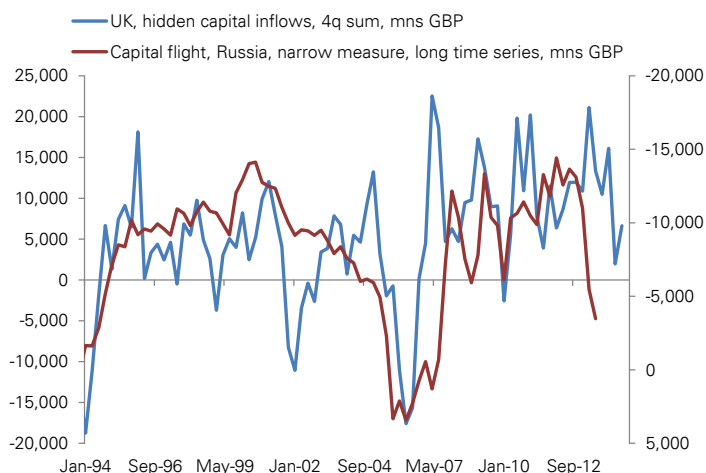




Dark matter: the hidden capital flows that drive G10 exchange rates

- In this paper, we highlight an overlooked but important issue for economic and exchange rate forecasting in G10: the systemic misreporting of flow data. Errors and omissions in the balance of payments should be random, but are not, suggesting that they have value for investors seeking to understand and predict currencies. We find evidence for this on a country-by-country basis in G10.
- In the UK, large positive net errors and omissions likely represent unrecorded financial inflows. As well as cyclical, these inflows are linked to the UK's status as a refuge for international capital flight. For the first time, we confirm through balance of payments data the popular belief that Russian money has flooded into the UK in recent years. Indeed, there is strong evidence that a good chunk of the UK's GBP 133bn of hidden capital inflows is related to Russia. Hidden inflows have been marginally supportive of GBP in recent years, and are another factor behind the UK's large current account deficit.
- In New Zealand, systematic NEOs have been correlated to immigration waves. Hidden outflows in the middle of the last decade may be related to remittances from Asian migrants, while a pick-up in inflows recently probably represents reverse migration from Australia, as well as Chinese capital flight into the property sector. Hidden inflows have been large enough to be a major support for New Zealand's balance of payments in recent years, and help to explain the high level of NZD.
- In the case of Sweden, massive negative NEOs cumulated over the last few decades are likely to represent household foreign portfolio and direct investment. This is connected with the country's high savings rate and unfavorable tax environment. Outflows help to explain the divergence of SEK from Sweden's balance of payments, which overstates surpluses generated by the current account and not offset by the financial account. Unrecorded capital outflows also suggest that Sweden, officially a net debtor to the rest of the world, may in fact be a creditor.

Figure 1: Russian capital flight major contributor to UK's hidden capital inflows



Source: Deutsche Bank, Macrobond



The hidden capital flows that drive G10 exchange rates

Balance of payments data are the bread and butter of FX forecasting. A country's exchange rate is determined by trade flows measured by the current account on the one hand and capital flows measured by the financial account on the other. But what if the numbers don't add up?

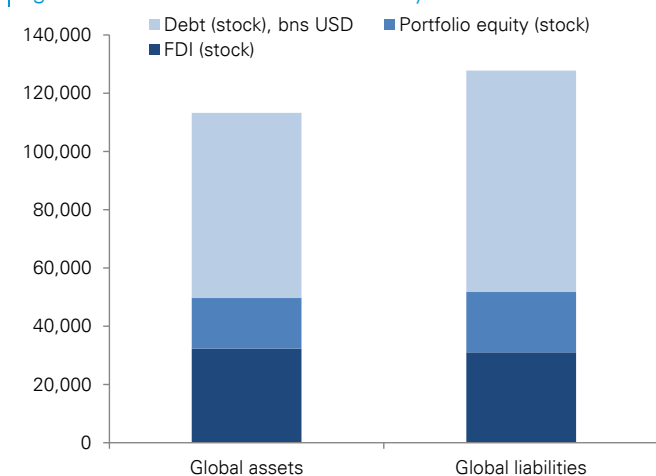
Numerous studies have noted discrepancies in official statistics on the balance of payments. One stand-out fact is that the stock of global liabilities outweighs global assets.¹ The world owes itself money. This is due to the tendency for global assets to be underreported, with one explanation the information black holes caused by tax havens. These measurement errors are large enough to have major macroeconomic implications. For example, one recent study suggests that when adding back in unrecorded household assets into individual countries' net international investment position, the Eurozone moves from the world's second largest net debtor to an overall net creditor.²

Here we analyze a different balance of payments anomaly: the systematic misreporting of flow data. This materializes in a hitherto overlooked part of the balance of payments, 'net errors and omissions'. Commonly treated as a balancing item, in certain countries errors and omissions display biases large enough to suggest they should be taken into account in analysis of the overall balance of payments. In so doing, they can materially alter the overall flow picture and demand a reassessment of currency performance. We start with a quick refresher on the balance of payments and FX forecasting:

Balance of payments and the exchange rate

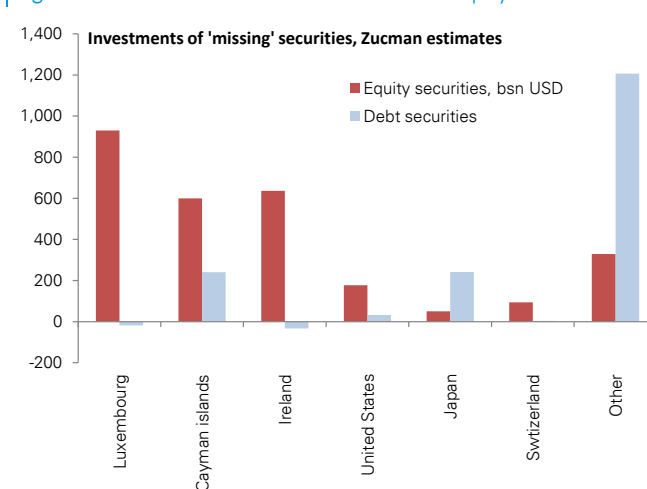
In economic theory, payments related to trade are perfectly offset by capital flowing in the other direction. Economists treat this 'balance of payments' as an accounting identity, i.e. it sums to zero by definition. Suppose country A exports 100 coconuts to country B. The positive entry on its 'current account' must be reflected in a negative entry on its 'financial account', since A effectively lends to B until it buys something in return. In the simplest case, A holds on to B's currency as foreign exchange reserves. More likely, A will use the proceeds from its exports

Figure 2: The world owes itself money



Source: Deutsche Bank, External Wealth of Nations Dataset, Lane and Ferretti

Figure 3: Tax havens distort the balance of payments



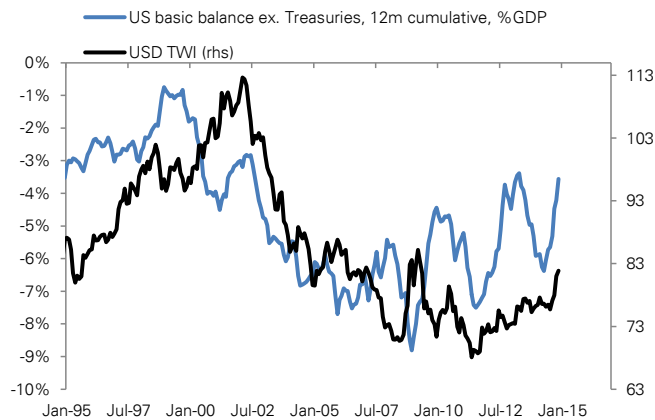
Source: Zucman, The Missing Wealth of Nations Dataset

¹ See Lane and Ferretti, "The external wealth of nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970-2004", *Journal of International Economics*, November 2007, pp. 223-50. <http://www.philiplane.org/EWN.html>

² Zucman, The Missing Wealth of Nations, Paris School of Economics, February 2013

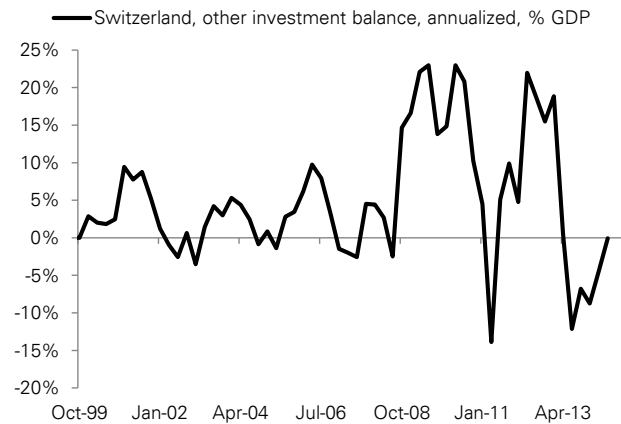


Figure 4: US dollar and US basic balance



Source: Deutsche Bank, Treasury International Capital Report, Bloomberg Finance LP

Figure 5: 'Flighty' capital can have big FX impact



Source: Deutsche Bank, Macrobond

to invest in B. Such investments can be directly into companies or governments, but also take other forms. The balance of payments can be written:

$$\text{Current account} = \text{Financial account} = \text{Capital account} + \text{direct investment (FDI)} + \text{portfolio investment} + \text{other investment} + \text{change in foreign exchange reserves}$$

If the balance of payments necessarily sums to zero, how can any one component flow matter more than any other for exchange rates? The truth is that economists and forecasters tend to place more emphasis on certain flows. In particular, the current account and FDI are seen as more stable and thus more representative of the true underlying flow picture in a country. Summed together, they represent the **narrow basic balance**. Portfolio flows into equity and debt instruments are also seen as important indicators of long-term investment attitudes towards economies, and are added to form the **broad basic balance**. Traditionally, narrow and broad basic balances have been used to measure the underlying flow story of a country and as lagging indicators of currency performance. Indeed, as seen in figure 4, the dollar has tracked the US broad basic balance relatively well over time. 'Other investment' flows, which measure deposits and loans, are not recorded in the basic balance because they are seen as 'flighty' capital, likely to quickly mean revert, and therefore less relevant to long term currency trends.

In reality, the relative importance of flows for exchange rates depends on context. For example, a shift towards investment from savings in an economy will result in a deterioration of the current account, but can also place upward pressure on the real exchange rate as capital is attracted to rising interest rates. Alternatively, if an economy experiences a fall in competitiveness, this should result in a deterioration of the current account and a fall in the real exchange rate.³ Other investment flows, excluded from the basic balance, can in fact have major impacts on exchange rates. During the 2008-9 and 2010-12 financial crises, Switzerland received huge safe haven inflows recorded in the other investment balance (figure 5) which placed significant upward pressure on the franc. Currency forecasting is intimately involved in disentangling which flow is driving currency performance more than any other at any one time.

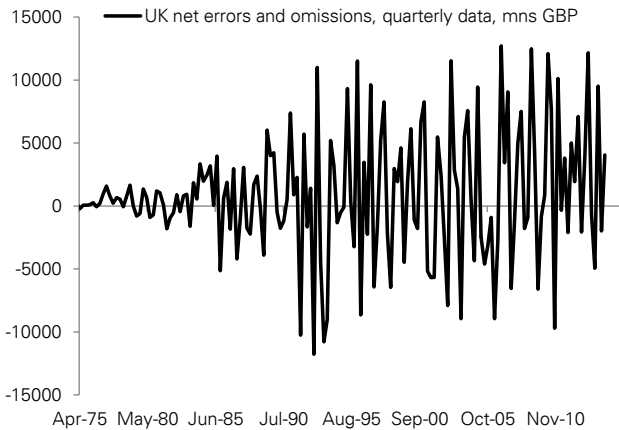
The net errors and omissions conundrum

One item in the balance of payments is commonly ignored by currency forecasters, at least in G10. In practice, statisticians rarely measure flows so accurately as to

³ See *The Deutsche Bank Guide to Exchange Rate Determination*, May 2002, for a more thorough analysis of external balances and the exchange rate

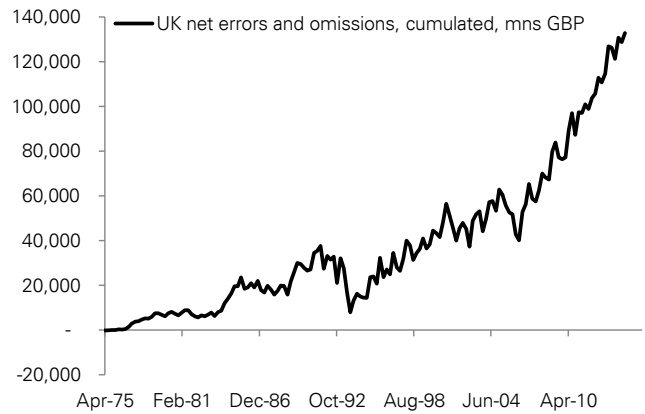


Figure 6: Net errors and omissions may appear random...



Source: Deutsche Bank, Macrobond

Figure 7: ...but look closer, and trends emerge



Source: Deutsche Bank, Macrobond

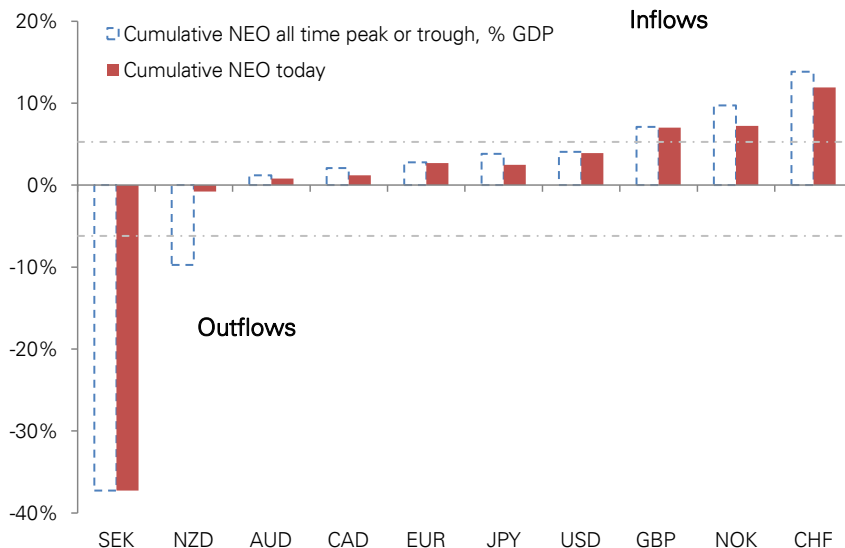
satisfy the balance-of-payments identity. Financial and trade data tend to come from different sources, all of which are subject to measurement errors and omissions. To balance the current and financial accounts, official statistics add a residual item commonly labeled 'net errors and omissions' (NEO).

$$\text{Current account} = \text{Financial account} + \text{NEO}$$

Measurement errors can stem from rounding errors, data inaccuracies, double-counting, stochastic errors in inferring population values from survey results, and so on. In theory, however, errors should share one key characteristic: randomness. If NEOs measures only random statistical measurement errors, they should have an expected value of zero. Although consecutive errors need not mean-revert, they should follow a random walk. They, therefore, should contain no relevant information for currency forecasting.

But this is not the case. Take the UK. As figure 6 shows, quarterly NEO balances since the start of the time series are highly volatile and at first appear random.

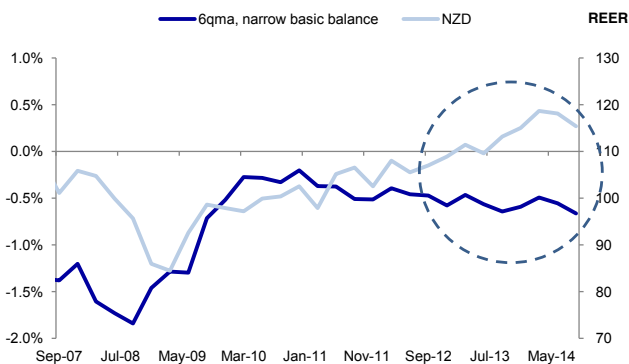
Figure 8: Inflows/Outflows by country



Source: Deutsche Bank, Macrobond, Haver Analytics

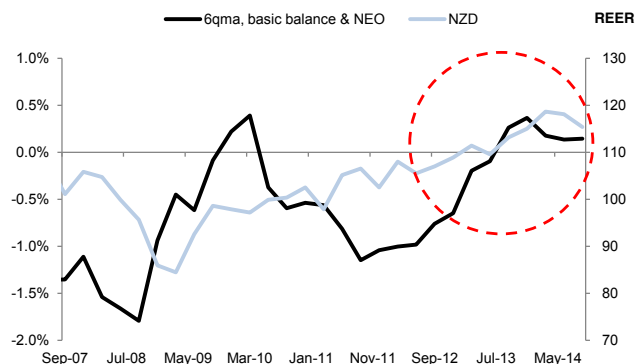


Figure 9: NZD divergence from basic balance since 2010...



Source: Deutsche Bank, Haver

Figure 10: ...is explained by adding NEOs back in



Source: Deutsche Bank, Haver

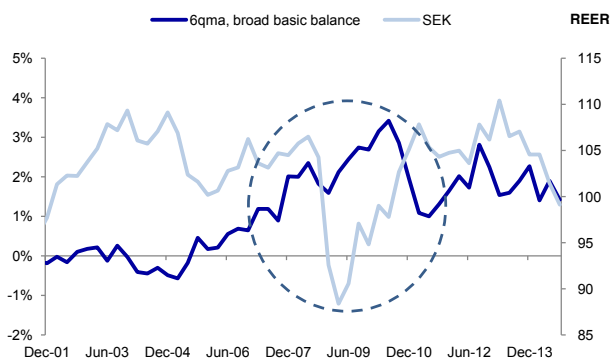
However, by cumulating these flows over time as shown in figure 7, a clear trend emerges. NEO balances have been consistently positive over time. This means that either the current account deficit has been overestimated or the financial account surplus underestimated year after year.

Systematic trends in NEOs occur in half of all G10 economies. At some point, Switzerland, Norway, the UK, New Zealand and Sweden have all displayed cumulative NEOs above 5% of GDP. In the case of Sweden, measurement errors are vast, with NEOs having reached nearly 40% of GDP when cumulated from the early 1990s. In the US, Eurozone, Japan, Canada and Australia, by contrast, cumulative NEOs have not reached above 5% of GDP. For complete charts on cumulative net errors and omissions in G10 FX, see appendix.

If NEOs are non-random, it follows this must result from the omissions rather than the errors component of the time series. These omissions must contain relevant information for FX forecasting. That is to say, they should be considered as a potentially relevant flow for currency performance, just like any other.

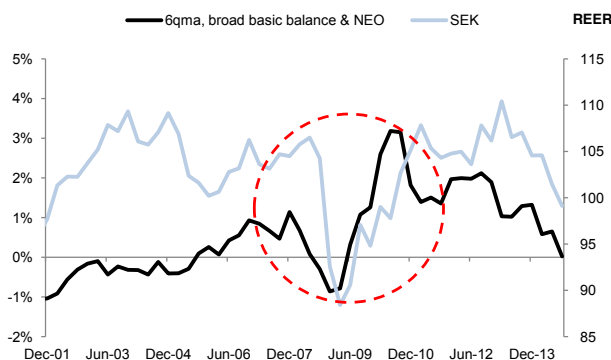
Returning to the example of New Zealand, figure 9 shows that the clear, if loose, relationship between New Zealand's narrow basic balance and New Zealand's real effective exchange rate broke down from 2011. New Zealand's basic balance declined, but NZD REER rose to all time highs. By adding in NEOs into the narrow basic balance, however, the relationship reestablishes itself. Similarly, in the case of Sweden, the narrow basic balance does a much better job of explaining SEK

Figure 11: SEK divergences from basic balance....



Source: Deutsche Bank, Haver

Figure 12: ... explained by NEOs



Source: Deutsche Bank, Haver



performance during the mid-2000s when NEOs are added back in.

“Sins” of omission

Considerable attention has been dedicated to explaining NEOs in emerging markets, but there has been little focus on the phenomena in developed markets.⁴ In EM, economists have commonly used NEOs as a narrow gauge of capital flight; in some cases combining it with non-bank other investment flows to form a broader measure of ‘hot money’.⁵

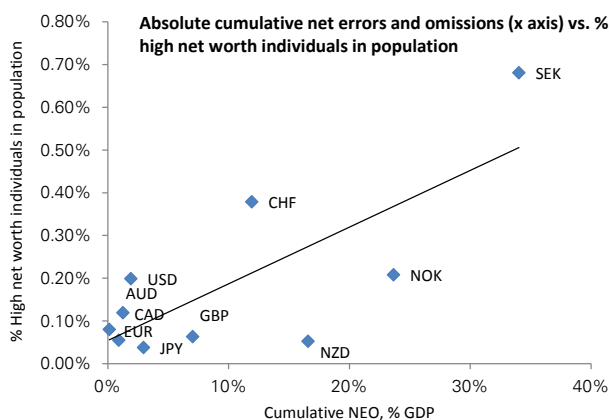
Capital flight is a broad term. At its most extreme, it can include criminal activity such as tax evasion and money laundering. For example, the Russian central bank has ascribed significant portions of Russian capital outflows to illegal activities.⁶ Numerous other studies have highlighted criminal activity as an important driver of hidden capital flows in emerging markets.

An unstable geopolitical or investment environment can also contribute to capital flight by incentivizing investors to move assets abroad or to fail to repatriate foreign earnings. Again, the central bank of Russia has highlighted an unfavorable investment climate as an important reason for capital flight.

Capital flight can be related to tax activities. High tax economies can generate incentives for investors to offshore wealth. There has been much recent work into the importance of tax evasion or avoidance in distorting international investment statistics. Interestingly, there appears to be a loose relationship between high net worth individuals and absolute levels of net errors and omissions across G10, although the sample size is too small to draw robust conclusions.

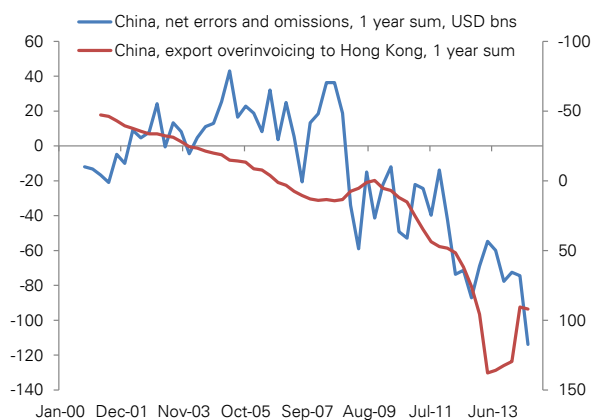
However, not all ‘hidden’ capital flows are related to capital flight. In some cases, unrecorded flows can be related to avoiding capital controls. For example, China’s NEOs have closely tracked export over-invoicing in recent years. Export over invoicing was seen as a mechanism for Chinese corporates to participate in high levels of onshore carry – hardly an example of capital flight.⁷ Other examples of illicit activities contributing to unrecorded capital flows include Hawala banking, or

Figure 13: Tax plays a role in capital flight



Source: Deutsche Bank, World Bank, Macrobond

Figure 14: Not all unrecorded flows related to capital flight



Source: Deutsche Bank, Macrobond

⁴ The Riksbank are the only major G10 central bank to investigate the importance of net errors and omissions in the balance of payment. See working paper: Bloomberg, Forss and Karlsson, *Errors and omissions in the balance of payments – a problem?*, February 2003

⁵ See Schneider, *Measuring Capital flight, Estimates and Interpretations*, March 2003. Overseas Development Institute

⁶ Interview with Russian central bank governor Sergey Ignatev, link: http://www.vedomosti.ru/finance/articles/2013/02/20/ottok_pod_kontrolem

⁷ See Hafeez, *DB Special: The Rise (And Fall?) of the China FX Carry Trade*, June 2013



informal business such as 'suitcase trades' which are impossible to capture through official statistics.

Nor are all 'hidden' flows necessarily illicit. In certain cases, systematic omissions of data can occur. The European Commission has noted a tendency for Eurozone countries to overestimate exports with one another. Statistical agencies also face obstacles in measuring potentially legitimate flows directly with third party intermediaries.⁸ Household foreign direct investment transactions (such as house buying) are a particular measurement challenge. We discuss the latter in some detail below.

This report is not intended to be a comprehensive investigation of the sources and causes of net errors and omissions in developed countries, but to highlight an important oversight in G10 currency forecasting. In what follows, we focus on three case studies within G10 where NEOs are significant: the UK, New Zealand and Sweden. We attempt a preliminary analysis in determining from where the flows are likely to arise, whether they are likely to continue and what impact they have on the overall balance of payments.

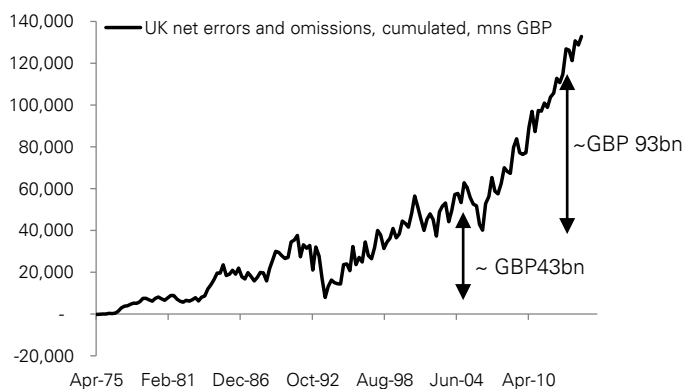
What matters about these flows from an FX perspective is that, whatever the motivation and whether legal or not, they drive exchange rates. A German buying London property needs to purchase sterling, irrespective of whether the property transaction is recorded in the balance of payments. These pounds should ultimately wind up in the pockets of a London-based estate agent, whose proverbial purchase of a flashy BMW with the money would worsen the UK's current account deficit and boost German exports.

Case study 1: The UK's hidden capital inflows– from Russia with love?

Since the mid-1970s the UK has attracted nearly GBP 133bn, or 8% of current GDP, in unrecorded inflows via NEOs. Inflows occurred mostly in two periods. From early-1993 to mid-2005 the UK saw around GBP 43bn worth of inflows. Then, from a trough in 2006 to the present day, nearly GBP 93bn of inflows have been recorded. Inflows have accelerated in recent years, tracking at around GBP 1bn per month since 2010.

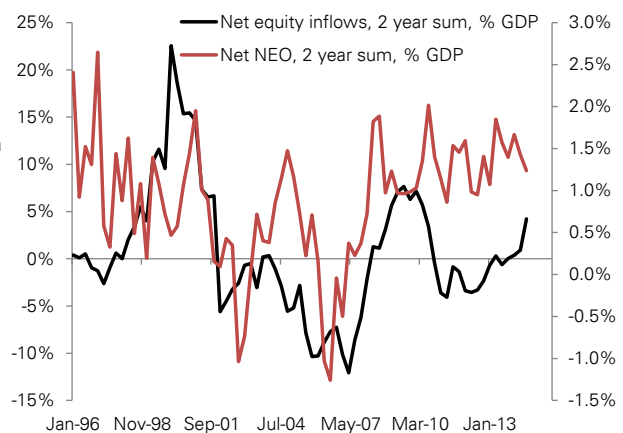
There has been little recent investigation of these inflows by economists or

Figure 15: Two periods of unrecorded inflows into the UK



Source: Deutsche Bank, Macrobond

Figure 16: NEOs positively correlated to equity inflows



Source: Deutsche Bank, Macrobond

⁸ Bloomberg, Forss & Karlsson, *Errors and omissions in the balance of payments – a problem?*, Feb 2003

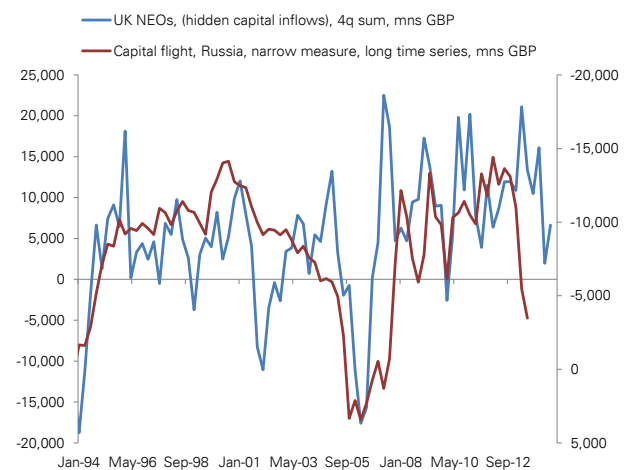


Figure 17: Russian money significant contributor to UK's hidden capital inflows



Source: Deutsche Bank, Macrobond, Central Bank of Russia

Figure 18: Russian capital flight has tracked UK hidden inflows since fall of Soviet Union



Source: Deutsche Bank, Macrobond, Central Bank of Russia

official bodies. In the past, the Bank of England and the ONS have ascribed large NEOs to inflows into the financial account, rather than an underestimation of export earnings or overestimation of imports.⁹ This appears a more likely explanation, as trade data is more comprehensively recorded than financial account data. The subject is clearly worthy of further investigation by statistical authorities, however.

Ascribing unrecorded inflows to the financial account seems to be justified by other balance of payments data. For example, there is a strong positive correlation between smoothed measures of net equity flows and NEOs. There is also a positive, if looser relationship with inflows into gilts. One possible source of such a discrepancy is a systematic reporting error of inflows by financial institutions. Another is that increasingly sophisticated tax avoidance and accounting methods make it difficult for reporting bodies like banks to trace the true beneficial owner of portfolio securities. As the ONS has noted, UK equity securities are increasingly held in multi-ownership pooled accounts, making it impossible to precisely determine the nationality of the owner.¹⁰

Hidden inflows have held up well in recent years even as official portfolio inflows have been weak. This divergence suggests cyclical factors are not the only determinant of hidden inflows. Another factor is the UK's perceived status as a safe haven for foreign investors seeking to hide assets from domestic authorities, or wishing to transfer wealth away from an unstable political environment. A source of such inflows would be countries like Russia. Numerous anecdotal examples have been provided by commentators of Russian money flooding into the UK (FT), but official statistics show little evidence of large-scale inflows.

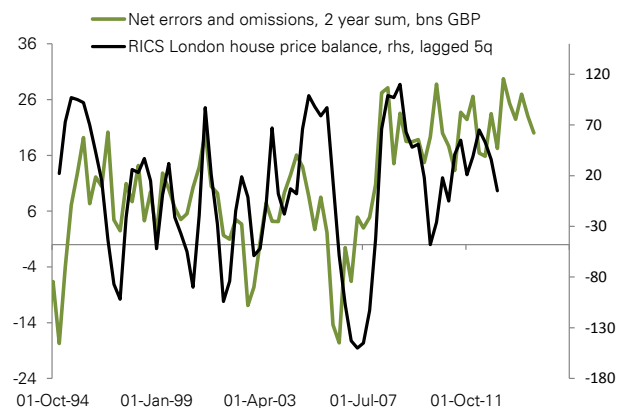
There is a striking relationship between Russian NEOs, commonly used as a narrow gauge of 'capital flight' from the country, recorded since the early 2000s measured in GBP, and the UK's own NEO series (figure 17). This relationship also holds using a longer time series from the central bank of Russia, which captures large UK NEO inflows during the mid to late 1990s coinciding at the same time as significant capital flight from Russia following the fall of the Soviet Union and during the Russian debt crisis of 1999 (figure 18).

⁹ For example, Bank of England Quarterly Bulletin, November 1988 or ONS Pink Book 1999

¹⁰ ONS Statistical Bulletin, Ownership of UK Quoted Shares, 2012

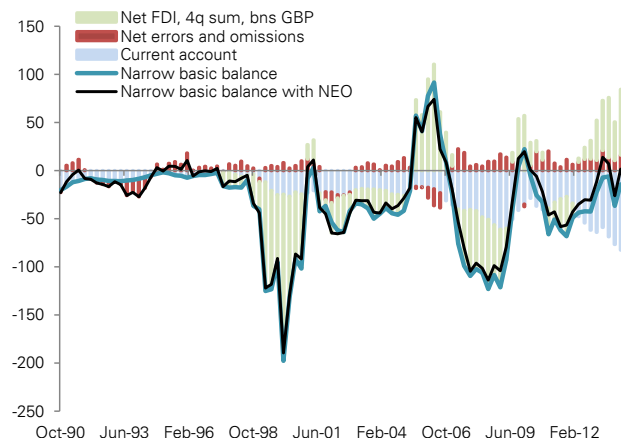


Figure 19: RICS house price balance and NEOs



Source: Deutsche Bank, RICS, Macrobond

Figure 20: Inflows not large enough to meaningfully alter basic balance



Source: Deutsche Bank, Macrobond

Russian money cannot explain all of the UK's hidden inflows. In the first place, annual Russian NEOs are less than half the UK's annual hidden capital inflows. Moreover, the UK is an attractive destination for residents of many more countries than Russia. However, it is difficult to escape the conclusion that Russian money has played a significant role in unrecorded inflows into the UK economy.

Into what assets has hidden capital been directed? As noted above, portfolio securities may be one destination, with legal and accounting techniques used to disguise the ultimate beneficial owner of securities. There is also a strong correlation between changes in the London RICS house price balance and UK NEOs (figure 19). This relationship holds better and for longer than with other financial account balances. It is not implausible that a significant chunk of UK NEOs relates to property transactions. As the ONS notes, it is particularly difficult to get reliable data for household property transactions in or out of the country.¹¹ An additional problem stems from the fact that many foreign property transactions are conducted via shell companies. One recent study estimates that over 36,000 London properties are held by offshore haven companies.¹² Data on foreign property transactions in central London suggests that purchases are sufficiently large to explain inflows. For example, Knight Frank estimates that nearly 50% of all transactions in prime central London were foreign residents in 2012, while another London estate agent estimated that GBP 7bn worth of international money was spent on prime London property the same year.¹³

While large in absolute terms, hidden inflows into the UK are still small relative to officially recorded capital flows. Even in recent years, inflows have not exceeded much more than GBP 12bn per year, only around 15% of the current account deficit. The information value of hidden inflows is also blunted by their positive correlation to other financial account flows (although since 2010 a divergence has opened up, meaning that hidden flows have been marginally supportive for the pound). Hidden inflows are, however, another explanation behind the exceptional recent weakness of the UK's current account deficit. They also raise major questions over the UK's role as a refuge for international capital flight and the need for better data and more rigorous oversight on foreign property transactions.

¹¹ From the methodological notes on the balance of payments. As the ONS notes, 'from 2003 data collection by UK tax agencies on direct investment in the UK by foreign households ceased and since then the data should be regarded as low quality.'

¹² Corruption On Your Doorstep, research paper by Transparency International UK, March 2015

¹³ <http://content.knightfrank.com/research/556/documents/en/oct-2013-1579.pdf>



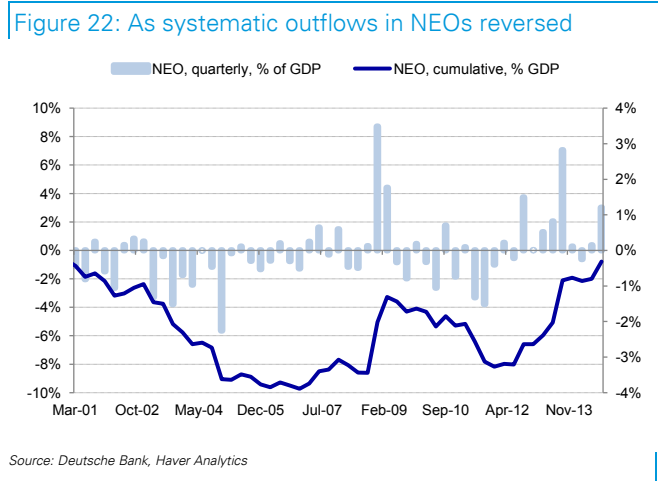
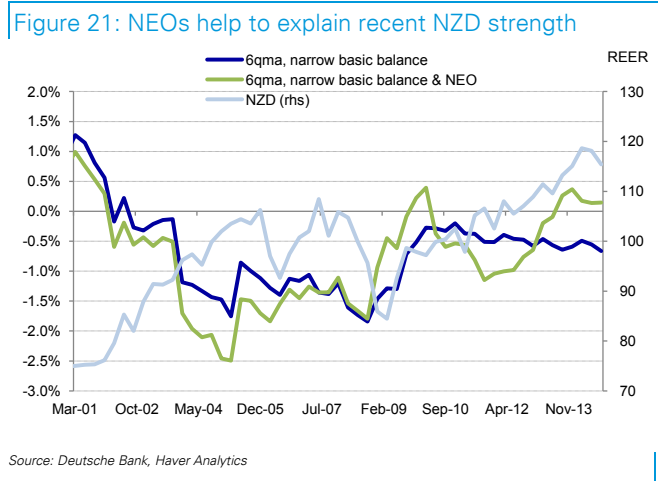
Case study 2: New Zealand’s “dim sums” - capital flows track immigration waves and Chinese property transactions

The divergence between NZD and New Zealand’s basic balance in the past three years has coincided with large and successive positive NEOs. Since 2012, New Zealand has received around NZD 15bn worth of inflows. As shown in figure 21, incorporating these inflows into the basic balance pushes it into positive territory and provides a much better fit with the high value of NZD over the period.

Figure 22 illustrates that the systematic trend in New Zealand’s NEO pivoted only about a decade ago. Prior to this point, New Zealand had in fact experienced systematic capital outflows. In both periods, flows have been closely connected with immigration waves. After the turn of the century, the Australian mining boom attracted numerous New Zealand residents to emigrate across the Tasman Sea. Chinese migrants, in particular, were welcomed to New Zealand to reinforce the domestic labour force, in turn allowing them to make remittances to their families back home. Until a few years ago, the balance of payments statistics did not carefully account either for remittances or for migrants transferring wealth between countries.¹⁴ Even today, New Zealand’s statistical authorities, while acutely aware of the problem, are restricted to making assumptions regarding the volume of these transactions.

Since 2012, these and other methodological difficulties have led to the omission of net inflows. Net immigration has accelerated and, unlike a decade ago, is associated with foreign capital flooding into New Zealand’s residential property sector. Wealth migration has partly replaced labour migration. Moreover, while immigration is the key vehicle, foreign savings also find their way into the country via other channels, whether legitimate or not.

The final destination of most of New Zealand’s unrecorded inflows is the property market. Figure 24 shows that building approvals in the residential sector are an excellent leading indicator of cumulative NEO prints in the following four quarters. Migrants need housing. Others use housing as an off-radar bridgehead. New Zealand has become a prime destination for Chinese money, some evading the country’s capital controls and tax system.¹⁵ This tends to be channeled through the property sector, where beneficial ownership is more easily disguised than in the financial sector.

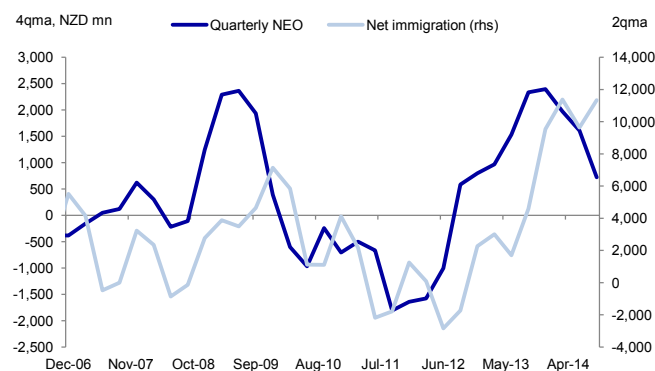


¹⁴ http://www.stats.govt.nz/browse_for_stats/economic_indicators/balance_of_payments/preview-2014-bop-improvts.aspx

¹⁵ <http://www.rawa.co.nz/uncategorized/nz-in-top-ten-chinese-property-searches/>

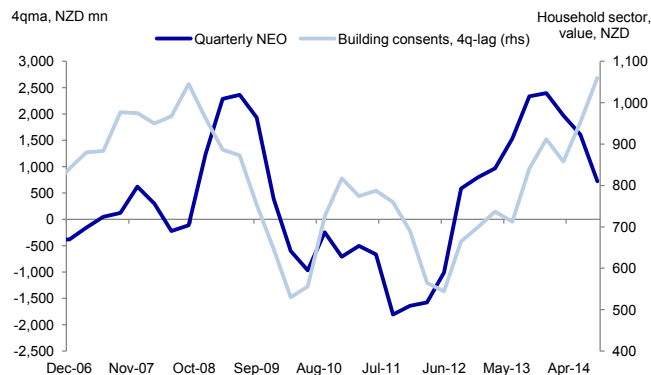


Figure 23: Migration waves may drive hidden flows



Source: Deutsche Bank, Statistics New Zealand

Figure 24: Final destination – residential property sector



Source: Deutsche Bank, Statistics New Zealand

Foreign inflows into the property market are not recorded in the balance of payments. New Zealand's statisticians assume that every migrant to the country adds to New Zealand's assets abroad, since they retain financial assets in their home countries, mostly cash from the sale of their homes. In the balance of payments, such imputed overseas assets are recorded as 'trade receivables', with migrants assumed to transfer their foreign assets over a period of three years. Yet the asset value is imputed on the basis of the house price level of the country of origin. For many Chinese immigrants, these wealth estimates are likely on the low side. As for direct investment of foreign individuals in New Zealand housing, these transactions are entirely omitted from New Zealand's statistics.

Are property transactions large enough to account for NEOs? The Inland Revenue Department estimates non-resident ownership at less than 5% on the basis of tax paid on rental properties owned by foreigners. This estimate is likely wide of the mark. For one, it dates from 2007 and is simply assumed by the Treasury not to have changed since. More importantly, the Treasury admits that "the limitations of the data mean that it is difficult to assess the extent to which foreign ownership rates are changing over time". A BNZ-REINZ survey among estate agents in 2013 found that every tenth house was thought to be purchased directly by a foreigner.¹⁶ With the value of monthly house sales in the region of NZD 3-4 billion, foreign purchases are clearly significant. Moreover, many overseas buyers have relatives residing in New Zealand who execute transactions on their behalf.

With the political debate in New Zealand gradually honing in on the sensitive topic of restricting foreign house purchases, there may be a political catalyst for curbing foreign inflows into the housing market. The government only recently announced a more concerted data collection process after the September election.¹⁷ Much depends on what the data reveal once a registry has been set up. In the meantime, the New Zealand government appears reluctant to act on public pressure, even if the Australian government looks determined to set a precedent on the same issue. Also, if the Chinese government presses ahead with plans to relax capital controls on purchases of foreign property by Chinese nationals, inflows could pick up.

Case study 3: Sweden's massive hidden outflows – a taxing environment

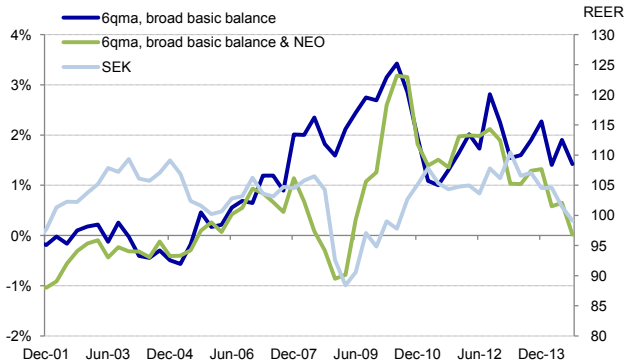
The trajectory of SEK is difficult to reconcile with Sweden's basic balance. Both in

¹⁶ <http://www.interest.co.nz/sites/default/files/BNZ-REINZ-Survey-May-2013.pdf>

¹⁷ http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11369028

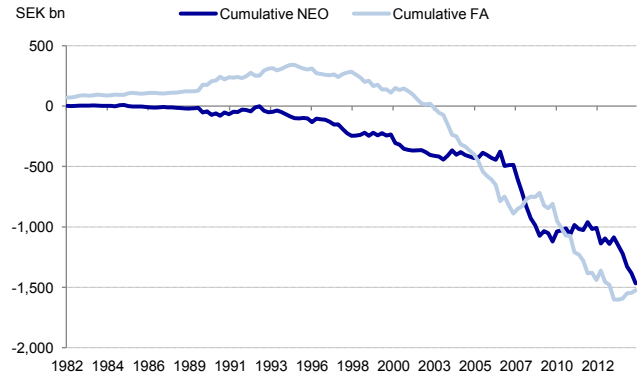


Figure 25: Hidden outflows explain recent SEK weakness



Source: Deutsche Bank

Figure 26: About half of Sweden's outflows since 1982 have gone unrecorded



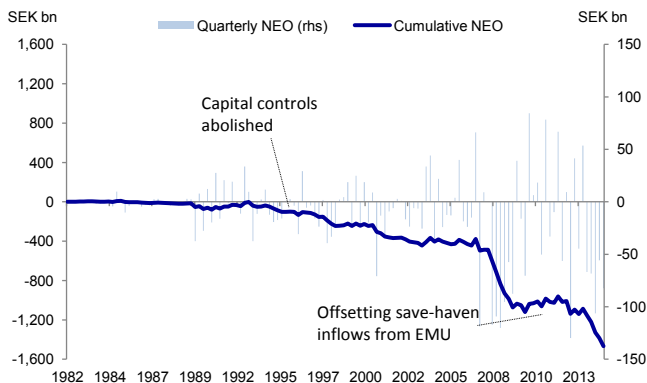
Source: Deutsche Bank

the period 2007-9 and since 2012, the krona weakened in spite of large current account surpluses and robust inward investment. As figure 25 demonstrates, the NEO residual again goes a long way towards closing the explanatory gap. Since June 2012, Sweden has leaked a startling 12% of its GDP over the period through hidden capital outflows.

The phenomenon is not new to Sweden. Its economy has leaked a vast amount of capital since the late 1980s, when the country abandoned capital controls. As figure 27 shows, a staggering SEK 1.5 trillion have since leaked from the financial account. The comparison with cumulative recorded financial accounts in figure 26 shows that over this period about half of Sweden's net financial outflows have not been recorded in the national balance of payments. Valuation effects notwithstanding, this means that Sweden's national statisticians underestimate Swedish foreign wealth by about 100%. This makes Sweden the most extreme of our three case studies.

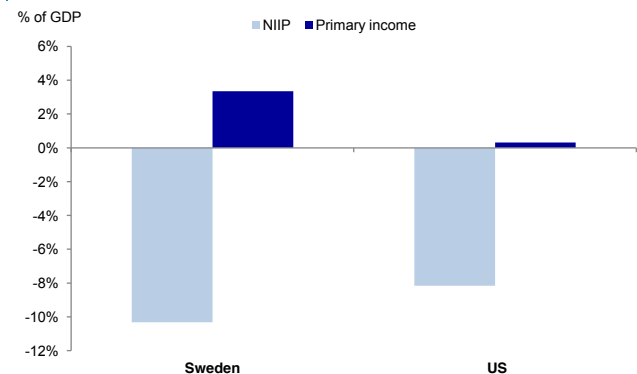
Swedish households have long been subject to comparatively high tax rates. A wealth tax was abolished in 2007 after years of debate. By this time, however, much private wealth had been transferred abroad. Many still seek to avoid capital gains taxes by moving assets abroad. Such investments abroad are not typically illicit. Since 1993, Swedish households have been legally entitled to hold foreign bank accounts and equity portfolios. The Riksbank has admitted in the past that

Figure 27: Swedish financial account began leaking after abolition of capital controls in the late 1980s



Source: Deutsche Bank

Figure 28: Greater 'exorbitant privilege' than the US – really?



Source: Deutsche Bank, Haver Analytics



household direct investment abroad is “only captured to a very minor extent in the balance of payments statistics.”¹⁸

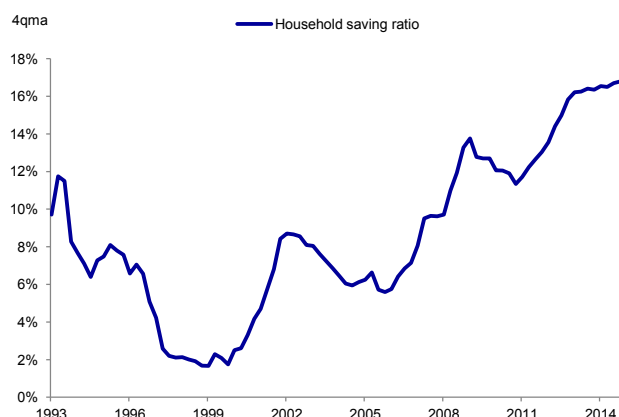
Yet although interest and capital gains are taxed abroad, after-tax profits tend to be repatriated and declared. This explains the paradox of Sweden generating SEK 130bn of investment income from net external debt of SEK -400bn. This would imply a greater ‘exorbitant privilege’ than that enjoyed by the US, where interest differentials and currency valuation effect have historically allowed it to grow debts at a lower rate than it accumulates current account deficits. Although there is no doubt that Sweden is a land of exorbitant privileges in many respects, SEK is not as privileged a currency as USD. It is not an international reserve currency.

Indeed, although continuous current account surpluses since 1994 should have reduced Sweden’s external debt, it has increased due to adverse exchange rate movements and historically high debt financing costs since the end of the Bretton Woods system.¹⁹ Yet even after adjusting the NIIP for valuation effects to SEK 1.5tn, the primary income balance on the current account still implies an implausibly high 6.6% rate of return. Adding in cumulative NEOs since 1974, however, raises the adjusted NIIP to SEK 3tn, thus implying a more plausible return of 3.3%. While these numbers remain indicative, the important point is that Swedish NEOs need to be taken in consideration not only in forecasting the krona in the short term, but also in assessing the sustainability of Sweden’s supposed external debt. In all likelihood, there is no net debt.

The economic drivers of these outflows are the savings generated by Swedish households and the rate at which they are channeled abroad, which is largely a function of tax-adjusted return differentials. On both accounts, outflows are unlikely to subside any time soon. The demographics are consistent with high saving rates. The dependency ratio is unusually high at 37%, with the over-65s alone comprising 20% of the population.

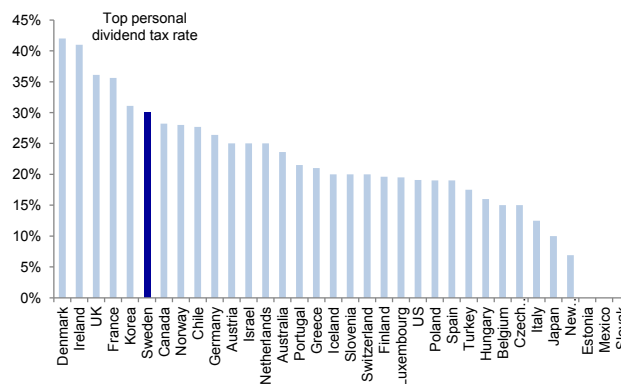
The incentive to invest savings in Sweden remains low. The effective capital gains tax rate may have decreased from the punitive levels of pre-1990, but it remains high in international comparison at over 30%. The political debate in Sweden is torn between preserving the status quo and addressing what many perceive as a

Figure 29: The household saving rate is at an all time high



Source: Deutsche Bank, Haver Analytics

Figure 30: Capital gains tax rate among highest in OECD



Source: Deutsche Bank, OECD, Ernst & Young

¹⁸ Blomberg et al, 2002, “Error and omissions in the balance of payments – a problem?”, Riksbank Economic Review, http://www.riksbank.se/Upload/Dokument_riksbank/Kat_publicerat/Artiklar_PV/er03_2_artikel3.pdf, p. 48

¹⁹ The Swedish krona depreciated by 26% in 1981-2.



rise in income and wealth inequality. Tax liberalization is not on the agenda.

Moreover, our Euroglut thesis suggests that the rate differential against the US — currently -1.3% for 10Y treasuries — is more likely to widen than to narrow in the coming years. The Riksbank will struggle to decouple its monetary cycle from the ECB. With Eurozone rates stuck at the zero bound for perhaps the rest of the decade, households will continue to channel savings into investment schemes registered abroad as well as—and here we come full circle—London property.

Conclusion

In this paper, we highlight an overlooked but important issue for economic and exchange rate forecasting in G10: the systemic misreporting of flow data. Errors and omissions in the balance of payments should be random, but are not, suggesting that they have value for investors seeking to understand and predict currencies. Work in developing countries suggests that capital flight plays a significant role in non-random NEO balances.

In G10, we find evidence for this on a country-by-country level. In the case of the UK, significant positive NEOs over the last two decades likely represent unrecorded financial inflows. As well as cyclically related, these inflows are linked with UK's status as a refuge for international capital flight. There is strong evidence that a considerable chunk of the UK's GBP 133bn of hidden capital inflows is related to Russian capital flight. While not significant for the overall balance of payments, hidden inflows may have been marginally supportive of the pound in recent years, and are another factor behind the UK's extremely large current account deficit.

In the case of New Zealand, systematic NEOs have been correlated to immigration waves. Significant hidden outflows in the middle of the last decade may be related to remittances from Asian migrants, while a pick-up in inflows recently probably represents reverse migration from Australia, as well as Chinese capital flight into the property sector. Hidden inflows have been large enough to be a major support for New Zealand's balance of payments in recent years, and help to explain the strong level of the currency. In the future, increased domestic focus on foreign property transactions may dampen future inflows.

In the case of Sweden, massive negative NEOs cumulated over the last few decades are likely to represent household foreign portfolio and direct investment abroad. This is connected with the country's high savings rate and unfavorable tax environment. Outflows help to explain the divergence of SEK from Sweden's balance of payments, which overstates surpluses generated by the current account and not offset by the financial account. They also explain the unusually high yield apparently generated by Swedish investment abroad. In fact, repatriated income from unrecorded household investment is likely to explain the high level of yield. Given the low level of Swedish yields, high savings rate and little political appetite to reform the tax system, there is little reason for unrecorded outflows to slow down soon.

For brevity's sake we have focused on only three out five G10 economies that demonstrate statistically significant systematic NEOs. Norway and Switzerland have both experienced large unrecorded inflows, in the latter case perhaps related to its tax haven status. While worthy of analysis, we save this to a later report.

The authors would like to thank our DB colleague Sahil Mahtani for the original inspiration for the piece



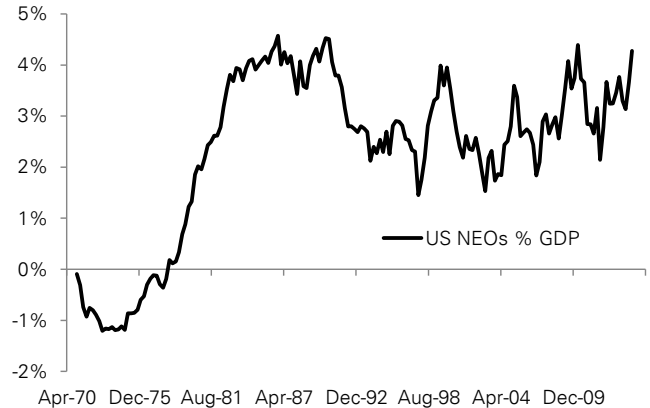
Appendix – Cumulative net errors and omissions in G10

Figure 31: US cumulative NEOs, local currency



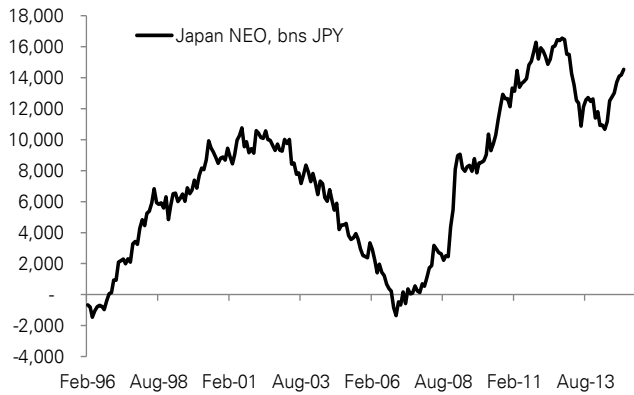
Source: Deutsche Bank

Figure 32: USD cumulative NEOs, % GDP



Source: Deutsche Bank

Figure 33: Japan cumulative NEOs, local currency



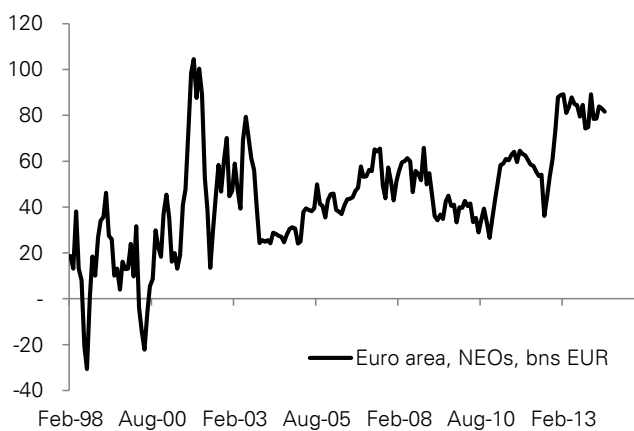
Source: Deutsche Bank

Figure 34: Japan cumulative NEOs, % GDP



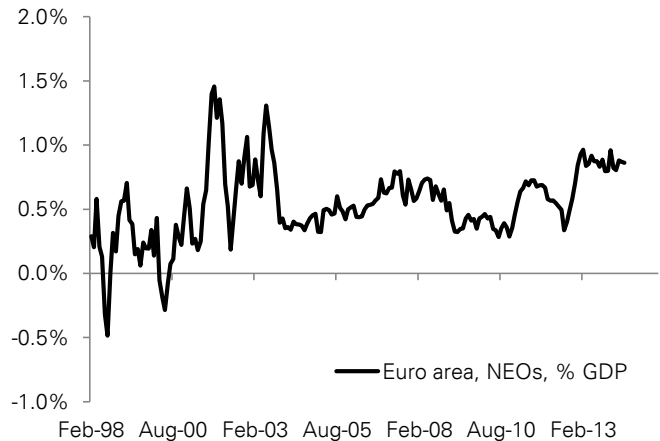
Source: Deutsche Bank

Figure 35: Eurozone cumulative NEOs, local currency



Source: Deutsche Bank

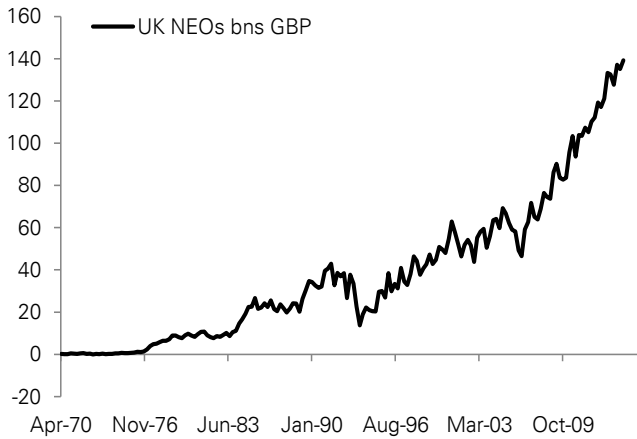
Figure 36: Eurozone cumulative NEOs, % GDP



Source: Deutsche Bank

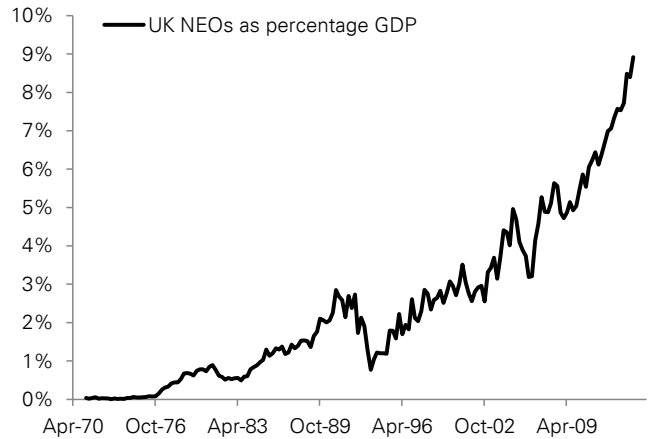


Figure 37: UK cumulative NEOs, local currency



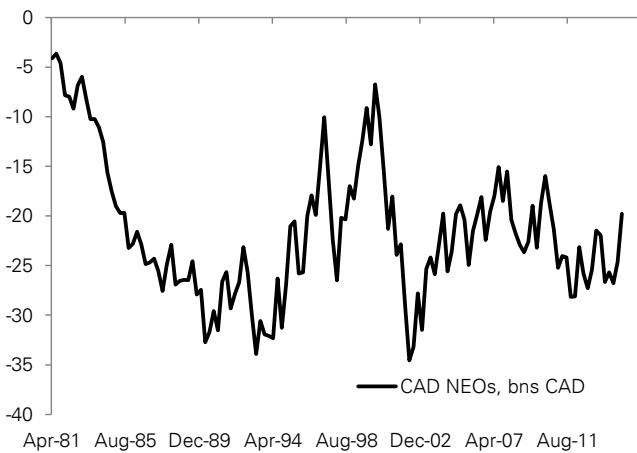
Source: Deutsche Bank

Figure 38: UK cumulative NEOs, % GDP



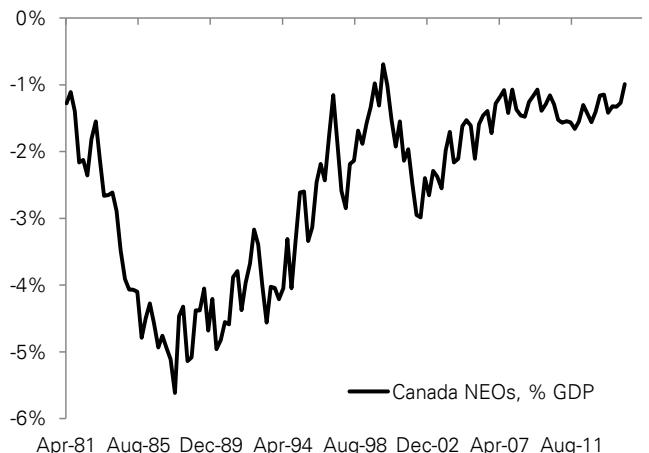
Source: Deutsche Bank

Figure 39: Canada cumulative NEOs, local currency



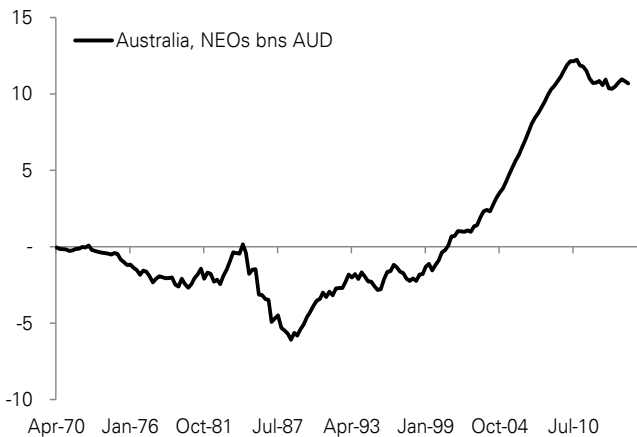
Source: Deutsche Bank

Figure 40: Canada cumulative NEOs, % GDP



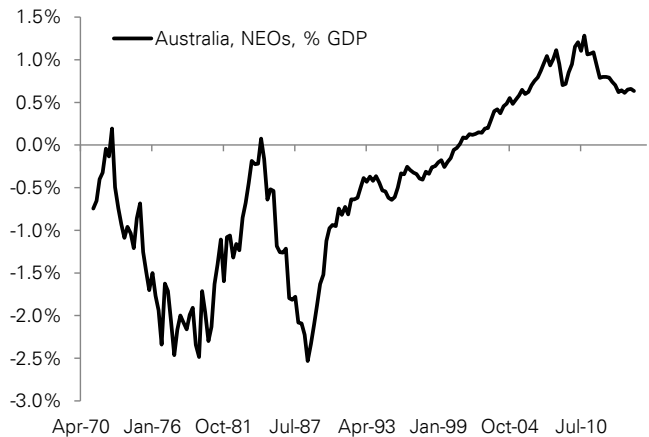
Source: Deutsche Bank

Figure 41: Australia cumulative NEOs, local currency



Source: Deutsche Bank

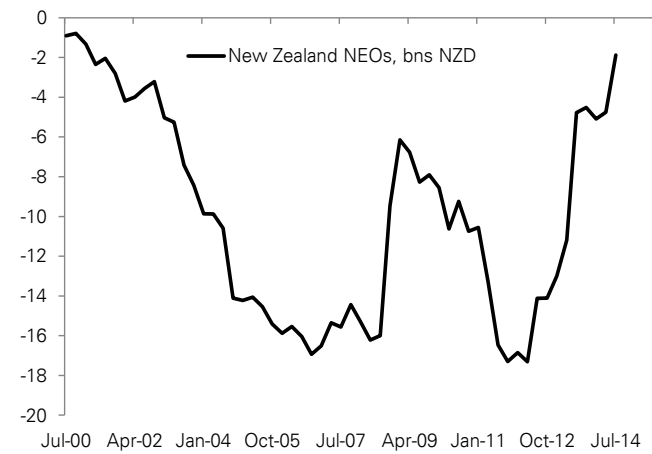
Figure 42: Australia cumulative NEOs, % GDP



Source: Deutsche Bank

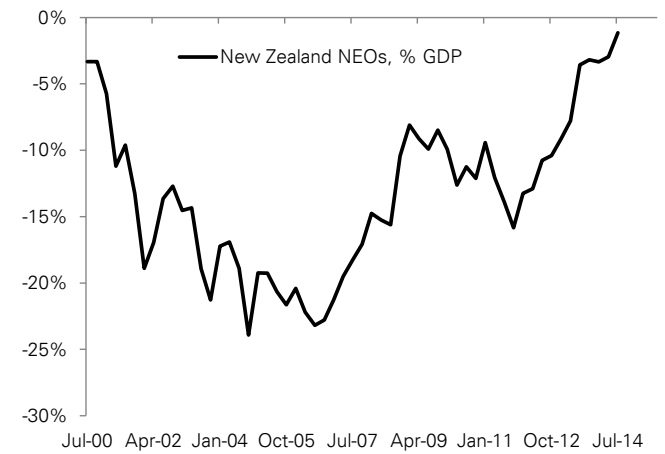


Figure 43: New Zealand cumulative NEOs, local currency



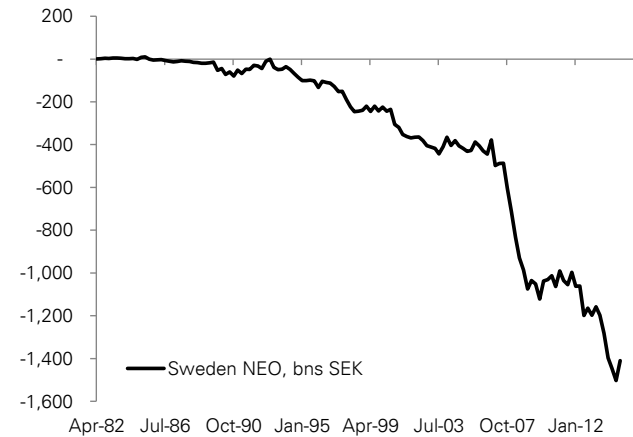
Source: Deutsche Bank

Figure 44: New Zealand cumulative NEOs, % GDP



Source: Deutsche Bank

Figure 45: Sweden cumulative NEOs, local currency



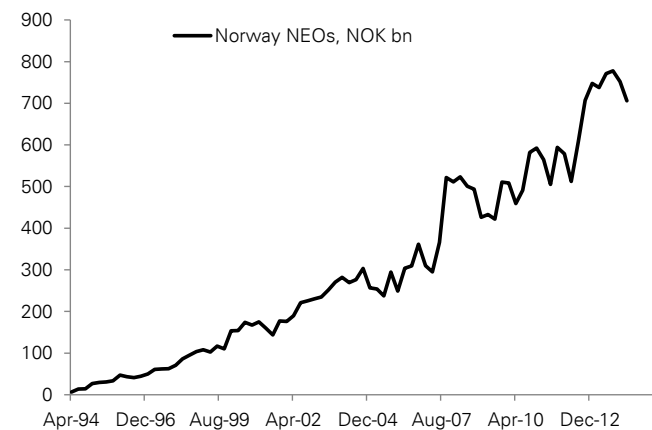
Source: Deutsche Bank

Figure 46: Sweden cumulative NEOs, % GDP



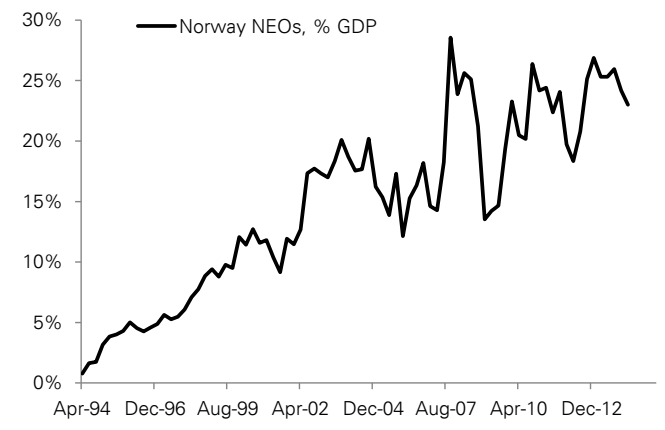
Source: Deutsche Bank

Figure 47: Norway cumulative NEOs, local currency



Source: Deutsche Bank

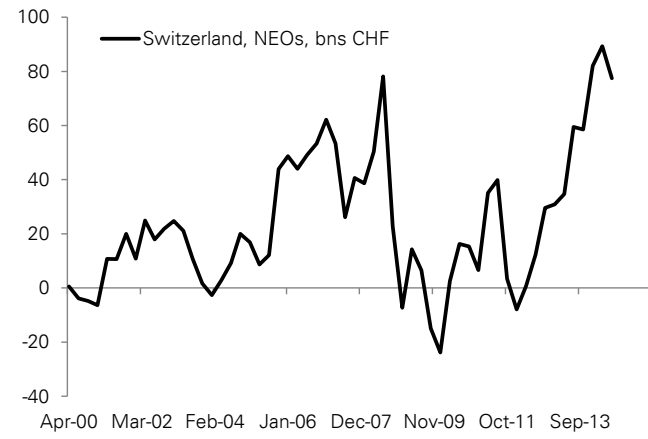
Figure 48: Norway cumulative NEOs, % GDP



Source: Deutsche Bank

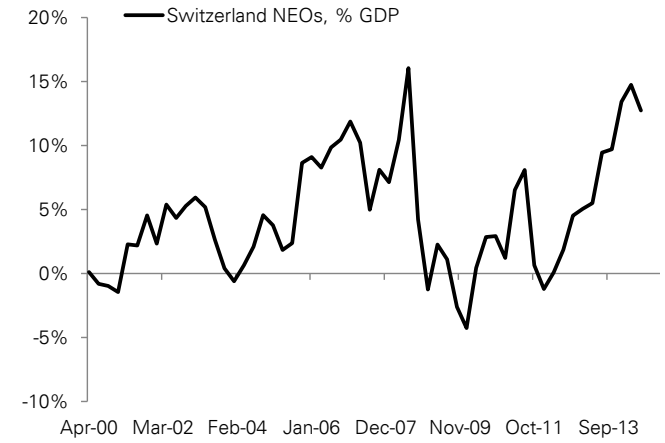


Figure 49: Switzerland NEOs, local currency



Source: Deutsche Bank

Figure 50: Switzerland NEOs, % GDP



Source: Deutsche Bank



Appendix 1

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