US Current Account Deficit and Exchange Rate Tax

De Lima, Gabrielle and Moura, Guilherme and Meurer, Roberto and Da Silva, Sergio

Federal University of Santa Catarina

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Gabrielle De Lima
Department of Economics, Federal University of Santa Catarina
Florianopolis SC 88049-970, Brazil
gabippl@hotmail.com

Guilherme Moura
Department of Economics, University of Kiel
24118 Kiel, Germany
gvallemo@economics.uni-kiel.de

Roberto Meurer
Department of Economics, Federal University of Santa Catarina
Florianopolis SC 88049-970, Brazil
rmeurer@mbox1.ufsc.br

Sergio Da Silva
Department of Economics, Federal University of Santa Catarina
Florianopolis SC 88049-970, Brazil
professorsergiodasilva@gmail.com
Tel.: +55 48 8804 7489
Fax: +55 48 3721 9901
Corresponding author

Abstract

We examine the relationship between the US current account deficit, the international value of the dollar, and the dollar reserves of foreign central banks. We find that the international value of the dollar impacts the US current account and also that dollar depreciations are accompanied by reductions in the inflow of foreign reserves. The inflow reductions are indicative that the US levies an exchange rate tax on foreigners because the foreign stock of reserves loses value.

JEL Classification: F32, F42

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1. Introduction

The United States' current account (CA) deficit has been on the rise since 1991. If that trend persists, net income payments may reach 4.5 percent of GDP while the trade deficit can be of only 1.5 percent of GDP (Truman 2005). Holding the trade deficit constant would require an increasing CA deficit because of the growing net investment income payments.

Indeed, the deficit is financed by foreign capital inflows. From 2000 to 2002 the latter declined but this did not reduce the CA deficit, as private capital outflows also shrank and official inflows rose. To sustain exchange rate pegs and thus prevent their currencies from appreciating, Asian central banks buy Treasury bonds in large quantities. About ¾ of the total of foreign dollar reserves are held by the Asian banks including the Bank of Japan as well as the oil-exporting countries that put some of their extra revenues into dollar-denominated assets and treasuries.

The CA deficit means growing foreign ownership of US capital stock and increasing US net debt to foreigners. Arguably these cannot grow limitless. Servicing a larger debt demands higher borrowing or higher net exports. But while the latter requires a dollar fall, debt service is not likely to become burdensome. Despite the fact that the US is a net debtor, US net investment income has remained positive. This is because US holdings of foreign assets have earned a higher rate of return than US debt owed to foreigners (Lane and Milesi-Ferretti 2005b).

The deficit can be mutually beneficial in that it allows the lender to enjoy a higher rate of return than the home rate, and allows the borrower to operate with a larger capital stock than that financed only from domestic savings. As the investments yield a high enough rate of return to service the debt, borrowing should not reduce future domestic income. So the CA deficit did not prevent the American economy to grow above three percent on average. Yet the deficit can have both positive and negative effects on the economy. Production of exports and import-competing goods becomes lower, but interest rates get also lower than in the absence of foreign capital inflows. And low interest rates can explain the high investment, the housing boom, and the big consumption of durables, such as cars and appliances.

So-called O'Neil doctrine has it that the CA deficit does not matter. The deficit would be a sign of America's strength. As US assets yield a higher (risk-adjusted) rate of return than foreign assets, rational investors will find US assets attractive. Fed chairman Ben Bernanke (2005) believes that foreigners will continue to increase their holding of US assets because of a global savings glut. A big thrift shift has been provoked precisely by the emerging economies, which have become net lenders and no longer net borrowers. Bernanke thus believes that neither profligate consumers nor the government budget deficit are the primary cause of the CA deficit.

Yet as much of the foreign borrowing is not being used to expand US productive capacity, such borrowing may not enhance US ability to service the foreign debt. Americans may be forced to eventually raise their savings (i.e. reduce consumption) and cut the government deficit. Alan Greenspan once warned that there must be a limit for foreigners to hold dollar based assets; and this can be extended to the dollar reserves held by the central banks of emerging markets. Some at the IMF also fear that the CA deficit is unsustainable and that it posits the number one risk to the world economy.

A slow decline in the dollar and CA deficit is not necessarily bad (Labonte 2005 gives a review). A slow reduction can be expansionary in the short run in that augmented net exports impact more aggregate demand than reduce investment. And this seems to receive support from the international experience of current account deficit reduction (Labonte 2005). However, a serious problem would be triggered if foreigners suddenly decided to either reduce the fraction of their savings that goes to the US as capital inflows or repatriate part of their liquid capital. The initial effect would be sharp and large dollar depreciation and US interest rate increase. Sky-high interest rates would lower the market value of debt securities, cause prices on stockmarkets to fall, and generate insolvency of debtors (DeLong 2005). And the dollar fall would harm standards of living because it would raise the price of imports to households, i.e. the terms of trade would decline. Were the Asian central banks to reduce their demand for dollars, Roubini and Setser (2004) estimate that US interest rates would grow by two percentage points.

Obstfeld and Rogoff (2004) also think that the CA deficit is due to low domestic savings and high foreign savings, and that a dollar slide ought to result from an eventual adjustment. They forecast a 20 percent dollar fall in the event of a gradual reduction of the CA deficit, and an above 40 percent fall amid a sharp reduction. A weaker dollar is commonly thought to dampen the CA deficit through export growth. Yet Obstfeld and Rogoff observe that a drop in domestic savings would provoke a reduction in both tradable and nontradable goods. To prevent unemployment, nontradable consumption had to be encouraged and this would require the dollar fall to mean a relative fall in nontradable prices.

Two main forces have contributed to worsen the CA deficit, namely (1) growing imports (due in part to persistent GDP growth) and shrinking US exports, and (2) excessive demand for dollars from the part of the Asian central banks (Blanchard et al 2005). These have scant interest in a weaker dollar because of their dollar holdings. Riggins and Klitgaard (2004) and Roubini and Setser (2004) predict that an appreciation of the Thai baht, the Korean won, and the Chinese yuan would depress those countries' GDPs. As for the effect on the dollar, the Chinese revaluation of the yuan in July 2005 (that ended an eleven year-old peg) seems to partly explain the dollar slide from April 2006 on. This has been largely anticipated (Blanchard et al 2005).

Some estimates using international data find that when CA deficits reach five percent of GDP, the exchange rate starts depreciating and the CA begins to react (Freund 2004). Given that the US CA deficit is already above this threshold, a CA account recovery is overdue. Yet a dollar slide is on the way.

The US can afford to run such a gigantic CA deficit thanks to its privilege of owing its debt in its own currency and receiving payments in their creditors' currency. Dollar depreciations soften the burden of the deficit and tend to increase US net wealth. The dollar's unique role explains why US investments abroad perform better than foreign investments in the US. US liabilities are all dollar-denominated while 70 percent of holdings of nonresident assets are denominated in the other countries' currencies. Lane and Milesi-Ferretti (2005a) argue that financial globalization makes debt relief through the exchange rate more important than through the trade balance. They reckon that, between 2002 and 2004, more than 75 percent of the growth of US foreign debt provoked by the CA deficit was offset by changes in the value of nonresident assets thanks to the dollar decline.

This can be thought of an "exchange rate tax". An analogy with the inflation tax (related to the domestic value of a currency) can be here straightforward. One can think of the exchange rate tax related to the international value of the dollar. The US benefits from a dollar fall as dollar-denominated assets held by foreign investors and central banks lose value. There is "international seignorage" and the "revenues" coming from dollar depreciations are similar to an exchange rate tax levied on US creditors. The US has a flexible exchange rate regime and so does not have to defend its currency with foreign exchange reserves. But while the Fed has no explicit exchange rate policy, it still benefits from dollar depreciations.

Yet persistent dollar falls may threaten the greenback's role as a store of value, medium of exchange, and unit of account. To escape the exchange rate tax, foreign investors and central banks might wish to diversify their reserve portfolios and increase their demands for yen or euro (for instance). There are even signs that this begins actually to happen and that returns over investments in the European Union and Japan start to outperform those in the US. While hyperinflation may result from inflation tax growth, an ever-increasing dollar supply combined with shrinking demand can (theoretically at least) lead to a dollar hyper-depreciation and the end of the dollar role as world reserve currency.

How deep a dollar slide ought to be to balance the US CA? Obstfeld and Rogoff (2004) estimate a depreciation of the dollar between 14.7 and 33.6 percent if the CA deficit were eliminated by a change in aggregate demand, and between 9.8 and 25.5 percent if eliminated by a change in the supply of tradable goods. The depreciation would have to be so large because about ¾ of US GDP is nontradable. Blanchard et al (2005) estimate that a 15 percent decline in the greenback would be associated with a reduction in the CA deficit equal to 1.4 percent of GDP. Stabilizing the net debt to GDP ratio at current levels would require the dollar to immediately depreciate by 56 percent and the CA deficit to decline to 0.75 percent of GDP. If foreigners decide to reduce their holdings of US assets, they estimate a large, though gradual, depreciation. Edwards (2005) employs a model similar to Blanchard et al's but finds faster declines in the dollar and CA deficit. Thus there is wide dispersion of estimates on the dollar depreciation related to a fall in the CA deficit. This is partly because of lack of a consensus exchange rate model that performs well empirically (Labonte 2005).

The aim of this paper is to assess the exchange rate tax, i.e. to what extent dollar depreciations are accompanied by reductions in the inflow of foreign reserves. Section 2 presents data. Section 3 performs analysis. And Section 4 concludes.

2. Data

We examine whether the assumption of an exchange rate tax levied by the US can receive support from both annual and quarterly data from 1973 to 2005. We took inflows of net foreign official assets to the US and divided them by the US GDP (both series are from the Bureau of Economic Analysis). The quarterly ratio was then annualized. Taking only the foreign official reserves rather than the entire capital account underestimates potential US gains and loss. Yet this has been done thanks to the availability of data to us. We also took a trade-weighted real exchange-rate series for the US from the Federal Reserve website; here we took natural logarithms and got either the annual series or the quarterly series by averaging monthly data. We finally took world GDP in logs from the WTO website. Table 1 shows the descriptive statistics of the three series. Note that net foreign assets per GDP are more volatile than the real exchange rate.

3. Analysis

Table 2 presents ADF unit root tests with a constant. Net foreign asset inflows per GDP and world GDP are nonstationary in levels but get stationary in first differences. The real exchange rate is stationary.

There is no Granger causality between the first differences of both net foreign assets per GDP and real exchange rate. The $I(1)$ variables (net foreign asset inflows per GDP and world GDP) do not cointegrate, thus suggesting the absence of stable relationship between the variables in the long run. We then run regressions (sample: 1976–2005) with the stationary variables, namely the real exchange rate and the first differences of both net foreign assets per GDP and world GDP. After beginning with two lags and dropping the nonsignificant ones, we got the ultimate model for the dependent variable, i.e. the first differences of net foreign asset inflows per GDP (Table 3). Results show well behaved residuals. Changes in the inflow of assets as a proportion of GDP occurring in one year are almost reverted in the subsequent two years. Thus real appreciations of the dollar are related to less foreign inflows, but these relate positively to the previous year's real exchange rate. Because a dollar appreciation in a given year will lead to higher inflows in the next year, but also to a reduction in the inflows in the appreciation's year, this translates into active reserve management aiming at minimizing losses. Changes in foreign inflows to the US are quite sensitive to world GDP changes, but only with a lag of two years. Higher world GDP reduces the inflows of assets to the US two years later. A strong dollar raises the gains over the current stock, increases portfolio values in local currencies, and causes the inflows to shrink. Thus the international price of the dollar influences the dynamics of foreign official dollar reserves in the short run, but is almost neutral in the long run. This suggests that the real exchange rate presents a greater impact on the US CA in its path toward the balance of payments equilibrium.

The quarterly data show the same picture. Table 4 shows the ADF unit root tests with a constant. Net foreign official asset inflows to the US as a share of GDP are now stationary whereas (the log of) the real exchange rate is stationary in first differences.

Table 5 shows the regression output for the sample 1973Q4–2006Q4. We begin with four lags and drop the nonsignificant ones. There is a significant constant and also a positive relationship of the inflows with their first and third lags. Thus the possibility of active foreign reserve management detected on the annual data is confirmed by the quarterly data.

Summing up, our regressions show that dollar depreciations are accompanied by a reduction in the inflow of foreign asset reserves. The inflow reductions confirm that the US profits because the current foreign stock of reserves is worth less, thus suggesting the existence of an exchange rate tax. (The one-year lagged inflow reversion can be in part explained by active money management. But while the latter is confined to the inflows, the depreciation affects the overall stock.)

3. Conclusion

We examine the US CA deficit, the dollar behavior, and its role as world currency. We find that the international value of the dollar impacts the US CA, and that dollar depreciations are accompanied by reductions in the inflow of foreign asset reserves. The inflow reductions confirm that the US levies an exchange rate tax on foreigners in that the foreign stock of reserves loses value.

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Table 1. Descriptive statistics, annual data

Statistic	US Net Foreign Assets/GDP	US Trade-Weighted Real Exchange Rate	World GDP
Mean	0.758120	4.580790	4.299649
Median	0.559699	4.560000	4.353621
Maximum	3.311069	4.809374	4.736036
Minimum	–0.533102	4.462857	3.827925
Standard Deviation	0.791882	0.091385	0.270548
Coefficient of Variation	1.044534	0.01995	0.062923

Table 2. ADF unit root tests, annual data

Variable	5% *t* critical value	1% *t* critical value	*t* stat	Prob.
US Net Foreign Assets/GDP	–2.954021	–3.646342	–2.650845	0.0934
US Net Foreign Assets/GDP (First Differences)	–2.960411	–3.661661	–5.838940	0.0000
US Trade-Weighted Real Exchange Rate	–2.957110	–3.653730	–2.962309	0.0494
World GDP	–2.960411	–3.661661	–1.037190	0.7272
World GDP (First Differences)	–2.960411	–3.661661	–3.309557	0.0231

Table 3. Regression output for the model with the first differences of net foreign assets per GDP as the dependent variable, annual data

Variable	Coefficient	Std. Error	*t*-Value	*t*-Prob.
First Differences of Net Foreign Assets per GDP (–1)	–0.453504	0.1662	–2.73	0.011
First Differences of Net Foreign Assets per GDP (–2)	–0.564205	0.1551	–3.64	0.001
Real Exchange Rate	–8.98749	2.257	–3.98	0.001
Real Exchange Rate (–1)	9.20545	2.278	4.04	0.000
First Differences of World GDP (–2)	–31.0455	9.998	–3.11	0.005
R-squared	0.532891			
Adjusted R-squared	0.458154			
RSS	8.51010297			
Log-likelihood	–23.669			
DW	2.01 (number of observations: 30)			
Mean(First Diff. Net Foreign Assets/GDP)	0.039090			
Var(First Diff. Net Foreign Assets/GDP)	0.607289			
AR 1-2 test	F(2,23) = 0.76315 [0.4776]			
ARCH 1-1 test	F(1,23) = 0.11242 [0.7404]			
Normality test	χ^2 (2) = 1.4190 [0.4919]			
Hetero test	F(10,14) = 1.1369 [0.4020]			
Hetero-X test	not enough observations			
RESET test	F(1,24) = 0.20550 [0.6544]			

Table 4. ADF unit root tests, quarterly data

Variable	5% *t* critical value	1% *t* critical value	*t* stat	Prob.
US Net Foreign Assets/GDP	–3.480038	–2.883239	–3.083127	0.0302
US Trade-Weighted Real Exchange Rate	–3.479656	–2.883073	–1.828296	0.3655
US Trade-Weighted Real Exchange Rate (First Differences)	–3.479656	–2.883073	–9.228269	0.0000

Table 5. Regression output for the model with the net foreign assets per GDP as the dependent variable, quarterly data

Variable	Coefficient	Std. Error	*t*-Value	*t*-Prob.
Constant	0.333416	0.09909	3.36	0.001
US Net Foreign Assets/GDP (–1)	0.304873	0.07057	4.32	0.000
US Net Foreign Assets/GDP (–3)	0.298156	0.07105	4.20	0.000
First Differences of the Real Exchange Rate	–17.5520	3.280	–5.35	0.000

R-squared	0.418702
Adjusted R-squared	0.405183
RSS	94.1343349
F(3,129)	30.97 [0.000]**
Log-likelihood	–165.735
DW	2.16 (number of observations: 133)
Mean(Net Foreign Assets/GDP)	0.806875
Var(Net Foreign Assets/GDP)	1.21758
AR 1-5 test	F(5,124) = 0.80055 [0.5513]
ARCH 1-4 test	F(4,121) = 1.3548 [0.2537]
Normality test	χ^2 (2) = 4.6579 [0.0974]
Hetero test	F(6,122) = 2.8103 [0.0135]*
Hetero-X test	F(9,119) = 2.9899 [0.0030]**
RESET test	F(1,128) = 0.80980 [0.3699]

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