

National Accounting Identities, Current Account Balances, Net Foreign Assets, and National Wealth

Thematic Area 4

MSc in ISFM

Basic National Accounting Identities

- **Gross Domestic Product (GDP)** is the total value added of goods and services produced during a time period by factors of production located within Greece. It is also equal to the total value of incomes accruing to all factors of production located within Greece.
- **Gross National Income (GNI)** is the total value added generated by factors of production owned by Greeks, including those employed in foreign countries.
- Example: A Greek firm's profits from producing in Bulgaria would count in Greek GNI but not in Greek GDP. (They would also count in Bulgarian GDP.)
- Thus,

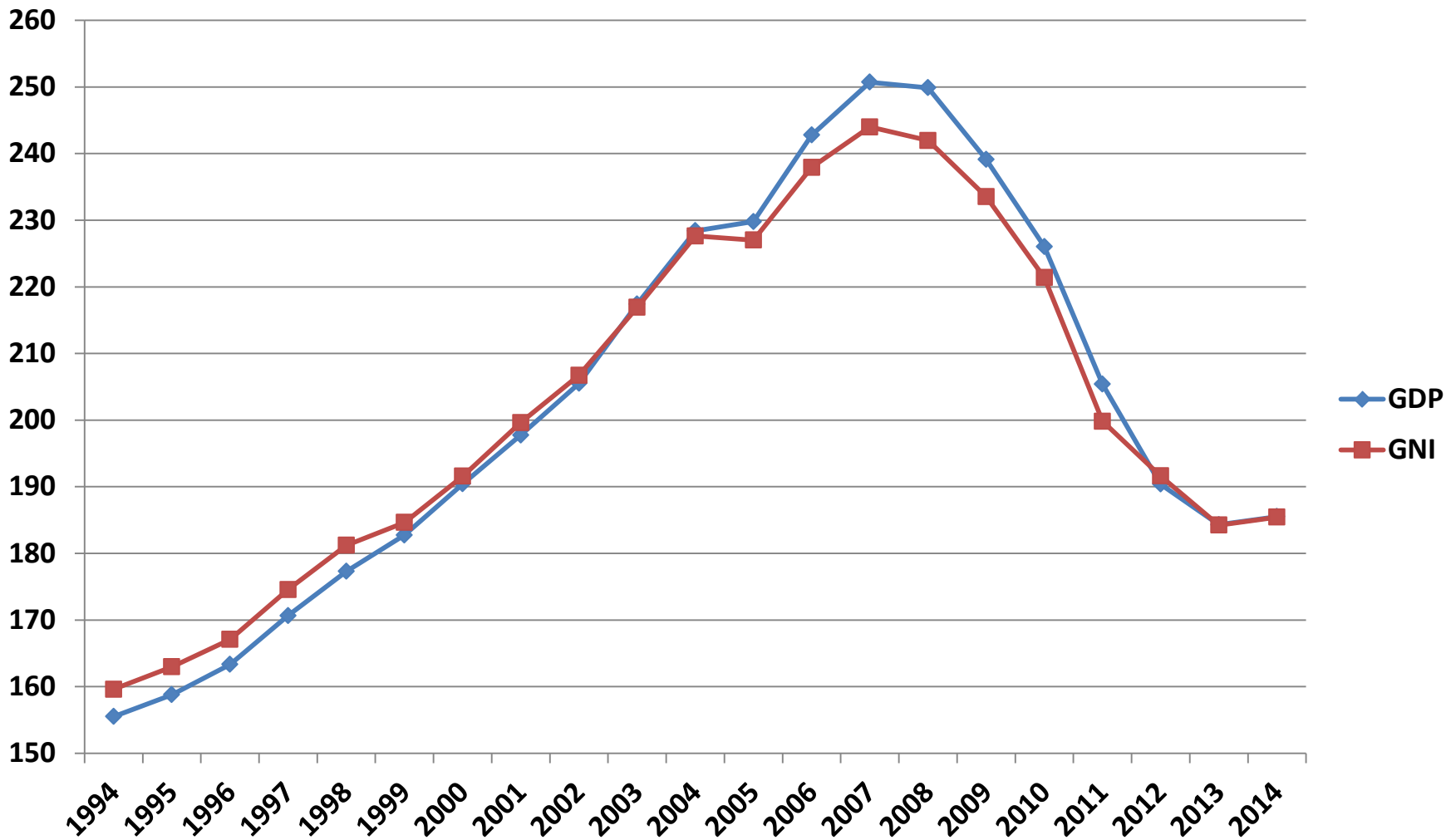
GNI = GDP –

– factors payments made to foreigners (dividends, interest, rent to foreigners owning assets in Greece and wages of foreigners working in Greece) +

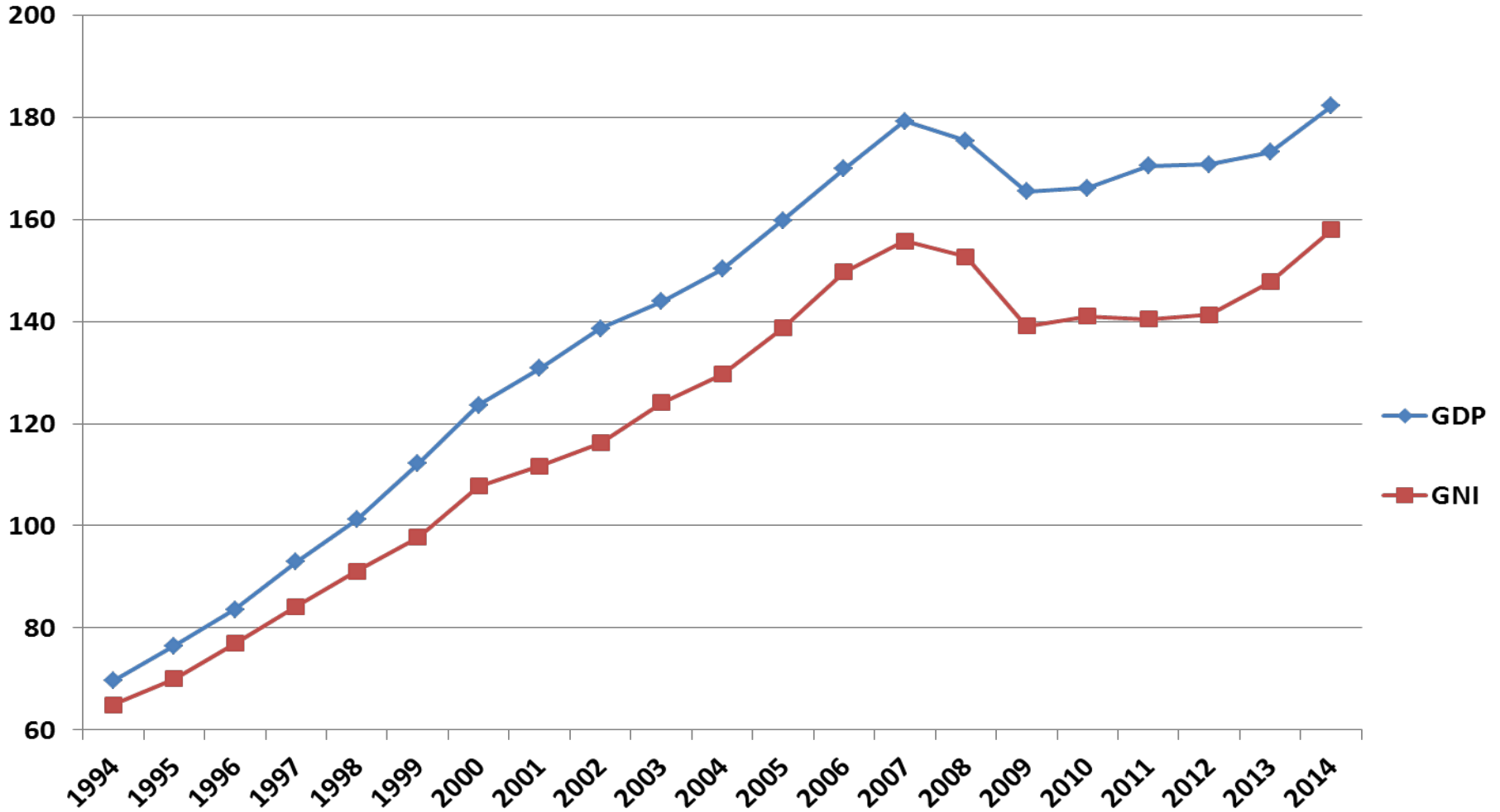
+ factor payments received from abroad (dividends, interest, rent to Greek residents owning assets abroad and wages of Greeks working abroad).

- between GDP and GNI not large in most countries (i.e. less than 1% of GDP), but for some countries (Greece (2% in 2011), Mexico, Bangladesh) can be substantial, and in some cases it can be higher than 15% of GDP (Ireland), or even 30% (Luxembourg).
- The difference is shaped by the evolution of Net Foreign Assets (**NFA**), and migration flows.
- **NFA** = Assets owned by Greeks abroad – Assets Owned by Foreigners in Greece
- Assets include stocks, bonds, loans, real estate, etc.
- The biggest (in absolute terms) net debtor country in the world is the USA (its NFA are about -5 trillion USD). As a percentage of GDP, its NFA are about -30%.
- Greece is one of the biggest net debtors in terms of GDP. Its NFA (sometimes called NIIP), are about -120% of GDP.
- If (negative) NFA exceed 50% of GDP, this is usually a sign that the country must quickly adjust (Greece reached that point in 2003).

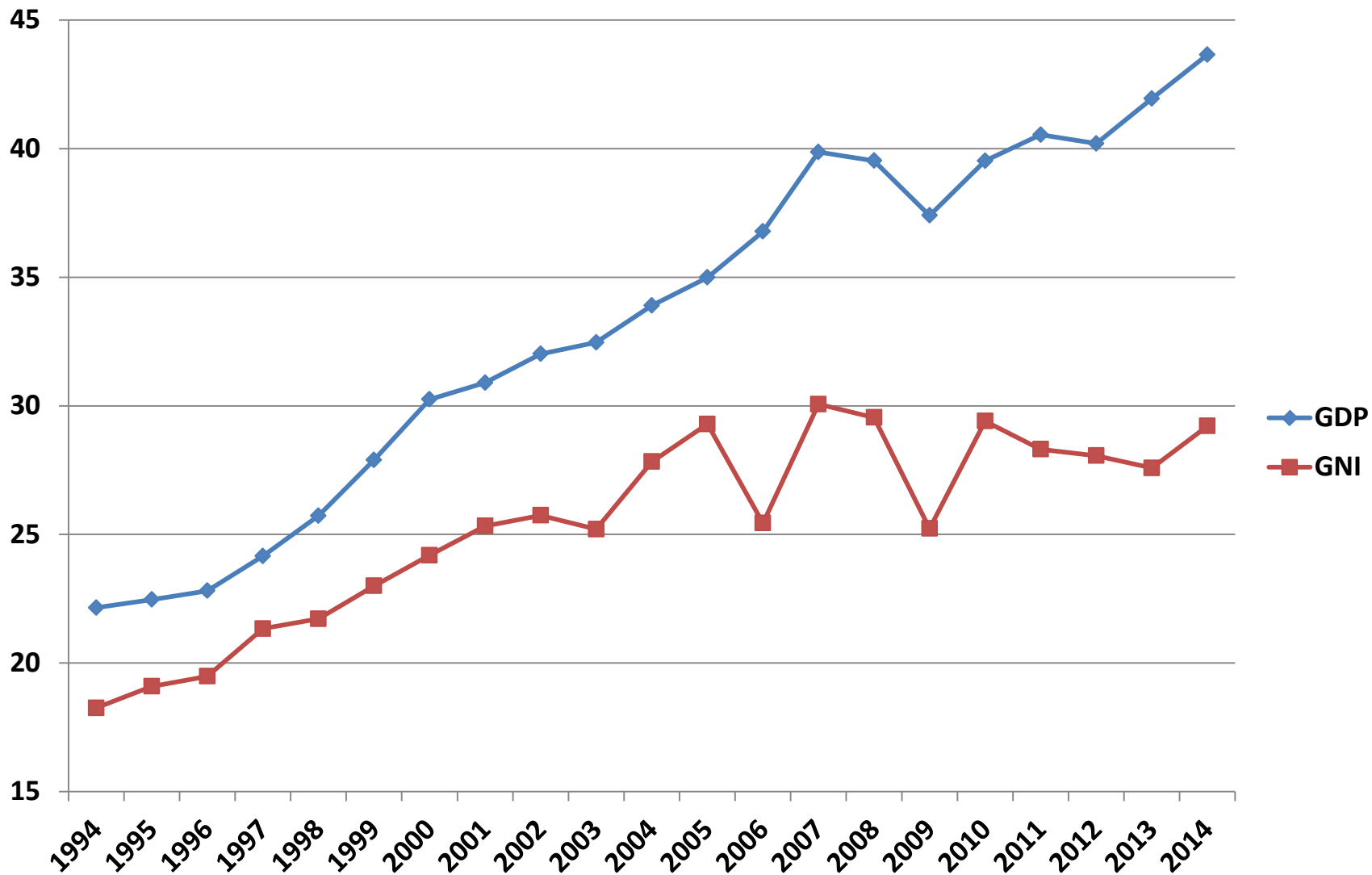
Greece: Gross Domestic Product and Gross National Income (bn euros, constant 2010 prices)



Ireland: Gross Domestic Product and Gross National Income (bn euros, constant 2010 prices)



Luxembourg: GDP and GNI (bn euros, constant 2010 prices)



Three Equivalent Ways to Understand the Current Account Balance (CAB)

- It is the difference between exports and imports, plus the net primary income balance
- It is the difference between national income and national spending
- It is the difference between national saving and investment

Definition of CAB according to the Balance of Payments Statistics

- **CAB=Exports of goods and services**
 - Imports of goods and services
 - + Net primary income balance
 - + Current Transfers Balance =
 - = Net Exports + NPIB + CTB
- The current transfers balance comprises mostly (in the case of Greece) the net transfers Greece receives from the EU. For ease of exposition we assume that $CTB=0$.
- *Assume, also, that no Greeks are working abroad, or foreigners in Greece.*
- Let, i = average interest rate (rate of return) on net foreign assets (foreign assets - foreign liabilities)
- *Then, $i NFA = NPIB$, and so*
CAB=NX + i NFA

CAB is the difference between national income and national spending

- **GDP = consumption + investment + government spending + net exports**
 - **$NX = X - M$**
 - **$GDP = C + I + G + NX$**
 - **$GNI = GDP + iNFA = C + I + G + (NX + iNFA)$
 $= C + I + G + CAB \quad (1)$**
- where **$CAB = NX + iNFA$**
- **(1) implies that $CAB = GNI - (C + G + I)$**
 - ***(C + G + I) is total domestic spending, thus the CAB is also the difference between (a country's) income and spending.***
 - **What happens to an individual if her spending exceeds her income? She accumulates debt. In the case of a country, it accumulates foreign debt (or its NFA are reduced)whenever its CA is in deficit.**

The CAB is the difference between National Saving and Investment

- **Gross National Saving (GNS)** is the sum of private sector saving and government saving, i.e., $GNS = PS + GS$.
- Since $PS = GNI - T - C$, and $GS = T - G$,
 $GNS = (GNI - T - C) + (T - G) = GNI - C - G$ (1)

which just says that GNS is the difference between Gross National Income ($GNI=Y$) and total current (as opposed to investment) spending (We assume that the government doesn't invest – nothing depends on this assumption).

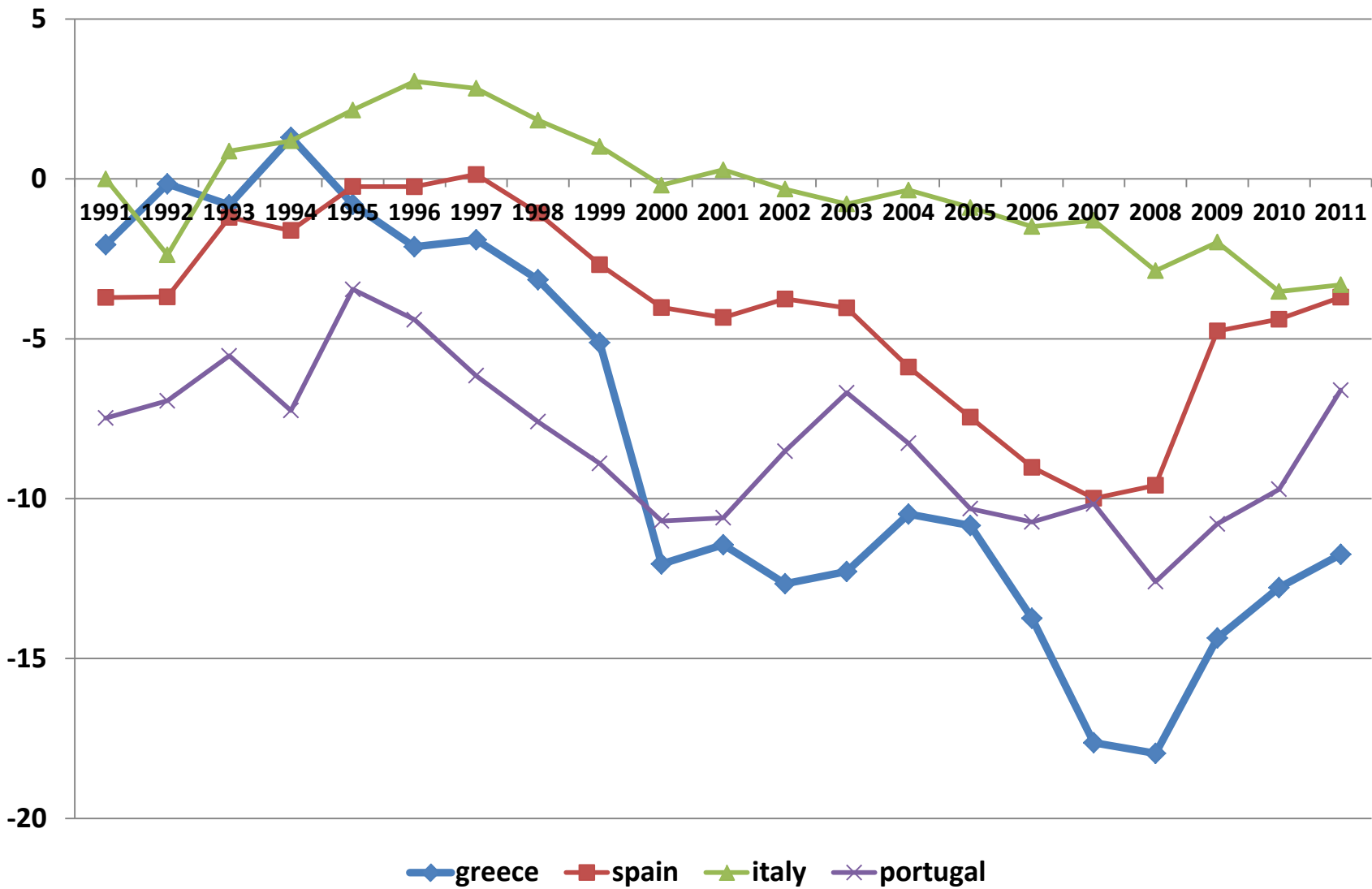
- Since, $GNI = GDP + iNFA = C + I + G + NX + iNFA$
 $= C + I + G + CAB$ (2)

From (1) and (2) we get $GNS = C + I + G + CAB - C - G$, which implies, **$CAB = GNS - I$** , and so the current account balance is the difference between national saving and investment.

- How can you invest more than what you have saved? By borrowing. Thus a country that invests more than it saves, and thus has a CA deficit, borrows from abroad, and accumulates foreign debt.



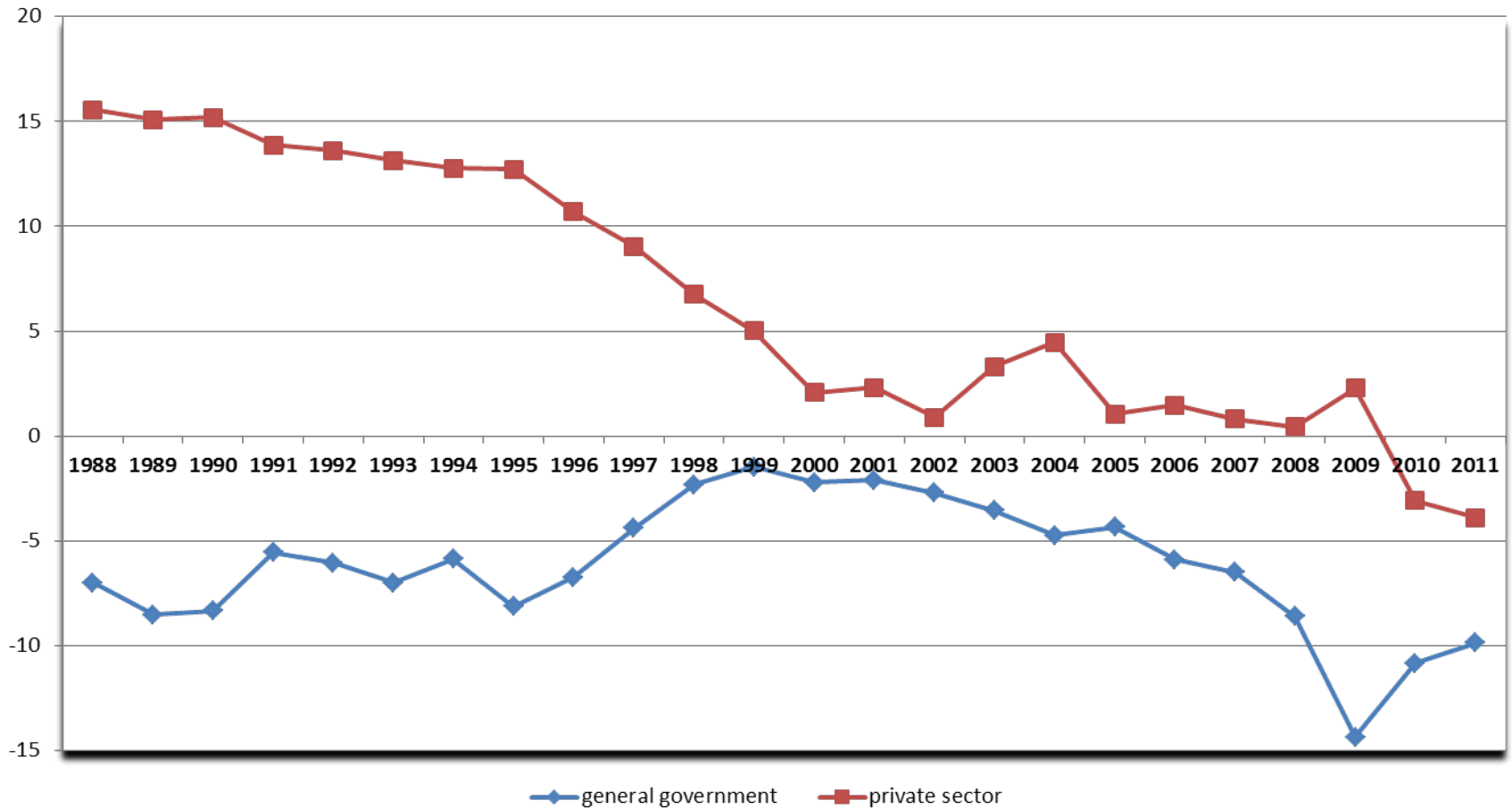
Current account balances, % of GDP



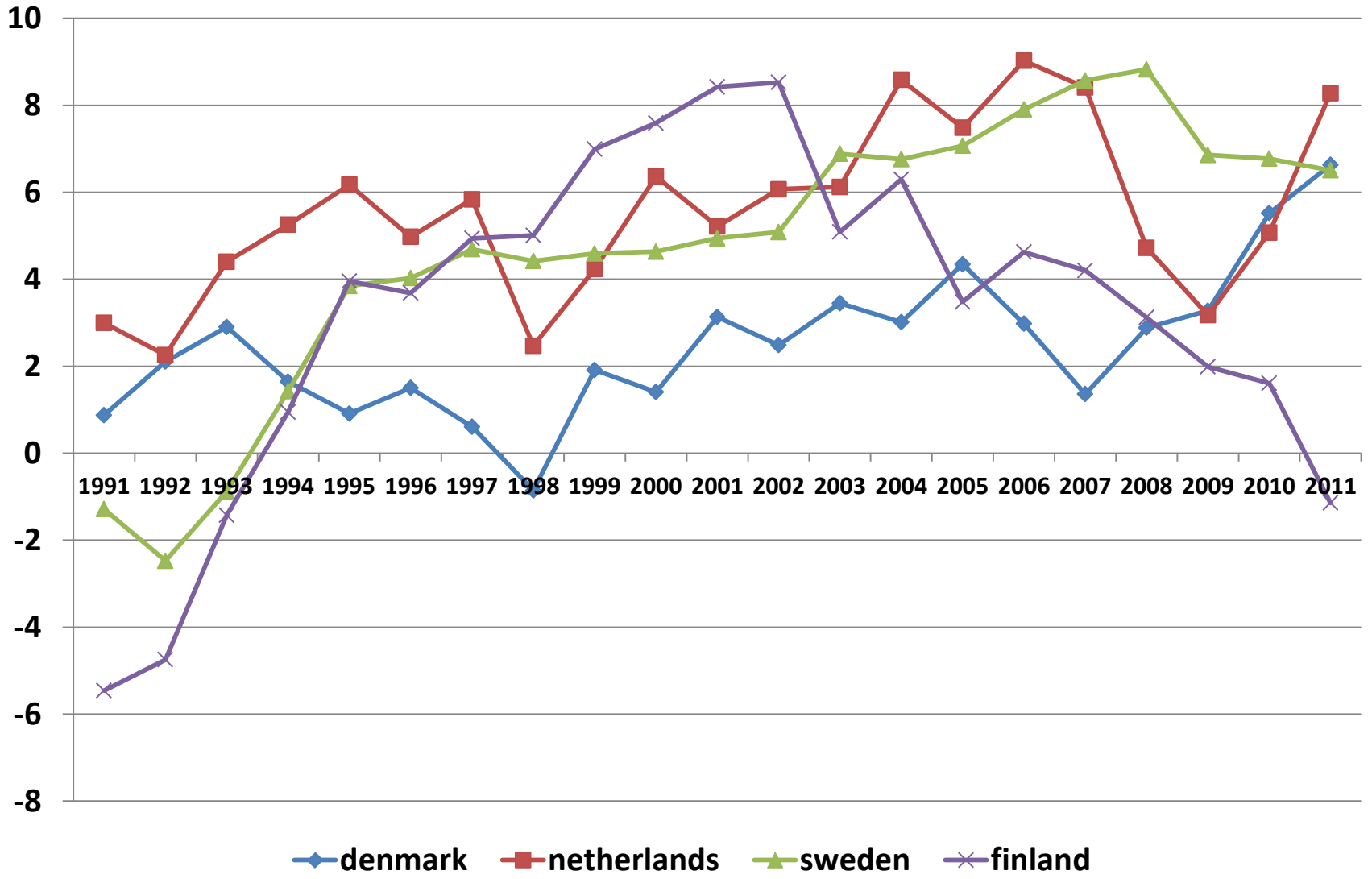
- Greece displayed the largest deterioration in the current account balance since the early 1990s
- The large increase in the current account deficit for Greece is mostly due to the sharp fall in private saving (next slide)
- Net private saving between the early 1990s and 2008 (the start of the Global Financial Crisis) fell by about 13 percentage points of GDP
- The deterioration in the current account balance during the same period was about 16 percentage points of GDP
- Large current account deficits around 2007-2008 were the common characteristic of all countries that were hit hardest by the crisis (the so-called GIPS – Greece, Ireland, Portugal, Spain)

Low interest rates have decreased private saving

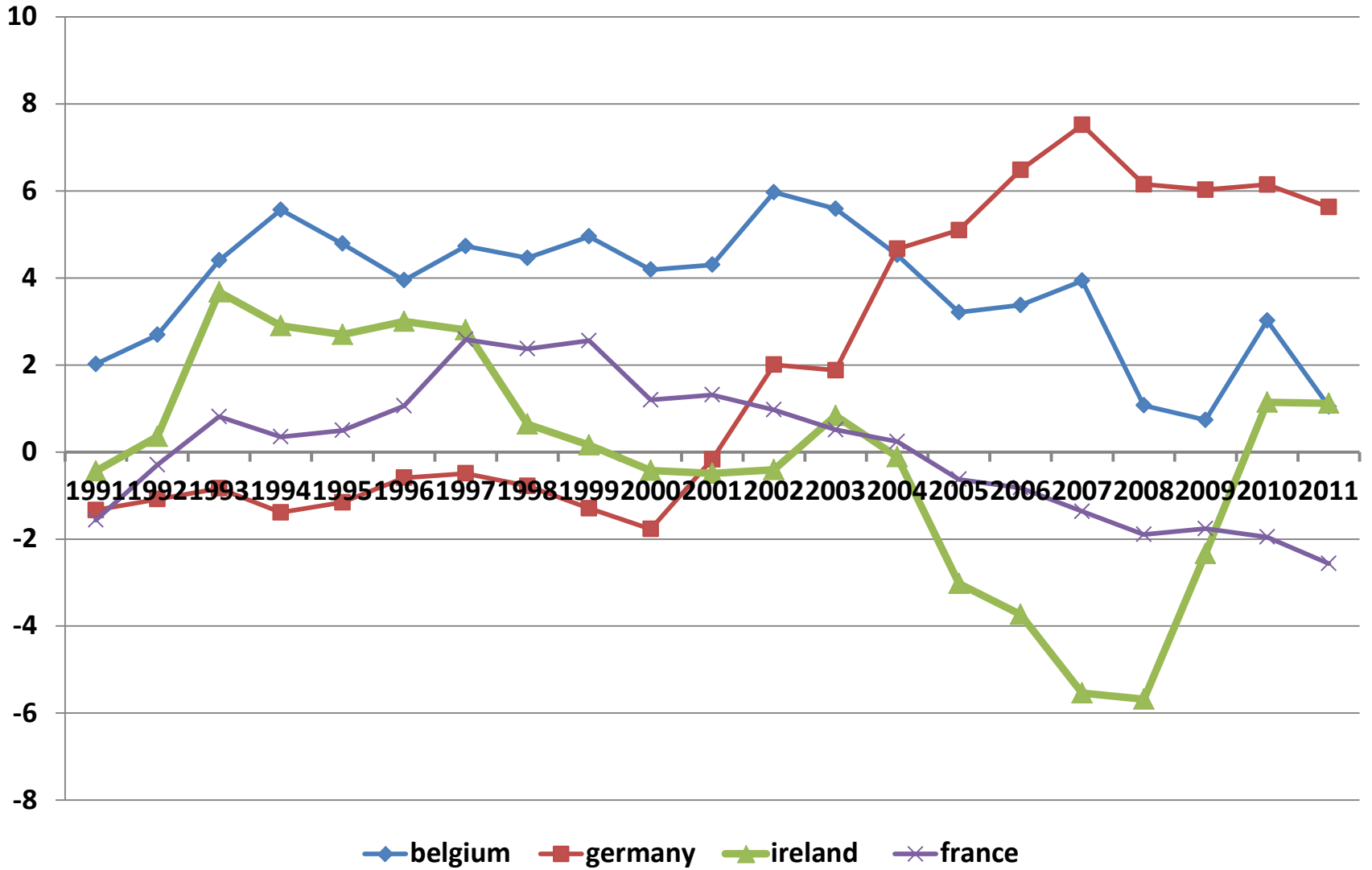
Greece: components of net saving, % of GDP



Current account balances, % GDP



Current Account Balances, % of GDP



How do a country's NFA evolve?

- A current account (**CA**) surplus results in an increase in the NFA of a country while a CA deficit results in a decrease of NFA or, if the country is already a net debtor, it results in an increase in the net foreign debt of the country.
- For example, and ignoring valuation effects (e.g. the “Nokia effect” – i.e. the rise in the stock price for Nokia in the 1990s decreased Finland's NFA as a lot of them were held by international investors),

NFA at the end of 2011=

$$= \mathbf{NFA} \text{ at the end of 2010} + \mathbf{CAB} \text{ in 2011}$$

- Is it possible that a country has a positive NPIB even if its NFA are negative. Yes, if rates of return on your assets are higher than rates of return on your liabilities (e.g. USA).

- A CA deficit allows a country to maintain a higher rate of investment than what national savings would allow.
- Important Note:

IT IS IMPOSSIBLE TO IMPORT FOREIGN CAPITAL WITHOUT A CA DEFICIT

- However, the corresponding foreign capital inflow is essentially a loan; therefore, it represents claims on future national income.

Whether current account deficits and the associated foreign debt burden represent a policy concern depends on one's view of the trade-off between higher investment and higher external indebtedness.

- One possibility is that the source of the CA deficit is a favorable domestic investment climate, which acts as a magnet for foreign capital. According to this view, foreign investment funds raise the domestic capital stock. By boosting future domestic GDP, the higher capital stock makes it easier for the nation to pay off the higher foreign debt. (Although, not necessarily, if investment is in the non-traded sector.)
- A less optimistic view is that the source of the deficit lies in a falling national saving rate, which forces the country to rely on foreign capital to maintain its current level of investment, i.e. there is no rise in total investment. In this case, the country's CA deficit has financed the increased consumption of the private sector and/or the government sector.

Balance of Payments Accounting

- Due to double-entry bookkeeping (i.e., every transaction enters as a credit and debit in in the BOP accounts) the sum of the current account balance, the capital account balance, and the financial account balance,
$$\text{CAB} + \text{KAB} + \text{FAB} = 0, \text{ or, } \mathbf{\text{CAB} + \text{KAB} = - \text{FAB}} \quad (1)$$
- Like the CAB, which is the difference between the exports and imports of goods and services, the FAB is the difference between the exports and imports of assets (both financial and “real” assets like land or buildings).
- The KAB measures transfers of wealth between countries (e.g. debt forgiveness), as well as transactions involving the acquisition or disposal of non-produced, non-financial assets (e.g. copyright and franchise payments). It is usually small relative to the CAB and the FAB, and in the case of Greece consists mostly of transfers (structural funds) from the EU for investment in fixed capital.
- In 2010, for Greece, CAB = - 23 bn, KAB = 2 bn, FAB = 21.4 bn .
- These do not sum to zero! Thus, there is an “errors and omissions” variable of - 0.4 bn. (IMF and EU data differ!)
- A positive FAB measures the amount that the country borrows from the rest of the world (ROW), by being a net “exporter” of assets to the ROW. Typical asset exports (for Greece) are Greek government bonds and bank bonds.

The Triple Deficits

- $PS = GNI - T - C$, or, $GNI = C + T + PS$ (1)

- $GNI = C + I + G + CAB$ (2)

- (1) and (2) imply,

$$T + PS = I + G + CAB, \text{ or,}$$

$$- \mathbf{CAB} = (\mathbf{I - PS}) + (\mathbf{G - T}) ,$$

i.e., a CA deficit is the sum of private-sector and government-sector imbalances.

- Before EMU, the private sector in some of the Southern Eurozone countries was saving enough to cover part of the government's borrowing (i.e. the government's negative saving), and so CA deficits were smaller than budget deficits.
- After EMU, the CA deficits became larger than the budget deficits in the Southern part of the Eurozone, which implies that not only the government, but the private sector as well was borrowing a lot from abroad.

Total Wealth

- A country's total wealth is equal to the value of the home capital stock (all **non** – financial assets in the home economy) plus its NFA. (Financial assets owed by one home entity to another cancel out in the aggregate.)

Thus, $W = K + NFA$, or, if we ignore valuation changes,

$$\Delta(W) = \Delta(K) + \Delta(NFA)$$

Ignoring capital's depreciation, $\Delta(K)=I$.

$\Delta(NFA)=-FAB$, and since

$$-FAB = CAB + KAB,$$

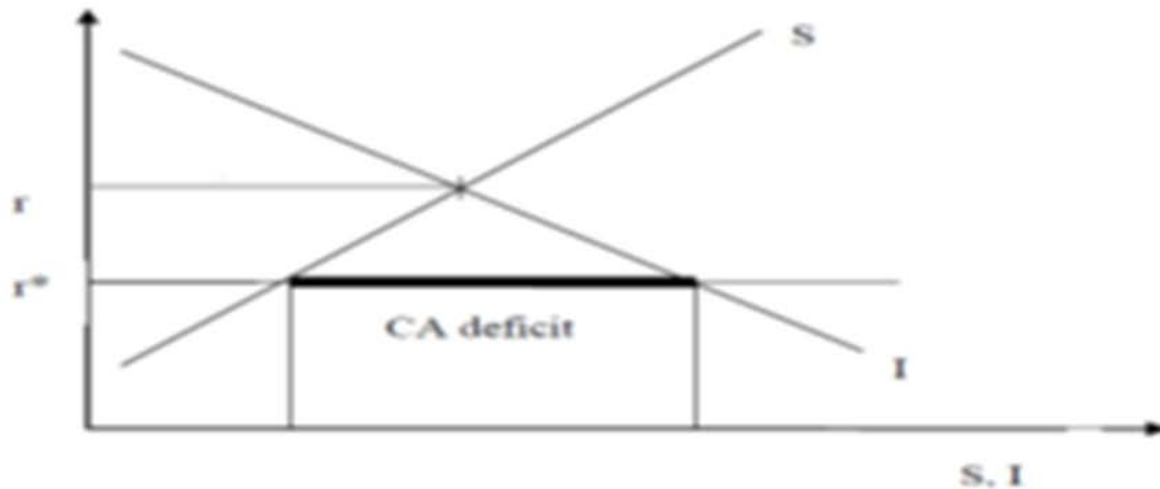
$\Delta(W) = I + CAB + KAB = \mathbf{GNS + KAB}$, which, as in the case of an individual, just says that your wealth increases if you save and you receive gifts.

IMPLICATION: A COUNTRY'S TOTAL WEALTH MAY INCREASE EVEN IF IT RUNS CA DEFICITS WHICH REDUCE ITS NFA.

- Global net worth per adult in mid-2014: about 50,000 USD
- To be among the wealthiest half of the world, an adult needs only about USD 5,000 in net worth.
- However, each adult requires more than about USD 80,000 to belong to the top 10% of global wealth holders and more than about USD 630,000 to be a member of the top 1%.
- The bottom half of the global population together possess less than 2% of global wealth, although wealth is growing fast for some members of this segment.
- In sharp contrast, the richest 10% own 83% of the world's wealth, with the top 1% alone accounting for 43% of global assets.
- Greece is among the most equal countries in the world in terms of the distribution of net worth among its citizens (Russia is the most unequal, Argentina and Brazil are very unequal as well).

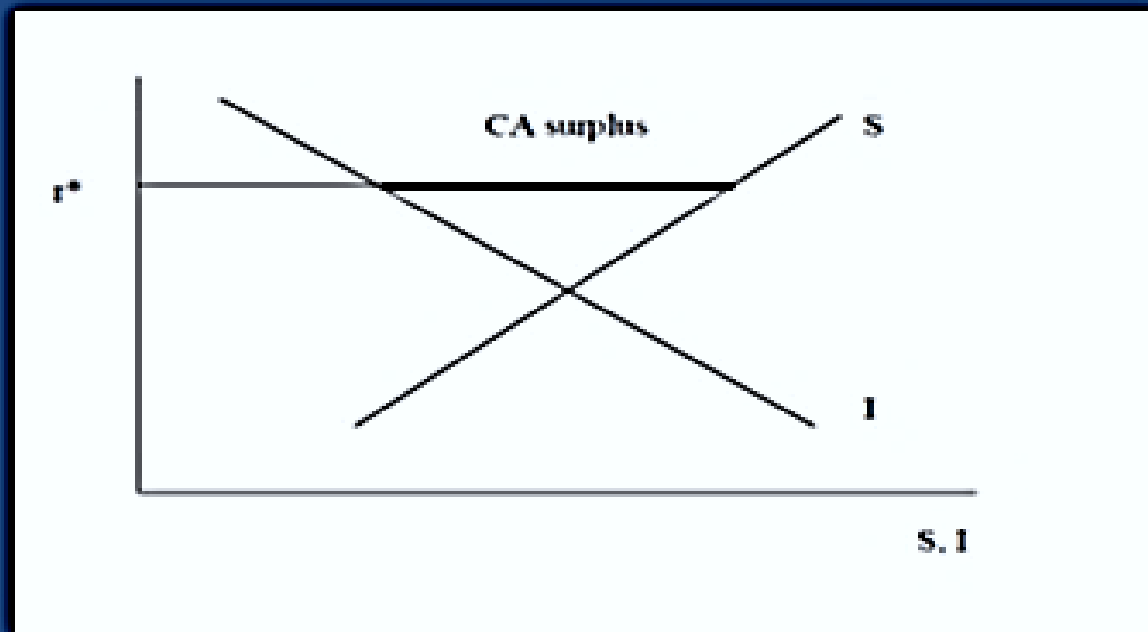
Savings-Investment Approach to the Current Account

Small Open Economy with $CAB < 0$



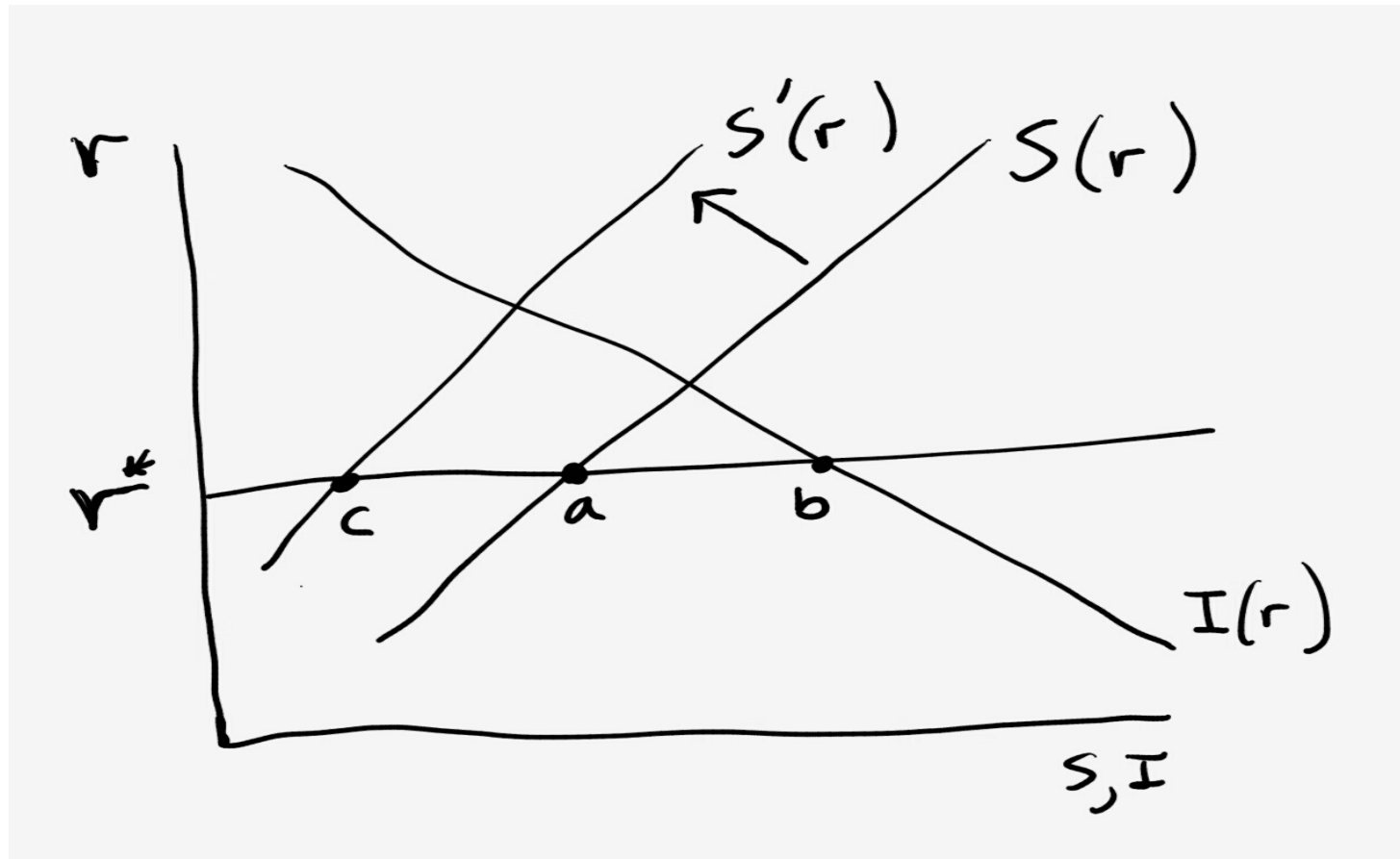
The diagram above shows the national saving (S) and investment schedules for the case of a small economy which can either borrow or lend at the fixed world interest rate (r^*). This country is running a current account deficit equal to the difference between I and S at r^* (the bold segment of the horizontal line at r^*).

Small Open Economy with $CAB > 0$

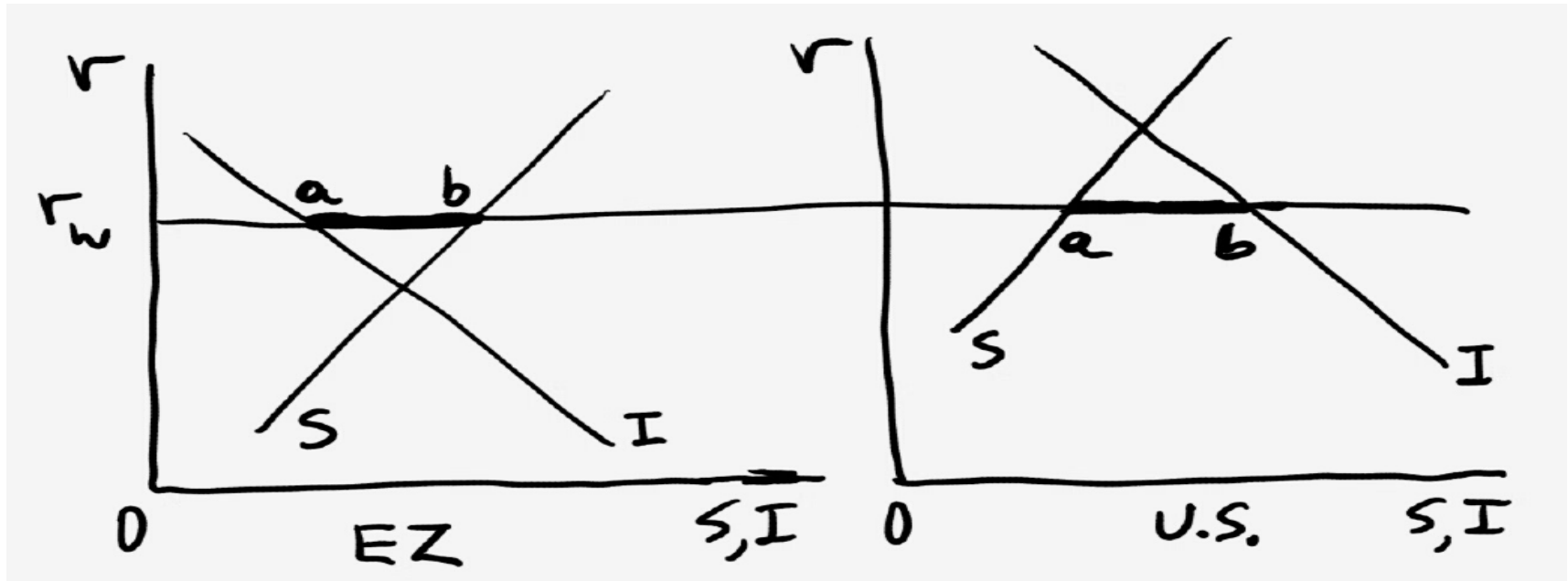


The diagram above shows the case of a small economy with a current account (CA) surplus since $S > I$.

Small Open Economy: A decrease in the country's desire to save (e.g. because its residents think that their future incomes will be higher than they previously thought) shifts the S schedule to the left and increases the CA deficit, from ab to cb.



B. Two Large Economies



The diagram above shows the case of a world economy consisting of two large countries. As drawn, one country (the Eurozone, EZ) is running a current account surplus equal to distance **ab**, and the other country (U.S.) is running a current account deficit of equal magnitude. The common world interest rate is determined so that one country's surplus (and thus, its lending) is equal to the other country's deficit (and thus, its borrowing).

The diagram below show the effects of a rise in the desire to save in the EZ, starting from a situation of current account balance for both countries. As a result of the rise in world saving (i.e. the sum of EZ and U.S. saving) the world interest rate drops from r_w^0 to r_w^1 , and current account imbalances develop (equal to **ab**). Note that the U.S. experiences a CA deficit due to changes taking place in the other country: this is a manifestation of economic interdependence.

EZ

U.S.

