

Lecture 3:

Factors Movements and Open-Economy Accounting

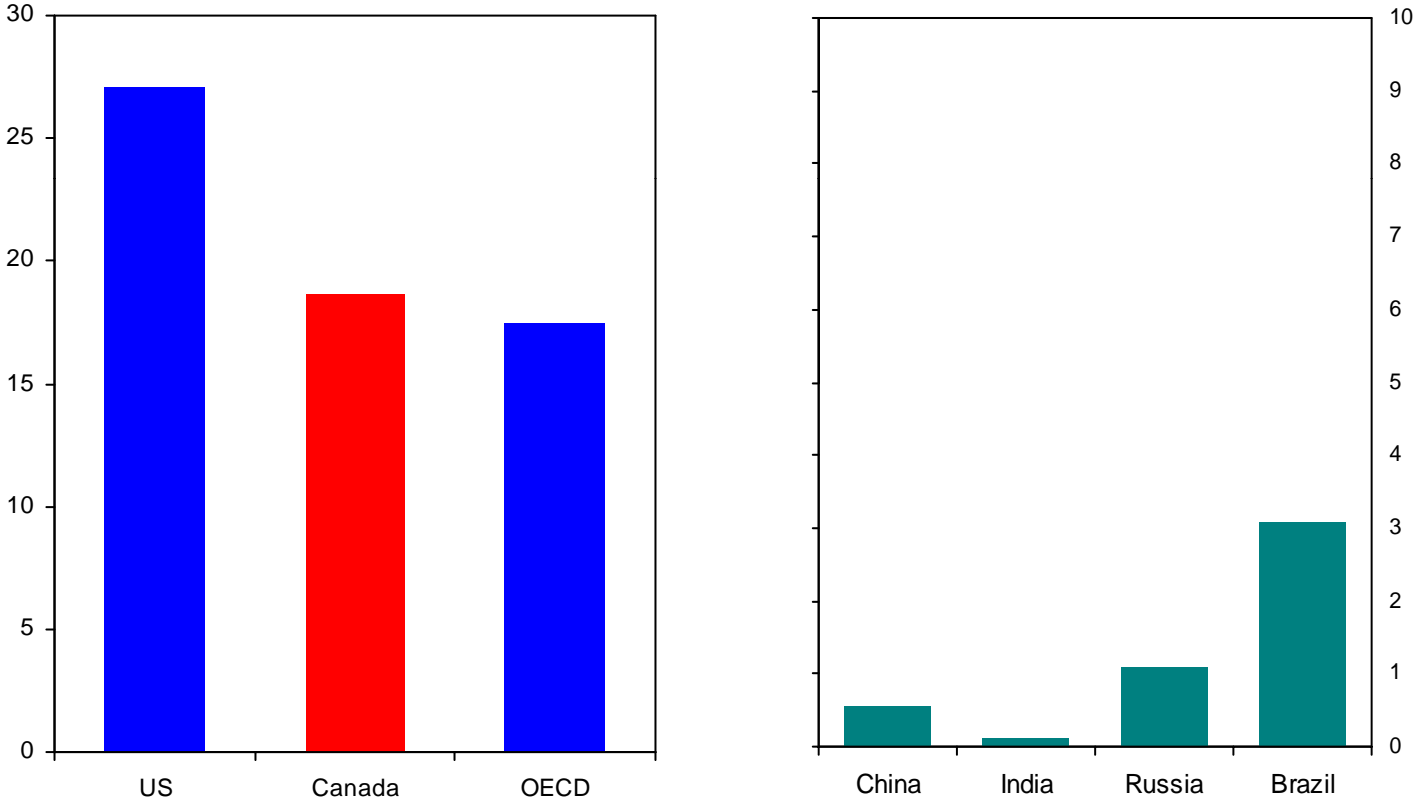
- International Factor Movements
- Open-economy National Income Accounting

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ECO-2113, Fall 2009

International trade in Labour, Capital and FDI

- International economic integration is more than trade in goods and services, It is also:
 - Labour mobility (permanent immigration and temporary labour movements)
 - Capital mobility (borrowing and lending of financial assets across nations)
 - Foreign direct investments (the acquisition of foreign firms or the creation of subsidiaries by multinational corporations)
- Like movements of goods and services, movements of factors of production are politically sensitive and are often restricted (e.g., immigration).
- Indirect trade in factors of production occurs through the trade of goods and services but clearly, this type of trade is currently too limited to equalize factor prices across nations.
- For example, huge differences in labour earnings (wages) across countries persist and provide incentives for labour to migrate, despite trade (e.g., Mexico and the U.S.). We have seen that differences in productivity is the main reason behind these gaps in wages.

Wages in select countries, U.S.\$, 2002



Source: (1) BLS for Canada, U.S., Brazil, China and OECD; (2) Industry Canada compilation for Russia and India based on data from WDI and ILO.

International labour mobility

- To illustrate the effect of labour movements across countries, consider a two-country model (Home and Foreign) producing a single good and using the same technology. The two countries differ only in their land and labour endowments.
- The production possibility curve is illustrated in Chart A (next slide):
 - Constructed with a given stock of land for Home ($T=T_0$) and Foreign ($T^*=L_0^*$)
 - Decreasing returns to labour as the labour/land ratio increases with output.
- Chart B shows the demand for labour in these economies (the MPL curve):
 - The contribution of each unit of labour to output diminishes with employment
 - Surface of the area below the curve (in blue and red) represents total production at full employment.
 - The wage that clears the labour market (in each country) determines the share of production that accrues to labour and what is left for landowners (their rent).

Production possibility and the demand for labour

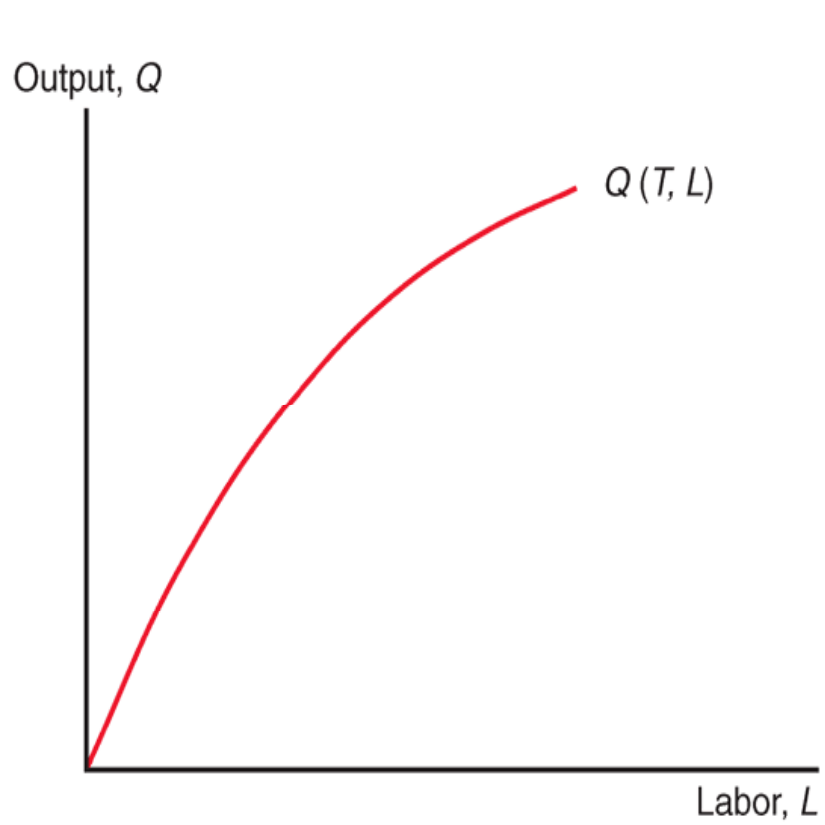


Chart A

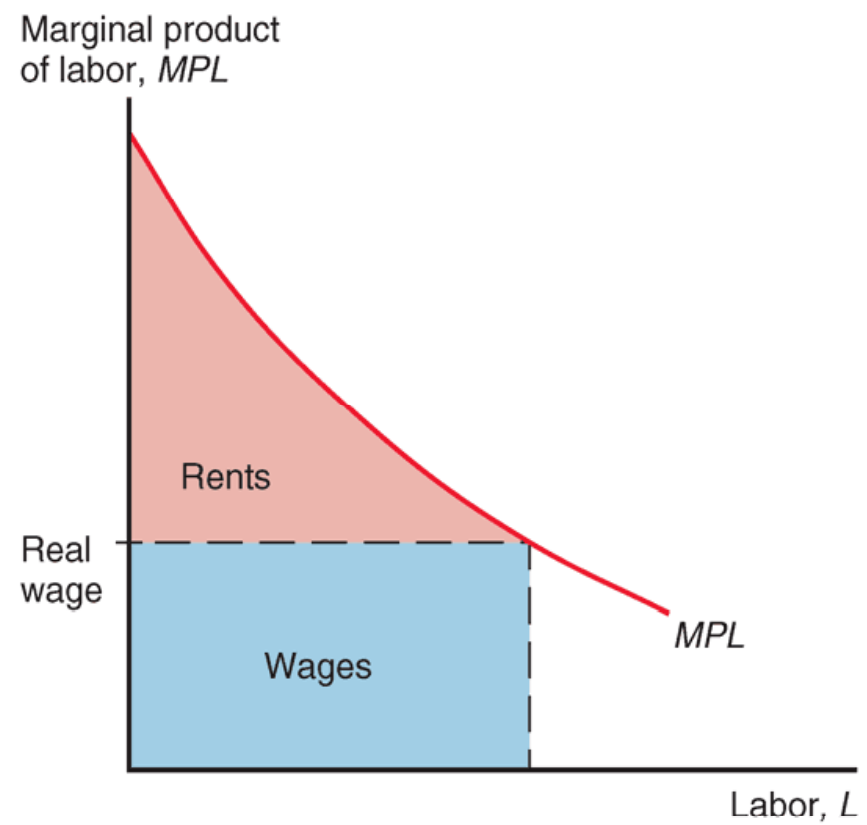
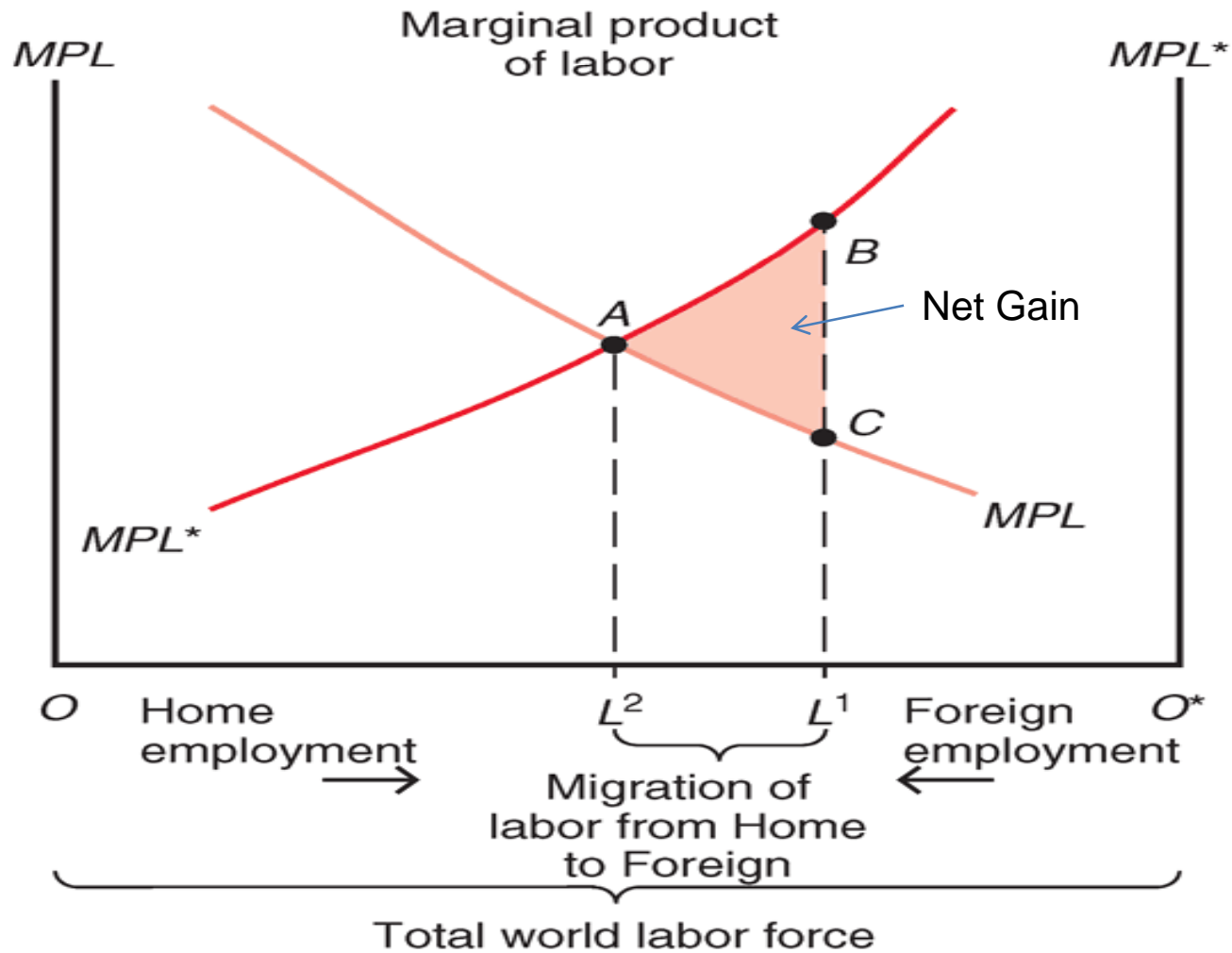


Chart B

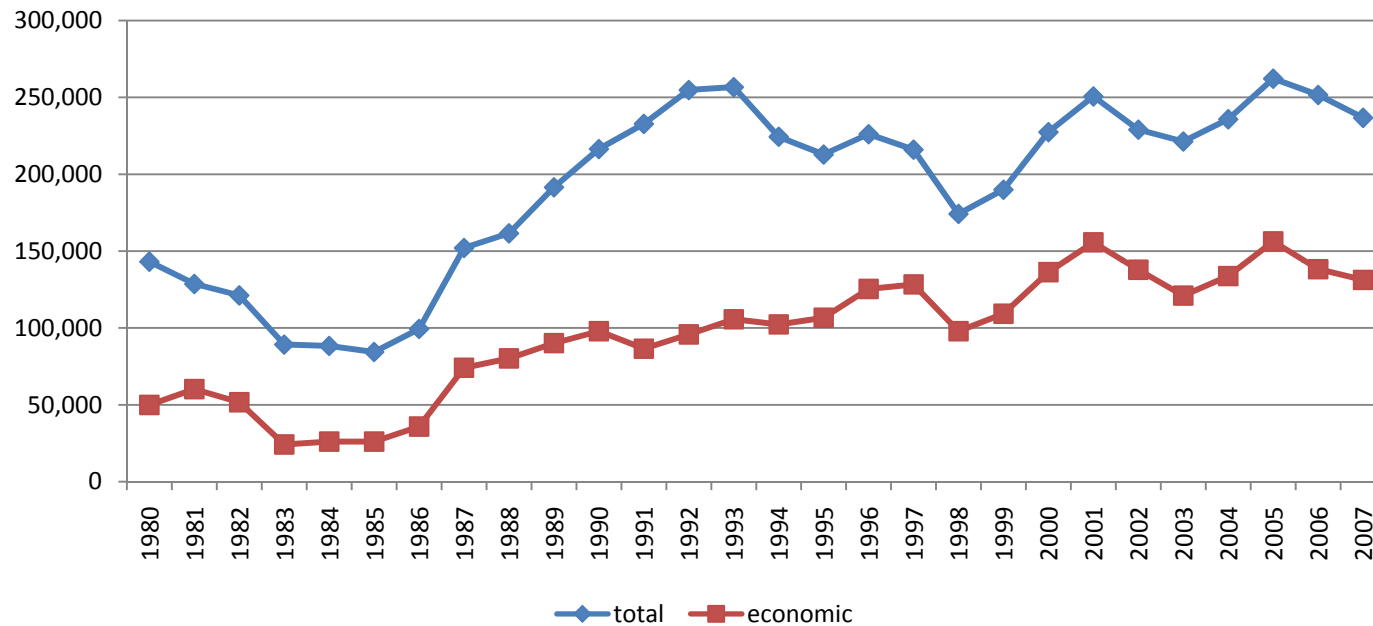
International labour mobility (cont'd)

- Next slide shows the equilibrium situation in autarky in both countries:
 - It is assumed that Home has more labour relative to land than Foreign so that using the same technology, Home produces more output than Foreign at equilibrium.
 - Home employs OL_1 labour and Foreign O^*L_1 (the horizontal length gives the $L+L^*$)
 - Wages at Home at full employment is at point C while at Foreign it is at B.
- With migration:
 - Labour will move from Home to Foreign to benefit from higher wages supported by more land per worker
 - Equilibrium will be reached at a common wage of A with the migration of L_2L_1 from Home to Foreign (a wage rise in Home and a fall in Foreign)
- Gains from migration and income distribution:
 - Net gain from migration in terms of total production is equal to the triangle ABC
 - Wages fall in Foreign, rent rises while the converse is true in Home. Lump sum transfers from landowners to workers in Foreign can make all groups better off.

Labour mobility with factor movement



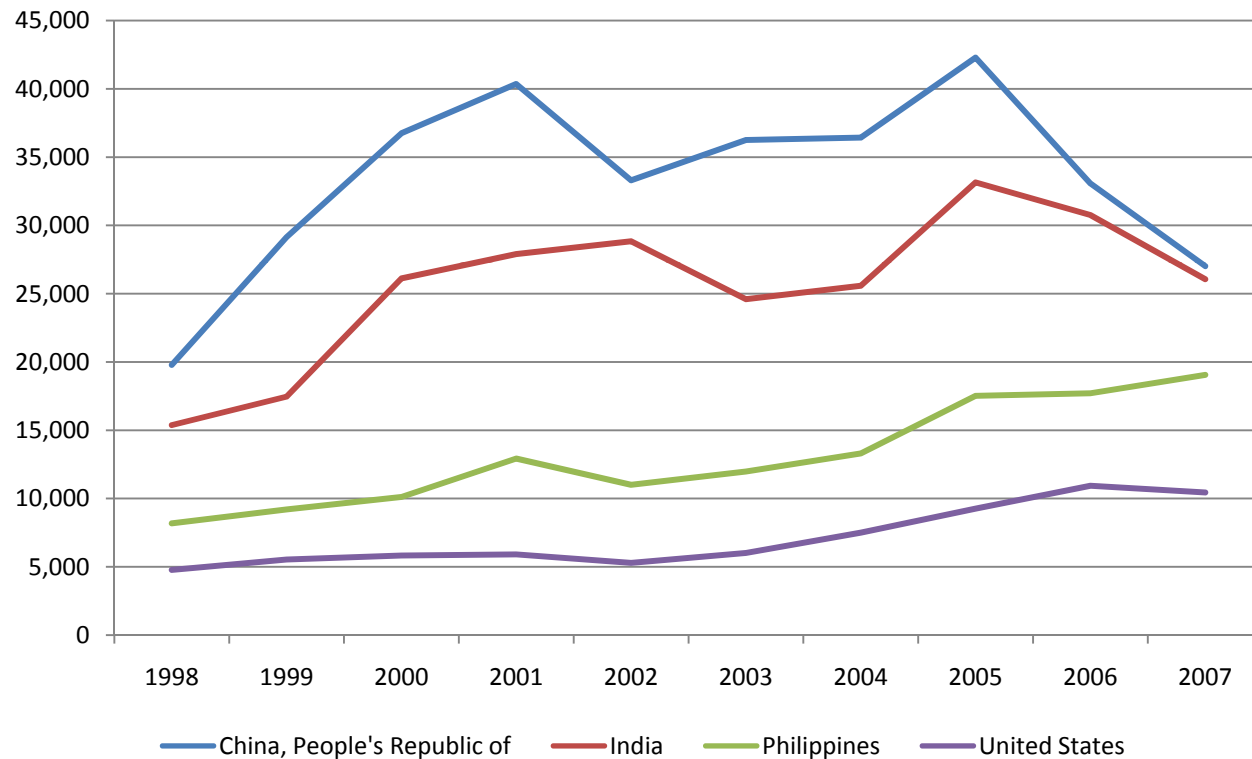
Permanent immigration to Canada: Total and Economic Immigrants*



Source: CIC Digital Library, 2007

* Economic immigrants are selected on the basis of a point system. Other classes include Refugees and Family class

Four top source countries for Canadian permanent immigration



Source: CIC Digital Library, 2007

Educational attainment distribution

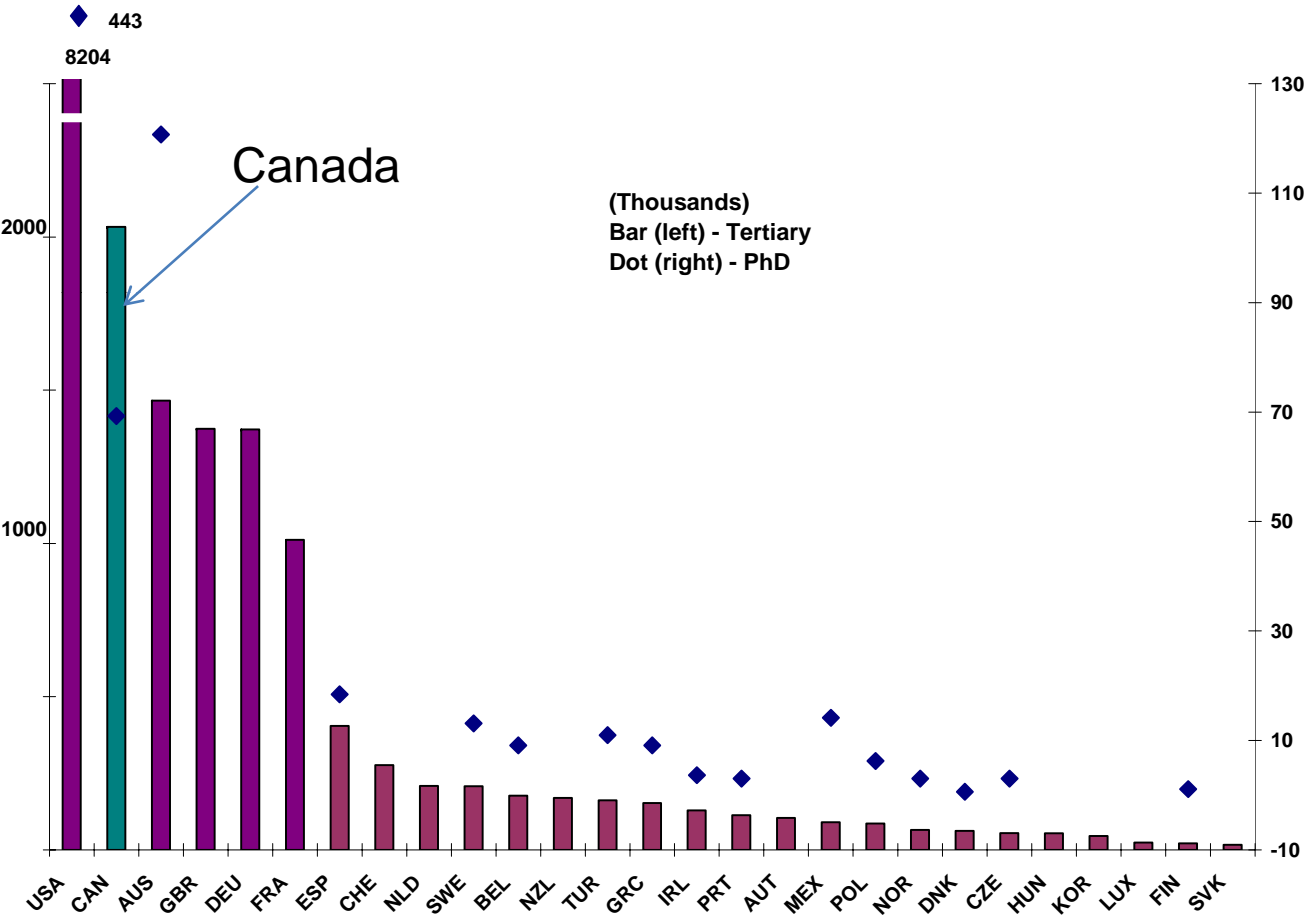
(2000/2001)

Educational attainment distribution of foreign-born and native-born population aged 15 or more, competitor countries, 2000/2001

	Native born (%)		Foreign born (%)		
	ISCED 0/1/2	ISCED 3/4	ISCED 0/1/2	ISCED 3/4	ISCED 5/6
Australia	45.8	15.7	38.6	38.3	18.8
Canada	31.6	36.9	31.5	30.1	31.9
UK	51.2	28.7	20.1	40.6	24.5
US	21.9	51.2	26.9	39.8	34.3
France	45.8	37.4	16.9	54.8	27.2
Germany	23.7	56.8	19.5	43.7	40.8

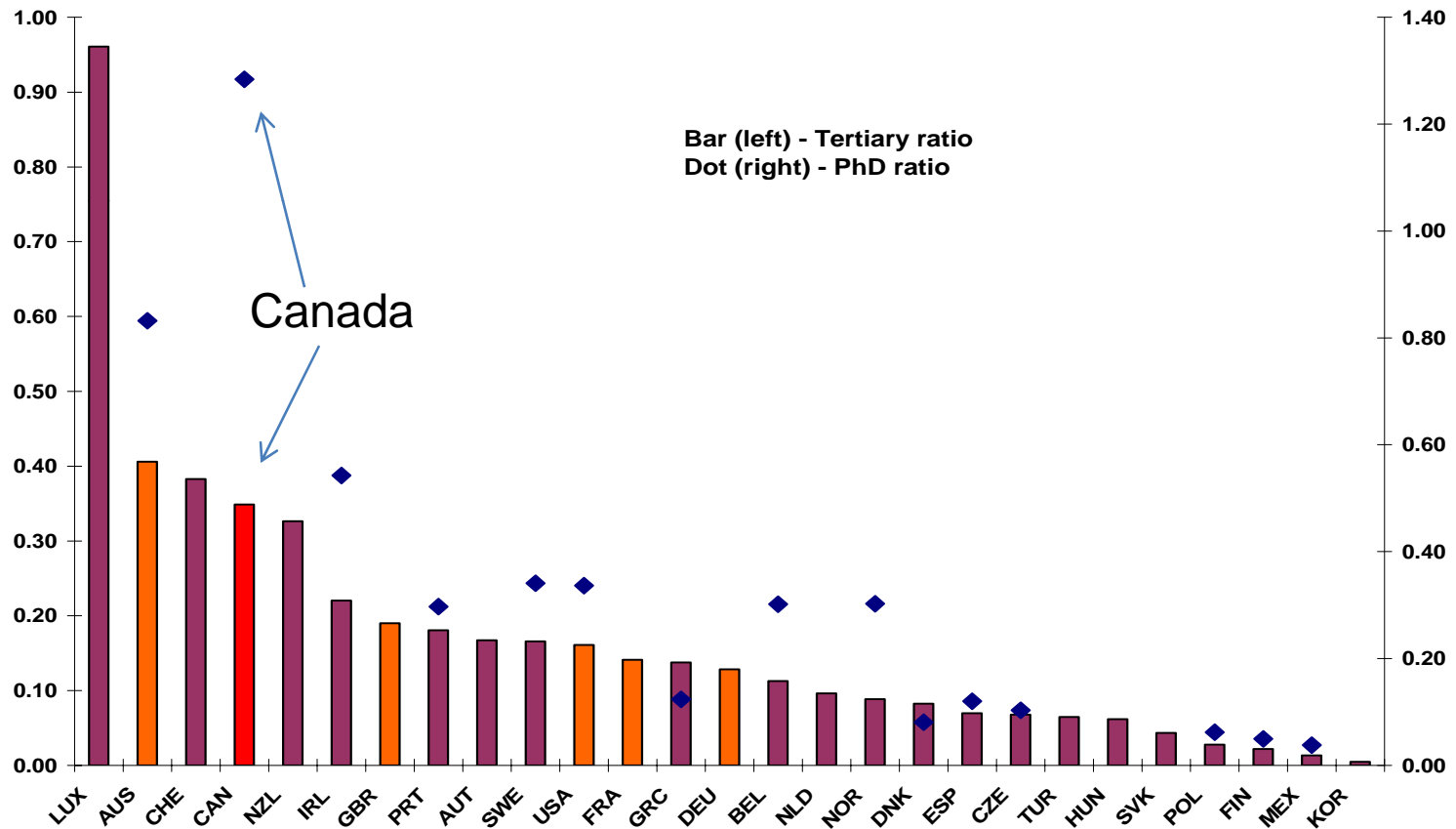
Notes: ISCED 0/1/2 corresponds to an education attainment of less than upper secondary level, ISCED 3/4 is for upper secondary and post-secondary non-tertiary education, ISCED 5/6 is tertiary education (colleges and university starting from Bachelor's degree). Source: OECD (2004).

Number of foreign-born population aged 15+ with tertiary education in OECD (2000-2001)



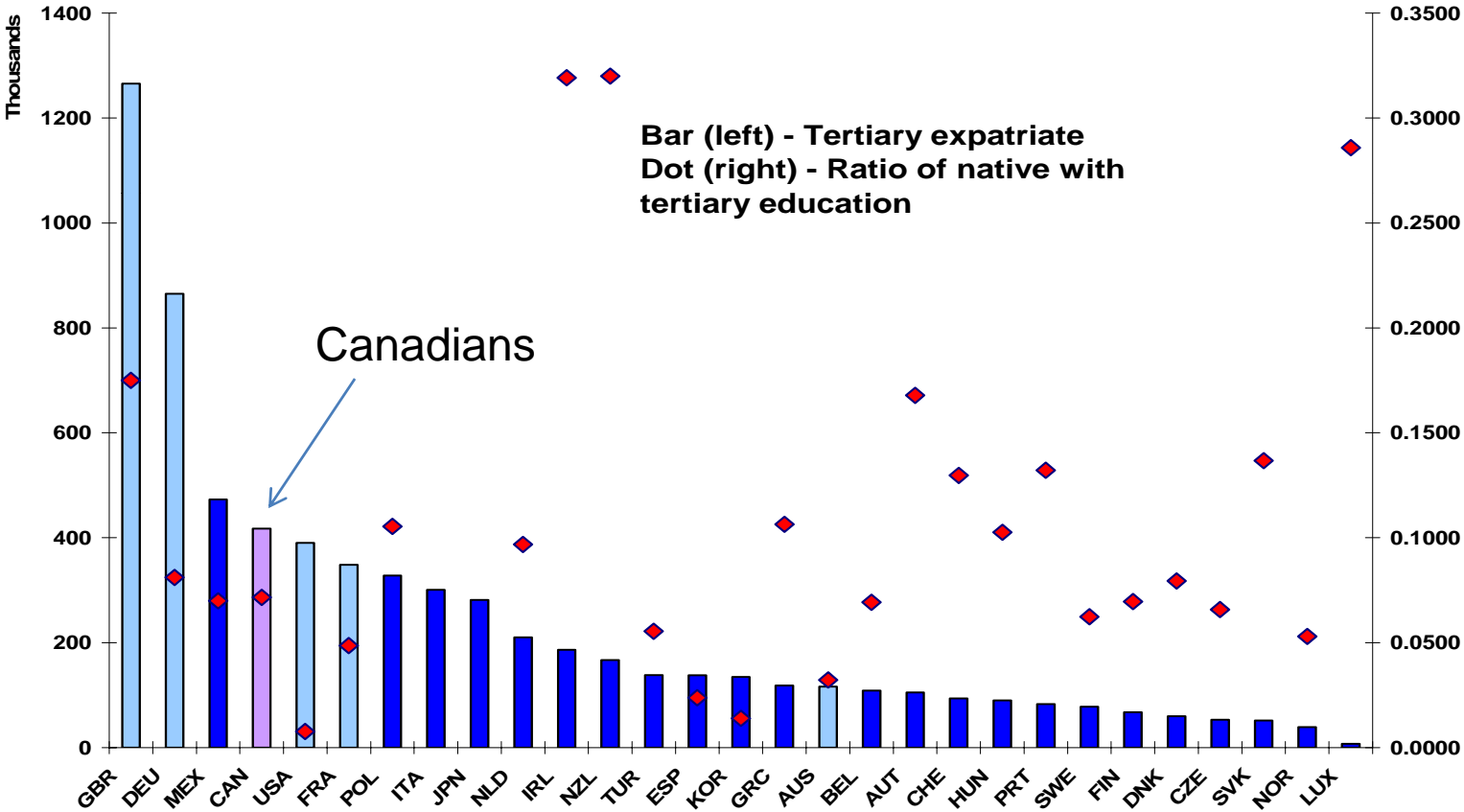
Source: OECD-DELSA/ELSA(2004)14

Ratio of foreign-born to native population aged 15+ with tertiary education, OECD countries (2000-2001)



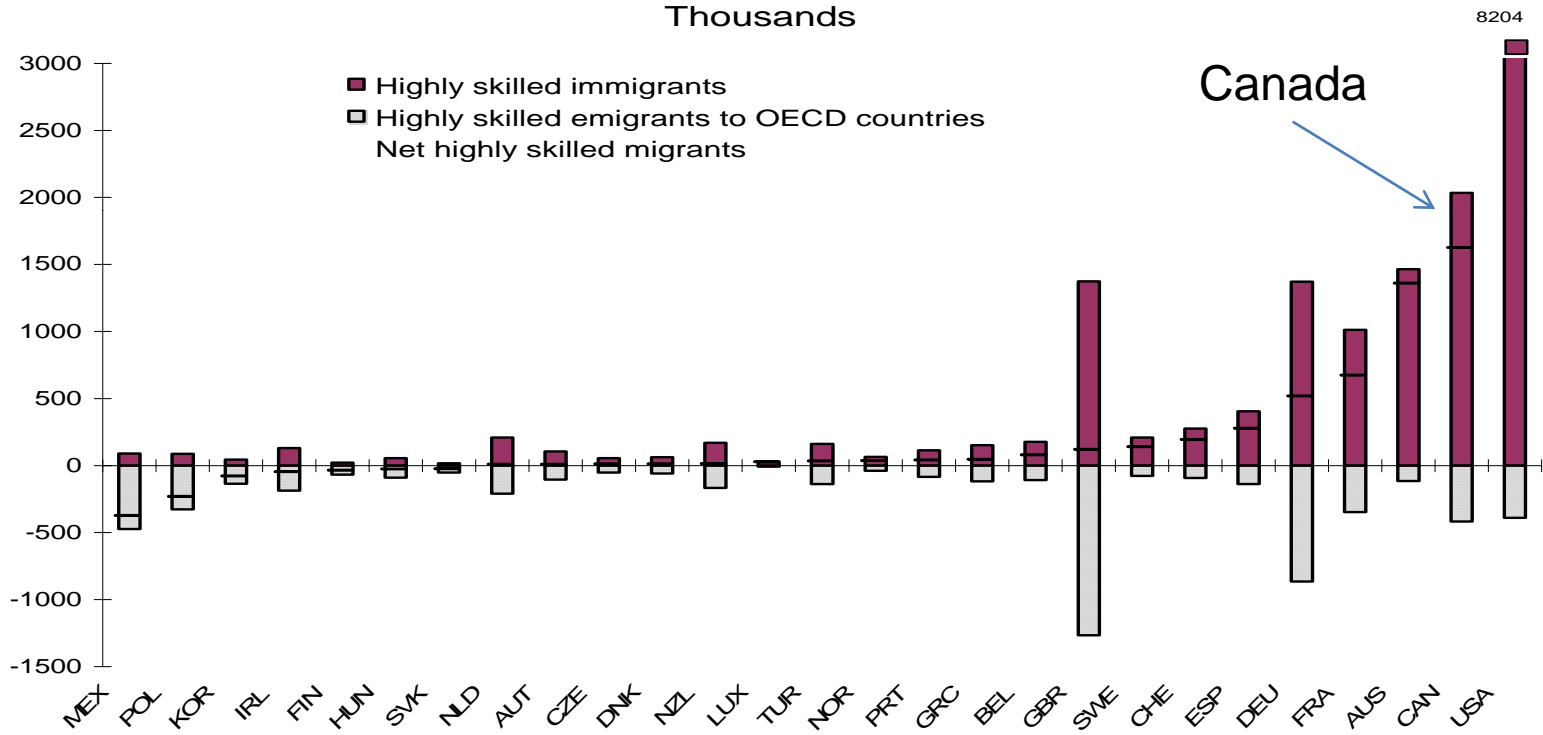
Source: Calculated from data given in OECD (2004)

Expatriates to OECD countries aged 15+ with tertiary education, OECD (2000-2001)



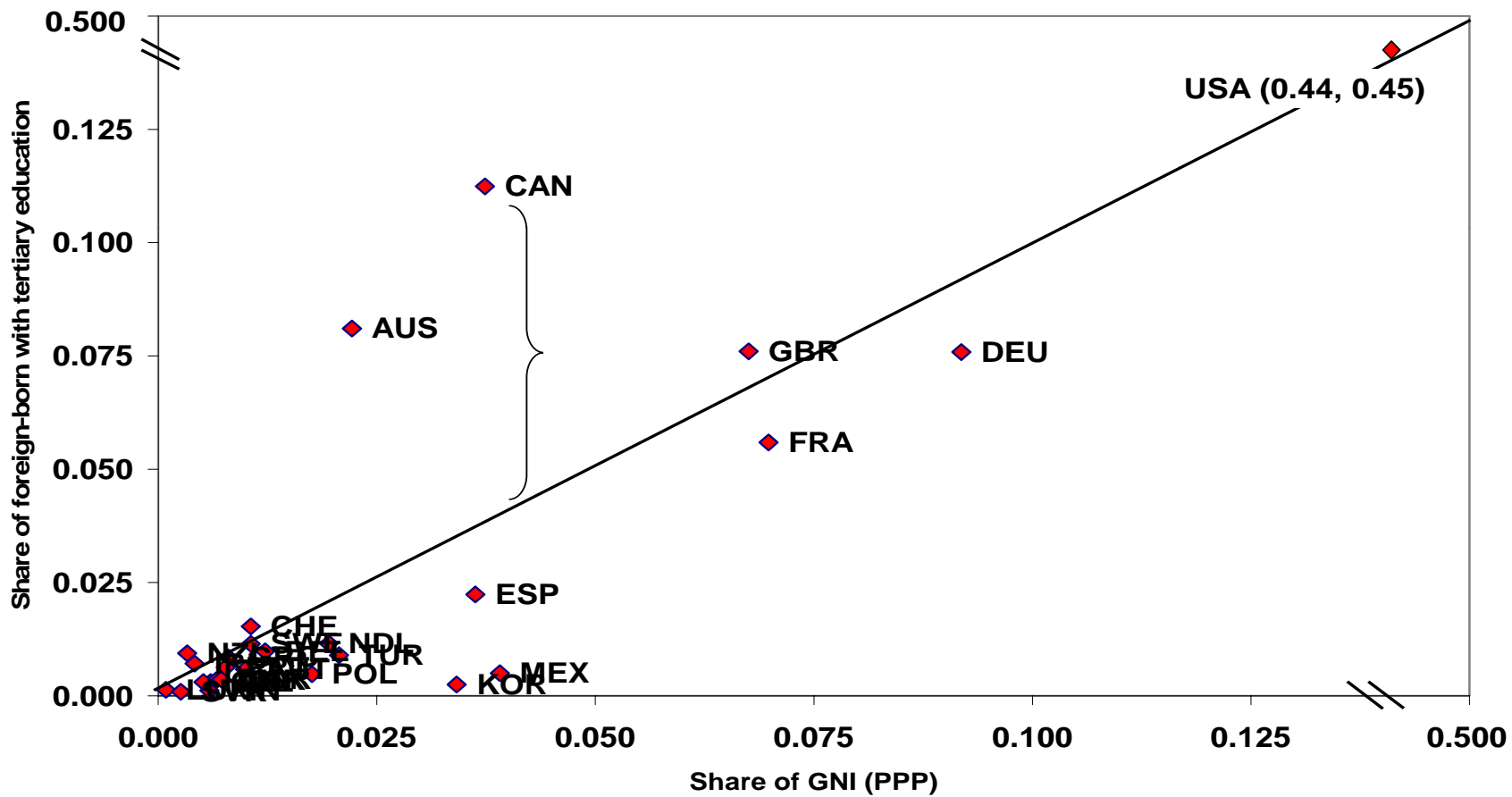
Source: OECD 2004

Net gain (stocks of foreign-born minus expatriates) aged 15+ with tertiary education, OECD (2000-2001)



Note: Data for Korean emigrants are partial as several OECD countries do not systematically distinguish South and North Korea.
Source: see Annex 1, Secretariat calculations.

Stocks of foreign-born aged 15+ with tertiary education relative to economic weight, OECD (2000-2001)

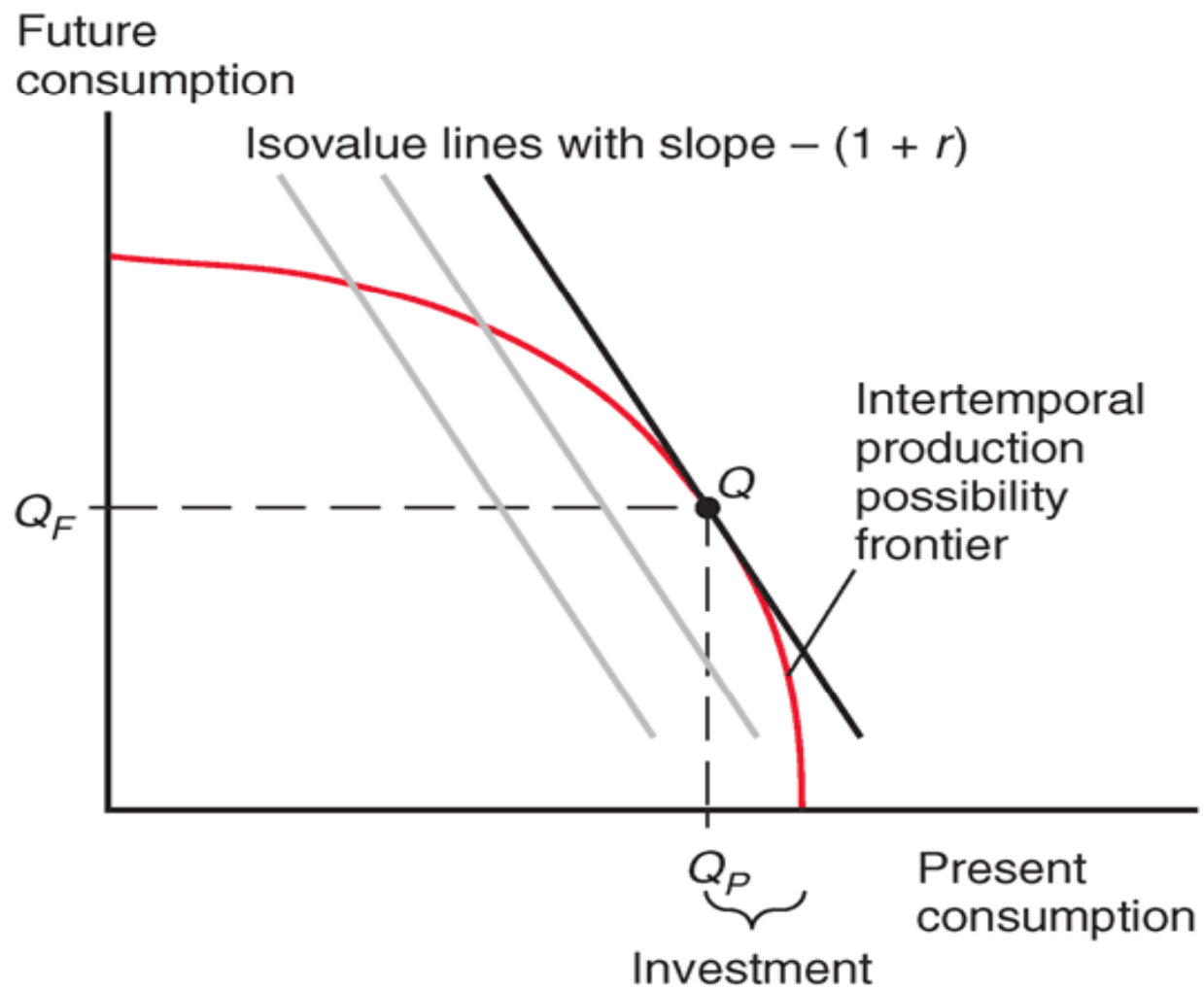


Source: OECD 2004

International borrowing and lending

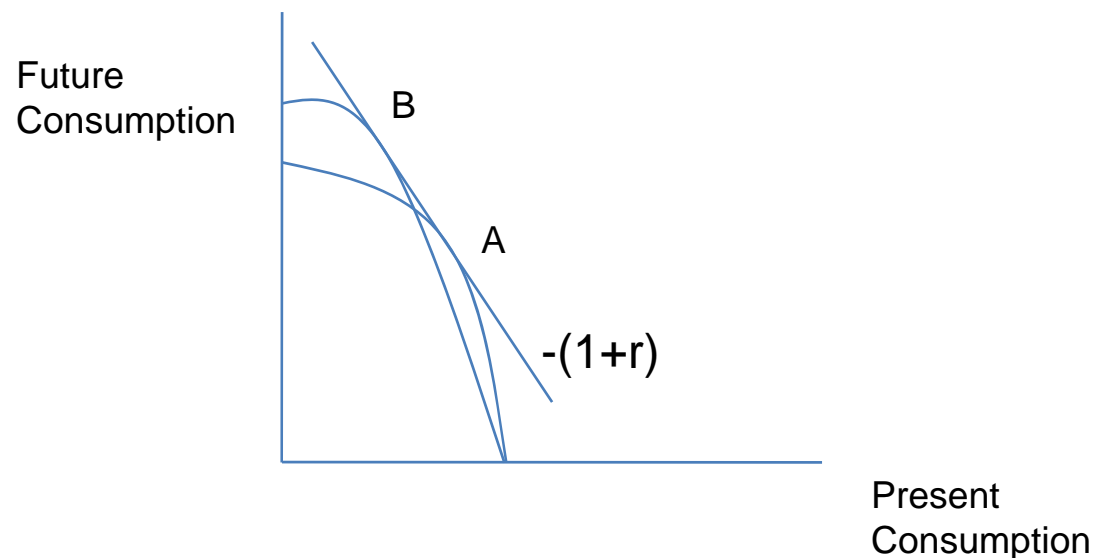
- International capital mobility refers to mobility of financial assets, or capital, across countries.
 - Financial capital is a source of funds used to build physical capital (ex., factories and equipment).
- International capital mobility can be interpreted as intertemporal trade:
 - trade of goods consumed today by borrowers in return for goods consumed in the future by lenders.
- For any economy, there is a trade-off (opportunity cost) between consuming today and saving for the future: resources can either be consumed or saved.
 - To save and invest more today typically means that economies need to consume less today.
- We represent this concept by drawing a special kind of production possibility frontier, an intertemporal production possibility frontier:
 - $C_F = Q_F = (Q_P - C_P)(1+r)$,
 - A country has to give up $(1+r)$ of future consumption for each unit of present consumption (slope of isovalue of present consumption line). Opportunity cost of future consumption in terms of present consumption is $(1/(1+r))$.

Consumption and investment in autarky



Trade-offs between the present and the future

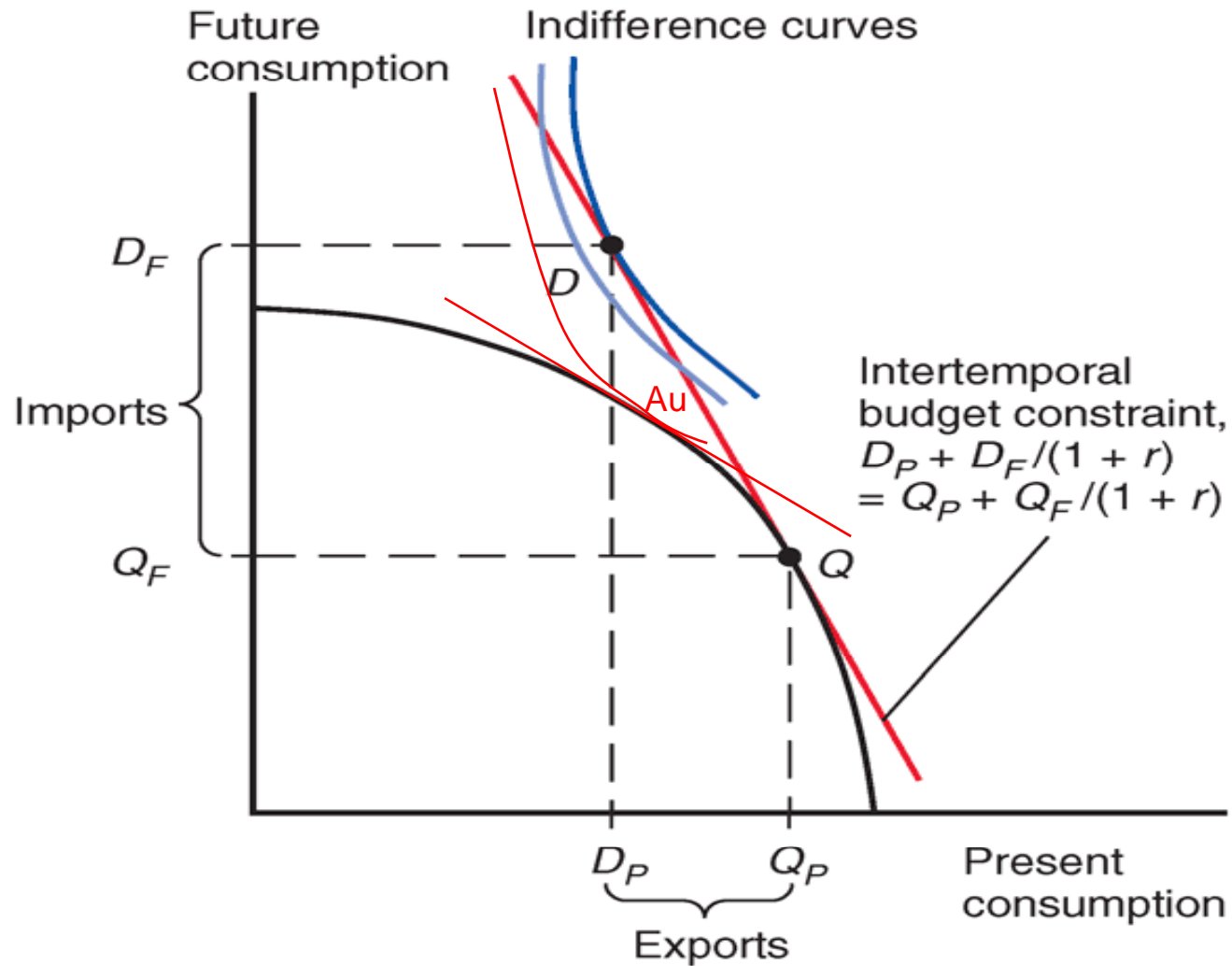
- Figure illustrates how two countries, one with a high investment opportunities (B) and one with less (A) allocate their production between present and future consumption.
- In autarky, the real interest rate will depend on the demand and supply of funds on the domestic market. An increase in the rate of interest reduces the present value of future production and therefore increases present consumption (reduces investment through higher borrowing costs).



Capital mobility

- Countries, much like individuals, must balance their consumption with their production over the long run (expressed in terms of present values):
 - $D_P + D_F/(1+r) = Q_P + Q_F/(1+r)$; the country's budget constraint over a two-period life
- With capital mobility, countries can trade present and future consumption:
 - Home has limited investment opportunities, presumably a low domestic interest rate, produces and consumes at A_u in autarky. Mobility of capital rises the returns on savings (higher opportunities in Foreign means a higher world r), and brings production at Q and consumption at D .
- Next slide illustrates the situation of a lending country:
 - Overall supply and demand of funds determine the international interest rate
 - Q maximises the present value of production at the equilibrium interest rate
 - D maximises the welfare of its population
 - Relative to autarky, Home invest less at home and exports its capital to Foreign
 - Future consumption is higher as Foreign reimburses the capital and pays interest
 - Gains from trade is represented by the shift up of the indifference curve relative to autarky.

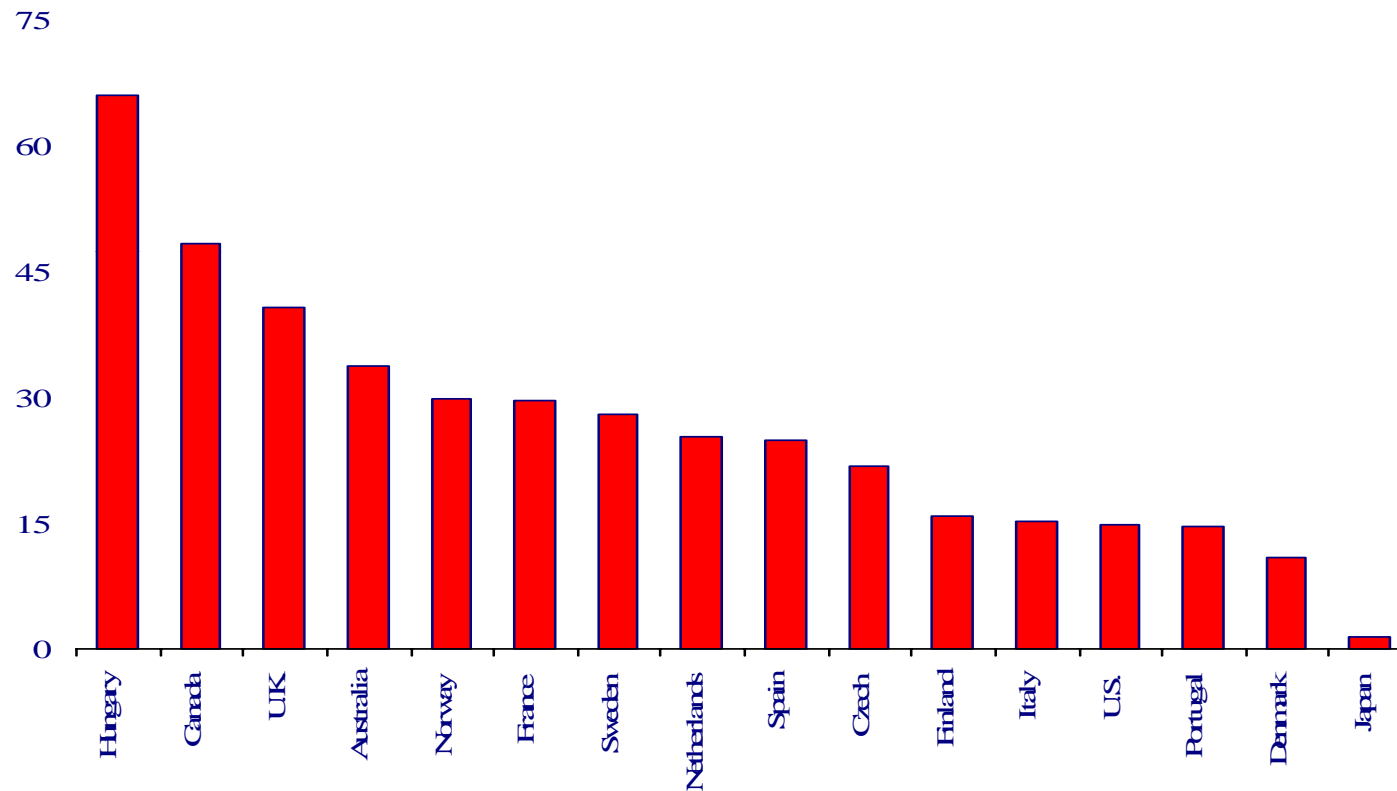
International capital movement: A lending country



Foreign direct investment (FDI)

- **Foreign direct investment**, a specific form of capital flows, refers to investment in which a firm in one country acquires *direct control or owns* a subsidiary in another country. Contrary to direct investment, portfolio investors have no significant influence on the operation or management of the enterprises in which they invest.
- If a foreign company invests in at least 10% of the stock in a subsidiary (or a foreign affiliate), the two firms are typically classified as a **multinational corporation**.
 - 10% or more of ownership in stock is deemed to be sufficient for direct control of business operations.
- Firms operating in Canada are considered **foreign-controlled** if the foreign owners have the ability to *effectively* control the board of directors of the corporations. Most of the time but not always, this means that the owner(s) must have majority voting (50% or more) ownership.

Value added share of foreign-owned affiliates in Manufacturing for selected OECD countries, 1999**

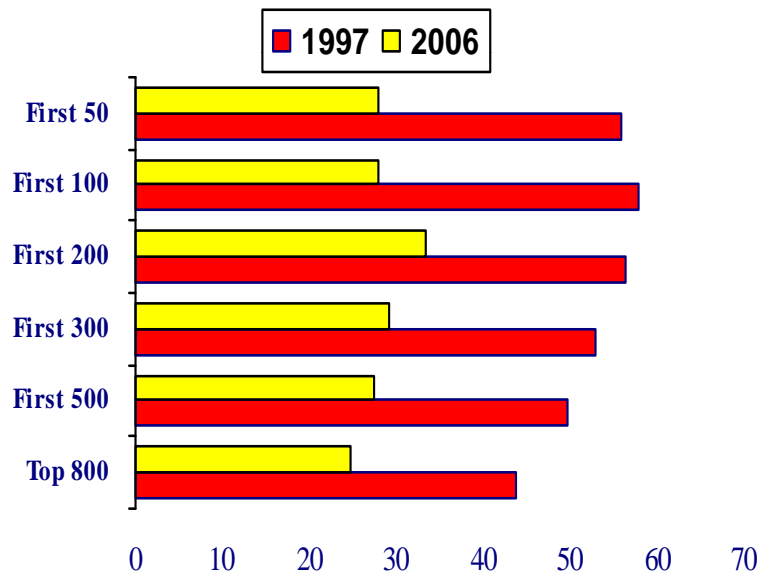


Sources: For Canada, Baldwin, John R. and Gellatly, Guy, "Global Links: Long-Term Trends in Foreign Investment and Foreign Control in Canada, 1960 to 2000"; for other countries, Chiara, Criscuolo, "The Contributions of Foreign Affiliates to Productivity Growth: Evidence from OECD Countries," OECD, Working Paper, 2005.

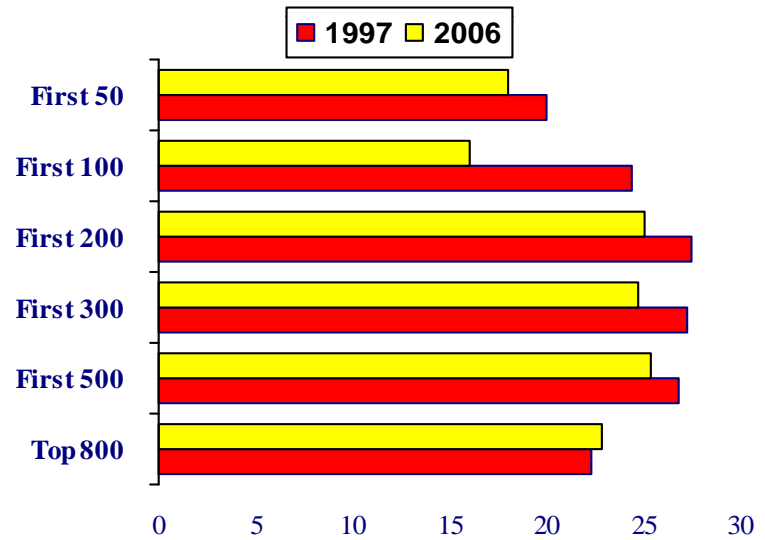
** For Italy, 2001 and for Australia, 2000.

Evolution of foreign ownership in Canada

Percentage of Canada's Largest Firms with 10% or More Voting Equity Held by Foreigners



Percentage of Canada's Largest Firms with 100% Voting Equity Held by Foreigners

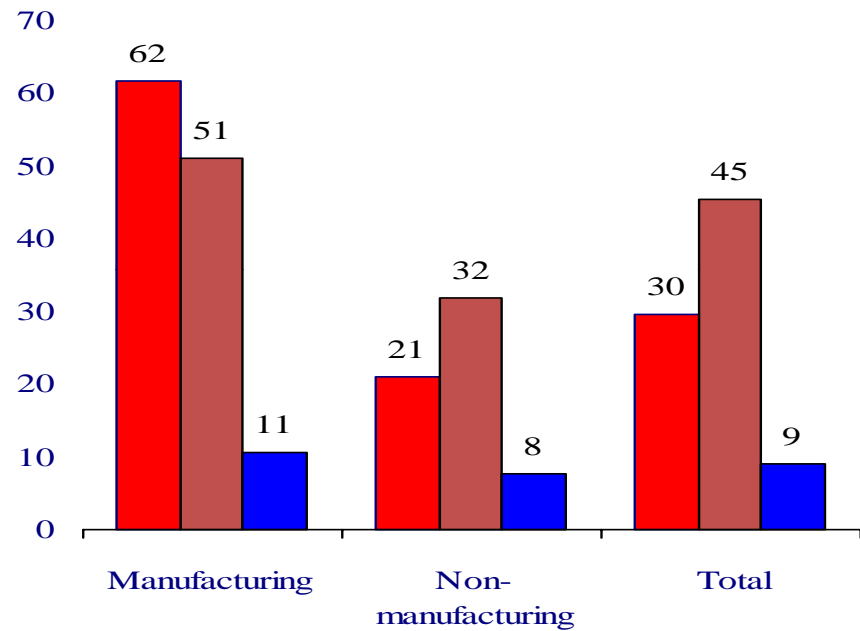


Source: Financial Post FP500

Benefits and Costs of Inward FDI

- The overall benefits of FDI are well documented. Given appropriate host-country policies and a basic level of absorptive capacity, many studies show that FDI triggers higher productivity, assists in innovation and technology transfer, contributes to international trade integration, helps create a more competitive business environment and enhances enterprise development.
- Even after controlling for firm and industry characteristics, the economic performances of foreign-controlled firms tend to be superior to domestic-controlled ones.
- These benefits far outweigh some of the short-term adjustment costs of foreign-ownership.
- The stronger economic performance of foreign-controlled firms is often associated to the fact that the foreign-owned corporation is a multinational enterprise. The nationality of the owner, a foreign company or a national company, does not seem to matter much. Most of the gap in performance found in the literature between foreign-controlled and domestic-controlled firms could be attributed to the fact that domestic-controlled firms tend to be national companies (smaller and less efficiently managed than multinationals).

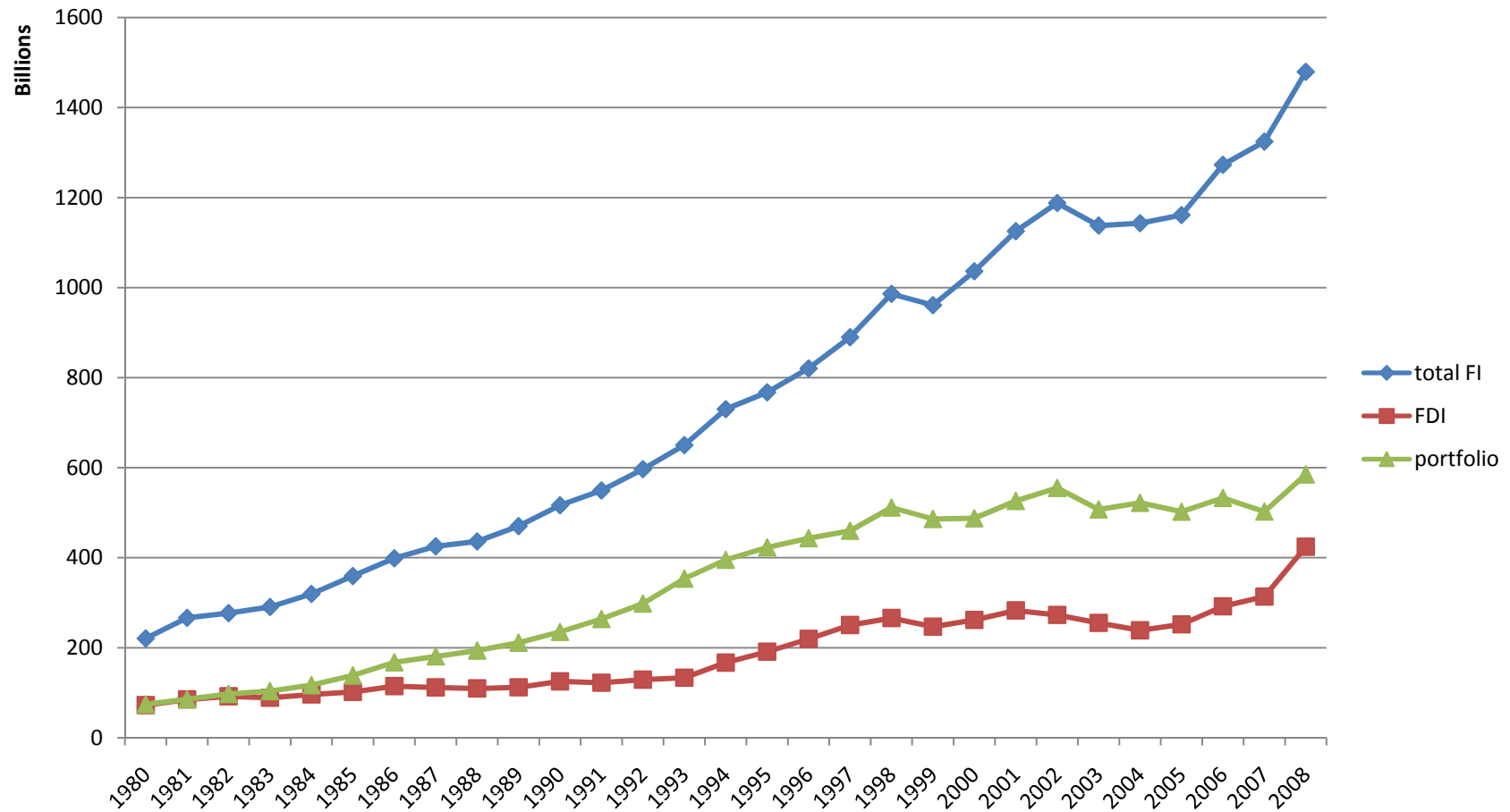
Foreign-controlled MNEs and trade in Canada (%)



Source: Byrd Craig, "Foreign Control of Canada's Merchandise Exports, 2002", Statistics Canada, and Statistics Canada, Corporations Returns Act.

Foreign Annual Investments in Canada

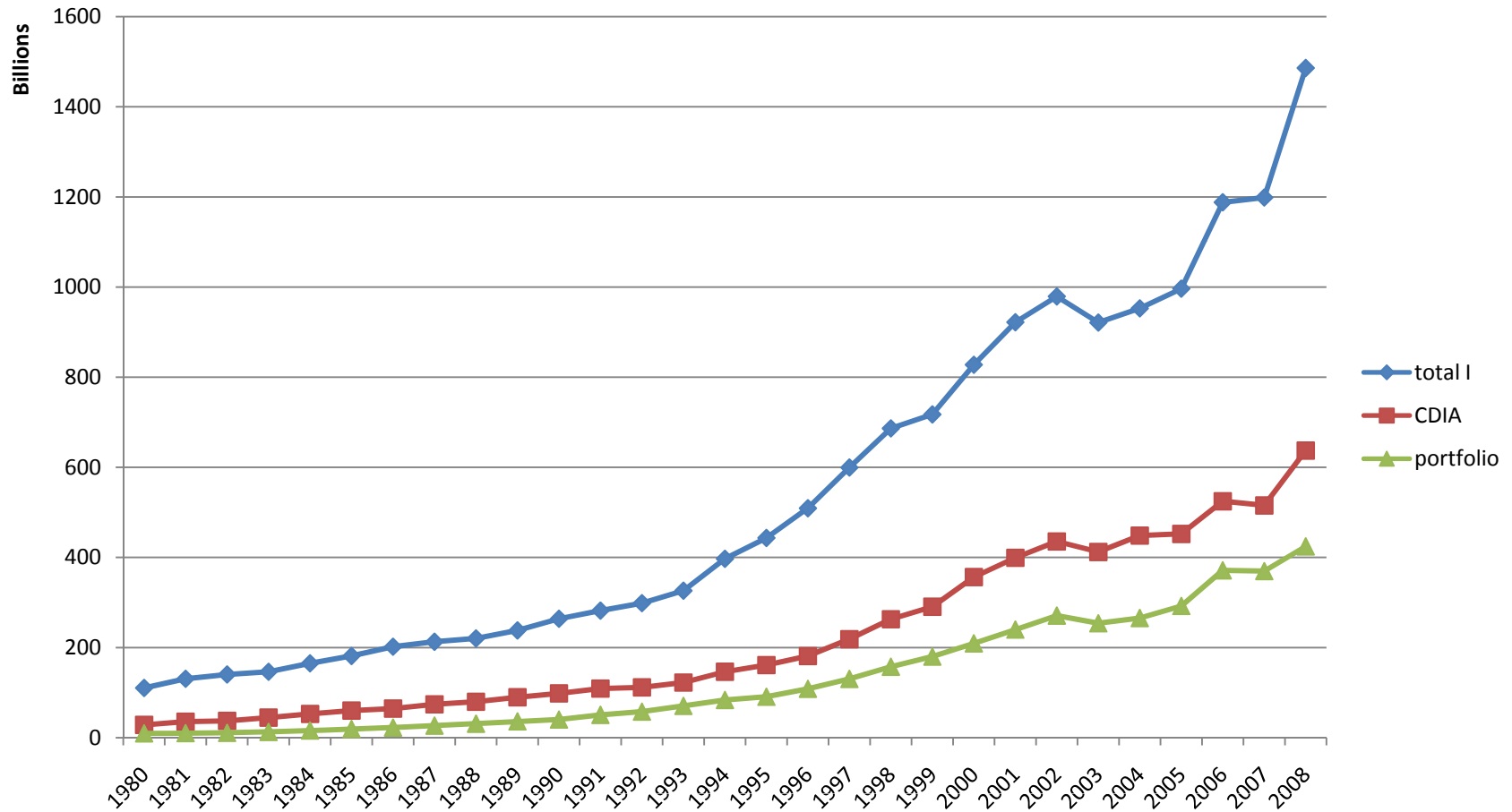
(1980-2008, billions)



Source: Cansim. Other components include loans and deposits, official international reserves and other asset movements.

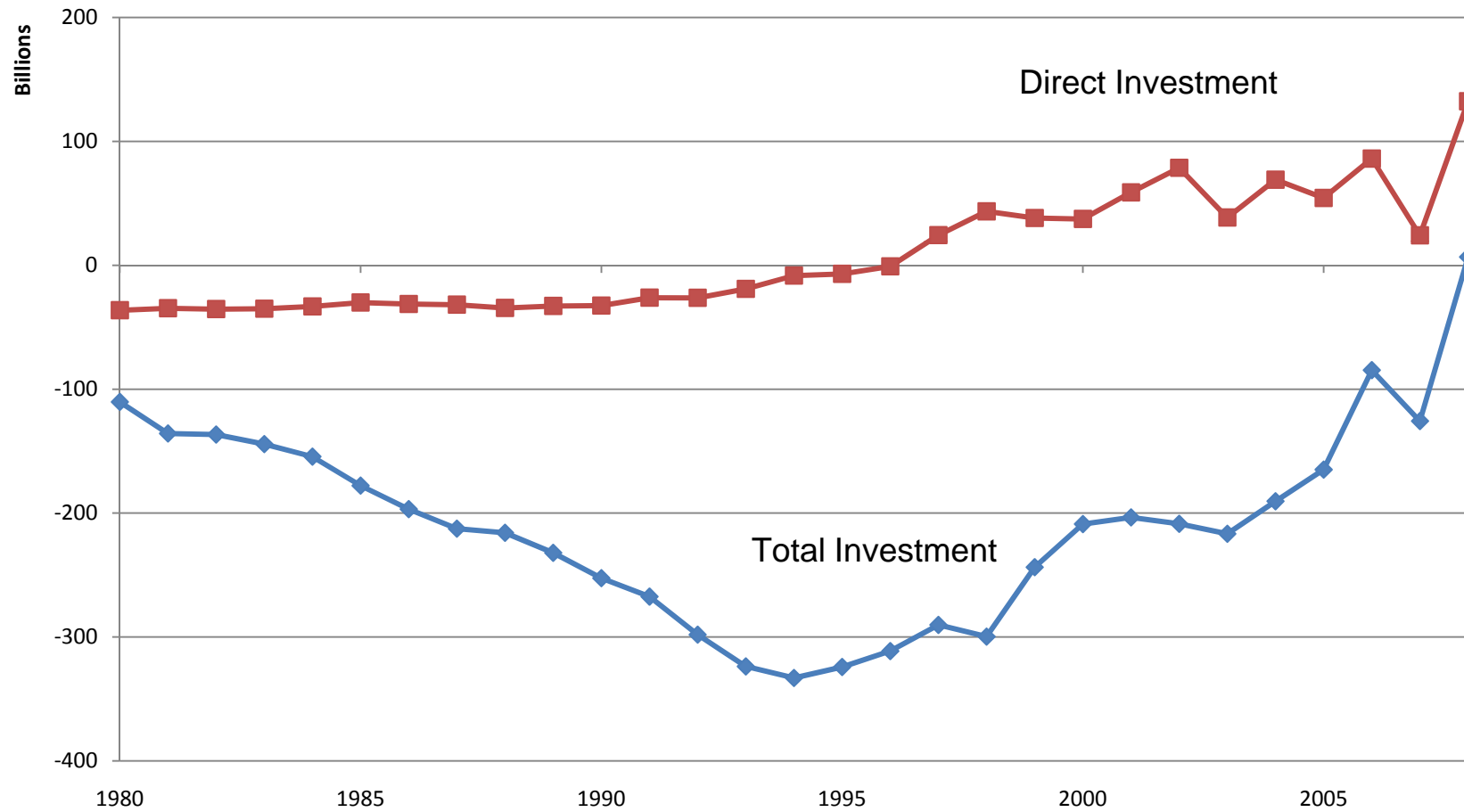
Annual Canadian International Investments

(1980-2008, billions)



Source: Cansim

Net Investment Balance: Canadian Investments minus Foreign Investments (1980-2008, billions)



Source: Cansim

Canada's FDI Position with the USA (1994-2008)

Foreign direct investment position with the United States

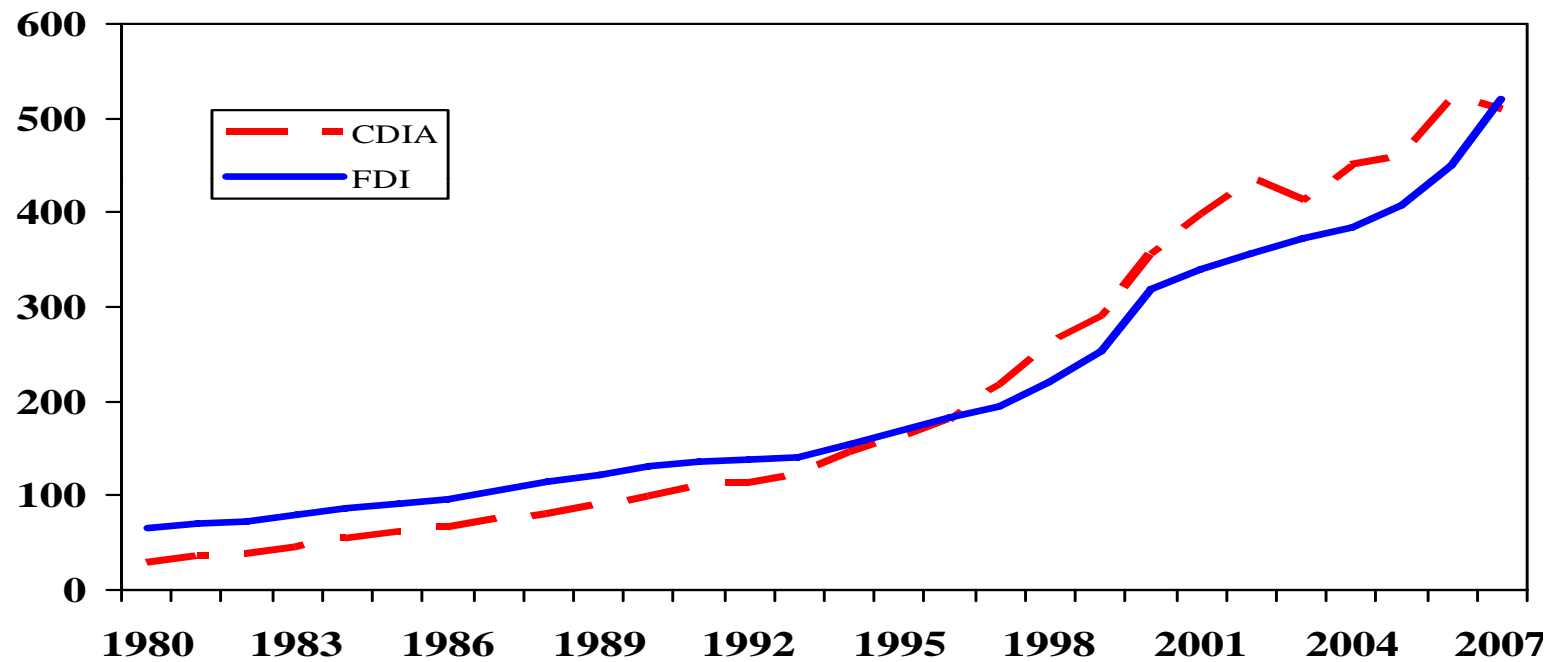
\$ billions



<http://www.statcan.gc.ca/daily-quotidien/090408/dq090408a-eng.htm>

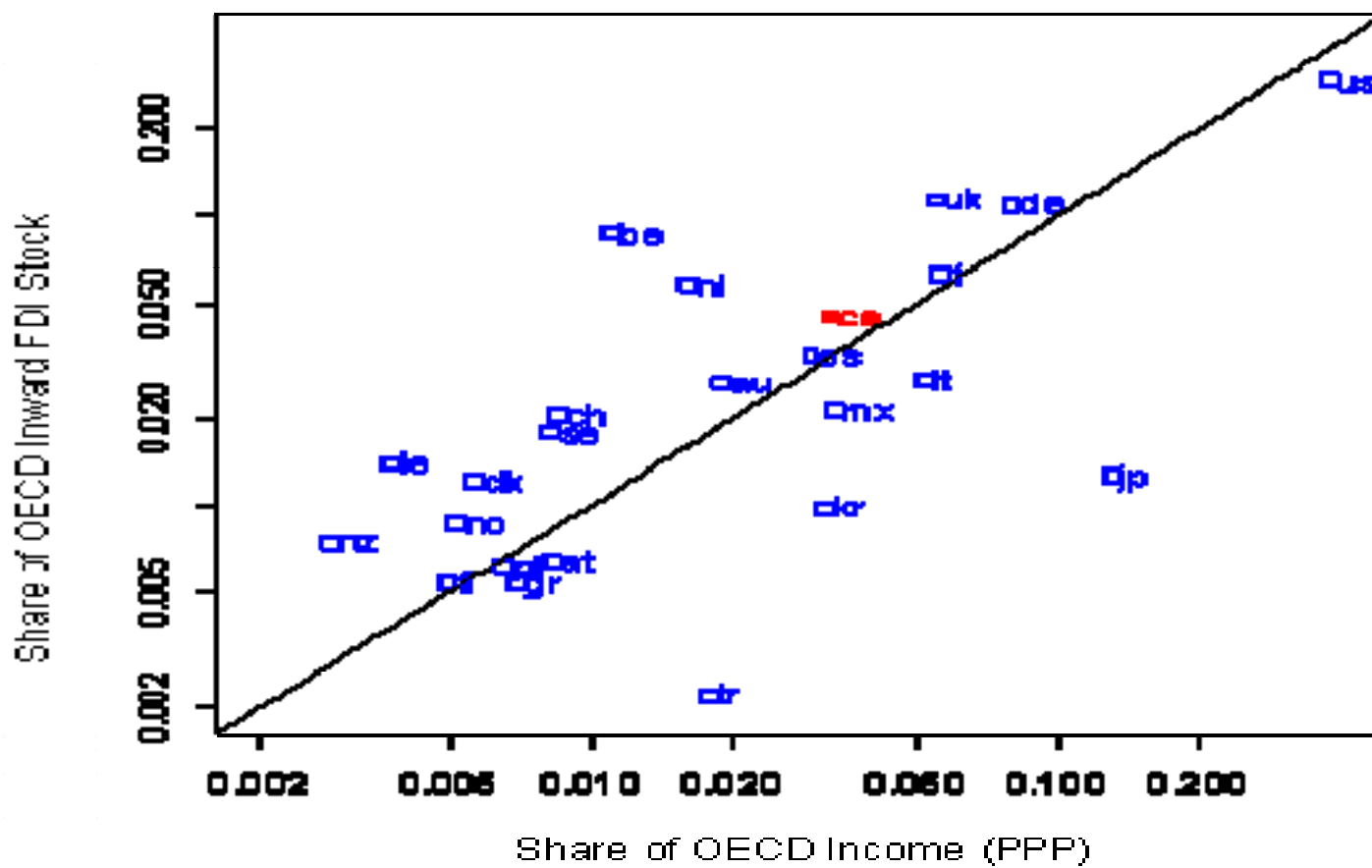
Stocks of Canadian direct investment abroad and foreign direct investment in Canada

(1980-2007, billions\$)



Source: Statistics Canada

The Distribution of Inward FDI Stocks in the OECD (2000)



Source: Head and Ries (2003)

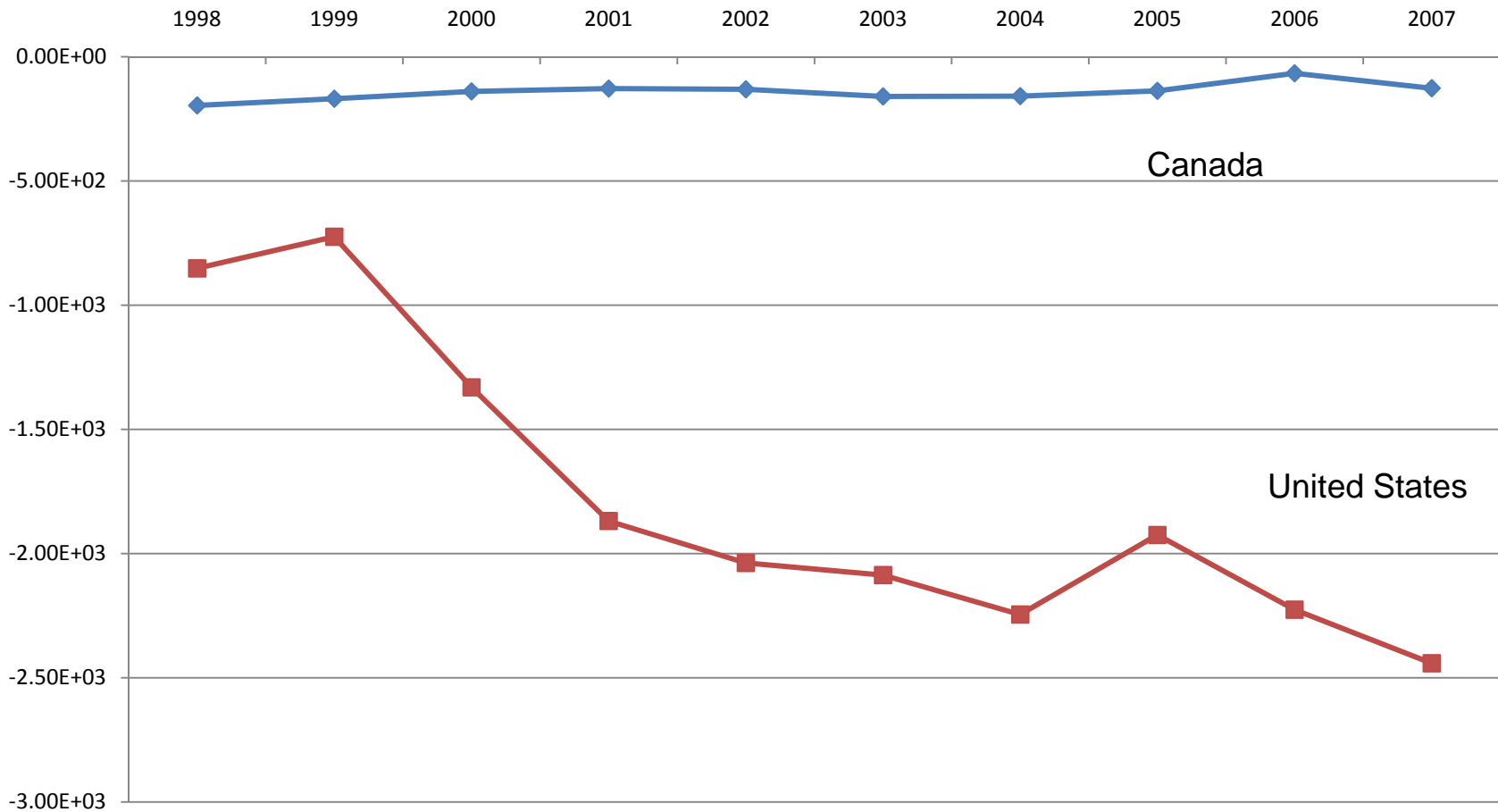
Expenditure and production in an open economy

- National income = value of production
 - $Y = C + I + G + EX - IM$
 - $Y = C + I + G + CA$
 - $CA = EX - IM = Y - (C + I + G)$
- When production > domestic expenditure, exports > imports: external current account > 0 and trade balance > 0
 - when a country exports more than it imports, it earns more income from exports than it spends on imports
 - net foreign wealth is increasing (claims on foreign assets is increasing, or the Net International Investment Position is improving)
- When production < domestic expenditure, exports < imports: current account < 0 and trade balance < 0
 - when a country exports less than it imports, it earns less income from exports than it spends on imports
 - net foreign wealth is decreasing (claims on Canadian assets by foreigners is increasing or the Net International Investment Position is deteriorating)

Savings and investment in an open economy

- $CA = Y - (C + I + G)$
 - $CA = (Y - C - G) - I$
 - $CA = S - I$
- Current account = national savings – investment
 - A country that has low national savings relative to investment must import more than it exports or run a current account deficit (or see a deterioration of its Net International Investment Position)
 - Eventually, the current account position must be reversed ($EX > IM$) to pay back foreign asset holders. Large fluctuations in exchange rates may be needed to achieve this rebalancing (Lecture 4).
 - Low national savings may result from low savings from households or firms that do not save much of the income they have or because the government current balance is in deficit. Stimulating domestic expenditures through large government deficits may encourage excess imports over exports and an increase in foreign debt.

Net International Investment Position: US and Canada (1998-2007, billions US\$)



Source: IMF-IFS

Net International Investment Position: Selected Countries

Selected Countries Net International Investment Position (billions US\$)		
	2004	2007
China Mainland	293	1162
Hong Kong	425	484
Japan	1783	2195
USA	-2245	-2442

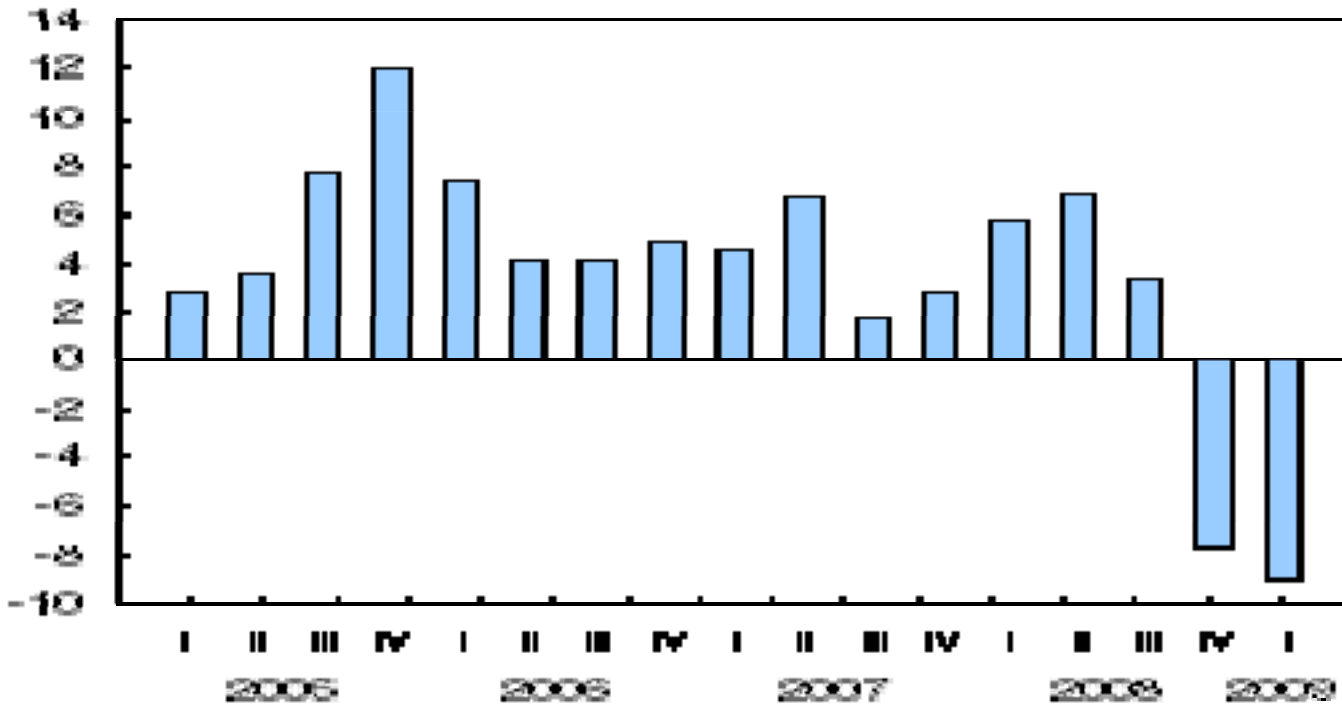
Source: IMF-IFS

Canada's Current Account Balance (2005Q1-2009Q1)

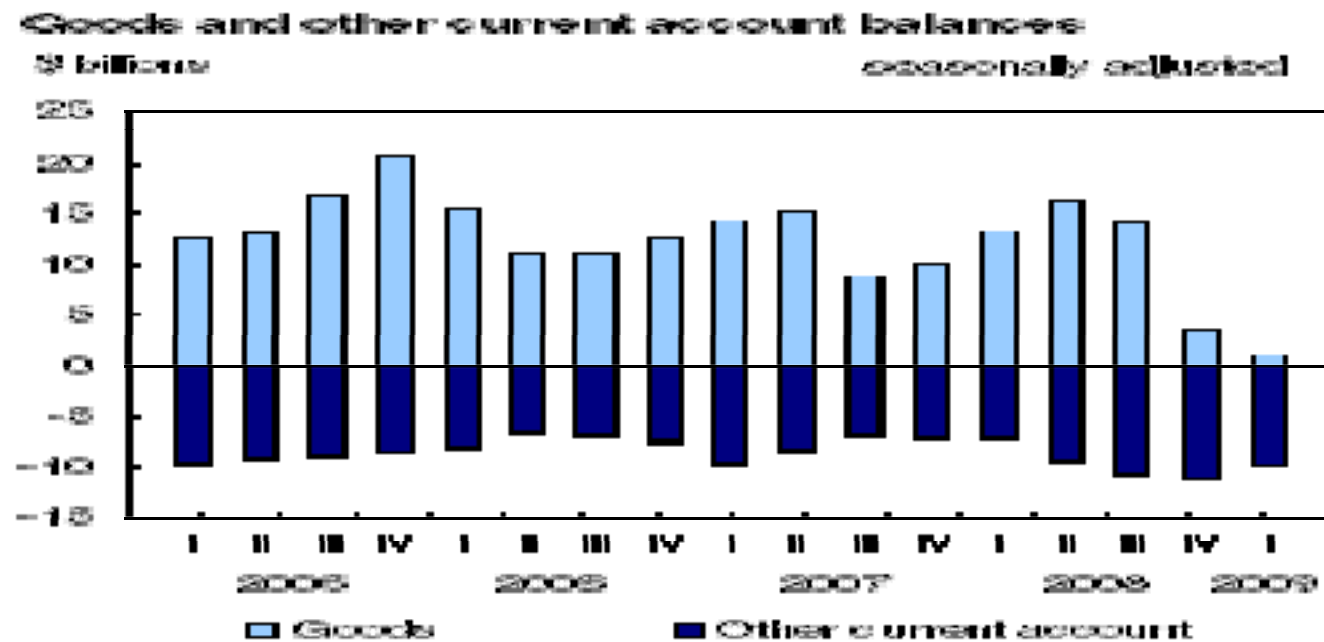
Current account balance

\$ billions

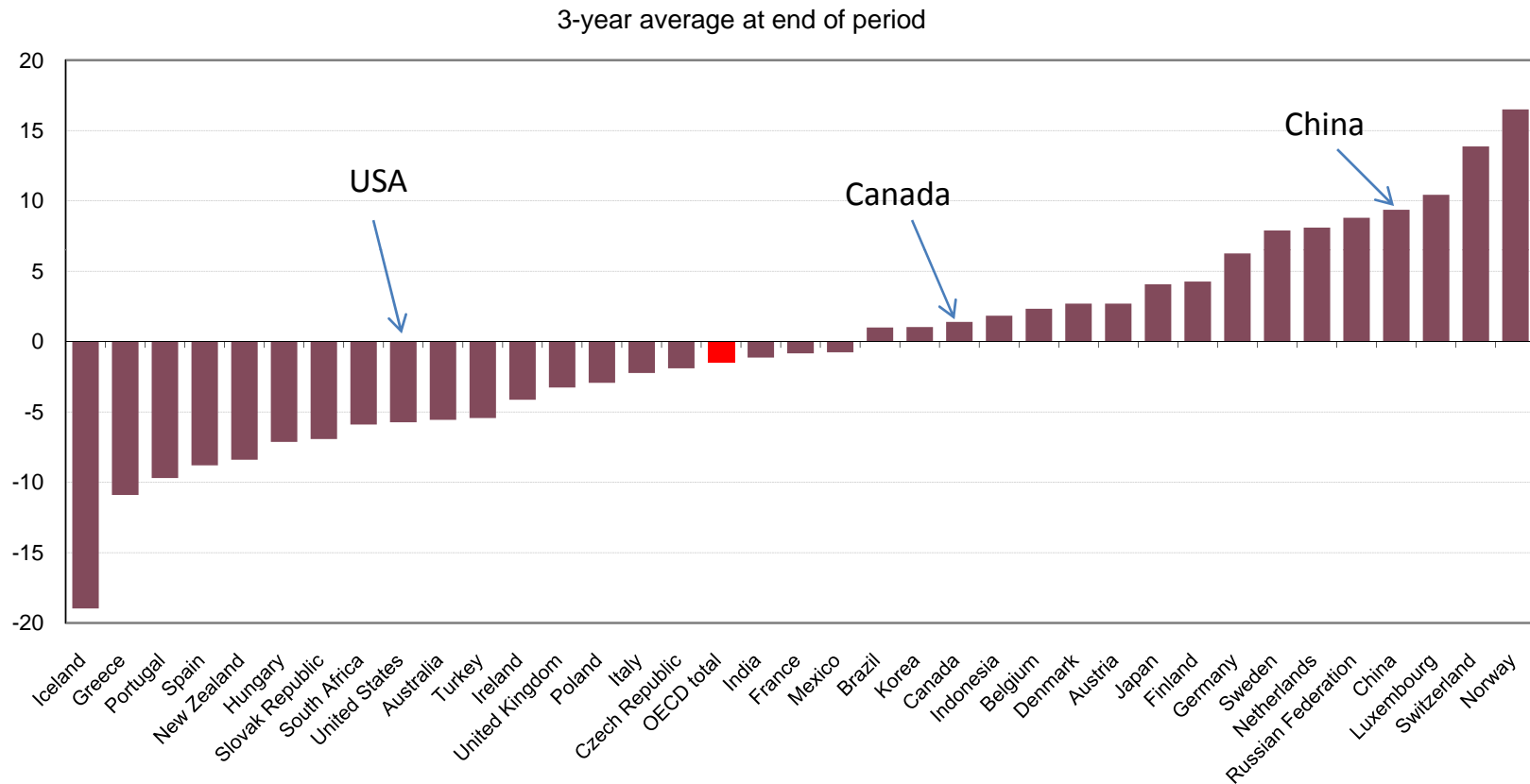
seasonally adjusted



Canada's Current Account Balance: Goods and Other Components (2005Q1-2009Q1)



Current Account Balance of Payments (2007) (percent of GDP)



Source: OECD Factbook 2009

Summary

- Labour mobility is much like trade in goods and have similar effects (net gains but some factors are losing).
- Canada performs relatively well in attracting educated labour from abroad. Canada is a net gainer in skilled labour movements.
- The international lending and borrowing of capital allows countries to optimize their consumption flows through time.
- Foreign Direct Investment in Canada and Canadian Direct Investment Abroad, are important capital flows that involve the acquisition of control and create trade efficiencies.
- Systematic external current account imbalances lead to positive or negative net international investment positions that, eventually, must be reversed.

Examples of questions for first mid-term (October 5th)

- 1- Which statement makes the most sense. The gravity model of trade:
 - A) Is a theoretical model explaining the composition of trade between two countries
 - B) Suggests that distance is becoming less important in explaining trade between two countries
 - C) States that trade flows between two countries tend to be independent of the economic size of the countries involved
 - D) Suggests that trade should be considered with gravitas given the welfare impact it has for the countries involved
 - E) None of these make sense

- Answer: E

Examples of questions for first mid-term (Cont'd)

- 2- The following table reports the unit of labour used in the production of two goods (X and Y) in two countries (Home and Foreign).

	home	foreign
x	1	2
y	3	4

- A) Which country has a comparative advantage in the production of X
 - B) Which country has a comparative advantage in the production of Y
 - C) True or false: Foreign has an absolute disadvantage in the production of the two goods
 - D) True or false : At equilibrium with trade, both goods will cost less at Home than in Foreign
 - E) True or false: At equilibrium with trade, wages will be higher in Foreign.
-
- Answers: A) Home, B) Foreign, C) True, D) False, E) False

Examples of questions for first mid-term (Cont'd)

- 3- Which of these statements is not true:
 - A) Resource endowments contribute to explain the pattern of trade across nations
 - B) Economies of scale suggests that countries might find it worthwhile to specialize and engage in trade
 - C) Variations in a country's terms of trade may be important for the welfare of a nation
 - D) Revealed comparative advantages suggest that Canada has specialized in the production and export of high-tech equipments
 - E) All these statements are not true

- Answer: D

- 4- An increase in foreign direct investment in Canada:
 - A) Increases the control of foreigners on the Canadian economy
 - B) Increases the flow of spending by Canadians abroad
 - C) Increases our net debt to foreigners
 - D) Is always accompanied by a loss of income for Canadians
 - E) None of the above

- Answer: A

Examples of questions for first mid-term (Cont'd)

- 5- A country that has a current account deficit:
 - A) Must consume more than it produces
 - B) Must invest less than it produces
 - C) Must consume and invest more than it produces
 - D) Must accumulate foreign assets
 - E) None of the above.

- Answer: C