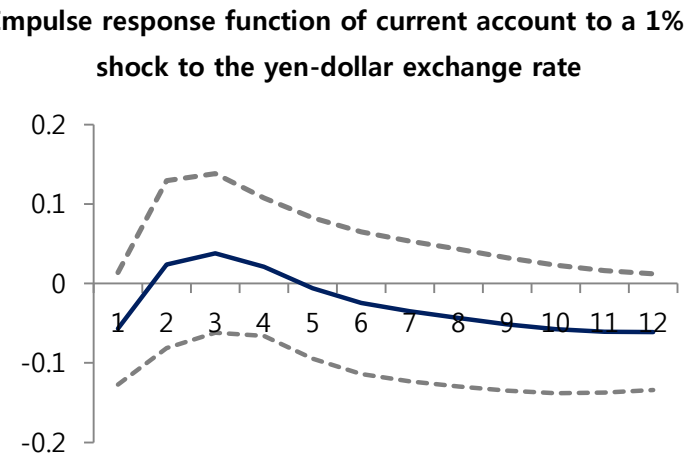
As shown in Figure 3, the largest response of the Korea- US trade account to the won-dollar exchange shock occurs on impact. It increases about 0.5 percent on impact to a 1 percent won-dollar exchange rate shock and then gradually decreases to the long run value. In contrast, the Korea-China trade account does not respond in the first two quarters but starts to rise beyond the second quarter. The peak increases (about 0.61–0.76 percent, differs from 0 with more than a 90 percent probability) are found five to ten quarters after the shock. In particular, these strong responses may be responsible for the behavior of the current account one year after the occurrence of the won-dollar exchange rate shock because China is Korea's largest trading partner (see Figure 1). On the other hand, the responses of the Korea-Japan and Korea-European Union trade accounts are weak and not statistically significant.

Figure 3. The effect of the won-dollar exchange rate (major trading partners)



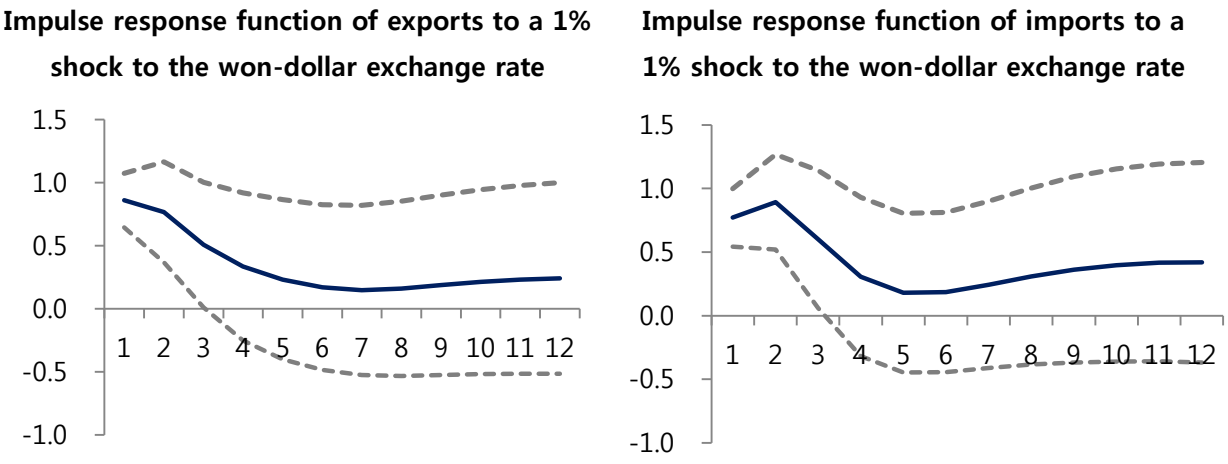
We now study the effect of the yen-dollar exchange rate shock on the Korean current account: If Korean firms compete with Japanese firms in the global market, then the depreciation of the Japanese yen makes Japanese exports more price competitive and thus causes the Korean trade balance (as well as the Korean current account) to decline, holding other things constant. As displayed in Figure 4, the negative response of the Korean current account is consistent with the prediction. However, those responses are not statistically significant.

Figure 4. The effect of the yen-dollar exchange rate



To look further into why the won-dollar exchange rate shock does not significantly affect the current account, we examine the responses of exports and imports to the exchange rate shock separately. Interestingly, the effects of the exchange rate on exports and imports of goods and services are quite similar. Specifically, the positive won-dollar exchange rate shock increases both exports and imports of goods and services, respectively. In the case of exports, the peak response occurs on impact, while it occurs across two quarters in the case of imports. Nevertheless, the responses of both exports and imports are quite large and statistically significant. In particular, the behavior of exports confirms a well-known exchange rate transmission mechanism: price competitiveness in exports due to the depreciation of the Korean won can induce an increase in the amount of exports of goods and services. However, the behavior of imports contradicts with the traditional mechanism: the imports of goods and services increase as the won-dollar exchange rate increases. Nevertheless, these very similar responses of exports and imports may be responsible for the weaker effect of the won-dollar exchange rate shock on the current account as well as the trade balance account. This contradictory behavior of imports calls for further investigation in the future.

Figure 5. The effect of the won-dollar exchange rate (exports and imports)



To analyze the Korean current account surplus more thoroughly, it will be helpful to consider two alternative ways of thinking; one that relates the surplus to the patterns of Korean trade, and a second that focuses on saving, investment, and international financial flows. Although these two ways of viewing the current account derive from accounting identities and are thus ultimately two sides of the same coin, each provides a useful lens for examining the issue. In this instance, we give the former side of the coin main consideration. However, to understand more thoroughly the causes of the Korean current account surplus, it is pressing to look into the latter side of the coin, such as the behavior of agents facing a rapidly aging population that motivates high savings to ensure consumption smoothing.

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