

## Assessing global and regional imbalances\*

by Daniel Vernazza, PhD, Chief UK & Senior Global Economist (UniCredit Bank, London)

- External imbalances – and the rapid unwinding of them – have historically played a key role in triggering economic and financial crises. In this paper, we examine the current state of imbalances at the country-level, regionally and globally.
- Our starting point is that large external deficits are problematic to the extent that they are not justified by fundamentals, such as differences in demographics and productivity growth. We estimate an “equilibrium” current account for each country-year in our sample of almost 200 countries between 1980 and 2018. We use this to compute the current account “gap” (or misalignment) between the actual current account and its estimated “equilibrium” level.
- We find that global imbalances have fallen significantly since the 2008-9 financial crisis, almost by half. Much of the improvement has been driven by a reduced current account deficit in the US and smaller current account surpluses in Asia. In Western Europe, imbalances remain high but, importantly, they reflect still large surpluses in core-Eurozone countries while peripheral-Eurozone states have transitioned from running deficits to now sizeable surpluses. Imbalances in Eastern Europe have been on a downward trend, while they have been rising in Latin America over the last few years.

### 1. External imbalances and economic crises

External imbalances (as measured by the current account) – and the rapid unwinding of them – have historically played a key role in triggering economic and financial crises.

The problem is large current account deficits, particularly when concentrated in just a few countries, and in excess of what fundamentals would suggest. The associated capital inflows can lead to asset price bubbles in those countries (if not properly reined in by regulators) and, when an adverse shock hits, the unwinding of those capital inflows typically results in a period of significantly lower growth and/ or financial instability. And while a large current account surplus is not a concern at the country level (at least from a financial stability point of view for that country)<sup>1</sup>, globally deficits and surpluses must balance.

In emerging markets (EM), the build-up of current account deficits – and the rapid unwinding of the capital inflows that financed those deficits – were associated with the onset of major EM crises such as the 1994-5 Mexican devaluation and the 1997 East Asian financial crisis (Chart 1).<sup>2</sup> The subsequent

sharp adjustment of the current account was associated with slower growth and real exchange rate depreciation.

For advanced economies, until fairly recently the adverse effects of large current account deficits were seen as less worrying, largely reflecting their deeper financial markets and, for the US, the “exorbitant privilege” of having reserve currency status. But the 2008-9 global financial crisis, followed by the 2010-12 sovereign debt crisis, changed all that.

In the run up to the 2008-9 global financial crisis, global external imbalances reached a peak with the US running ever larger current account deficits, financed by Asia, particularly Japan and increasingly China (Chart 2). One, influential but partial, explanation of the global financial crisis is that an excess of savings in Asia sought the deep financial markets of the US and, in particular, risk-free assets (Ben Bernanke’s global “savings glut” hypothesis). These flows pushed down global real interest rates, which encouraged consumption and investment in the US and elsewhere. This fueled the US housing market (“sub-prime”) bubble, the subsequent bursting of which exposed the US financial sector to a downturn.<sup>3</sup> Importantly, however, global imbalances were not the only cause of the financial crisis: in the US, regulation was too lax and permitted excessive leverage, fiscal policy encouraged home ownership, and monetary policy was too easy.

In the Eurozone, external imbalances are now widely seen as key to the causes of the sovereign debt crisis.<sup>4</sup> When the Euro was formed, government bond spreads collapsed across member states as market participants believed the Maastricht Treaty promises of “no default” and “no devaluation”, and the inflation risk premium converged under an independent ECB mandated with maintaining price stability. Much lower borrowing costs in the periphery encouraged higher borrowing, financed by the core Eurozone countries. The result was large current account deficits in the peripheral countries of Greece, Ireland, Italy, Portugal and Spain, and large surpluses in the core countries, particularly Germany and the Netherlands (Chart 3). Much of the external financing went into (non-productive) housing, particularly in Spain and Ireland, which pushed up wages and the prices of tradable goods, in turn deteriorating international competitiveness and the current accounts in these countries. During the crisis, the core Eurozone countries withdraw capital from the periphery, which exacerbated the downturn.

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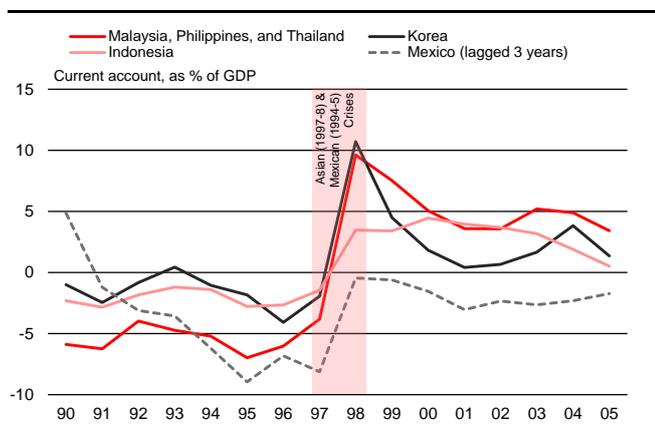
<sup>1</sup> Although it may be suboptimal if it reflects forgone productive domestic investment.

<sup>2</sup> See “The drivers of EM capital flows”, *UniCredit Economics Thinking*, No. 78, 28 September 2018.

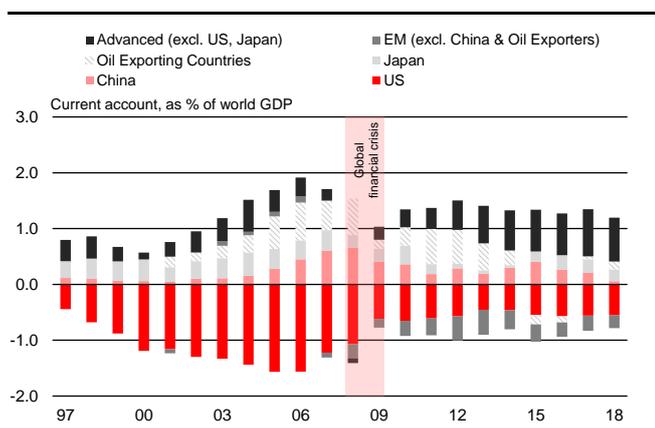
<sup>3</sup> See, for example, Caballero and Krishnamurthy (2009).

<sup>4</sup> Baldwin and Giavazzi (2015).

**CHART 1: IMBALANCES AROUND THE MEXICAN & ASIAN CRISES**



**CHART 2: GLOBAL IMBALANCES AROUND THE 2008-9 FINANCIAL CRISIS**



Note: In the top chart, the Mexico series is lagged three years so that the Mexican crisis (1994-5) can be more easily compared with the Asian (1997-8) crisis. In the bottom chart, EM denotes emerging markets. Oil Exporting Countries are Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Oman, Qatar, Saudi Arabia, United Arab Emirates and Venezuela. Source: IMF, UniCredit Research

In contrast to the US, and without monetary policy options, notably the governments of Ireland and Spain did actually take some action to try to reduce the imbalances pre-crisis by running sizeable fiscal surpluses, although insufficiently so, it turned out.

More recently, the issue of external imbalances has gained added attention, as US President Donald Trump is of the view that US trade deficits (which, along with the net income balance, constitute the current account deficit) have hurt the US economy.<sup>5</sup> This has motivated the US administration's trade policy, including the renegotiation of NAFTA and the imposition – and threats – of tariffs on US imports from some countries, particularly those countries or trading blocs that the US runs its largest trade deficits with, notably China and the Eurozone.

<sup>5</sup> For example, the US President said, "we lose \$800bn a year on trade, every year". Actually, this is the US trade deficit in goods only, neglecting the fact that the US runs a trade surplus in services of more than USD 250bn.

## 2. Imbalances are not necessarily bad

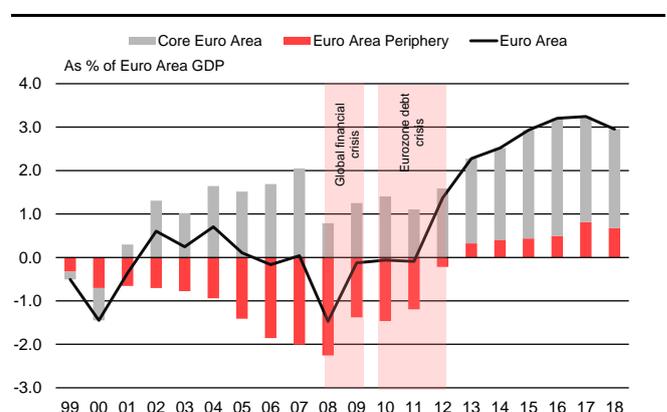
In reality, however, whether external imbalances are excessive (or problematic) or not requires a more nuanced approach. External imbalances are only problematic to the extent that they are not justified by fundamentals, such as differences in demographics and productivity growth.

One way to view the current account is as the balance of national saving and investment: a current account surplus means national saving exceeds domestic investment and the difference is lent abroad; a current account deficit means national saving is less than investment and the difference must be borrowed from abroad. Since foreign lenders will not allow debts to be rolled over indefinitely, a country faces an intertemporal budget constraint such that current account deficits must, eventually, be financed by current account surpluses.<sup>6</sup> This (so-called intertemporal) view of the current account yields several useful insights.

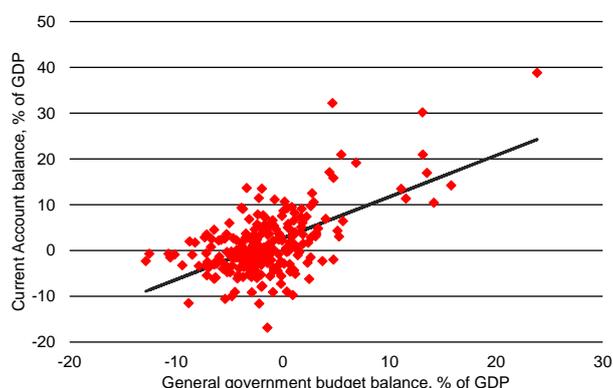
For example, it may be optimal for countries with higher productivity growth to borrow today (against future earnings) and, hence, run current account deficits. Similarly, those countries with relatively young populations (or high natural population growth) or old populations (dissaving during their retirement) should be net borrowers, all else equal. In contrast, those countries with a relatively high share of prime-age workers (saving for their retirement) should be net lenders. It is examples like these that show current account imbalances are not necessarily bad and can be good, if justified by differing fundamentals.

We proceed as follows. In the next section, we identify the fundamental drivers of current account imbalances. Then we estimate a "normal" or "equilibrium" level of the current account for each country-year in our sample, based on fundamentals. We use this to compute the current account "gap" (or misalignment) as the difference between the actual current account and its "equilibrium" level.

**CHART 3: IMBALANCES AROUND THE EUROZONE DEBT CRISIS**



<sup>6</sup> Theoretically, the current account balance should also include valuation effects on the stock of net foreign assets, but the balance of payments does not include these valuation effects.

**CHART 4: FISCAL BALANCE AND THE CURRENT ACCOUNT**


Notes: In the top chart, the Euro area periphery consists of Greece, Ireland, Italy, Portugal and Spain. The Euro area core is the Euro area excluding the periphery. In the bottom chart, each “diamond” represents a 5-year average for the fiscal balance (x-axis) and the current account balance (y-axis) for a particular country. The sample only includes advanced countries. The data is from 1980 onwards. The line denotes the best linear prediction.

Source: IMF, UniCredit Research

### 3. The fundamental drivers of the current account

To identify the fundamental drivers of the current account, we use annual data on almost 200 countries from 1980 to 2018. Since we are interested in computing the underlying “equilibrium” value of the current account, we abstract from high frequency volatility by taking five-year averages.<sup>7</sup> This allows us to abstract from cyclical drivers of the current account (which would require estimating the unobservable output gap) and lagged effects of past exchange rate movements. To be sure, the idea here is that, to the extent current account deficits or surpluses can be explained by fundamentals, they do not require an adjustment – or, at least, no sharp adjustment – and the economic costs associated with it.

Our analysis reveals the following drivers of the current account (formal estimation results are provided in the appendix)<sup>8</sup>:

- **The government fiscal balance** is positively related to the current account balance. Chart 4 shows this graphically for the subset of advanced economies. This is not a big surprise: a decline in public sector savings tends to lead to a decline in national savings, which deteriorates the current account and has given rise to the term “twin deficits”. The fact that, empirically, private net saving does not increase to fully offset the fall in net public sector saving means that Ricardian equivalence does not hold. In our baseline specification (see Table 1 in the Appendix, the “Full sample” column) we find that a one percentage point (pp.) increase in the general government budget balance as a percent of GDP is associated with a 0.48pp. increase in the

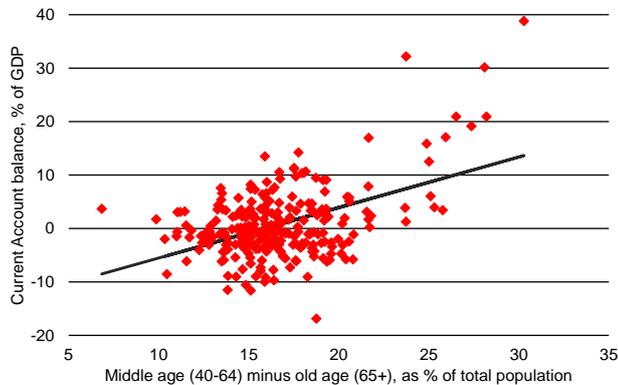
<sup>7</sup> The five-year periods are 1980-84, 1985-89, 1990-94, and so on. The most recent time period, 2015-18, only contains 4 years of data. Chinn and Prasad (2003) take this approach.

<sup>8</sup> In the formal statistical estimation, the coefficient estimates capture the “average” (or “normal”) effect, across all countries and periods, of a set of fundamentals for the current account.

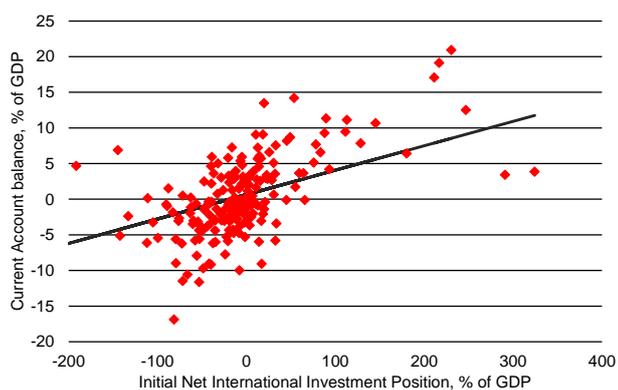
current account balance as a percent of GDP. In part it explains why budget deficit countries such as the US and the UK run current account deficits, while fiscally prudent governments in Germany and Switzerland run current account surpluses. One implication is that the substantial fiscal stimulus by the current US administration, at a time when the output gap has closed, will likely result in a widening current account deficit in the US.

- **Demographics.** The theory is a simple one: the young borrow (against their future income), the middle-aged save (for their retirement), and the old-aged (retired) run down their savings (as their labour income falls sharply). Also, countries with higher (natural) population growth tend to be younger and borrow against future income. For illustration, Chart 5 plots the middle-aged (40-64) share of the population minus the old-age (65+) share of the population against the current account as a percent of GDP. The line of best fit is upward sloping, consistent with the theory that the middle-aged are saving for their retirement and the old-aged are dissaving. More specifically, in the formal statistical estimation (“Full sample” in Table 1 of the Appendix) we find that a one percentage point increase in the old-age share of the population (relative to the average in the sample) is associated with a 1.33pp. decrease in the current account balance as a percent of GDP. And a one percentage point increase in annual population growth (relative to the average) is associated with a 1.27pp. decrease in the current account balance as a percent of GDP.
- **Initial net foreign assets.** The relationship between the current account and initial net foreign assets is mechanical. Since the current account directly includes net investment income earned abroad, the bigger the initial stock of net foreign assets the higher the flow of net investment income generated from these net assets will be, for any given rate of return. Chart 6 shows this positive relationship graphically. We find that a ten-percentage point increase in net foreign assets as a percent of GDP is associated with a 0.15pp. increase in the current account balance as a percent of GDP.
- **Output per capita (in PPP terms) relative to the US.** Richer countries tend to have a lower return to capital than poorer countries, because richer countries have higher capital stocks and there are diminishing returns to capital. Consequently, productivity growth tends to be higher in poorer countries than richer ones. Since countries with higher productivity growth can borrow today against higher output and incomes in the future, they are more likely to run current account deficits. Hence, capital should tend to flow from richer countries to poorer countries. We find that a one percentage point increase in output per capita (relative to the US) is associated with a 7.5pp. increase in the current account balance as a percent of GDP.

**CHART 5:  
THE MIDDLE-AGED SHARE AND THE CURRENT ACCOUNT**



**CHART 6: NET FOREIGN ASSETS (LAGGED) AND THE CURRENT ACCOUNT**



Note: In the top chart, each “diamond” represents a 5-year average for the share of the population that is middle-aged minus the share of the population that is old-aged (x-axis) and the current account balance (y-axis) for a particular country. The sample only includes advanced countries. In the bottom chart, each “diamond” represents a 5-year average for initial net foreign assets as a percent of GDP (x-axis) and the current account balance (y-axis) for a particular country. The sample only includes advanced countries. The data is from 1980 onwards. Source: IFS, IMF, UN, UniCredit Research

■ **Openness.** As is common, we measure openness as imports plus exports as a % of GDP. The thinking here is that more open economies tend to have larger exports and are better able to finance current account deficits. They tend to also have more open capital accounts. We do not find a statistically significant effect of openness on the current account in the full sample, but interestingly this seems to be driven by advanced economies (see column 3 of Table 1). For the group of emerging markets, we find that a 10pp. increase in openness decreases the current account balance as a percent of GDP by 0.2pp.

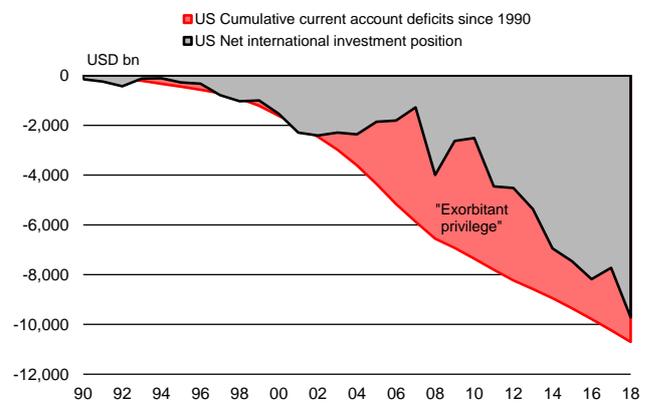
■ **Terms of trade volatility.** The argument here is that for those countries that suffer from greater volatility in their terms of trade (i.e. the ratio of export prices to import prices), they

have a greater precautionary saving motive to smooth out the impact of that volatility, and hence are more likely to run a current account surplus. However, the effect is not statistically significant in our sample.

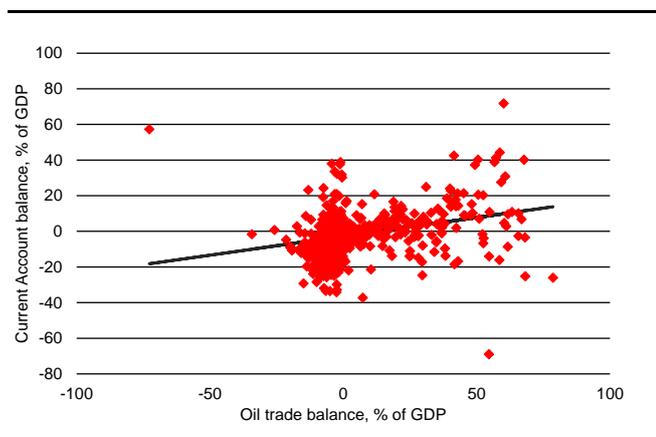
■ **Share of a country’s currency in global reserve holdings.** So called “exorbitant privilege” accrues to those countries that are the providers of global reserve and vehicle currencies (essentially, the US). There are two main reasons. First, those countries with a reserve currency tend to have their external liabilities denominated in their own currency, and foreign assets largely denominated in foreign currency, so a depreciation of the domestic currency leads to a capital gain, which improves that country’s net foreign asset position. Second, for those countries with a reserve currency, their assets tend to be weighted towards risky, higher return, assets, whereas their liabilities tend to be concentrated in government bonds and bank deposits. Consequently, despite running large current account deficits, the US net foreign asset position even improved during the years 2002-07 (Chart 7). We find that a 10pp. increase in the share of global FX reserves decreases the current account balance as a percent of GDP by 0.5pp., but the effect is only statistically significant for the subsample of advanced economies.

■ **Oil trade balance.** Oil reserves are a finite resource. Therefore, those countries with large oil reserves should run current account surpluses in order to smooth income over time. In the years preceding the global financial crisis, higher oil prices largely explain the rise in current account surpluses of oil exporters (Chart 1). We find that a 1pp. increase in the oil trade balance as a percent of GDP increases the current account balance as a percent of GDP by 0.24pp.

**CHART 7: US “EXORBITANT PRIVILEGE”**



**CHART 8: OIL BALANCE AND THE CURRENT ACCOUNT**



Note: In chart 8, each “diamond” represents a 5-year average for the oil trade balance as a % of GDP (x-axis) and the current account balance (y-axis) for a particular country. The sample includes advanced economies and emerging markets. The line denotes the best linear prediction.  
Source: COFER, IFS, IMF, UN COMTRADE, UNCTAD, UniCredit Research

#### 4. Imbalances at the country-level

We use the estimated relationship between the fundamentals and the current account (from the last section) to compute a “normal” or “equilibrium” level of the current account for each country-year in our sample. We then compute the current account “gap” (or misalignment) as the difference between the actual current account and its “equilibrium” level as a percent of GDP.

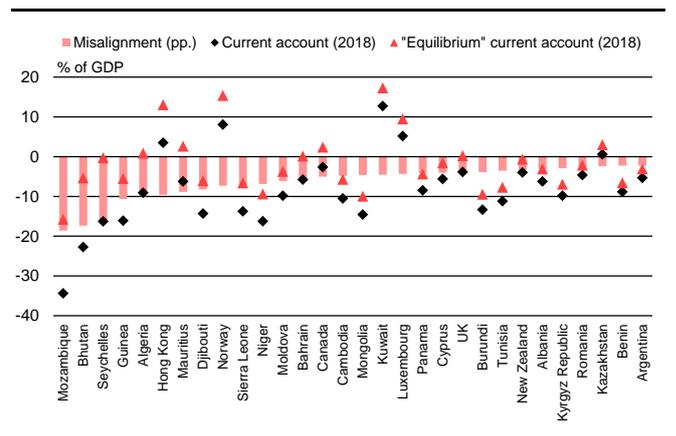
Chart 9 displays these current account “gaps” in 2018 for the top-30 countries ranked according to the size of the “gap” deficit. Among those countries with large deficit “gaps” are Algeria, Moldova, Cambodia, the UK, Tunisia and New Zealand. While these countries ran current account deficits, some of the countries with the biggest deficit “gaps” actually ran surpluses but those surpluses were smaller than the fundamentals of those countries would suggest (for example, Hong Kong and Norway).

Turkey, which experienced a currency and debt crisis in 2018, does not quite make it into our top-30 largest deficit “gaps” in 2018, although it did run a sizable deficit “gap”. It’s because Turkey’s actual current account deficit had already narrowed by 2018 to 3.5% of GDP. If, instead, we had shown Chart 9 for the year 2017, when Turkey ran a current account deficit of 5.6% of GDP, then Turkey would have figured in the top-20 deficit “gaps”.

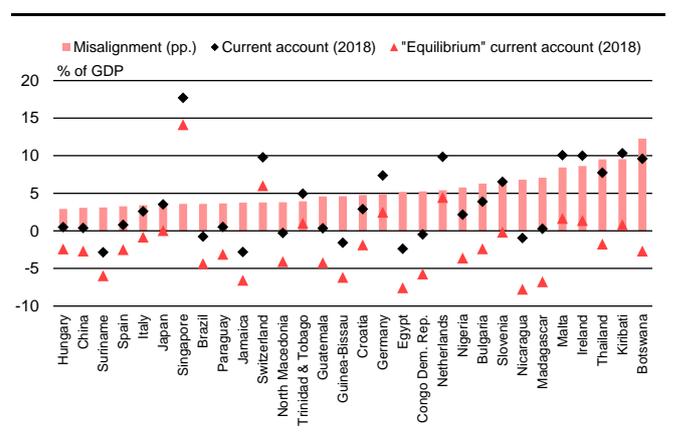
Chart 10 looks at the other end of the scale: those countries with the largest surplus “gaps”. They include Thailand, Ireland, Slovenia, the Netherlands, and Germany.

In CEE, the current account “gaps” are relatively small in absolute terms for most countries (see Chart 11). Moldova, Albania, Romania and Serbia have some of the biggest deficit “gaps”, while Slovenia, Bulgaria and Croatia have the largest surplus “gaps”.

**CHART 9: TOP-30 DEFICIT CURRENT ACCOUNT “GAPS” IN 2018**



**CHART 10: TOP-30 SURPLUS CURRENT ACCOUNT “GAPS” IN 2018**



Source: UniCredit Research

#### 5. Imbalances globally and regionally

As well as imbalances at the country-level, an important question is how global and regional imbalances compare to the past. To this end, we compute the GDP-weighted average of the absolute value of imbalances across countries. We do this globally (Chart 12) and separately for six regions: North America (Chart 13), Asia (Chart 14), Western Europe (Chart 15), Eastern Europe (Chart 16), Latin America (Chart 17) and the Middle east & North Africa (Chart 18).<sup>9</sup>

<sup>9</sup> Since the aggregation is sensitive to changes in the country-composition of our sample over time, the aggregation is done with a balanced panel of 167 countries from 1997 to 2018. In contrast, the regression results presented in the Appendix (and referred to in section 3) use a larger, unbalanced sample.

There are several interesting findings. First, global imbalances have fallen significantly since the 2008-9 financial crisis, almost by half. Taking into account fundamentals (i.e. the “gaps”), then the imbalances are somewhat smaller than the actual current account figures suggest – meaning that, on average across countries, part of the imbalances is actually healthy.

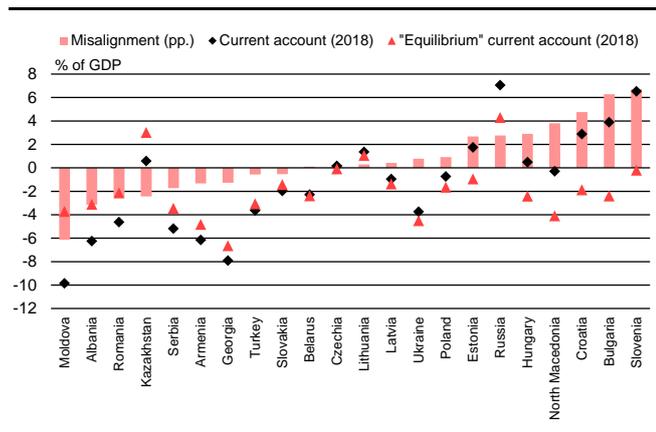
Second, the two regions accounting for much of the rise in global imbalances before the 2008-9 financial crisis, North America and Asia, have since significantly reduced their imbalances.

Third, in Western Europe, imbalances remain high but, importantly, they reflect still large surpluses in core-Eurozone countries while peripheral-Eurozone states have transitioned from running deficits to now sizeable surpluses (Chart 3). To be sure, these surpluses are not a concern for these countries (in terms of financial stability), but they are the counterpart to deficits somewhere outside of the region. Within Western Europe, the UK stands out as running a large current account deficit.

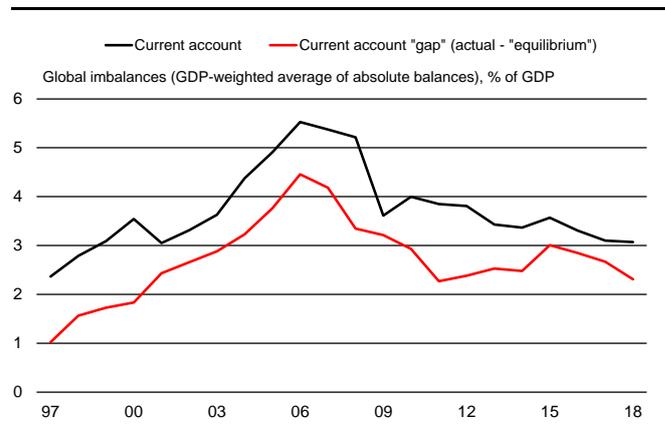
Fourth, in Eastern Europe, on average, current account “gaps” have been on a downward trend. The opposite is true for Latin America, although average current account “gaps” are below their pre-crisis peak and look manageable.

Fifth, and finally, Asia stands out as the only region where imbalances measured by current account “gaps” have typically exceeded headline current account imbalances. In other words, on average, current account imbalances cannot be explained by fundamentals in the Asia region.

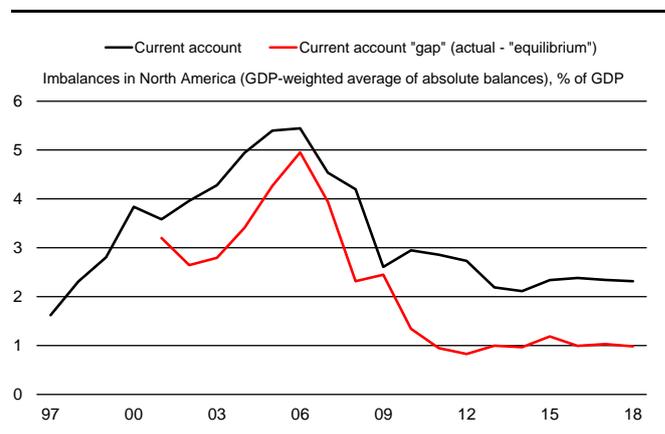
**CHART 11: CEE CURRENT ACCOUNT “GAPS” IN 2018**



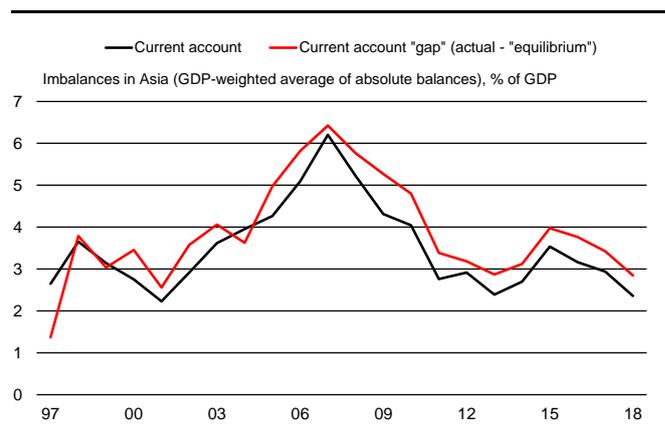
**CHART 12: GLOBAL IMBALANCES**



**CHART 13: REGIONAL IMBALANCES: NORTH AMERICA**

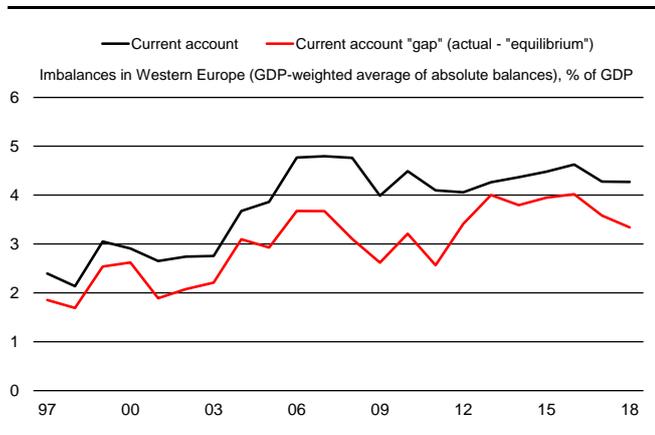


**CHART 14: REGIONAL IMBALANCES: ASIA**

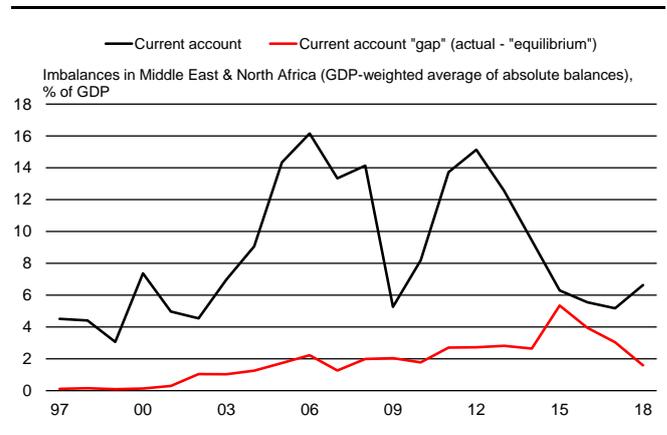


Source: IMF, UniCredit Research

**CHART 15: REGIONAL IMBALANCES: WESTERN EUROPE**

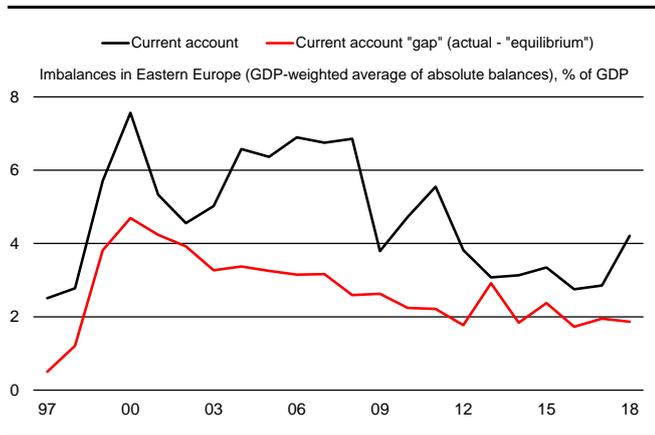


**CHART 18: REGIONAL IMBALANCES: MIDDLE EAST & NORTH AFRICA**

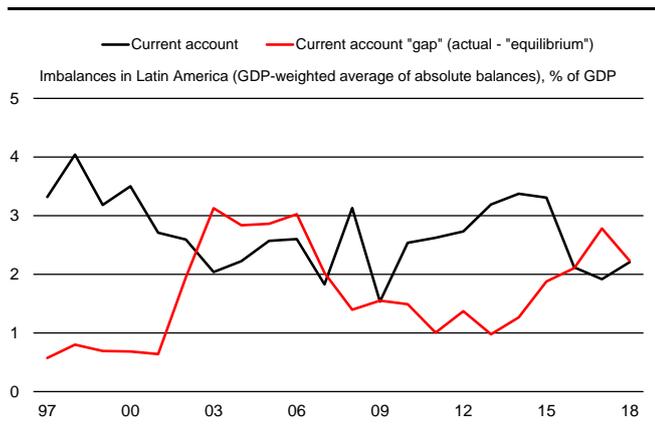


Source: IMF, UniCredit Research

**CHART 16: REGIONAL IMBALANCES: EASTERN EUROPE**



**CHART 17: REGIONAL IMBALANCES: LATIN AMERICA**



## 6. Concluding remarks

In this paper, we examined external imbalances, as measured by the current account. Since imbalances are not necessarily bad, we estimated an “equilibrium” current account based on fundamentals and defined the current account “gap” as the difference between the actual current account and the estimated “equilibrium” level. We did this at a country-level, regionally and globally, and compared the current situation to the past.

**Our main findings are** that global imbalances have fallen significantly since the 2008-9 financial crisis, almost by half. Much of the improvement has been driven by a reduced current account deficit in the US and smaller current account surpluses in Asia. In Western Europe, imbalances remain high but, importantly, they reflect still large surpluses in core-Eurozone countries while peripheral-Eurozone states have transitioned from running deficits to now sizeable surpluses. Imbalances in Eastern Europe have been on a downward trend, while they have been rising in Latin America over the last few years.

**Author**  
**Daniel Vernazza, PhD**  
 Chief UK & Senior Global Economist  
 (UniCredit Bank, London)  
 +44 207 826-7805  
[daniel.vernazza@unicredit.eu](mailto:daniel.vernazza@unicredit.eu)

**Editor**  
**Erik F. Nielsen**  
 Global Head of CIB Research  
 Group Chief Economist  
 (UniCredit Bank, London)  
 +44 207 826-1765  
[erik.nielsen@unicredit.eu](mailto:erik.nielsen@unicredit.eu)

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## APPENDIX

The estimated "equilibrium" current account is the fitted value from an Ordinary Least Squares regression of the current account, expressed as a percent of GDP, on the following explanatory variables (data source in parentheses): general government budget balance as a percent of GDP (IMF); old-age share of the total population relative to the average in the full sample (UN); annual population growth relative to the full sample average (UN), initial net foreign assets as a percent of GDP (IMF); GDP per capita in PPP terms relative to the US (IMF); average real GDP growth (IMF); openness ratio measured as imports plus exports as a percent of GDP (IFS); terms of trade volatility (IMF); share of global foreign exchange reserves (IMF COFER); and the oil trade balance as a percent of GDP (COMTRADE, UNCTAD).

Table 1 displays the coefficient estimates and their statistical significance. Table 2 presents the regression results using median regression instead of ordinary least squares. The results are similar, suggesting extreme values are not driving the main results.

**TABLE 1:**  
**PANEL ESTIMATION OUTPUT: ORDINARY LEAST SQUARES**

DEPENDENT VARIABLE: Current Account as % of GDP			
Variable:	Full sample	Advanced economies	Emerging markets
Government budget balance, % of GDP	0.48***	0.23**	0.57***
Old age (65+) as % of total population, relative to average	-1.33*		-2.24*
Population annual % growth, relative to sample mean	-1.27*	-0.23	-1.70***
Middle age (40-64) as % of total population, relative to sample mean		11.54***	
Initial net foreign assets, % of GDP	0.015***	0.016***	0.013***
GDP per capita (PPP), relative to the US	7.47***	9.44***	8.21***
Average real GDP growth	-0.086	0.13	-0.10
Openness (imports plus exports, as % of GDP)	0.002	0.001	-0.020*
Terms of trade volatility	0.013	0.04	-0.03
Share of global foreign exchange reserves, %	-0.05	-0.06*	4.34
Oil trade balance, % of GDP	0.24***	0.11	0.23***
Time dummies	YES	YES	YES
Adjusted R-squared	0.44	0.55	0.43
Number of observations	522	171	351

Note: The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10% level, 5%, and 1% levels, respectively. Standard errors (not reported) are clustered at the country level.  
Source: UniCredit Research

**TABLE 2: PANEL ESTIMATION OUTPUT: MEDIAN REGRESSION**

DEPENDENT VARIABLE: Current Account as % of GDP			
Variable:	Full sample	Advanced economies	Emerging markets
Government budget balance, % of GDP	0.38***	0.13	0.53***
Old age (65+) as % of total population, relative to average	-1.32*		-2.61**
Population annual % growth, relative to sample mean	-1.11**	-1.92**	-1.86***
Middle age (40-64) as % of total population, relative to sample mean		13.4***	
Initial net foreign assets, % of GDP	0.019***	0.021***	0.012***
GDP per capita (PPP), relative to the US	-0.038	0.19	0.01
Average real GDP growth	0.002	0.004	-0.024**
Openness (imports plus exports, as % of GDP)	0.051	0.008	-0.09
Terms of trade volatility	-0.08*	-0.08**	2.31
Share of global foreign exchange reserves, %	0.21***	0.11	0.21***
Oil trade balance, % of GDP	YES	YES	YES
Time dummies	0.27	0.39	0.24
Adjusted R-squared	522	171	351

Notes: The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10% level, 5%, and 1% levels, respectively. Standard errors (not reported) are clustered at the country level.  
Source: UniCredit Research

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## UniCredit Research\*

## Macro Research



**Erik F. Nielsen**  
 Group Chief Economist  
 Global Head of CIB Research  
 +44 207 826-1765  
 erik.nielsen@unicredit.eu



**Dr. Ingo Heimig**  
 Head of Research Operations  
 & Regulatory Controls  
 +49 89 378-13952  
 ingo.heimig@unicredit.de

## Head of Macro Research



**Marco Valli**  
 Head of Macro Research  
 Chief European Economist  
 +39 02 8862-0537  
 marco.valli@unicredit.eu

## European Economics Research



**Dr. Andreas Rees**  
 Chief German Economist  
 +49 69 2717-2074  
 andreas.rees@unicredit.de



**Dr. Loredana Federico**  
 Chief Italian Economist  
 +39 02 8862-0534  
 loredanamaría.federico@unicredit.eu



**Stefan Bruckbauer**  
 Chief Austrian Economist  
 +43 50505-41951  
 stefan.bruckbauer@unicreditgroup.at



**Daniel Vernazza, Ph.D.**  
 Chief UK & Senior Global Economist  
 +44 207 826-7805  
 daniel.vernazza@unicredit.eu



**Tullia Bucco**  
 Economist  
 +39 02 8862-0532  
 tullia.bucco@unicredit.eu



**Edoardo Campanella**  
 Economist  
 +39 02 8862-0522  
 edoardo.campanella@unicredit.eu



**Walter Pudschedl**  
 Economist  
 +43 50505-41957  
 walter.pudschedl@unicreditgroup.at



**Chiara Silvestre**  
 Economist  
 chiara.silvestre@unicredit.eu



**Dr. Thomas Strobel**  
 Economist  
 +49 89 378-13013  
 thomas.strobel@unicredit.de

## US Economics Research



**Dr. Harm Bandholz, CFA**  
 Chief US Economist  
 +1 212 672-5957  
 harm.bandholz@unicredit.eu

## EEMEA Economics Research



**Dan Bucsa**  
 Chief CEE Economist  
 +44 207 826-7954  
 dan.bucsa@unicredit.eu



**Gökçe Çelik**  
 Senior CEE Economist  
 +44 207 826-6077  
 gokce.celik@unicredit.eu



**Mauro Giorgio Marrano**  
 Senior CEE Economist  
 +43 50505-82712  
 mauro.giorgiomarrano@unicredit.de



**Artem Arkhipov**  
 Head, Macroeconomic Analysis  
 and Research, Russia  
 +7 495 258-7258  
 artem.arkhipov@unicredit.ru



**Hrvoje Dolenc**  
 Chief Economist, Croatia  
 +385 1 6006-678  
 hrvoje.dolenc@unicreditgroup.zaba.hr



**Dr. Ágnes Halász**  
 Chief Economist, Head of Economics and  
 Strategic Analysis, Hungary  
 +36 1 301-1907  
 agnes.halasz@unicreditgroup.hu



**Ľubomír Koršňák**  
 Chief Economist, Slovakia  
 +421 2 4950 2427  
 lubomir.korsnak@unicreditgroup.sk



**Anca Maria Negrescu**  
 Senior Economist, Romania  
 +40 21 200-1377  
 anca.negrescu@unicredit.ro



**Kristófor Pavlov**  
 Chief Economist, Bulgaria  
 +359 2 9269-390  
 kristofor.pavlov@unicreditgroup.bg



**Pavel Sobišek**  
 Chief Economist, Czech Republic  
 +420 955 960-716  
 pavel.sobisek@unicreditgroup.cz

UniCredit Research, Corporate & Investment Banking, UniCredit Bank AG, Am Eisbach 4, D-80538 Munich, globalresearch@unicredit.de  
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