Global imbalances in the XIX, XX and the XXI centuries

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Abstract

We establish a new stylized fact: while the current account and the trade balances are positively correlated during the second globalization (1990s-2010s), they were negatively correlated during the first globalization (1870s-1910s). We show that the reason behind is that the world interest rate is currently low relatively to the world growth rate due to a "global saving glut", while this was not the case during the first globalization.

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1 Introduction

Countries' current account imbalances have mainly been driven by trade imbalances in the last few decades. For instance, the current account deficits of the United States and the United Kingdom are accounted for by large trade deficits. On the other hand, the current account surpluses of China and Germany are the consequence of massive trade surpluses (IMF, International Financial Statistics).

Although it may seem obvious that countries finance the difference between domestic spending and domestic output with an increase in international borrowing, this was not the case between the late 19th century and the early 20th century[1]. As the world's major capital exporter, Britain ran substantial current account surpluses while running trade deficits at the same time. As Samuelson once argued, England had reached the stage of a "mature creditor nation", as "her merchandise imports exceeded her exports. Before we feel sorry for her because of her so-called 'unfavorable' balance of trade, let us note what this really means. Her citizens were living better because they were able to import much cheap food and (...) were paying for their import surplus by the interest and dividend receipts they were receiving from past foreign lending". Meanwhile, "the capital goods that England had previously lent" the rest of the world "permitted them to add to their domestic production (...) more than had to be paid out to England"[2].

In section 2, we establish some stylized facts about the relationship between the current account and the trade balance over the history. In section 3, we show that those facts can be explained through the lens of neoclassical growth models with overlapping-generations.

2 Stylized facts

Figure 1 shows that Britain's external position during the first globalization was not unique: the period is characterized by a negative relationship between the current account and the trade balance. France and Germany also ran current account surpluses and trade deficits at the same time for several years. On the other hand, the United States, the emerging economic power, paid foreign lenders via trade surpluses.

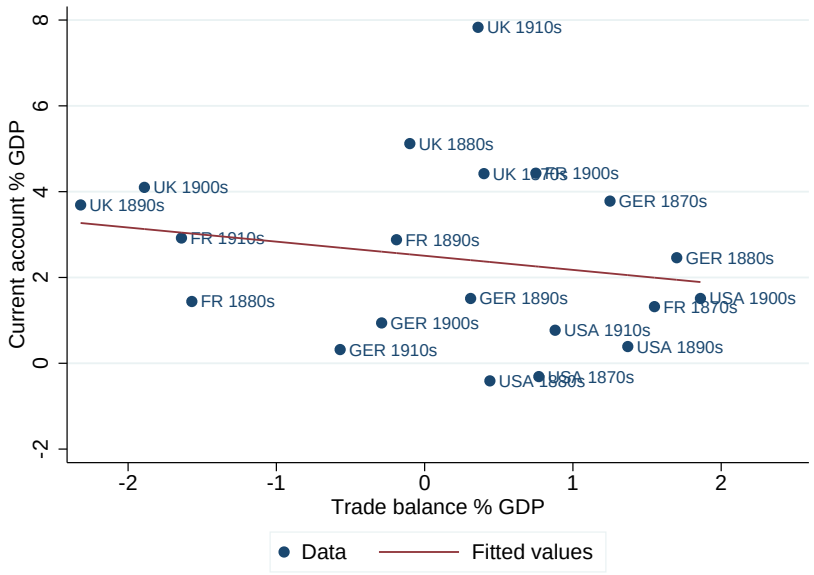
Capital flows plummeted following the First World War and the Great Depression and they significantly recovered only in the early 1990s[3]. Differently from the first globalization, Figure 2 shows that there has been an almost perfect (positive) correlation between the current account and the trade balance in the last thirty years. This neglects the fundamental role of interest payments that Samuelson had earlier emphasized: the net income from abroad that lender countries such as China and Germany currently receive is not high enough for them to be able to fund trade deficits. Similarly, countries such as the United States and the United Kingdom are not forced to run trade surpluses to be able to repay their foreign debt.

[1] The economic historians define this period as "first globalization", as it was characterized by a high level of capital mobility (Obstfeld and Taylor, 2004).

[2] As reported in Gale (1974).

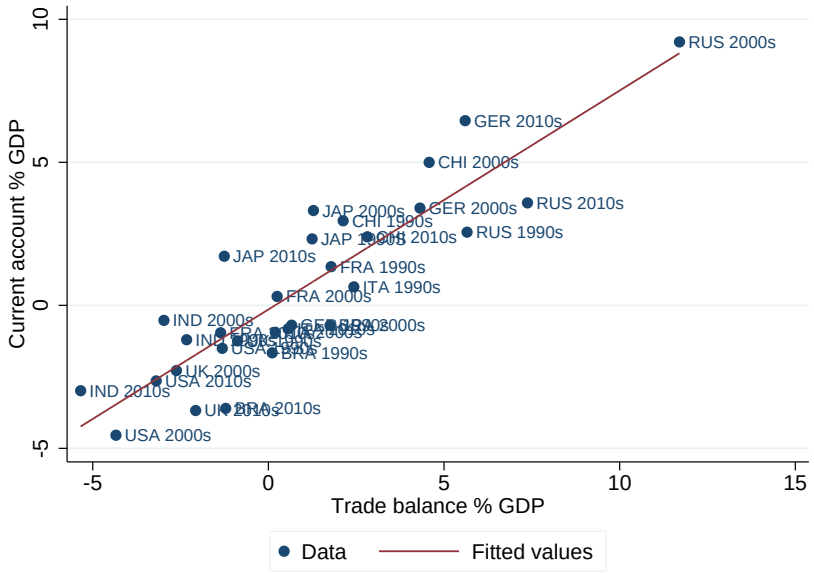
[3] Obstfeld and Taylor (2004).

Figure 1: Current account and trade balances during the first globalization: 1870-1914



Notes: The data source is Piketty et al.'s database (2014). Data are decennial averages.

Figure 2: Current account and trade balances during the second globalization: 1990-2010



Notes: The data sources are the IMF's World Economic Outlook and International Financial Statistics databases. Data are decennial averages.

3 From "mature creditor nations" to the "global saving glut": theory and evidence

Let us recall the dynamics of the current account in a world of perfect capital mobility and in the context of one-sector neoclassical growth models. The current account balance of country i at time t is equal to the trade balance plus net income from abroad, which is computed as the world interest rate times the net foreign assets position of the country at the beginning of the period. The current account entirely determines the change in the net foreign assets position of the country:

$$A_{i,t+1} - A_{i,t} = CA_{i,t} = TB_{i,t} + r_t A_{i,t}$$

Suppose that the world economy is growing at a constant rate, due to both technological progress and population growth: $Z_{i,t} = (1+g)Z_{i,t}$ and $L_{i,t} = (1+n)L_{i,t-1}$. Dividing all sides by $Z_{i,t}L_{i,t}$, we can express all variables per effective worker:

$$(1+n)(1+g)a_{i,t+1} - a_{i,t} = ca_{i,t} = tb_{i,t} + r_t a_{i,t}$$

Alternatively:

$$tb_{i,t} = (1+n)(1+g)a_{i,t+1} - (1+r_t)a_{i,t}$$

Now assume that the world economy is in a steady state: $r_t = r$, implying that $tb_{i,t} = tb_i$, $ca_{i,t} = ca_i$ and $a_{i,t} = a_i$. Then:

$$tb_i \approx (n+g-r)a_i \tag{1}$$

$$ca_i \approx (n+g)a_i \tag{2}$$

$$\Leftrightarrow tb_i \approx \frac{n+g-r}{n+g} ca_i \tag{3}$$

where $n+g$ is the world growth rate. Whether the current account and the trade balances are positively or negatively correlated depends on the sign of the numerator in (3): if the world growth rate is higher (lower) than the world interest rate, then a country that runs a current account surplus (i.e. a lender country) runs a trade surplus (deficit).

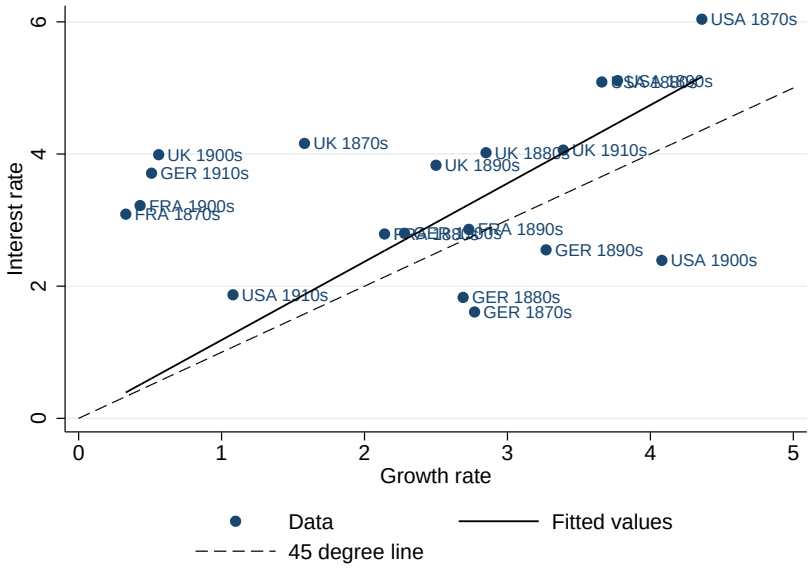
A situation where $n+g$ is greater than r reflects capital overaccumulation, which is compatible with utility maximization only as long as the demographic structure consists of overlapping-generations[4]. Therefore, the presence of a "global saving glut" (Bernanke, 2005) might explain the positive relationship between the trade balance and the current account in the second globalization, while the first globalization was instead "normal" in the sense of Pareto efficiency (Gale, 1974).

We test this hypothesis by examining the statistical relationship between growth rates and interest rates in the two eras of globalization. As an estimate of the world growth rate is not available for the first globalization, we construct country-specific growth rates and interest rates. Figure 3 illustrates that, as most observations are above the 45 degree line, interest rates were statistically higher than growth rates. This is evidence that interest payments were high enough to allow lender countries to fund trade deficits.

[4] In models with infinitely-lived agents, the transversality condition requires that r is greater than $g+n$. See Gale (1971, 1974), Buiter (1981) and Eugeni (2015) for examples of overlapping-generations models that can underpin equation (1).

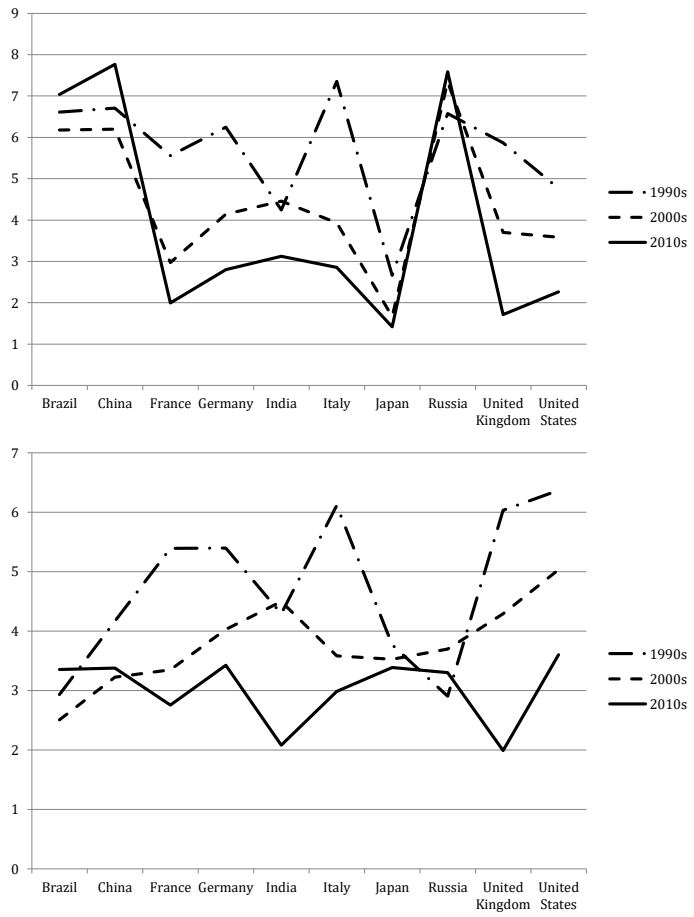
Since the IMF provides data on the world growth rate, we do a different kind of exercise for the second globalization. We calculate the world interest rate in each period as a weighted average of the returns of the largest countries in the world. We then regress the world interest rate on the world growth rate. As cross-country returns have been falling over time (Figures 4 and 5), we divide the sample in two periods: 1991-1999 and 2000-2011. The results are reported in Table 1. It can be observed that while during the 1990s the world interest rate was still higher than the world growth rate, it fell below during the 2000s. This is the period which indeed saw the emergence of substantial trade imbalances-driven current account imbalances.

Figure 3: The first globalization, 1870-1914: "mature creditor nations"



Notes: See Appendix for data construction. The regression coefficient is significant at 1% level (no constant assumed).

Figure 4: Second globalization: average returns on foreign assets and on foreign liabilities.



Notes: See Appendix.

Table 1: The second globalization, 1991-2011: a"global saving glut"

Dependent variable: world interest rate

	1991-1999	1991-1999	2000-2011	2000-2011
	Return on FA	Return on FL	Return on FA	Return on FL
world growth rate	1.5147***	1.5701***	0.8999***	0.9670***
	(0.1003)	(0.0875)	(0.1006)	(0.0897)
No. of observations	9	9	12	12

Notes: FA (FL) stands for foreign assets (liabilities). No constant is assumed. Standard errors are reported in parenthesis. *** indicates significance at the 1% level. See Appendix for details on the construction of the time-series.

4 Conclusions

This paper shows that the world economy of the late XIX and early XX centuries was efficient in a Pareto sense while the XXI world is not as the world interest rate is low as compared to the world growth rate. This evidence explains why the correlation between the current account and the trade balance has turned positive from negative in the recent decades. The positive correlation between the current account and the trade balance is nothing but a indication that policies aimed at reducing world savings are desirable.

References

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5 Appendix

5.1 Countries

First globalization: United Kingdom, France, Germany, United States.

Second globalization: United Kingdom, France, Germany, United States, Italy, Japan, China, Brazil, India, Russia (ten largest countries in terms of their share of world GDP, World Economic Outlook).

5.2 First globalization

Growth rates. We use Piketty et al. (2014) data on national income (2010 billion domestic currency) and compute the annual percentage change. We then compute decennial averages.

Interest rates. Calculating the return that countries received (paid) on their foreign assets (liabilities) is not straightforward. As we do not have data on gross positions, we assume that the net foreign assets position of a country was equal to the gross position. Since most of UK's net capital outflows was directed to the "New World" (Edelstein, 2004), it is reasonable to assume that developing countries did not significantly invest in the UK. We use Piketty et al. (2014) data on net foreign capital income and net foreign assets to compute the average interest rate on net foreign assets: $r = \frac{\text{net foreign capital income}}{\text{net foreign assets}}\%$.

5.3 Second globalization

World growth rate. World Real GDP growth, 1991-2011 (International Financial Statistics).

World interest rate. We construct two indicators: the average returns on foreign assets and on liabilities. The average return for each year for each country is calculated as follows:

$$r_{i,t}^{\text{assets}} = \frac{\text{investment income (credit)}_{i,t}}{\text{foreign assets}_{i,t-1}}\%$$

$$r_{i,t}^{\text{liabilities}} = \frac{\text{investment income (debit)}_{i,t}}{\text{foreign liabilities}_{i,t-1}}\%$$

where the stock data come from Lane and Milesi-Ferretti (2007) database and the flows are from IFS. Then, we calculate the world interest rate as a weighted average of the countries' using their share of world GDP as weights (IMF, World Economic Outlook database):

$$r_t^{\text{assets}} = \frac{\sum_i r_{i,t}^{\text{assets}} \cdot \text{share of world GDP}_{i,t}}{\sum_i \text{share of world GDP}_{i,t}}$$

$$r_t^{\text{liabilities}} = \frac{\sum_i r_{i,t}^{\text{liabilities}} \cdot \text{share of world GDP}_{i,t}}{\sum_i \text{share of world GDP}_{i,t}}$$