

Stabilization of Net Foreign Assets: Outlook and Implications

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[Research background] Korea's net foreign asset position has massively increased in recent years. As this phenomenon is accompanied by a rising demand for foreign investment, there has been growing interest in whether this upward trend will be sustained. Changes in a country's net foreign asset position are determined by **flow** (current account balance) and **valuation** (exchange rates, asset prices) effects, while, in the long run, they are closely correlated with fundamental factors such as demographic and fiscal factors. In this study, drawing on the existing body of research, we attempt to empirically assess the likelihood of stabilization in Korea's net foreign assets by examining flow and valuation effects, as well as by exploring fundamental factors.

[Increase in net foreign assets and background] Korea's net foreign asset position **turned positive (+) from the third quarter of 2014**, as its foreign financial assets grew faster than its foreign financial liabilities. **During the fourth quarter of 2024, Korea's net foreign asset balance rose above USD 1 trillion for the first time to 55% of the GDP as of June 2025.** This **rapid expansion in net foreign assets** was driven primarily by **flow effects**, as the widening current account surplus caused foreign investment and foreign exchange reserves to rise. **Valuation effects have mostly worked to reduce the net foreign asset position.** However, from the early 2020s onwards, negative (-) valuation effects have been significantly reduced amid an increase in foreign equity investment and the strength of the U.S. stock market.

[Assessment of the outlook for stabilization of net foreign assets] The national panel data of Korea and major countries were analyzed to determine **whether there is a stabilizing trend in net foreign assets.** 1) While the current account balance was found to have no statistically significant relationship with changes in net foreign assets, asset prices appeared to have stabilizing effects. The results showed that when **a country's net foreign asset position increased, this caused the prices of its domestic assets to rise faster than the prices of foreign assets, which, in turn, lowered the net foreign asset position back to a stable level.** However, the stabilizing effects of asset prices have been generally muted in recent years due to the continuous upward momentum in U.S. stock prices. 2) The analysis also revealed a strong correlation between a country's net foreign asset position and its **fundamental indicators, such as national income and demographic structure.** Moreover, the steady-state net foreign asset levels, estimated based on these indicators, tended to rise gradually, particularly among creditor countries.

[Overall assessment and implications] Although a higher net foreign asset position can have beneficial effects on a country's external soundness, it can also entail negative implications, such as **reduced investment in domestic capital markets, sustained downward pressure on the domestic currency, and increased exposure to global risks.** Therefore, policy efforts are needed to make investing in domestic markets more attractive (enhancement of the valuation of listed domestic companies → **stimulation of the domestic stock market** → reduction of the concentration of investment in foreign assets → **slower increase in net external assets**).

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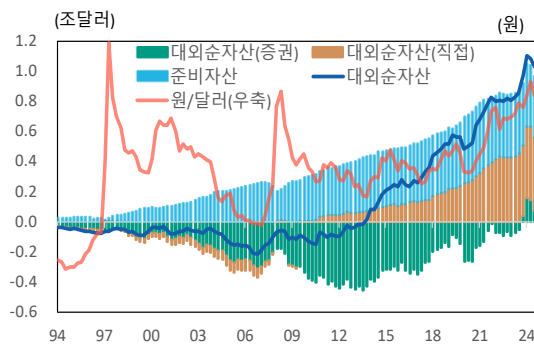
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I. Research Background

1. Recently, Korea has witnessed a significant rise in its net foreign assets¹ (hereafter, “NFA”), driven by the accumulated current account surplus and a surge in foreign portfolio investment by residents. As a result, there has been growing interest in whether this upward trend will be sustained. While a large NFA position can favorably affect a country’s income account and external soundness, it can also have adverse consequences for the supply and demand balance in the domestic foreign exchange market by causing a continuous outflow of investment capital.

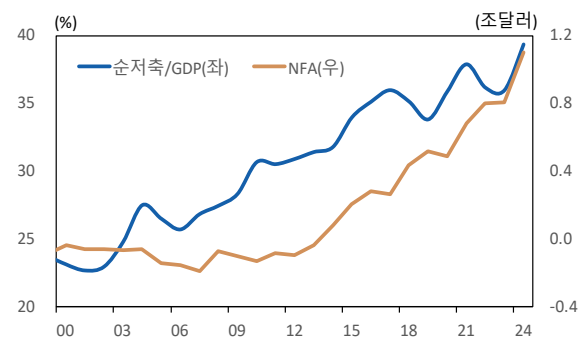
2. When assessing NFA trends, it is important to consider both factors driving changes in a country’s NFA position (current account balance, valuation)² and its relationship with fundamental variables that are specific to this country.³ Changes in NFA are influenced by flows of transactions stemming from current account flows (hereafter, “flows”) and valuation changes resulting from movements in exchange rates and asset prices (hereafter, “valuation”). Meanwhile, NFA levels are closely correlated with the fundamental indicators of each country insofar as they are a reflection of a country’s net savings. In this study, we examine trends in Korea’s NFA position and the circumstances surrounding its recent rise by looking at flow and valuation changes, as well as by exploring its relationship with fundamental variables, and assess the likelihood of its stabilization through an empirical analysis that draws on the existing literature.

Figure 1. NFA and KRW/USD exchange rate



Source: ECOS.

Figure 2. Net savings-to-GDP ratio and NFA in Korea



Sources: ECOS, Bloomberg.

(조달러) (원)	(USD trillions) (KRW)
대외순자산(증권)	Net foreign assets (securities)
대외순자산(직접)	Net foreign assets (FDI)
준비자산	Reserve assets
원/달러(우측)	KRW/USD (right)
순저축/GDP(좌)	Net savings/GDP (left)
NFA(우)	NFA (right)

¹ Defined as net foreign financial assets, calculated by subtracting total foreign financial liabilities from total foreign financial assets as reported on the international investment position (hereafter, the “IIP”).

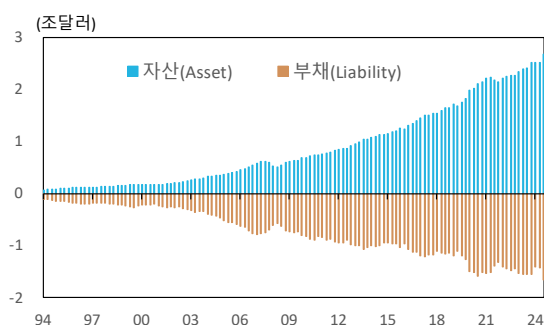
² Adler & Garcia-Macia (2018).

³ Lane & Gian (2001).

II. Recent Rise in NFA and Background

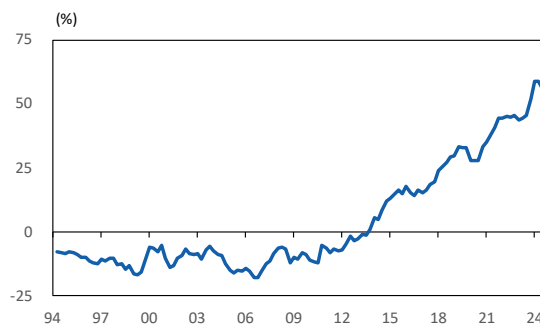
3. Korea’s NFA position turned positive from the third quarter of 2014 as the increase in its foreign financial assets outstripped the growth of its foreign financial liabilities starting in 2010. During the fourth quarter of 2024, its NFA balance surged past USD 1 trillion for the first time to 55% of the GDP as of June 2025. While Korea’s foreign financial assets jumped over seven-fold in the last 20 years (2006-2025) to surpass USD 2.7 trillion (June 2025), its foreign financial liabilities only tripled during the same period to currently stand at USD 1.6 trillion. This has resulted in the rapid growth of Korea’s NFA position in a positive (+) direction.

Figure 3. Foreign financial assets and liabilities



Source: ECOS.

Figure 4. NFA/GDP ratio



Source: ECOS.

4. Changes in NFA can be broken down into flow effects from changes in the current account balance and valuation effects⁴ from changes in asset prices and exchange rates. The recent increase in Korea’s NFA position was driven mainly by inward flows (current account surplus). Most of the current account surplus accumulated since the 2000s, amounting to USD 1.1539 trillion, has flowed out of Korea in the form of net foreign investment,⁵ thus increasing its NFA position.⁶ Residents’ outward foreign portfolio investment has resulted in a sharp rise in Korea’s NFA balance, especially as inward foreign portfolio investment in domestic assets has remained comparatively sluggish during this period.

5. Valuation effects have mostly worked to reduce Korea’s NFA position, but the magnitude of negative (-) effects has been reduced recently. Negative (-) effects of valuation change on Korea’s NFA position are explained by the fact that, in the past, its foreign financial assets consisted primarily of reserve assets and bonds, while stocks accounted for a large proportion of its foreign financial liabilities. Because of this, the increase in foreign liabilities from rising stock prices tended to greatly exceed the increase in foreign assets. As a matter of fact, during the 2010s, stocks represented only 13.8% of Korea’s IIP (international investment position) assets, whereas they made up as much as 38.7% of its IIP liabilities. After the 2020s, as the portion of Korea’s foreign financial assets that is accounted for by stocks jumped to 25.6% and foreign (U.S.) stock prices climbed faster than domestic

⁴ Changes in NFA caused by adjustments in the valuation of foreign assets held by residents and domestic assets held by foreigners, resulting from movements in asset prices and exchange rates.

⁵ Cumulative total of Korean residents’ net investment in foreign assets, including FDI, securities, derivatives, and other assets, in January 2000 to June 2025: USD 741.1 billion.

Increase in foreign exchange reserves during the same period: USD 306.7 billion.

⁶ According to the balance of payments (BOP) identity, a country’s current account (CA) surplus, in the long run, coincides in value with the sum of changes in net financial investment by residents and foreigners (financial account) and reserve assets (foreign exchange reserves).

stock prices,⁷ this reduced the negative (-) valuation effects of asset prices on its NFA position, with even small positive (+) effects observed recently.

Figure 5. Contribution of NFA growth to GDP growth

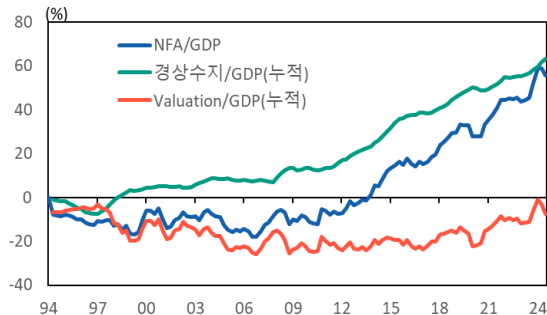
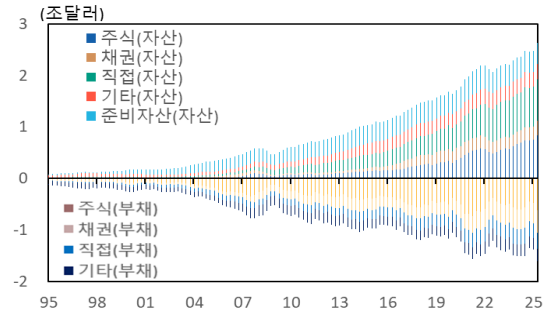


Figure 6. Composition of IIP assets and liabilities



Note: 1) Calculated by subtracting the current account balance-to-GDP ratio from the NFA-to-GDP ratio.

Source: ECOS.

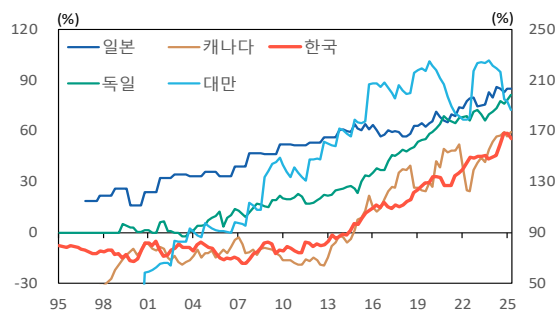
Sources: ECOS, Bank of Korea.

(조달러)	(USD trillions)
경상수지/GDP(누적)	Current account balance/GDP (cumulative)
Valuation/GDP(누적)	Valuation/GDP (cumulative)
주식	Stocks
채권	Bonds
직접	FDI
기타	Others
준비자산	Reserve assets
(자산)	(assets)
(부채)	(liabilities)

NFA Trends in Major Countries

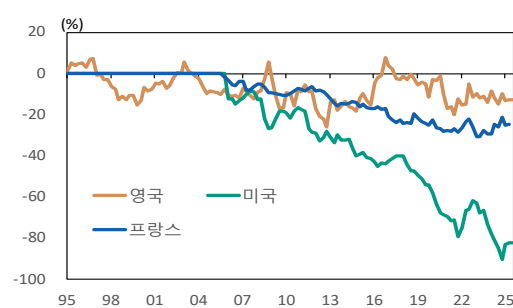
6. The examination of NFA trends in major countries revealed significant divergence (upward trend) among net creditor nations. In Korea and other export-driven manufacturing economies (Japan, Taiwan, Germany, etc.), amid a continuous buildup of NFA, the trend has steadily remained upward. Meanwhile, the NFA position of the U.S., running large current account deficits at the same time as experiencing a huge jump in inward foreign investment, showed a downward trajectory.

Figure 7. NFA/GDP ratios among net creditor countries



Source: ECOS.

Figure 8. NFA/GDP ratios among net debtor countries



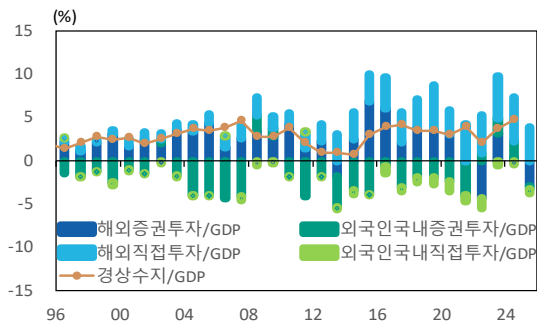
Source: ECOS.

⁷ Stock price appreciation in January 2020-August 2025: S&P 500 (+101%), KOSPI (+44%).

일본	Japan
캐나다	Canada
한국	Korea
독일	Germany
대만	Taiwan
영국	UK
미국	U.S.
프랑스	France

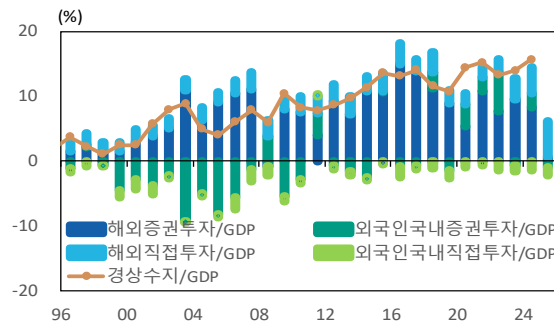
7. By component, the increase in Japan’s NFA was led primarily by foreign direct investment (FDI), while the expansion in Taiwan’s NFA was fueled by foreign portfolio investment. Up until 2010, similarly to Korea, foreign portfolio investment was the main driver of NFA growth in Japan. However, later when Japan’s shrinking domestic market pushed its companies to increasingly expand globally, FDI became the main component of its foreign financial assets.

Figure 9. NFA/GDP ratio in Japan



Sources: IMF, Bloomberg.

Figure10. NFA/GDP ratio in Taiwan

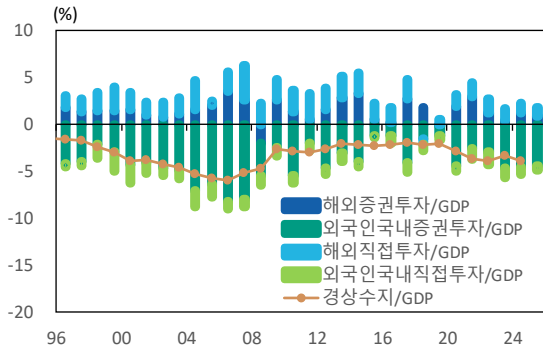


Sources: IMF, Bloomberg.

해외증권투자	Outward foreign portfolio investment
해외직접투자	Outward foreign direct investment
경상수지	Current account balance
외국인국내증권투자	Inward foreign portfolio investment
외국인국내직접투자	Inward foreign direct investment

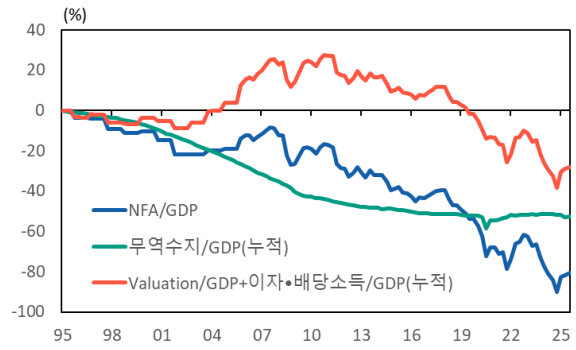
8. As for the U.S., while the divergence of its NFA into a negative (-) direction appeared to be caused mainly by inward foreign portfolio investment, driving up its foreign financial liabilities, net investment income (NII, interest and dividend income plus valuation changes) effects also seem to be contributing to this trend. The U.S. has long enjoyed the “exorbitant privilege” of the dollar’s status as the world’s reserve currency. As this status allowed it to borrow at low rates and invest in high-yield foreign financial assets, the U.S. was able to continuously run a NII surplus (+). However, in recent years, despite the stabilization of the current account balance, NII effects turned negative (-) due to rising interest rates, a strong dollar, and the sharp appreciation of stock prices, which pushed its NFA position further into negative territory.

Figure 11. NFA/GDP ratio in the U.S.



Sources: IMF, Bloomberg.

Figure 12. Contribution of NFA growth to GDP growth in the U.S.



Sources: IMF, Bloomberg, authors' own calculations.

무역수지/GDP(누적)
Valuation/GDP+이자·배당소득/GDP(누적)

Trade balance/GDP (cumulative)
Valuation/GDP + interest and dividend income/GDP (cumulative)

III. Assessment of the Outlook for NFA Stabilization

9. Rather than increasing infinitely, a country’s NFA position can stabilize to a steady state through the activation of stabilizing channels, among others. We therefore examined NFA-stabilizing channels at the level of factors driving changes in NFA, as well as in relation to its fundamental determinants.

10. (Factors driving changes in NFA) An increase in a country’s NFA position can cause shifts in factors driving its changes (flows, valuation) by influencing market indicators, such as exchange rates, interest rates, and stock prices, in such a way that it will return to a stable level. When a country experiences an increase in its NFA position due to the accumulated current account surplus, this leads to the strengthening of its currency and the strength of its currency, in turn, lowers its current account surplus (flow channel). Moreover, the appreciation of its currency, together with rising domestic asset prices, decreases the valuation of its foreign assets at the same time as increasing the valuation of domestic assets held by foreigners (valuation path), resulting in the reduction in its overall NFA balance.

11.(Relationship with fundamental variables) A country’s NFA level is ultimately correlated with its demographic structure, fiscal conditions, and savings and investment structures. Because of this, its NFA position can converge, in the long run, to an equilibrium level that reflects the fundamental factors that are specific to it. A high elderly population share and a low level of government debt are generally associated with a high level of NFA, while a low elderly population share and a high level of government debt are associated with a low level of NFA. Using the national panel data of Korea and other major countries, we analyzed the likelihood of NFA stabilization⁸ by considering both the primary drivers of changes in NFA and its fundamental determinants.

Table 1. Existing research on the stabilization of NFA

	Adler & Garcia-Macia (2018)	Lane & Gian (2001)
Data	1990–2015, IIP, currency composition, valuation losses	IIP in 1970–1990s, macro-variables
Dependent variable	$\Delta\text{NFA}/\text{GDP}$	NFA/GDP
Explanatory variables	Balance of trade (flow component), asset prices and exchange rates (valuation components)	Macro-variables including growth, population, fiscal balance, and openness
Equilibrium level	Calculation of the mean reversion coefficient and a country-specific steady-state NFA position	Estimation of a long-run equilibrium level of NFA as share of GDP that can be explained by fundamental variables
Cross-country heterogeneity	Global factors (β) and country-specific factors	National differences in fundamental determinants

Analysis of Stabilizing Mechanisms Based on Drivers of NFA Changes

12. When NFA dynamics were analyzed by focusing on the primary drivers of NFA changes, the results pointed to the existence of a stabilizing trend. However, this stabilizing trend appeared to have weakened in recent years. In order to determine whether or not the levels of NFA have stabilized

⁸ For the analysis of NFA-stabilizing channels based on factors driving changes in NFA positions, we drew on the methodology proposed by Adler & Garcia-Macia (2018) and for the analysis of the long-run equilibrium relationship between NFA and fundamental variables, we employed the methodology of Lane & Gian (2001).

over time, we conducted a panel regression analysis ($\Delta nfa_{i,t} = \alpha_i + \beta nfa_{i,t-1} + \epsilon_i$), where the change in the NFA-to-GDP ratio ($\Delta nfa_{i,t}$) is the dependent variable and the NFA-to-GDP ratio of the previous period ($nfa_{i,t-1}$) is the independent variable.⁹ The results of the panel regression analysis revealed that, although β was within a range that is indicative of a stabilizing trend ($-1 < \beta < 0$), this trend tapered off recently as the absolute value of β decreased progressively.

Table 2. Change in the β value

1990-2007	1990-2015	1990-2023
-0.132***	-0.091***	-0.059***

Note: *, **, and *** denote significance at a 10%, 5%, and 1% level, respectively.
Source: Bank of Korea.

13. The analysis of stabilizing channels¹⁰ found no significant relationship between a country's current account balance (flow effects) and changes in its NFA position. On the other hand, the results confirmed the stabilization effects of asset prices, in which an increase in NFA causes the prices of domestic assets to rise faster than the prices of foreign assets (increase in liabilities > increase in assets), which, in turn, decreases their level. This is because the buildup of NFA occurs most often in countries with an export-driven economic structure and the expansion of NFA, which is a reflection of export growth and the improving performance of export firms, tends to be accompanied by an appreciation of domestic assets, particularly of stocks. Meanwhile, the valuation effects of exchange rates appeared to have promoted the divergence (+) of NFA. This implies that, in the countries analyzed, a current account surplus (accumulation of NFA) and the weakening of the domestic currency occurred simultaneously and that, because of this, the flow channel (current account surplus → strengthening of domestic currency → reduction of current account surplus) was not activated.

Table 3. β values by stabilization channel

Channel (dependent variable)	1990-2007	1990-2015	1990-2023
Flows (current account balance)	0.026	-0.007	0.003
Valuation	-0.161***	-0.084***	-0.063***
(exchange rates)	0.048	0.079***	0.033***
(asset prices)	-0.210***	-0.164***	-0.096***

Note: *, **, and *** denote significance at a 10%, 5%, and 1% level, respectively.
Source: Bank of Korea.

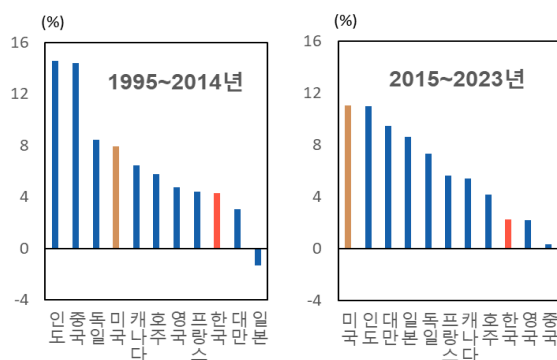
⁹ For detailed results of this analysis, see <Box 1> “Results of Estimating a Steady-state NFA Based on Factors Driving Changes in NFA.”

¹⁰ A regression analysis was performed between CA (current account balance), Val FX (valuation effects of exchange rates), Val AP (valuation effects of asset prices), and changes in NFA to determine the channels in which the β value is within the stabilizing range ($-1 < \beta < 0$).

$$\begin{aligned}
 CA_{i,t} &= \alpha_i + \beta_{CA} nfa_{i,t-1} + \epsilon_{i,t} \\
 Val^{NFA}(FX)_{i,t} &= \alpha_i + \beta_{FX} nfa_{i,t-1} + \epsilon_{i,t} \\
 Val^{NFA}(AP)_{i,t} &= \alpha_i + \beta_{AP} nfa_{i,t-1} + \epsilon_{i,t} \\
 (\alpha_i &= \alpha + \tau_i, \tau_i = \text{country fixed effects})
 \end{aligned}$$

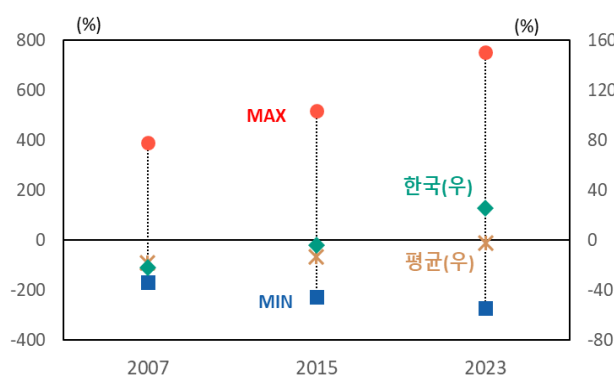
14. The absolute values of steady-state NFA positions¹¹ of countries, calculated using the regression equation, exhibited a rising trend over a long term. This appears to be mainly due to the fact that, amid a continuous surge in asset prices in the U.S., a net debtor country, the appreciation of creditor countries' foreign assets has largely offset valuation effects (-) from the rising prices of their domestic assets. During the latter half of the analysis period (2015-2023), the U.S. stock market (S&P500) returned 11% per annum on average, significantly higher than the average annual return of 8% in the first half (1990-2014). This has blunted the NFA stabilizing effects of valuation gains on the domestic assets of net creditor countries with a positive (+) NFA balance.

Figure 13. Average annual stock returns in global markets¹⁾



Note: 1) Geometric mean of annual returns based on representative stock indices of each country.
Source: Bloomberg.

Figure 14. Distribution of steady-state NFA/GDP ratios¹⁾



Note: 1) Based on 53 countries included in the panel analysis.
Sources: IMF, Bank of Korea.

인도	India
중국	China
독일	Germany
미국	U.S.
캐나다	Canada
호주	Australia
영국	UK
프랑스	France
한국	Korea
대만	Taiwan
일본	Japan
한국(우)	Korea (right)
평균(우)	Average (right)

15. Korea's steady-state NFA level also showed an upward trend, but its actual NFA position consistently exceeded the steady-state position by a significant margin. This has likely to do with country fixed effects. When steady-state NFA positions are calculated using the results of an empirical analysis, country fixed effects are reflected based on their historical averages in the analysis period. However, since changes in fundamental indicators, including population aging, occurred extremely rapidly in Korea, it is conceivable that their effects on factors driving NFA changes were not sufficiently accounted for.

¹¹ A stationary NFA level that remains constant in the absence of external shocks ($\Delta nfa = 0$). For this calculation, $\Delta nfa=0$ was substituted into the regression equation to simplify it with respect to NFA.

Table 4. Steady-state and actual NFA/GDP ratios by country

Country	Type	Actual NFA/GDP ratio			Steady-state NFA/GDP ratio		
		2007	2015	2023	2007	2015	2023
Korea	Creditor	-16%	14%	47%	-22%	-4%	26%
Japan	Creditor	46%	61%	79%	40%	54%	70%
Germany	Creditor	12%	34%	71%	10%	22%	61%
UK	Debtor	-13%	-16%	-24%	-14%	-19%	-26%
U.S.	Debtor	-9%	-42%	-73%	-17%	-38%	-79%

Source: Bank of Korea.

Analysis of Steady-state NFA Levels Based on Long-run Relationship with Fundamental Variables

16. The analysis of the long-run relationship with fundamental variables revealed that a country's NFA position was closely correlated with indicators such as its national income and demographic structure. Using national panel data, a regression analysis ($\left(\frac{NFA}{GDP}\right)_{i,t} = C + \sum_{k=1}^6 \beta X_{k,i,t} + \epsilon_i$)¹² was performed to estimate the relationship between NFA as share of GDP and fundamental indicators (GDP growth, demographic structure, government spending, etc.). The results suggested that the higher the GDP per capita growth and old-age dependency ratio¹³ of a country, the higher its level of foreign savings, hence also the higher its NFA-to-GDP ratio. Meanwhile, a high government spending-to-GDP ratio appeared to lower the NFA-to-GDP ratio by widening fiscal deficits (decrease in government savings) and worsening current account deficits. But, when the time horizon was extended to more recent years (until 2023), the relationship between government spending and the NFA/GDP ratio was less significant. However, this result appears to be an outlier caused by factors such as the recent increase in public pension expenditure¹⁴ and the global low interest rate environment created by quantitative easing, as well as a massive rise in government spending in countries around the world, in response to the COVID-19 crisis.¹⁵ When 2020 was excluded from the analysis, the influence of government spending on NFA was once again statistically significant.

Table 5. Relationship between NFA/GDP ratio (β value in the panel regression) and fundamental variables by period

	1990-2007	1990-2015	1990-2023	1990-2023 (excluding 2020 ¹⁾)
GDP per capita growth	0.16**	0.17**	0.22**	0.23**
Old-age dependency ratio	0.74*	0.33***	2.59***	2.52***
Government spending-to-GDP ratio	-0.57**	-0.11***	-0.22	-0.49**

Notes: 1) Excluding pandemic-induced outliers.

2) *, **, and *** denote significance at a 10%, 5%, and 1% level, respectively.

Source: Bank of Korea.

17. When steady-state NFA positions (equilibrium NFA-to-GDP ratios) were calculated based on the long-run relationship between NFA and the explanatory variables derived from the empirical analysis, the results showed a pattern of gradual increase in their levels, particularly

¹² $X_{i,t}$ = GDP per capita growth, old-age dependency ratio, government spending-to-GDP ratio, trade facilitation indicators (export volume change + import volume change), and risk variables (volatility in GDP per capita growth and trade facilitation indicators). For further details, see <Box 2> "Results of Estimating a Steady-state NFA Based on Long-run Relationship with Fundamental Determinants."

¹³ (population aged 65 and older)/(population aged 15-64) × 100.

¹⁴ As public pension expenditure is close in nature to income transfer, its influence on NFA is limited when compared to other expenditure categories that are considered pure fiscal expenditure.

¹⁵ In 2020, government spending in 49 countries increased by 5.1% on average, far surpassing the corresponding average of 0.03% in 1995-2023.

among creditor countries. Fundamental indicators in major countries exhibited a strengthening trend in a single direction and the sensitivity of NFA (β) to key explanatory variables appeared to intensify, progressively raising the steady-state levels, especially in creditor countries. This could be a reflection of growing trade imbalances between the U.S. and major exporting countries, resulting in an accelerated pace of NFA build-up. Korea's steady-state NFA level rose sharply from -3% in 2015 to 30% of GDP in 2023. During the same period, its actual NFA positions were significantly above the steady-state levels, which could be explained in part by an excessive propensity for foreign savings, caused by diminishing investment returns from domestic assets.

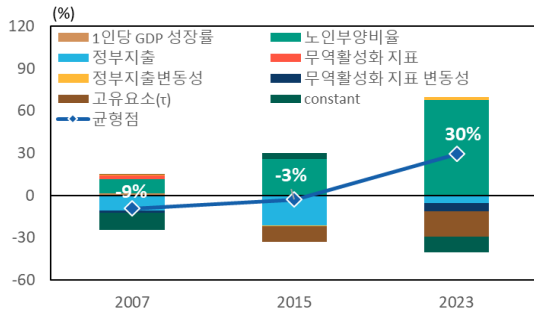
※ Causes of large gaps between actual and steady-state NFA-to-GDP ratios in some countries

In export-driven economies with a massive current account surplus, such as Norway and Taiwan, the actual NFA-to-GDP ratio significantly exceeded the steady-state level estimated based on fundamental indicators.

[Norway] Norway is one of the very few advanced European countries that are also a natural resource exporter. Norway runs large current account surpluses (17.1% of the GDP as of June 2025) and has amassed, over the decades, considerable foreign investment assets through its sovereign wealth fund, consisting mainly of stocks. The accumulated valuation gains from foreign investments have lifted Norway's actual NFA position far above the level predicted by its demographic structure and other fundamental indicators.

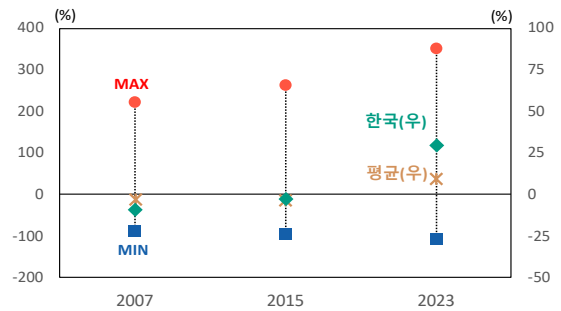
[Taiwan] Due to sizeable current surpluses from the semiconductor supercycle (14.8% of the GDP as of June 2025) and the accumulated gains on its foreign investment assets, Taiwan has built up a substantial NFA position well above the steady-state level.

Figure 15. Contribution of fundamental factors to steady-state NFA/GDP ratio



Sources: ECOS, Bloomberg.

Figure 16. Distribution of steady-state NFA/GDP ratios



Sources: ECOS, Bloomberg.

1인당 GDP 성장률 정부지출 정부지출변동성	GDP per capita growth Government spending Government spending volatility
고유요소 균형점	Fixed effects Steady state
노인부양비율 무역활성화 지표 무역활성화 지표 변동성	Old-age dependency ratio Trade facilitation indicators Trade facilitation indicator volatility

Table 6. Actual NFA/GDP ratio and steady-state NFA/GDP ratio estimated based on the long-run equilibrium relationship with fundamental variables

Country	Type	Actual NFA/GDP ratio			Steady-state NFA/GDP ratio		
		2007	2015	2023	2007	2015	2023
Norway	Creditor	52%	197%	297%	40%	64%	132%
Taiwan	Creditor	113%	211%	227%	92%	134%	180%
Japan	Creditor	46%	61%	79%	28%	51%	84%
Germany	Creditor	12%	34%	71%	16%	19%	40%
China	Creditor	26%	16%	17%	19%	15%	30%
Canada	Creditor	-12%	22%	49%	-22%	-14%	13%
Korea	Creditor	-16%	14%	47%	-9%	-3%	30%
France	Debtor	-8%	-19%	-28%	0%	-1%	2%
UK	Debtor	-13%	-16%	-24%	-4%	-4%	0%
U.S.	Debtor	-9%	-42%	-73%	-17%	-19%	-23%
Australia	Debtor	-57%	-60%	-31%	-47%	-53%	-38%

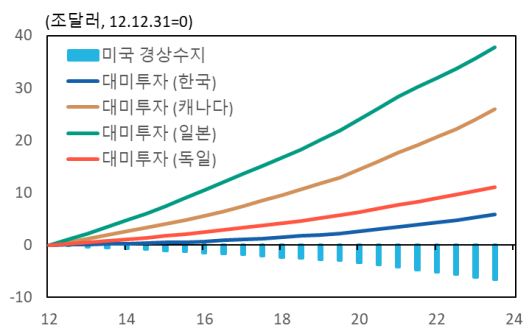
Source: Bank of Korea.

Discussion of Empirical Results

18. Under the both methods, steady-state or equilibrium NFA positions of countries were found to diverge (further into positive (+) territory for creditor countries, further into negative (-) territory for debtor countries). This polarization is driven by both global factors (β) and country-specific factors. Among the global factors, global imbalances stemming from overspending and undersaving in the U.S. appear to be the single-most important contributor. The widening current account deficit of the U.S., combined with the increase in surplus countries' investments in its assets, has driven up both the values of the dollar and U.S. assets. This situation has weakened the NFA-stabilizing channels; namely, the flow channel (adjustment of the current account balance from changing exchange rates) and the valuation channel (buildup of negative NFA leading to a decline in asset prices). Concerning country-specific factors, fundamental indicators are exhibiting greater directional clarity. In Korea, falling rates of investment return on domestic assets, coupled with massive investments by the National Pension Service in foreign assets, have caused its NFA position to climb above the steady-state level.

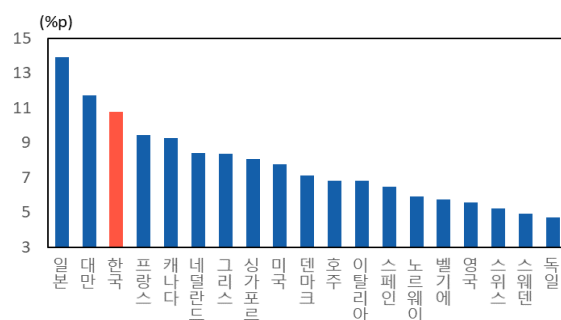
19. In the Korean foreign exchange market, the weakening of the asset price valuation channel is generating excess demand for foreign currency by perpetuating the situation where returns on residents' investments in foreign assets are continuously higher than returns on foreigners' investments in domestic assets. As the current return gap is caused by the diminished effects of the increase in the NFA position on valuation gains on domestic assets, short-term solutions are unlikely.

Figure 17. US investment by country and US current account balance¹⁾



Note: 1) December 31, 2012=0, cumulative.
Sources: IMF, Bloomberg.

Figure 18. Change in population aging rate by country¹⁾



Note: 1) Change between 2010 and 2023.
Source: World Bank

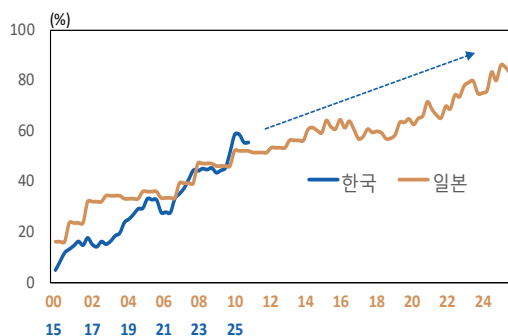
(조달러, 12.12.31=0)	(USD trillions, December 31, 2012=0)
미국 경상수지	U.S. current account balance
대미투자	U.S. investment
일본	Japan
대만	Taiwan
한국	Korea
프랑스	France
캐나다	Canada
네덜란드	Netherlands
그리스	Greece
싱가포르	Singapore
미국	U.S.
덴마크	Denmark
호주	Australia
이탈리아	Italy
스페인	Spain
노르웨이	Norway
벨기에	Belgium
영국	UK
스위스	Switzerland
스웨덴	Sweden
독일	Germany

IV. Overall Assessment and Implications

20. As long as global imbalances and other fundamental causes of NFA divergence persist, the NFA positions of Korea and other current account surplus countries will likely expand further, with outward foreign investment continuing unabated. Despite the tariff and reindustrialization policies of the Trump administration, there is little certainty that the U.S. trade balance can be meaningfully improved. Even if these policies are successful, it will take some time to see results. It is also the opinion of the OECD that reshoring or relocating an entire supply chain is not practically feasible, as well as highly risky.¹⁶

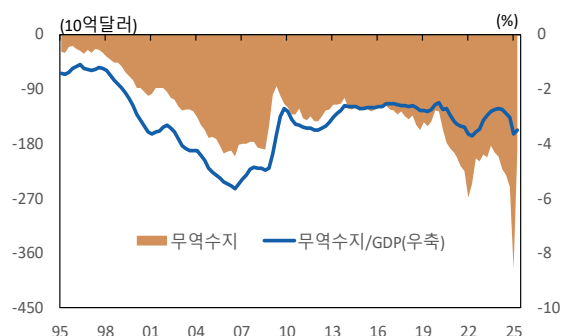
21. Domestic factors driving the increase in NFA, such as continuously high investment in foreign assets by the National Pension Service and dwindling investment returns on domestic assets, are unlikely to subside in the near term. In Japan, the expansion of NFA began much earlier than in Korea, although under similar circumstances. The upward trend in Japan’s NFA has persisted even after 2009 when its NFA-to-GDP ratio hit Korea’s current level (55%), which, by the end of 2024, climbed to 83.3%.

Figure 19. NFA-to-GDP ratios in Japan and Korea



Sources: ECOS, IMF, Bloomberg.

Figure 20. U.S. trade balance



Source: Bloomberg.

(10 억달러)	(USD billions)
무역수지	Balance of trade
무역수지/GDP(우측)	Trade balance/GDP ratio (right)

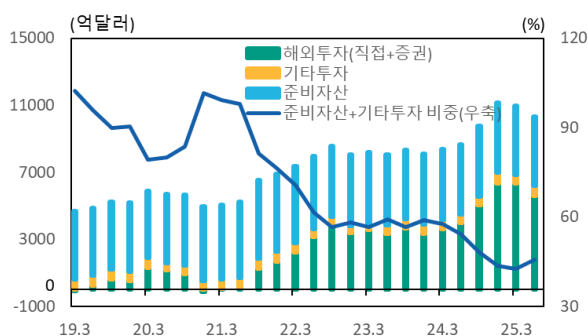
22. Although a rise in NFA can positively impact a country’s income account and external soundness, it can also have adverse consequences such as magnifying capital outflows and thereby reducing the availability of funds in domestic capital markets, putting sustained downward pressure on the domestic currency, widening exposure to global risks, and worsening pressure from trade imbalances. From a foreign exchange perspective, it is worth noting that the accumulation of NFA in Korea has been increasingly driven by foreign portfolio investment by the private sector and that this has commensurately reduced the importance of reserve assets and the banking sector in the composition of NFA. Since 2019, when the private sector’s net foreign investment (outward foreign portfolio investment by residents - inward foreign portfolio investment by foreigners) turned positive (+) for the first time, the portion of total NFA that is accounted for by the banking sector and the public sector (other assets + reserve assets) has continuously decreased. What this means is that, in recent

¹⁶ OECD Supply Chain Resilience Review 2025.

years, outward foreign portfolio investment by the private sector has resulted in a capital outflow whose size is nearly equal to, or exceeding, the inflow of foreign currency generated from the current account surplus and that the demand for foreign currency associated with outward foreign portfolio investment has been met by commercial banks and the central bank (by selling foreign currency). This is also the reason why the foreign currency assets of commercial banks and the central bank have been mostly flat during the same period. It should be noted that one of the main purposes of the NFA of the banking and public sectors is to provide a buffer against volatile changes in the demand and supply of foreign exchange.

23. Efforts are therefore needed to reduce the concentration of private-sector investment in foreign assets through measures to make domestic assets more attractive, including enhancing the risk-adjusted returns of domestic stocks. The investment environment in the domestic stock market must be improved and the National Pension Service must be encouraged to invest more in domestic assets. In Japan, a government-led corporate value-up program, aimed at improving the valuation of listed companies, began earlier than in Korea. Following the launch of this program in February 2023, Japan’s stock market hit a 35-year high. This has resulted in large inflows of foreign investment capital, slowing down the rise in its NFA position.¹⁷ This is an example of a virtuous cycle between corporate valuation and NFA (improving corporate valuation → stimulating the domestic stock market → reducing the concentration of investment in foreign assets → slowing NFA expansion) has important implications for Korea. The improvement of corporate valuation must be combined with efforts towards the advancement of the overall financial sector, including seeking inclusion in MSCI’s development market index, so as to attract more foreign investment in domestic capital markets.¹⁸

Figure 21. Composition and breakdown of NFA¹⁾



Note: 1) For 2019, the year when (reserve assets_other investment)/NFA fell below 100%, and later.

Source: ECOS.

Figure 22. PBR¹⁾ in Japan and Korea



Note: 1) Price-to-book value ratio.

Source: Bloomberg.

(억달러)	(USD 100 million)
해외투자(직접+증권)	Foreign investment (FDI+securities)
기타투자	Other investments
준비자산	Reserve assets
준비자산+기타투자 비중(우측)	Reserve assets + other investment/NFA (right)
(배)	(multiples of book value)
니케이 225	Nikkei 225
일본 밸류업	Corporate value-up (Japan)
한국 밸류업	Corporate value-up (Korea)

¹⁷ Change in NFA/GDP ratio (%p) after the corporate value-up program (January 2023-June 2025): Japan (+5.6), Korea (+11.3). 3-year change (%p) before the corporate value-up program (December 2019-December 2022): Japan (+14.7), Korea (+14.8).

¹⁸ Although the advancement of the overall financial sector tends to cause foreign assets and liabilities to expand at the same time by promoting both inward and outward foreign portfolio investment, it is nevertheless shown to lower the NFA position by making it significantly easier to borrow from abroad (Vermeulen & de Haan, 2014).

<Box 1>

Results of Estimating a Steady-State NFA Based on Factors Driving Changes in NFA

(Summary of analysis) ① To determine whether there exists a trend towards stabilization, the dynamics of NFA were analyzed by looking at how a country's NFA position changes when it rises or falls above or below a specific level. ② Next, NFA-stabilizing channels were examined by focusing on the movement of factors driving change in NFA (flows: current account balance, valuation: exchange rate effects and asset price effects). ③ Finally, a steady-state NFA was calculated for each country and the results were compared.

- [NFA stabilization]** Using the panel data of 53 countries, NFA dynamics were analyzed to test the existence of a stabilizing trend. The results suggest that a sudden, large increase in a country's NFA position (NFA increase shocks) triggers negative changes (Δnfa), leading to its stabilization (when the value of β is between -1 and 0, the impact of NFA increase shocks diminishes gradually, causing the NFA position to return to a steady state).

$$\text{Panel regression equation: } \Delta nfa_{i,t} = \alpha_i + \beta nfa_{i,t-1} + \epsilon_i, \quad -1 < \beta < 0$$

* Where change in NFA/GDP ratio ($\Delta nfa_{i,t}$) is the dependent variable and the NFA/GDP ratio in the previous period ($nfa_{i,t-1}$) is the independent variable.

- [NFA stabilizing channels]** The examination of stabilizing channels, exploring how an increase in a country's NFA position affects factors driving its changes, found that stabilizing effects occurred through asset price changes. However, the stabilizing effects of asset prices appeared to have steadily weakened as the time horizon extended.

$$\begin{aligned} CA_{i,t} &= \alpha_i + \beta_{CA} nfa_{i,t-1} + \epsilon_{i,t} \\ Val^{NFA}(FX)_{i,t} &= \alpha_i + \beta_{FX} nfa_{i,t-1} + \epsilon_{i,t} \\ Val^{NFA}(AP)_{i,t} &= \alpha_i + \beta_{AP} nfa_{i,t-1} + \epsilon_{i,t} \end{aligned}$$

* Where CA, Val(FX), and Val(AP) denote current account balance, exchange rate valuation, and asset price valuation, respectively. $\alpha_i = \alpha + \tau_i$, τ_i is the country fixed effects.

- [Steady-state NFA]** An implied steady-state NFA was calculated* for each country. In most countries, the absolute value of the steady-state NFA level displayed a tendency to progressively increase when the time horizon was extended (2007→2015→2023), following an upward trajectory that is similar to the trajectory of the actual NFA position. This was also the case for Korea, whose steady-state NFA was found to have risen in recent years, closely mirroring the movement of its actual NFA position. However, across the entire analysis period, Korea's actual NFA position significantly exceeded its steady-state NFA level.

$$\text{Steady-state NFA formula: } nfa_i^* = \frac{-\hat{\alpha} + \hat{\tau}_i + \hat{\gamma}Z}{\hat{\beta}}$$

*Here, $\hat{\tau}_i$ is country fixed effects and Z is the control variable (net creditor country or net debtor country). The steady-state NFA being a stationary level that remains constant in the absence of external shocks, $\Delta nfa=0$ was substituted into the NFA dynamics equation to simplify it with respect to NFA.

<Box 2>

Results of Estimating a Steady-state NFA Based on Long-run Relationship with Fundamental Determinants

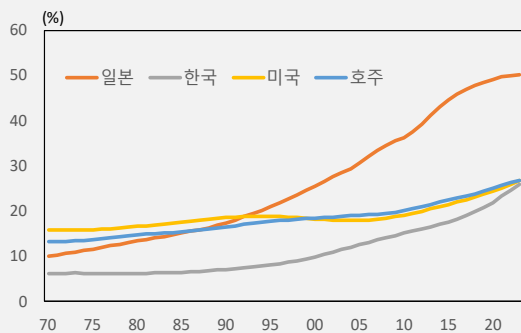
(Summary of analysis) By employing the model proposed by Lane & Gian (2001), the panel data of 44 countries were analyzed to ① explore the relationship between the NFA/GDP ratio and fundamental variables (GDP growth, demographic structure, public expenditure, etc.) and ② estimate a steady-state NFA position for each country, as predicted by their fundamental indicators.

$$\left(\frac{NFA}{GDP}\right)_{i,t} = C + \sum_{k=1}^6 \beta X_{k,i,t} + \epsilon_i,$$

*X_{it} = GDP per capita growth, old-age dependency ratio, government spending-to-GDP ratio, trade facilitation indicators (export volume change + import volume change), risk variable (volatility of GDP per capita growth and trade facilitation indicators). C is a constant.

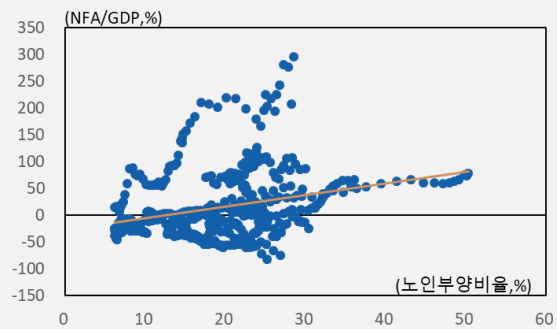
1 [Relationship between NFA and fundamental factors] The results of the empirical analysis demonstrated that a country’s national income and demographic structure were strongly correlated with its NFA position. Concretely, the higher a country’s GDP per capita growth, the higher its NFA position, a finding that corroborates the notion that GDP growth in export-driven economies is closely connected to the accumulation of NFA. A high old-age dependency ratio was also associated with higher levels of NFA, suggesting that, as a country’s population ages, consumption decreases and savings increase.

Old-age dependency ratio by country



Source: World Bank.

Old-age dependency ratio and NFA/GDP ratio



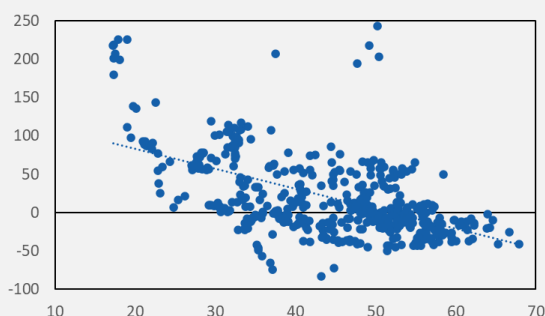
Source: World Bank.

(노인부양비율, %)

(Old-age dependency ratio, %)

Meanwhile, a high government spending-to-GDP ratio appeared to lower the NFA/GDP ratio by widening fiscal deficits (reduction in government savings) and worsening the current account balance. Finally, countries that have a high level of trade activity (trade facilitation indicators: export volume change + import volume change) tended to have a large NFA position. However, the statistical significance of this relationship has decreased due, among others, to the realignment of supply chains after the global financial crisis, which has increased exporting countries’ import reliance for intermediate goods.

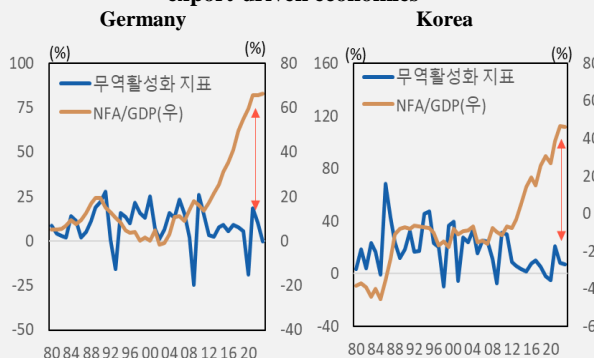
Government spending/GDP ratio and NFA/GDP ratio¹⁾



Note: 1) 8 European countries, Canada, Japan, Taiwan, UK, U.S., Korea.

Sources: IMF, ECOS.

Trade facilitation indicators and NFA/GDP ratio in export-driven economies



Sources: ECOS, IMF, Bloomberg.

무역활성화 지표

Trade facilitation indicators

2 [Estimating steady-state NFA levels] Based on the long-run relationship between NFA and the explanatory variables derived from the empirical analysis, a steady-state NFA position was estimated for each country.

$$nfa_i^* = \alpha_i + \beta_1 GDP\ PCR_{i,t} + \beta_2 ODR_{i,t} + \beta_3 Gov\ SP/GDP_{i,t} + \beta_4 Trade_{i,t} + \beta_5 Risk1_{i,t} + \beta_6 Risk2_{i,t} + \epsilon_i$$

* GDP PCR = GDP per capita growth rate, ODR = old-age dependency ratio, Gov SP/GDP = government spending-to-GDP ratio, trade facilitation indicators (trade = export volume change + import volume change), Risk1 = standard deviation in the government spending-to-GDP ratio, Risk2 = standard deviation in trade facilitation indicators. The steady-state NFA position was calculated by applying the values of β and α , obtained from the regression analysis, to the fundamental indicators at year-end.

Fundamental indicators by country

	Year	GDP per capita growth* (%)	Old-age dependency ratio (%)	Government spending/GDP (%)	Trade facilitation indicators (%)
Korea	2007	10.2	13.7	18.8	24.5
	2015	2.3	17.7	18.8	1.9
	2023	2.1	25.9	23.2	7.1
Japan	2007	-0.3	33.4	33.1	11.0
	2015	-0.3	44.7	37.3	3.7
	2023	-0.4	50.3	39.1	1.5
Germany	2007	5.7	30.3	43.5	15.2
	2015	-0.3	32.0	44.5	9.2
	2023	3.1	36.0	48.4	-0.1
Taiwan	2007	3.2	14.1	19.0	15.8
	2015	3.1	16.9	17.4	1.7
	2023	4.4	26.3	19.0	-9.6
U.S.	2007	4.1	18.2	34.6	11.3
	2015	2.2	21.5	35.0	5.5
	2023	4.6	26.8	37.1	1.6
UK	2007	7.0	24.1	38.7	-3.0
	2015	-1.4	27.6	40.4	8.7
	2023	1.1	30.4	44.8	-1.6
Australia	2007	9.1	19.4	34.3	16.3
	2015	1.6	22.5	37.3	8.5
	2023	2.9	26.9	37.2	13.7

* Annual average rate of growth in 2000-2007, 2008-2015, and 2016-2023.

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