

Balance of Payments: The U.S. Experience

ECON3171
Fall 2007

Balance of Payments: National Income Accounting Approach

- Consider the national income accounting identity from macroeconomics

$$Y = C + I + G + (X-M)$$

- Y = GDP (Expenditures)
- C = Consumption
- I = Investment
- G = Government Spending
- $(X-M)$ = Net exports (Current Account)

Balance of Payments: National Income Accounting Approach

- The NIA identity can be rewritten as
$$Y - (C + I + G) = CA$$
- If $CA < 0$ then $Y < C + I + G$
- If a country spends more than it earns?
 - It *must* borrow from the rest of the world; future consumption is traded for current consumption.
- If $CA > 0$ then $Y > C + I + G$
- If a country spends less than it earns?
 - It *can* lend to other countries; current consumption is traded for future consumption.

Balance of Payments: National Income Accounting Approach

Another approach is to consider saving

There are two forms of saving:

- Private: $S_p = Y - C - T$ (Income – Consumption – Taxes)
- Public: $S_g = T - G$ (Taxes – Gov't spending)

Total Saving:

- $S = S_p + S_g = Y - C - T + T - G$
- $S = Y - C - G = I + CA$
- $S - I = CA$

If savings is greater than domestic investment, then rest of the world *can* borrow the remainder ($CA > 0$ or $S > I$)

If investment is greater than savings; *must* borrow the difference from abroad ($CA < 0$ or $S < I$)

Balance of Payments: National Income Accounting Approach

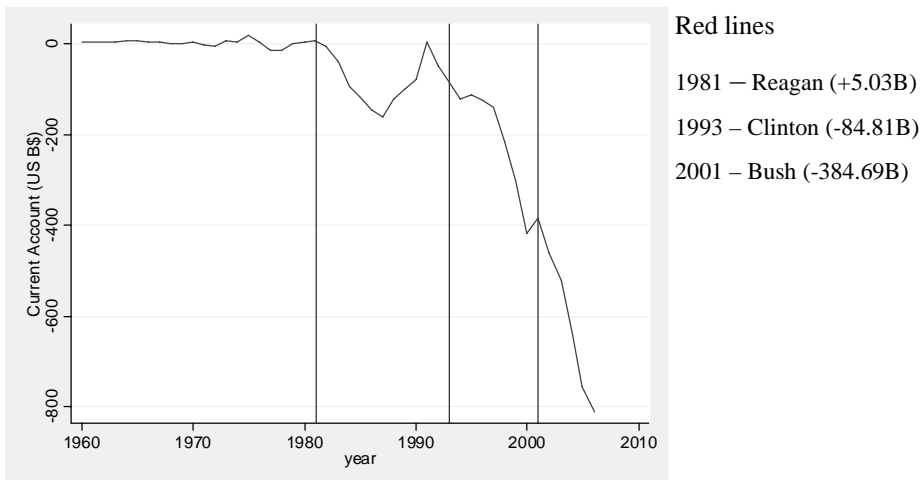
How might $I > S$?

- A country might build capital stock to increase production possibilities in the future.
- Foreigners might be willing to invest in this capital accumulation with the hopes of being repaid in the future.

- To an extent, this is no different than many college students:
 - College degree is anticipated to increase future earnings
 - Many students go into debt during college years ($I > S$)
 - Plan to retire the debt over time with increased earnings.

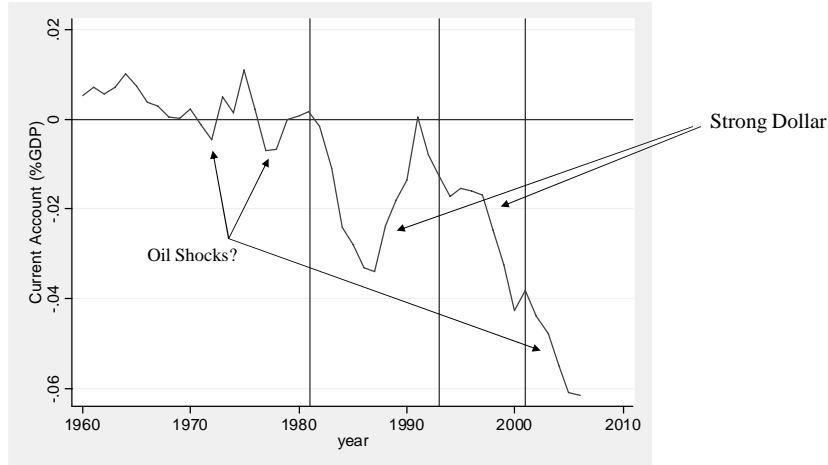
- Does it always work? Not necessarily
 - Consider spending student loans on a Mustang GT.
 - Retiring debt might be more difficult if earnings don't increase.

U.S. Current Account (1960-2006)



The U.S. current account balance was -811B in 2006.

U.S. Current Account as % of GDP



U.S. current account as a percentage of GDP is now ~ 6%

Is this sustainable? Is this *per se* bad ?

Is U.S. Current Account Deficit Sustainable?

Before we can answer “Yes, it is sustainable” or “No, it is bad” we need more information:

1. Is C.A. negative because of private spending?
If so, why are we buying so much from abroad?
 - Preferences; Availability; Exchange rates?
2. Is C.A. negative because of government spending?
If so, what kind of spending is it?
 - Transfer payments; education; infrastructure; culture/arts?
3. Is C.A. negative because the ROW wants to loan us money?
If so, why?
 - This is a question of causation.

U.S. Current Account Deficit

What is the U.S. doing with the influx of dollars from abroad (the capital account)?

- If invest in new technologies/products that make the U.S. more efficient then
 - U.S. PPF in the future expands and U.S. is better off than if it hadn't invested – if growth exceeds the principle and interest owed, then the CA deficit is sustainable.

- If borrowed money does not contribute to economic growth then
 - CA deficit is (probably) not sustainable as the U.S. will buy less from the ROW; paying principle and interest will require a sacrifice of consumption in the future

U.S. Current Account Deficit

- At this point, we don't know if the current level of the CA deficit is sustainable or not.
 - The U.S. has an unprecedented CA deficit (in absolute terms)
 - However, the U.S. is in many ways an unprecedented country
 - Largest portion of world GDP

Rank	Country	GDP(06m)	%world
1	United States	13,244,550	0.27
2	Japan	4,367,459	0.09
3	Germany	2,897,032	0.06
4	People's Republic of China	2,630,113	0.05
5	United Kingdom	2,373,685	0.05
6	France	2,231,631	0.05
7	Italy	1,852,585	0.04
8	Canada	1,269,096	0.03
9	Spain	1,225,750	0.03
10	Brazil	1,067,706	0.02

Source: International Monetary Fund

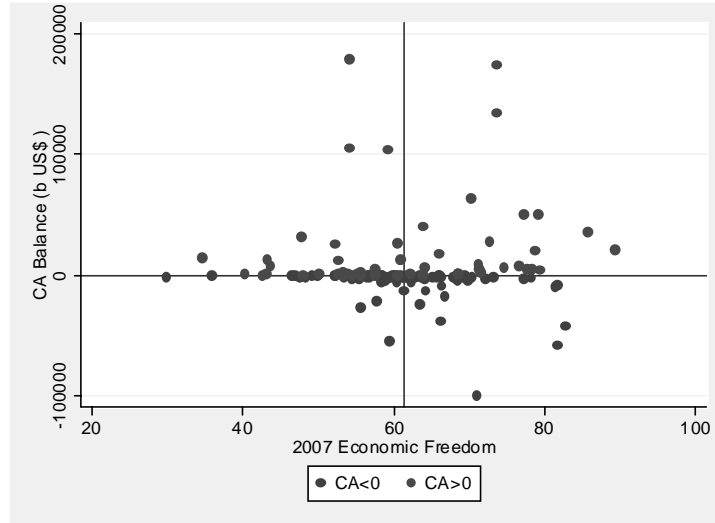
U.S. Current Account Deficit

- The CA deficit shows that the ROW has more dollars than they spend on U.S. goods/services. Yet, what does the ROW do with those dollars?
 - Buy U.S. assets, e.g., Google shares, real estate, government debt?
 - This is what “Japan, Inc.” did during the 1980s with a huge CA surplus.
 - Invest in U.S. start-up firms with hopes of a big payoff in the future?
 - Buy U.S. goods and services (either today or in future)?
 - Hold U.S. currency as a “store of value?”
 - Trade U.S. currency for another currency?

U.S. Current Account Deficit

- Over the past thirty years, high GDP growth and high employment growth is associated with CA deficits? Why?
- Is it better to be the investee or the investor?
Not a trick question:
 - Investment builds wealth in recipient country
 - Countries that provide investment might be “passive”
 - Countries in which investment takes place might be “active”
- Higher growth rates imply investment rather than just consumption. Perhaps investors are drawn to such countries?
 - Well operating capital markets might support this intuition: informed investors make “good” choices.

Current Accounts and Economic Freedom



Current Accounts and Economic Freedom

- Regression analysis suggests that countries that are more free tend to have negative CA:
- Why might this be?
 - Economic freedom might allow domestics to consume
 - Depken and Sonora (2004) find that increased economic freedom tends to increase imports.
 - Economic freedom might encourage foreigners to invest
 - Bengoa and Sanchez-Robles (2003) find that increased economic freedom tends to increase investment from abroad.
- These two elements could combine to simultaneously increase the capital account balance and reduce the current account balance.

Current Accounts and Economic Freedom

- Perhaps the U.S. (or another developed country?) is a “safer” investment than some other countries.
- Consider the United States:
 - a. Politically stable
 - b. Strong property rights
 - c. Long history of innovation
 - d. Large and growing population
 - e. Highly educated workforce
 - f. Low tax burden (for now?)
 - g. Low inflation
 - h. Economic Freedom
 - i. Love to consume (profit potential)

In other words, perhaps the capital account is in surplus, which causes the current account to be in deficit (not the other way around)

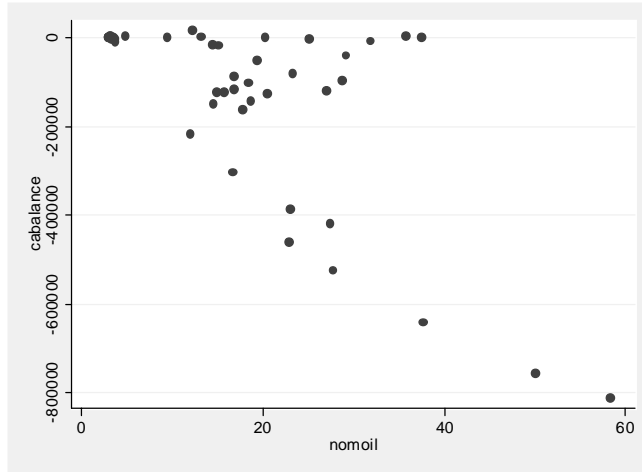
U.S. Current Account and Other Economic Variables of Interest

I gathered annual data on U.S. C.A. balance, price of oil, GDP, inflation, exchange rate, and short-term interest rate:

Variable	Obs	Mean	Std. Dev.	Min	Max
year	47	1983	13.71131	1960	2006
G/S Balance	47	-148127.2	215961.3	-838271	8903
Current Acct	47	-126943.1	208541.3	-811477	18116
Oil Price	47	17.36383	13.03123	2.85	58.3
GDP	47	4607.56	3774.497	526.4	13194.7
Inflation	47	4.237872	2.87555	1.01	13.52
ST interest	47	5.543617	2.670624	1.01	14.04

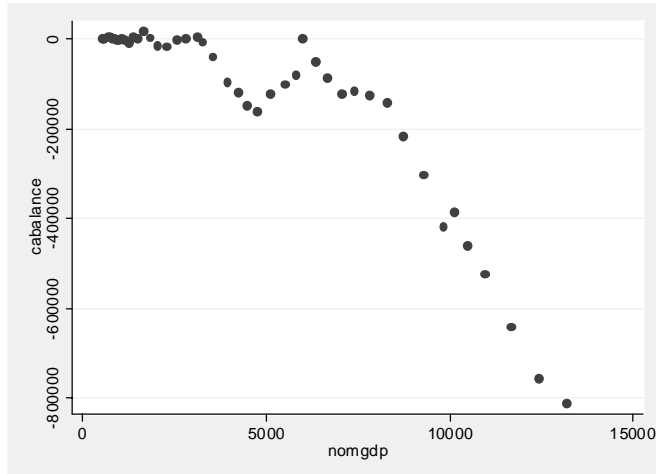
The data can be used to investigate the relationships between current account and these variables.

U.S. Current Account and the Price of Oil



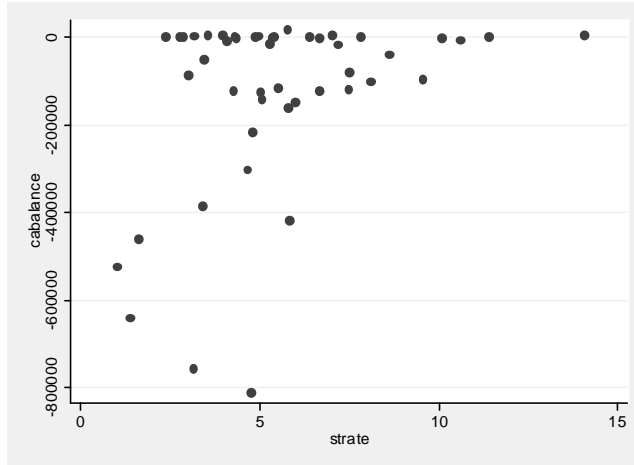
Strong negative relationship between price of oil and current account.

U.S. Current Account and Nominal GDP



Strong negative relationship between GDP and the current account.

U.S. Current Account and Short Term Interest Rates



Slight positive relationship between short term interest rate and current account – (why would this make sense?)

To test for relationships we can use econometrics (very cool!!)

One question: Can we determine causality?

One approach: Granger Causality (Clive Granger – NL 2003)

X “Granger causes” Y and/or Y “Granger causes” X

CA Granger causes CA Granger caused by:

GDP?	NO	YES
Price of Oil?	Maybe	YES
Inflation?	NO	NO
ST Interest Rate?	NO	YES
Exchange Rate?	YES	NO

These results follow theoretical predictions (whew!).

Regression analysis: Explain the variation of the Current Account (\$m) with the variation of the price of oil (\$), GDP (\$b), the interest rate (%points) and inflation (%points):

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Oil Price	-2039.364	989.2583	-2.06	0.046	-4037.211	-41.51594
GDP	-235.0652	64.57669	-3.64	0.001	-365.4805	-104.6499
ST Int. Rate	7916.777	3722.103	2.13	0.039	399.8368	15433.72
Inflation	186.6936	1004.119	0.19	0.853	-1841.166	2214.554

What does it all mean?

For every dollar increase in the price of oil, CA balance ***falls*** by 2b dollars

For every billion dollar increase in GDP, CA balance ***falls*** by 235m dollars

One point increase in short-term interest rate, CA balance ***improves*** by 7.9b dollars

Inflation ***has no*** statistically significant relationship with the CA balance

Conclusions?

- U.S. C.A. deficit at an all-time high nominally and as % of GDP.
- Many economists/politicians are concerned because a CA deficit indicates “borrowing” which might require a reduction in future consumption or (perhaps) a fall in the strength of the dollar.
- Unresolved: Can the CA deficit be ***caused*** by capital account surplus?
- Empirical Results:
 - Price of oil strongly affects U.S. current account balance (1)
 - GDP also strongly affects U.S. current account balance (1)
 - Keynesian “marginal propensity to import” from disposable income is higher in the U.S. than in the rest of the world (related to economic freedom/culture?)
 - Short term interest rate affects U.S. current account balance (k)
- Next: Exchange rates and how the CA relates to For-Ex market.