

Staff Analytical Note/Note analytique du personnel 2017-14

Can the Canadian International Investment Position Stabilize a Slowing Economy?



Maxime LeBoeuf and Chen Fan

Financial Markets Department
Bank of Canada
Ottawa, Ontario, Canada K1A 0G9
mleboeuf@bankofcanada.ca
cfan@bankofcanada.ca

Bank of Canada staff analytical notes are short articles that focus on topical issues relevant to the current economic and financial context, produced independently from the Bank's Governing Council. This work may support or challenge prevailing policy orthodoxy. Therefore, the views expressed in this note are solely those of the authors and may differ from official Bank of Canada views. No responsibility for them should be attributed to the Bank.

Acknowledgements

The authors are grateful to Guillaume Bédard-Pagé, Gabriel Bruneau and Jean-Sébastien Fontaine for helpful comments.

Abstract

In this note, we find that valuation effects can act as an important stabilizer, strengthening Canada's net external wealth when its economic outlook worsens relative to that of other countries. This is particularly true when the Canadian dollar depreciates against the US dollar and the Canadian outlook worsens compared with that of the United States. Such was the case during the 2014–15 oil price shock, where valuation effects boosted Canada's net international investment position (NIIP) by 30 per cent of GDP.

Bank topics: Balance of payments and components; International financial markets

JEL codes: F, F2, F21, F3, F32

Résumé

Dans la présente note, nous déterminons que les effets de valorisation peuvent agir comme un stabilisateur important en renforçant la richesse extérieure nette du Canada lorsque ses perspectives économiques s'assombrissent comparativement à celles d'autres pays. Cela est particulièrement vrai lorsque le dollar canadien se déprécie par rapport au dollar américain et que les perspectives de l'économie canadienne se détériorent par rapport à celles de l'économie américaine. C'est ce qui s'est produit pendant le choc des prix du pétrole de 2014-2015 : à ce moment, les effets de valorisation ont rehaussé la valeur de la position extérieure nette du Canada d'un montant équivalant à 30 % du PIB.

Sujets : Balance des paiements et composantes, Marchés financiers internationaux

Codes JEL : F, F2, F21, F3, F32

Cross-border investments have increased rapidly over the past two decades, drawing attention to valuation effects—changes in the value of a country’s external assets and liabilities due to movements in asset prices and exchange rates.

Forbes, Hjortsoe and Nenova (2016) argue that valuation effects act as stabilizers when the domestic economy slows down. In this note, we find that valuation effects can act as an important stabilizer, strengthening Canada’s net external wealth, when its economic outlook worsens relative to that of other countries. This is particularly true when the Canadian dollar depreciates against the US dollar and the Canadian outlook worsens compared with that of the United States.¹ Such was the case during the 2014–15 oil price shock, where valuation effects boosted Canada’s net international investment position (NIIP) by 30 per cent of GDP.

Given the positive relationship between wealth and economic activity, it is likely that the decline in Canadian GDP experienced during both episodes would have been larger without these valuation effects.²

International Investment Position and Valuation Effects

Canada’s international investment position (IIP) measures the value of foreign assets owned by its residents (external assets) and the domestic assets owned by foreigners (external liabilities). The net IIP (NIIP) measures the difference between external assets and external liabilities, which is the country’s net external wealth. Changes in the NIIP can be due to **capital flows** and valuation effects. In turn, valuation effects can be decomposed further into **exchange rate gains** (or losses) and **capital gains** (or losses).

The currency composition of a country’s external assets and liabilities determines the potential for stabilization due to **exchange rate gains**. A depreciation leads to a greater improvement in the NIIP for countries holding external assets largely denominated in foreign currencies and owing external liabilities largely denominated in the domestic currency. This is because depreciation boosts the NIIP by increasing the value of the external assets denominated in the domestic currency by more than that of the external liabilities. This pattern is typical of advanced economies, including Canada.

Capital gains can also stabilize the NIIP following a deterioration of the domestic economic outlook relative to those of other countries. In these cases, the relative underperformance of domestic asset prices—the country’s external liabilities—raises the NIIP. The risk profile of a country’s external assets and liabilities can also increase this stabilizing effect. For example, a composition of riskier external liabilities (e.g., domestic equities or foreign direct investment) and safer external assets (e.g., foreign government bonds) increases the potential for stabilization due to capital gains when the economy slows down.

This stabilizing effect of exchange rate gains and capital gains operates for most advanced economies during times when the domestic outlook worsens compared with those of other countries. The weaker

1 Valuation effects could also be destabilizing after foreign shocks that lead to a decline in the value of external assets and a worsening of the NIIP. While important, analysis of the role of valuation effects during foreign shocks is beyond the scope of this note and is left for future work.

2 See Pichette and Tremblay (2003) for a discussion of the link between aggregate wealth and Canadian real activity.

outlook leads to a depreciation of the domestic currency and a decline in the value of the economy's external liabilities. In these cases, net external wealth increases for domestic investors but declines for foreign investors. This mechanism is sometimes referred to as "automatic international risk sharing."³

The Composition of Canada's IIP

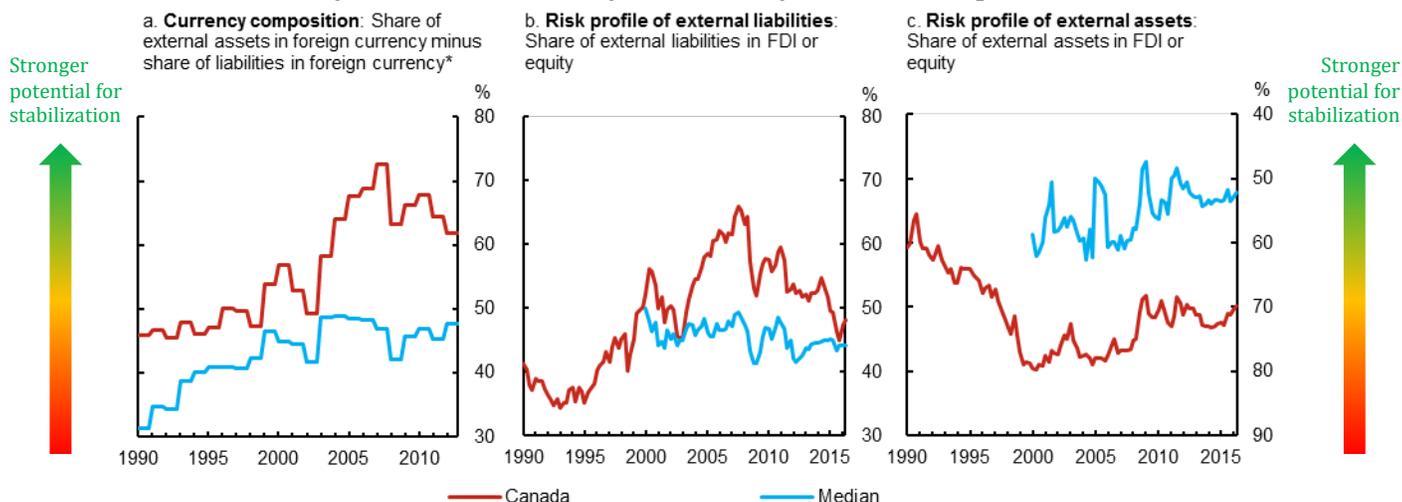
We compare the currency composition and risk profile of Canada's IIP over time with the median of a group of 10 countries belonging to the Organisation for Economic Co-operation and Development (OECD) and find evidence that valuation effects remain an important stabilizer in Canada.

Currently, the share of Canada's external assets denominated in foreign currencies is roughly 60 percentage points above that of its external liabilities. This figure is considerably higher than that for other OECD countries (**Chart 1, Panel a**), suggesting a substantial role for exchange rate gains.

Currently, almost 50 per cent of Canada's external liabilities are composed of foreign direct investment and portfolio equity, which are riskier types of assets than portfolio debt and loans (**Chart 1, Panel b**). This share has declined from a peak of 65 per cent in 2007, following considerable foreign investment in Canadian portfolio debt after the global financial crisis. Yet, the risk composition of Canada's IIP still indicates a significant degree of risk sharing.

However, the risk profile of Canada's external assets is much greater than that of other OECD countries; the share of external assets in foreign direct investment or portfolio equity is around 70 per cent, compared with an OECD median of less than 55 per cent. This indicates that capital gains could lead to a worsening of Canada's NIIP during a global economic downturn (i.e., when the Canadian economy fares similarly or better than its peers, **Chart 1, Panel c**).

Chart 1: The composition of Canada's IIP points to an important stabilizing role of valuation effects



*The changes in currency composition since 2012 are not captured because we assume constant currency weights from 2012 onward. Evidence suggests that this variable has declined (worsened) further since 2012. Note: The median is from 10 countries for which data are available. The countries are Australia, Canada, Japan, New Zealand, Norway, South Korea, Sweden, Switzerland, United Kingdom and United States. Panel c features a reversed vertical scale. Sources: Benetrix, Lane and Shambaugh (2015), International Monetary Fund, Statistics Canada and Bank of Canada calculations. Last observation: 2016Q2

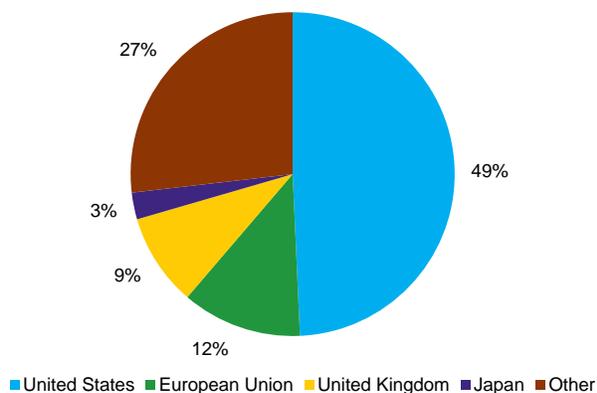
Looking at the currency composition and distribution of Canada's external assets across countries more closely, we find that around 50 per cent consists of US assets (**Chart 2**), while approximately 60 per cent

³ See Forbes, Hjortsoe and Nevova (2016) for a more extensive discussion.

are denominated in US dollars (**Chart 3**). As a result, valuation effects will be a more important stabilizer when Canada’s economic outlook worsens relative to that of the United States and the Canadian dollar depreciates against the US dollar.

Chart 2: Investment destination of Canada's external assets

As a percentage of total external assets outstanding, annual data, book value

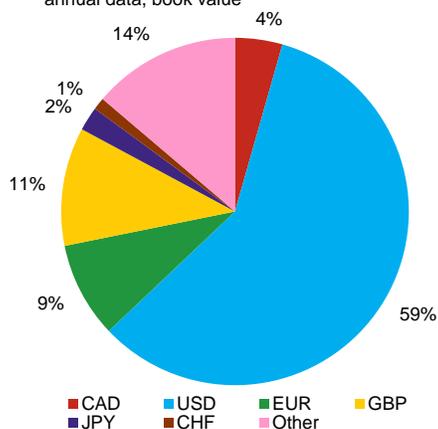


Source: Statistics Canada

Last observation: 2015

Chart 3: Currency composition of Canada's external assets

As a percentage of total external assets outstanding, annual data, book value



Source: Benetrix, Lane and Shambaugh (2015)

Last observation: 2012

Valuation Effects During the 2014–15 Oil Price Shock and the Financial Crisis

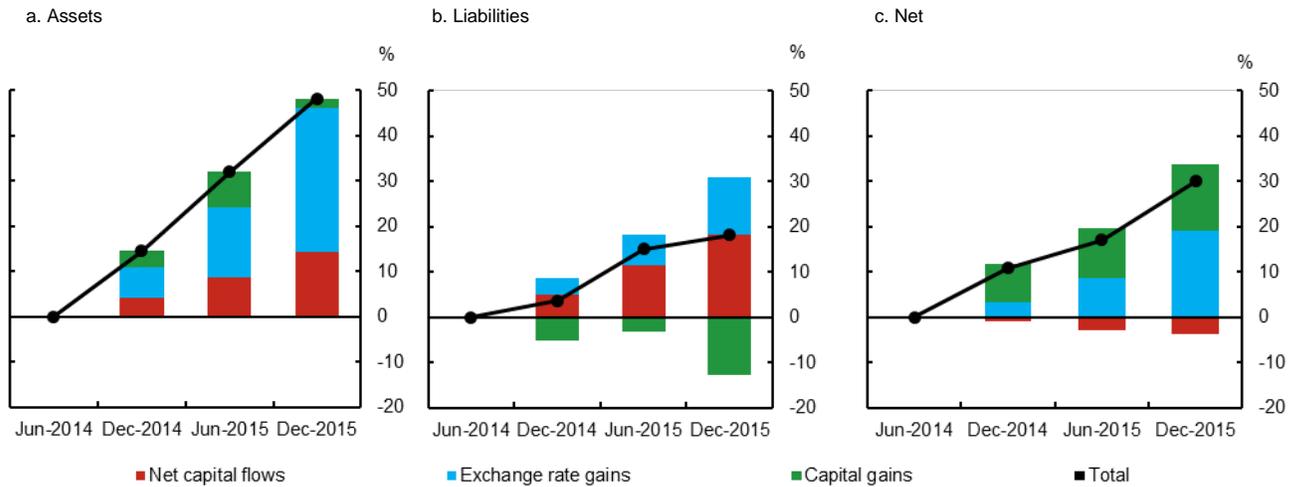
Valuation effects acted as stabilizers during the 2014–15 oil price shock, when Canada’s economic outlook worsened relative to that of the United States. To see this, we decompose changes in Canada’s NIIP as those that are due to capital flows, exchange rate gains or capital gains.⁴

Valuation effects boosted Canada’s NIIP by 30 per cent of GDP during the 2014–15 oil price shock (**Chart 4**). Exchange rate gains followed the sharp depreciation of the Canadian dollar and boosted the NIIP by 20 per cent of GDP. Capital gains also played a role. The value of Canada’s external liabilities declined sharply (consistent with lower expected Canadian corporate profits), while the value of its external assets rose slightly. In contrast, capital inflows were only a small drag on the NIIP.

⁴ Further details on the methodology and data sources are provided in the Appendix. The analysis assumes that valuation effects due to capital gains and exchange rate movements are uncorrelated. Furthermore, it assumes that capital flows are uncorrelated with valuation effects. Additional analysis is required to comprehensively isolate the net effects of those different factors.

Chart 4: Capital gains and exchange rate gains led to a large improvement of the NIIP during the oil shock

Cumulative change since 2014Q2, as a percentage of nominal GDP



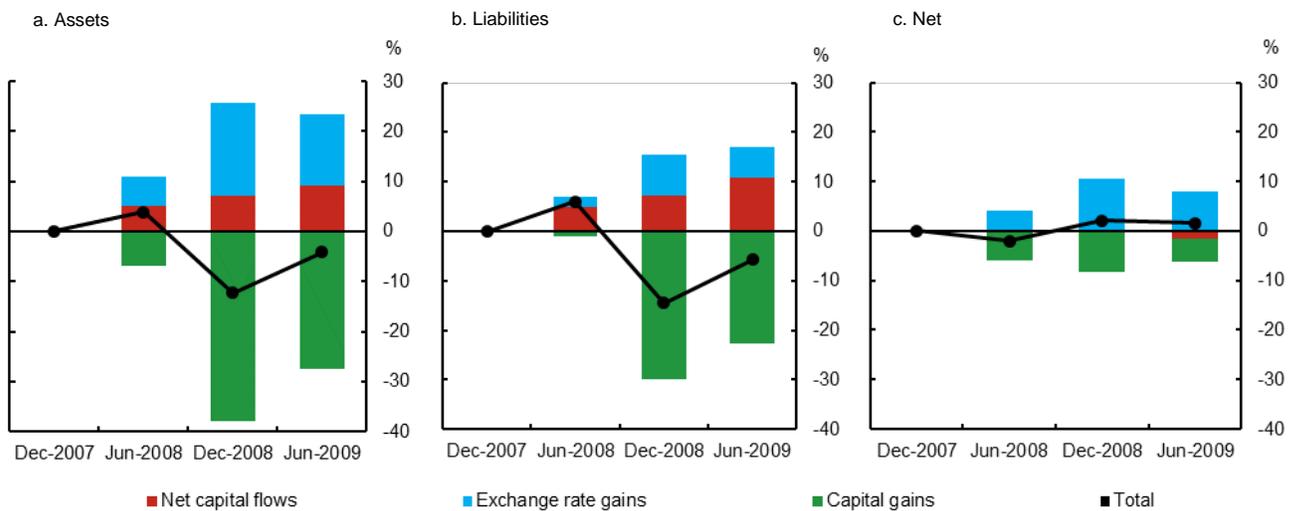
Sources: Benetrix, Lane and Shambaugh (2015), International Monetary Fund, Statistics Canada and Bank of Canada calculations

Last observation: 2015Q4

The global financial crisis provides a contrasting example, where Canada’s outlook did not worsen significantly more than that of the United States. When a global shock like this occurs, capital gains and exchange rate gains can have opposite effects. Indeed, for Canada, a positive contribution from exchange rate gains was partially offset by the negative impact of capital gains, translating into an increase in the NIIP of about 2 per cent of GDP (Chart 5).

Chart 5: Exchange rate gains were partially offset by capital losses during the global financial crisis

Cumulative change since 2007Q4, as a percentage of nominal GDP



Sources: Benetrix, Lane and Shambaugh (2015), International Monetary Fund, Statistics Canada and Bank of Canada calculations

Last observation: 2009Q2

Conclusion

Valuation effects can play an important stabilizing role when the domestic economy slows down. The 2014–15 oil price shock worsened Canada’s economic outlook and lowered domestic wealth. However, the composition of Canada’s IIP caused net external wealth to increase, since the value of Canada’s external liabilities declined by more than the value of its external assets. Valuation effects may have significant implications for the adjustment of real activity and the transmission of future monetary policy. Quantifying these implications offers a stimulating avenue for future research.

References

- Benetrix, A. S., P. R. Lane and J. C. Shambaugh. 2015. “International Currency Exposures, Valuation Effects and the Global Financial Crisis.” *Journal of International Economics* 96(S1): S98–S109.
- Forbes, K., I. Hjortsoe and T. Nevova. 2016. “Current Account Deficits During Heightened Risk: Menacing or Mitigating?” Bank of England Discussion Paper No 46 (May).
- Pichette, L. and D. Tremblay. 2003. “Are Wealth Effects Important for Canada?” Bank of Canada Staff Working Paper No. 2003–21.

Appendix — Data and Methodology

The decomposition of changes in Canada’s NIIP during the 2014–15 oil price shock and the global financial crisis is obtained using equation 1.

$$\Delta NIIP_t = (FA_t^A - FA_t^L) + (VAL_FX_t^A - VAL_FX_t^L) + (VAL_CG_t^A - VAL_CG_t^L) \quad (1)$$

The first component of equation 1 represents capital flows—purchases of external liabilities by foreign investors and purchases of external assets by Canadian investors. The net value of these purchases is equal to the financial account balance.

$VAL_FX_t^A$ and $VAL_FX_t^L$ reflect changes in the value of Canada’s external assets (A) and external liabilities (L) that are strictly due to exchange rate movements (equations 2 and 3). Since the currency composition differs for the subcategories (i) of external assets and liabilities, we calculate the contribution of exchange rate movements separately for *FDI*, portfolio equity (*pe*), portfolio debt (*pd*) and a category that includes all other assets (*o*). The contribution of exchange rate movements is therefore a function of the share of each subcategory in total external assets and liabilities (θ_i^A and θ_i^L) and a measure of exchange rate fluctuations that takes into account the currency composition of the subcategories ($\Delta fx_{t,i}^A$ and $\Delta fx_{t,i}^L$). This measure of exchange rate fluctuations is determined by each currency’s (j) weight ($w_{t,i,j}^A$ and $w_{t,i,j}^L$) in the subcategories of external assets and liabilities and movements in the bilateral exchange rates ($\% \Delta E_{t,j}$).

Estimates of currency weights for the subcategory of Canada’s external assets and liabilities come from Benetrix, Lane and Shambaugh (2015). Weights are available for the following foreign currencies: Swiss franc (CHF), the euro (EUR), pound sterling (GBP), Japanese yen (JPY) and US dollar (USD). We then derive weights for another category that includes all currencies except the Canadian dollar (CAD), CHF, EUR, GBP, JPY and USD.

$$VAL_FX_t^A = \sum_i \theta_i^A A_{t-1,i} (\Delta fx_{t,i}^A) \quad (2)$$

For $i = FDI, pe, pd$ and o

$$VAL_FX_t^L = \sum_i \theta_i^L L_{t-1,i} (\Delta fx_{t,i}^L) \quad (3)$$

$$\Delta fx_{t,i}^A = \sum_j w_{t,i,j}^A \% \Delta E_{t,j} \quad (4)$$

For $j = CHF, EUR, GBP, USD, JPY$ and OTH

$$\Delta fx_{t,i}^L = \sum_j w_{t,i,j}^L \% \Delta E_{t,j} \quad (5)$$

Finally, capital gains ($VAL_CG_t^A$ and $VAL_CG_t^L$) reflect changes in the value of financial assets excluding the impact of exchange rate movements. We compute this category of valuation effects by

taking the difference between the change in the level of external assets and external liabilities in a given period minus the contribution from capital flows and exchange rate gains (equations 6 and 7). Since it is a residual component, capital gains would be affected by measurement errors on the contribution of exchange rate gains that could result from the approximation of currency weights. Investigating the possible size of these measurement errors is challenging and beyond the scope of this note.

$$VAL_CG_t^A = \Delta A_t - FA_t^A - VAL_FX_t^A \quad (6)$$

$$VAL_CG_t^L = \Delta L_t - FA_t^L - VAL_FX_t^L \quad (7)$$

Data on the international investment position come from Statistics Canada and the International Monetary Fund, and span from 1990Q1 to 2016Q2. We use annual currency weights from Benetrix, Lane and Shambaugh (2015) from 1990 to 2012, and assume constant currency weights from 2012 onward. We set the quarterly values of currency weights in a given year equal to the annual weight.