

Cornell University

ECON 3040 Intermediate Macroeconomic Theory

Lecture 18: International Trade and Capital Markets

Prof. Mathieu Taschereau-Dumouchel Spring 2018

Today

- Balance of payment accounting
- International loanable funds market
- Equilibrium in a small open economy
- Equilibrium in a large open economy

Open Economies

- Almost all economies today are open
 - They trade heavily with the rest of the world
 - Their financial markets are integrated
- In an open economy, a country's spending need not equal its production in every period
 - If the U.S. consumes more in a year than it produces, it borrows the difference from abroad.

Savings and Investment in an Open Economy

- Remember that the goods market can be represented by the Investment/Savings market
- In previous lectures, we derived
 - Desired savings: $S^d = S_{pvt} + S_{gvt} = S(r; G, Y_f, a)$
 - Desired investment: $I^d = I(r; p_{K'}, MPK^f)$
- Equilibrium in closed-economy: r adjusts until S = I
- Equilibrium in open-economy: *S* = *I* + *CA*
 - If S < I, country finances some of its investment with CA < 0
 - If S > I, country funds some investment abroad with CA > 0

Balance of Payments Accounting

• The part of the NIPA accounts that records international transactions

- General rule
 - Credit (+): funds that flow <u>into</u> the home country (here, the U.S.)
 - Example: exports of goods
 - Debit (-): funds that flow <u>out of</u> the home country
 - Example: imports of goods

Current Account

- <u>Current Account</u> CA = NX + NFP + NUT
 - NX = Net exports of goods and services ('trade balance')
 - NFP = Net factor payments
 - Net investment income (from previously acquired assets abroad)
 - (+) American owns British stock => dividend flow into U.S.
 - (+) Foreign subsidiary of US firms => profit flow into U.S.
 - (-) Britain holds U.S. stock => dividend flow out of U.S.
 - (-) U.S. subsidiary of foreign firm => profits flow out of U.S.
 - Net payments to labor (very small for U.S.)
 - NUT = Net unilateral transfers (i.e. not in payment for goods / assets)
 - (-) foreign aid
 - (-) remittances of foreigners working in U.S. to their families abroad
 - (+) gifts from abroad
 - (+) remittances from Americans abroad

Capital and Financial Account

- <u>Capital Account</u> = unilateral transfers of assets
 - (-) Debt forgiveness
 - (+) Assets of immigrants moving to the U.S.
- <u>Financial Account</u> = financial flow *in exchange for* assets
 - (+) Financial Inflow
 - Daimler buys Chrysler stocks (=> payment flows into U.S.)
 - (-) Financial Outflow
 - U.S. resident opens Swiss bank account (=> payment flow out of U.S.)
- *KFA* = <u>Capital</u> + <u>Financial</u> account balance

Balance of Payments

- The <u>balance of payments</u>
 - Transactions in official reserve assets are conducted by central banks of countries
 - Central banks buy (or sell) official reserve assets with (or to obtain) their own currencies
 - Equal to the net increase in a country's official reserve assets
 - Having a balance of payments surplus means a country is increasing its official reserve assets; a balance of payments deficit is a reduction in official reserve assets

TABLE 5.1

Balance of Payments Accounts of the United States, 2014 (Billions of Dollars)

Current Account					
Net exports of goods and services (NX) Exports of goods and services Goods Services Imports of goods and services Goods Services Net income from abroad (NFP) Income receipts from abroad Income payments to residents of other countries Net unilateral transfers* Current Account Balance (CA)	1632.6 710.6 2374.1 477.4	2343.2 2851.5 823.4 585.4	-508.3 238.0 -119.2	-389.5	
Financial Account					
Financial Account Net financial flows Increase in U.Sowned assets abroad (financial outflow) U.S. official reserve assets Other U.Sowned assets abroad Increase in foreign-owned assets in U.S. (financial inflow) Foreign official assets Other foreign-owned assets Financial Derivatives, Net** Financial Account Balance (FA) Statistical Discrepancy Memoranda: Balance on goods and services (trade balance) Balance on goods, services, and income Balance of payments = Increase in U.S. official reserve assets minus increase in foreign official assets = -3.6 - 100.4	-3.6 795.7 100.4 877.0	792.1 977.4	185.3	239.6 149.9 -508.3 -270.3	
Note: Numbers may not add to totals shown owing to rounding. *Net unilateral transfers includes the balance on secondary income (transfers of income) and the capital account (transfers of assets). The capital account is usually very small. **The sign has been reversed from BEA Table 1 so that a positive number is a net increase in foreign-owned as- sets in U.S. (an inflow) Source: "U.S. International Transactions: First Quarter 2015 and Annual Revisions," Table 1, BEA news release downloaded from bea.gov/newsreleases/International/transactions/2015/trans115.htm, and International Transactions Accounts, Table 9.1, downloaded from bea.gov/International/Index.htm.					

CA and KFA

• Accounting identity:

$$CA + KFA = 0$$

- Every transaction involves offsetting effects
- In practice, measurement problems, recorded as a statistical discrepancy.

<i>Case I:</i> United States Imports \$75 Sweater from Britain; Britain Imports \$75 Computer Game from United States			
Current Account Exports Imports Current account balance, CA	+\$75 -\$75 0		
Capital and Financial Account No transaction Capital and financial account balance, <i>KFA</i> Sum of current and capital and financial account balances, <i>CA</i> + <i>KFA</i>	0 0		
<i>Case II:</i> United States Imports \$75 Sweater from Britain; Britain Buys \$75 Bond from United States			
Current Account Imports Current account balance, CA	$\frac{-\$75}{-\$75}$		
Capital and Financial Account Financial inflow Capital and financial account balance, <i>KFA</i> Sum of current and capital and financial account balances, <i>CA</i> + <i>KFA</i>	+\$75 +\$75 0		
<i>Case III:</i> United States Imports \$75 Sweater from Britain; Federal Reserve Sells \$75 of British Pounds to British Bank			
Current Account Imports Current account balance, CA	<u>-\$75</u> -\$75		
Capital and Financial Account Financial inflow (reduction in U.S. official reserve assets) Capital and financial account balance, <i>KFA</i> Sum of current and capital and financial account balances, <i>CA</i> + <i>KFA</i>	+\$75 +\$75 0		

Balance of Payments Accounting

- Net foreign assets are a country's foreign assets minus its foreign liabilities
 - Net foreign assets may change in value (e.g., change in stock prices)
 - Net foreign assets may change through acquisition of new assets or liabilities
- The net increase in foreign assets equals a country's current account surplus



Year

Equivalent Measures of a Country's International Trade and Lending

Each Item Describes the Same Situation

A current account surplus of \$10 billion A capital and financial account deficit of \$10 billion Net acquisition of foreign assets of \$10 billion Net foreign lending of \$10 billion Net exports of \$10 billion (if net factor payments, *NFP*, and net unilateral transfers equal zero)

Net Foreign Asset position of country = sum of current account surpluses over time

International Loanable Funds Market

• For simplicity, assume NFP = NUT = 0

– CA = NX : <u>Current Account</u> = <u>Net Export</u>

• Accounting Identity

$$Y = C + I + G + NX$$

• Equilibrium in international loanable funds market:

$$-$$
 S^d, I^d such that S^d = I^d + NX

$$NX = Y - \underbrace{(C + I + G)}_{\text{Domestic Absorption}}$$

If domestic absorption exceeds production, then the rest is imported

International Loanable Funds Market

- Assumption: all countries can borrow and lend at the common world interest rate r^w
 - Perfect capital mobility
 - If r > r^w no one would borrow at domestic rate
 - If r < r^w no one would lend at domestic rate
 - By no arbitrage: r = r^w
 - For a <u>small</u> country: r^w unaffected by domestic conditions
 - For a <u>large</u> country: r^w affected by changes in domestic economy

Equilibrium in a Small Open Economy



Equilibrium in a Small Open Economy



Temporary Negative Income Shock



Increase in Future Productivity



Equilibrium in a Large Open Economy

- Large economy = Economy large enough to affect r^w
 - Suppose there are just two economies in the world
 - <u>Home</u> or domestic economy (with saving *S* and investment *I*)
 - <u>Foreign</u> economy = rest of the world (with saving S_{For} and investment I_{For})
- r^w moves to equilibrate desired international lending by one country with desired international borrowing by rest of world
 - World supply of goods = World demand for goods
 - $Y + Y_{For} = C^{d} + I^{d} + G + C^{d}_{For} + I^{d}_{For} + G_{For}$
 - World saving = World investment
 - S^{d} + $S^{d}_{For} = I^{d}$ + I^{d}_{For}
 - Desired int'l borrowing = Desired int'l lending
 - $(S^d I^d) + (S^d_{For} I^d_{For}) = 0 \iff CA + CA_{For} = 0$

Equilibrium in Large Open Economy



Desired national saving, S^d, and desired investment, I^d

Desired national saving, S_{For}^d , and desired investment, I_{For}^d

(a) Home country

(b) Foreign country

Fiscal Deficits and Current Accounts

- Bailouts and stimulus packages have led to large fiscal deficits in the U.S.
- What are the effect on the current account and the international loanable funds equilibrium?
 - In small open economy case
 - In large open economy case

Fiscal Deficit in Small Open Economy



Desired national saving, S^d , and desired investment, I^d

Fiscal Deficit in Small Open Economy

- Deficit caused by increased government purchases
 - Deficit reduces national saving => current account declines
- Deficit resulting from a <u>tax cut</u>
 - S^d falls only if C^d rises
 - S^d won't change if Ricardian equivalence holds, since then a tax cut won't affect consumption
 - But if people don't foresee the future taxes implied by a tax cut today, they will consume more => desired savings and current account decline
- Increase in <u>fiscal deficit</u> leads to increase in <u>current account deficit</u> (i.e. a "Twin Deficit") only if increase in fiscal deficit decreases national savings
 - see ABC application page 193.

Fiscal Deficit in Large Open Economy

- Suppose deficit is caused by increase in government spending
 - S^d decreases
- At initial world interest rate, $S^d + S^d_{For} < I^d + I^d_{For}$
- \Rightarrow World interest rate has to <u>increase</u> until

 $\Rightarrow I^{d} + I^{d}_{For}$ decreases relative to $S^{d} + S^{d}_{For}$ until equality is reestablished

 \Rightarrow A world-wide crowding out effect...



Special Topic: Globalization



Special Topic: Globalization

- Costs of globalization: U.S. jobs lost in particular sectors
- Benefits of globalization: U.S. jobs gained in particular sectors
 - U.S. exports increase
 - Cheaper imported goods means more goods
 & services at lower prices—gains from trade
- But loss of jobs from foreign trade is a small fraction of total job loss in the United States

Special Topic: Globalization

- Recent years: big changes in business services industry—call centers, etc.
- Critics: moving jobs abroad
- Reality: the United States is the world leader in exporting business services—far more is done in the United States and sold abroad than vice versa
- So, on average, the United States benefits from such activity more than it "loses"
 - Of course, some people are disproportionately hurt by globalization

Net Import by Sector



Source: Erica L. Groshen, Bart Hobijn, and Margaret M. McConnell, "U.S. Jobs Gained and Lost through Trade: A Net Measure," Current Issues in Economics and Finance, Volume 11, Number 8, August 2005, Federal Reserve Bank of New York, Chart 4, available at http://www.newyorkfed.org/research/current_issues/ci11-8.pdf

U.S. Jobs Embodied in Net Imports



Source: Erica L. Groshen, Bart Hobijn, and Margaret M. McConnell, "U.S. Jobs Gained and Lost through Trade: A Net Measure," Current Issues in Economics and Finance, Volume 11, Number 8, August 2005, Federal Reserve Bank of New York, Chart 4, available at http://www.newyorkfed.org/research/current_issues/ci11-8.pdf

U.S Jobs in Net Imports as a Share of Payroll Employment



Source: Erica L. Groshen, Bart Hobijn, and Margaret M. McConnell, "U.S. Jobs Gained and Lost through Trade: A Net Measure," Current Issues in Economics and Finance, Volume 11, Number 8, August 2005, Federal Reserve Bank of New York, Chart 5, available at http://www.newyorkfed.org/research/current_issues/ci11-8.pdf