
References:


Lane, Philip and Gian Maria Milesi-Ferretti, “Examining Global Imbalances”, IMF Finance and Development, 2006. (internet link on reading list)

* See syllabus.
Lecture 1: Where were we before financial crisis began?

*Review some identities and definitions –*

From previous lectures:

\[ S_{\text{private}} - CA = I + (G - T) \Rightarrow CA = S_{\text{private}} - [I + (G - T)] \]

What can’t be financed by \( S_{\text{private}} \) must be financed from abroad.
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NFA = (U.S. stock of foreign assets) - (foreign stock of U.S. assets)

\[ \Delta(NFA) = CA \]

Revised definition of the Current Account:

\[ CA = Ex - Im + \text{net earnings (from abroad)} \]

\[ \text{net earnings} = \text{net return on assets} + \text{net transfers} \]
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So, finally:

\[ Ex - Im + \text{net return} + \text{net transfers} = CA = S_{private} - [I + (G - T)] \]
**Chart 1: Growing links**

International financial integration is growing globally, but particularly strongly among industrial countries.

(sum of external assets and liabilities as a percent of total group GDP)

Source: Lane and Milesi-Ferretti (2006).
investment performance on its foreign assets than have foreign residents on their U.S. assets. This rate-of-return advantage, coupled with the expansion in foreign leverage documented in figure 5, has so far allowed the United States to maintain a generally positive balance of net international investment income even as its net international investment position has become increasingly negative. Figure 6 shows two measures of U.S.

### Table 1. International Investment Positions of Selected Industrial Countries, 2003

<table>
<thead>
<tr>
<th>Country</th>
<th>Gross assets</th>
<th>Gross liabilities</th>
<th>Net position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>75</td>
<td>93</td>
<td>−18</td>
</tr>
<tr>
<td>Euro area</td>
<td>107</td>
<td>118</td>
<td>−10</td>
</tr>
<tr>
<td>France</td>
<td>179</td>
<td>172</td>
<td>7</td>
</tr>
<tr>
<td>Germany</td>
<td>148</td>
<td>141</td>
<td>6</td>
</tr>
<tr>
<td>Italy</td>
<td>95</td>
<td>100</td>
<td>−5</td>
</tr>
<tr>
<td>Japan</td>
<td>87</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>Switzerland</td>
<td>503</td>
<td>367</td>
<td>135</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>326</td>
<td>329</td>
<td>−2</td>
</tr>
</tbody>
</table>


a. Gross assets may differ from the sum of gross liabilities and the net position because of rounding.
Figure 2. Net foreign assets (percent of world GDP)

Note: the emerging Asia group includes China, Hong Kong SAR, Taiwan prov. of China, Korea, Malaysia, Singapore, and Thailand. The Swi + Nordics group includes Norway, Sweden, and Switzerland. The Middle East group includes Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Libya, Saudi Arabia, Syria, United Arab Emirates, and Yemen.
Figure 1. Current account balances (percent of world GDP)

Note: the emerging Asia group includes China, Hong Kong SAR, Taiwan prov. of China, Korea, Malaysia, Singapore, and Thailand. The Swi + Nordics group includes Norway, Sweden, and Switzerland. The Middle East group includes Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Libya, Saudi Arabia, Syria, United Arab Emirates, and Yemen.
Figure 9. Composition of capital flows to the United States, 1980-2004
(share of outstanding liabilities)

Note: Equity inflows to the United States (portfolio and FDI) are scaled by the outstanding stock of U.S. equity liabilities; debt inflows (portfolio and other) are scaled by outstanding stock of U.S. debt liabilities.
Figure 12. United States: Official Inflows as a percent of Total Debt Inflows, 1999-2004

Note: Data source is Bureau of Economic Analysis.
in equities (both portfolio equity and foreign direct investment) than do foreigners of their U.S. assets. At the end of 2003, Americans held almost $7.9 trillion in foreign assets, of which 60 percent was in equities, either foreign stocks or foreign direct investment (here measured at market value). Foreigners, by contrast, held only 38 percent of their $10.5 trillion in U.S. assets in the form of equity. Given that equity has, over long periods, consistently paid a significant premium over bonds, it is not surprising that U.S. residents have remained net recipients of investment returns even though the United States apparently crossed the line to being a net debtor in the late 1980s.

A major reason why foreigners hold relatively more U.S. bonds than Americans hold foreign bonds is that the dollar remains the world’s main reserve and vehicle currency. Indeed, of the $3.8 trillion in international reserves held by central banks worldwide, a very large share is in dollars, and much of it is in short-term instruments.\footnote{See the survey in Central Banking, “The Rise of Reserve Management,” March 2005, p. 14.} Figure 7 illustrates the burgeoning reserves of Asia, now in excess of $2 trillion. According to the

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure7.png}
\caption{Foreign Exchange Reserves, Selected Countries, Various Years}
\end{figure}
Chart 5

Investment portfolio
U.S. investors emphasized foreign direct investment (FDI) and equities, while foreigners lapped up U.S. debt.

Composition of U.S. foreign assets, 2004
- FDI: $3,287 billion (33 percent)
- Portfolio equity: $2,520 billion (25 percent)
- Portfolio debt: $917 billion (9 percent)
- Other investment: $3,059 billion (31 percent)
- Foreign exchange reserves: $190 billion (2 percent)

Composition of U.S. foreign liabilities, 2004
- FDI: $2,687 billion (21 percent)
- Portfolio equity: $2,071 billion (17 percent)
- Portfolio debt: $4,250 billion (34 percent)
- Other investment: $3,507 billion (28 percent)

Sources: Bureau of Economic Analysis and Lane and Milesi-Ferretti (2006).
net international investment income.\footnote{Gourinchas and Rey (2005b) present a similar graph covering a much longer period. The estimates in the text are consistent with those found by Obstfeld and Taylor (forthcoming) using a different methodology. For a complementary discussion of returns on foreign assets and liabilities, see Lane and Milesi-Ferretti (2005b).} The first, net foreign investment income (income receipts on U.S. assets owned abroad less income payments on foreign-owned assets in the United States), is taken from the U.S. balance of payments accounts and comprises transactions data only, that is, actual income earned on assets. Interestingly, this balance has not yet entered negative territory, although it could do so soon. Over 1983–2003 the income return on U.S.-owned assets exceeded that on U.S. liabilities by 1.2 percentage points a year on average.

A more comprehensive investment income measure adds the capital gains on foreign assets and liabilities, reflecting price changes that could be due to either asset price movements (such as stock price changes) or exchange rate changes. The Bureau of Economic Analysis (BEA) incorporates estimates

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure6}
\caption{U.S. Net Foreign Investment Income and Total Net Return on Foreign Assets, 1983–2003}
\end{figure}

\begin{table}
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
Year & Net foreign investment income & Total net return on foreign assets & & \\
\hline
1983 & & & & \\
1984 & & & & \\
1985 & & & & \\
1986 & & & & \\
1987 & & & & \\
1988 & & & & \\
1989 & & & & \\
1990 & & & & \\
1991 & & & & \\
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2000 & & & & \\
2001 & & & & \\
2002 & & & & \\
2003 & & & & \\
\hline
\end{tabular}
\caption{Net Foreign Investment Income and Total Net Return on Foreign Assets, 1983–2003}
\end{table}
How did we get here –

Recall:

Ex - Im + net return on assets + net transfers = CA

\[ = S_{\text{private}} - [I + (G - T)]\]

So, obvious possibilities are: (Chinn emphasizes *)

Trade deficit: unfair trade practices, oil imports*.

Fiscal deficit*:

Low \( S_{\text{private}} \): historical problem.

High I: faster growth, safe place for U.S. investors.
Accounts, Flows, and Stocks

The trade balance is the difference between exports and imports of goods and services. The current account is the trade balance, adding in net factor income and transfers (which includes remittances). These two series are displayed below.

**Figure 2:** Trade and Current Account Balances, in Billions of Dollars, Seasonally Adjusted Annual Rates (SAAR).

![Graph showing trade balance and current account balances over time](image)

*Source: Bureau of Economic Analysis; see [http://www.bea.gov/bea/di/home/bop.htm](http://www.bea.gov/bea/di/home/bop.htm).*

Net capital inflows is the difference between capital inflows (borrowing) and capital outflows (lending). Capital flows are composed of private and official flows. Official inflows, for instance, include foreign central bank accumulation of U.S. assets (usually either dollars or U.S. Treasury securities). The current account deficit must equal net capital inflows, up to a (sizable) statistical error, and a difference due to the basis for accounting.

**Figure 3:** Total Net Capital Inflows (private and official) and Net Official Capital Inflows, in Billions of Dollars, Seasonally Adjusted Annual Rates (SAAR).

![Graph showing net capital inflows and net official capital inflows over time](image)

*Source: Bureau of Economic Analysis; see [http://www.bea.gov/bea/di/home/bop.htm](http://www.bea.gov/bea/di/home/bop.htm).*

Current account balances and capital inflows. As long as a country runs a current account deficit, it must borrow to cover that deficit, or run down its foreign exchange reserves. Usually this process means that a country becomes ever more indebted to the rest of the world. Large revaluations in assets and liabilities due to exchange rate changes or price changes can affect this relationship.
Household net saving rates (From OECD)
As a percentage of household disposable income
Source: Energy Information Administration
The CBO’s most recent long-run budget projections included one scenario that can be interpreted as reflecting a continuation of current underlying fiscal policy.

This budget scenario importantly assumes that:

• Temporary tax and spending provisions in recent fiscal stimulus and financial stabilization programs are allowed to expire as scheduled.
• The 2001-2003 tax cut provisions are extended permanently and the thresholds for the alternative minimum tax (AMT) are indexed for inflation so that most taxpayers avoid paying taxes under the AMT.

• Medicare payments to physicians are assumed to grow at historical rates, which are greater than those currently scheduled under the sustainable growth rate (SGR) mechanism. (Medicare spending for physician services has been allowed to be above the SGR targets since 2002.) Other features of Medicare and Medicaid are assumed to evolve as specified in current law.

• Social Security benefits and taxes are assumed to evolve as scheduled under current law.
• Discretionary spending follows the CBO’s baseline projection through 2011 and then these outlays are held constant at the 2009 level as a percent of GDP (excluding stimulus and related outlays) thereafter. As a result, federal spending for programs other than Social Security, health-related programs, and interest payments moves down to 10½ percent of GDP by 2012, about equal to the average level for these programs over the twenty-year period prior to the recent recession and financial crisis.

• Real GDP will rise at an average annual rate of 3½ percent over the next five years as the economy recovers from the recent deep recession. Real GDP growth is assumed to slow in the longer term to 2¼ percent—the rate of potential GDP growth.
Chart 1
Federal Revenues and Noninterest Outlays
1962-2050
(percent of GDP)

Chart 2
Categories of Federal Noninterest Outlays
1962-2050
(percent of GDP)
Chart 3
Federal Budget Deficits
1962-2050
(percent of GDP)

Chart 4
Federal Debt Held by the Public
1790-2050
(percent of GDP)
Chart 5
Projections for Federal Spending on Medicare and Medicaid
Under Different Assumptions about Excess Cost Growth
(percent of GDP)

Chart 6
U.S. Population Age 65 or Older as a Percent of the Population Ages 20 to 64
Chart 7
Effects of Aging and Excess Cost Growth on Projected Spending for Medicare, Medicaid, and Social Security (percent of GDP)

Chart 8
Alternative Tax Revenue Assumptions for 2001-2003 Tax Cuts and AMT Relief (revenue as a percent of GDP)
Lecture 2: How will it all unwind?

Is there a need to change macroeconomic policies? (Again, this is from a before crisis of 2007 perspective.)

Basic Reference: Chinn (2005). I also draw from other sources, update some arguments, and interject my own judgements as well.

Recall: \[ CA(EP*/P, Y-T, Y*-T*) \] and \[ CA = S_{private} - [I + (G - T)] \]

\[ CA < 0 \] adds to net foreign indebtedness, which has become very large. How will U.S. CA adjust to stabilize the debt?

There is much controversy over this, and two basic reactions –

1. the “Not-to-Worry” camp
2. the “Worry-Some-to-a-Lot” camp:
The “Not-to-Worry” camp’s arguments –

1. Deficits are good news: Sign a healthy U.S. economy and lack luster trading partners. Focus is on: \( \text{CA}(\text{EP}^*/\text{P}, \ Y-T, \ Y^*-T^*) \)
   a. U.S. is growing faster than Europe and Japan: naturally has more \( C \) and Imports.

   Policy conclusion: Don’t slow U.S. down; speed up trading partners by free market reform.

   Problem with this argument: China is growing fast. Kennedy & Slok (2005) find empirically that reform \( \neq \text{CA}^{\uparrow} \)
   b. U.S. is an attractive place to invest: attracts foreign savings.

   Problems: Foreigners are not buying doing FDI or buying equity. China is buying up U.S. govt bonds. So are other Asian CB’s.

   This is how most of recent CA deficits have been financed.
2. Perpetual free lunch for Americans:
   Dollar’s “exorbitant privilege”. Dollar is used in world payments, and U.S. treasuries serve as liquid safe haven.
   U.S. assets are largely in equity, liabilities are largely in $’s
   We pay low interest on debt and get paid high dividends on assets.

   Canzoneri, Cumby, Diba and Lopez-Salido: 0.5% of consumption.

Problems:
   a. Lenders may become satiated with transactions balances.
   b. Recovering economy may obviate need for liquid safe haven.
   c. Depreciating Dollar implies capital losses to bond holders.
      See exchange rate graphs.
      Do we really want China to quit “manipulating” its exch rate?
3. A world “savings glut” with nowhere to go:

China, East Asia, Opec countries have high savings; it has to go somewhere; U.S. is attractive place.

problems:

a. Much of it is CB’s going into U.S. treasury bonds; not private savings in U.S. equities.

b. Which seems more likely: Foreigner savers are forcing the U.S. to consume vs a “savings scarcity” in the U.S. that requires financing.

*In summary:* I agree with Chinn that the “Not-to-Worry” arguments are not very convincing.
The “Worry-Some-to-A lot” camp’s arguments –
Focus on possible adjustment scenarios and their implications,
again before the crisis of 2007 made adjustment more complicated.

1. Obstfeld and Rogoff Brookings paper (wrote a series of papers) –
   Focus is on: \( \text{CA}(E^P/P, Y-T, Y^*-T^*) \)
   a. Note that U.S. CA deficit soaks up 75% of the combined CA surpluses of all the surplus countries; this can’t go on forever.
   b. Adjustment via \( E^P/P \) is difficult with sticky prices because:
      Oil priced in dollars.
      China and some other Asian countries have \( E \) pegged to $.
      Dollar depreciation will not affect their \( E^P/P \).
      Thus, onus of adjustment falls on Europe.
c. Simulations of a static model show:
   Ask what depreciation would be required to cause a demand shift
to U.S. goods large enough to cause U.S. CA deficit to close by
half (6% of GDP to 3%).
Depreciation against European currencies \( \approx 30\% \)
   Need a huge European decline in exports (causing recession?)
   Implies a huge loss on European holdings of $ assets.

2. Chinn, O&R’s and others’ worries about possible outcomes:
   a. Will foreigner’s continue financing the U.S. CA? What happens if
they suddenly shift away from $ assets?
   *Worst case scenario:* A sudden collapse of $, a and rise in real R
   (to finance CA). Things we usually think U.S. is not subject to!
b. Consequences:

i. *in U.S.*: Will real R↑ cause a collapse of the already sagging housing market? Will this loss of wealth and collateral cause U.S. C to fall? Will Fed respond to E collapse by raising real R even further? Will this cause bankruptcies and a recession? Will the $ lose its status as key currency to the Euro?

ii. *in Japan and Europe*: Will EP*/P depreciation and U.S. C↓ cause exports to fall? Will export ↓ and wealth loss (due to E↑) cause demand in Japan and Europe to fall enough to cause recessions there?

iii. *in China*: Will fall in exports cause social disruptions? Some say exchange rate policy is designed to foster exports and create jobs for workers coming off the farms.
Chinn argues: It is only prudent to take steps now (ie. then, before 2007 crisis) to avoid such possibilities:

1. Reduce public deficits –
   Hard to lower G with:
   a. Afghanistan and Iraq war spending.
   b. Baby boomers’ retirement; medicare and social security costs.
   c. Administrations desire for universal health care coverage, other social programs.
   That leaves T: Republican resistance; political consequences.

2. Raise private saving –
   How?
3. Reduce quantity or price of oil imports –
   Incentives to oil companies? Bush administration has already tried.
   Taxes on gasoline to discourage consumption? Not popular.
   Gas milage standards, and higher car prices. Not popular.
   Make friends in the Middle East, to keep price down? Not likely.

4. Coordinating a cessation of East Asia currency pegs.
   Revaluations would make their goods more expensive.
   Floating would allow $ depreciation to work.
   Now: no one country wants to take the first step; coordination is needed, but how?
   Complications with financing the deficit.