Open Economy

And it may be said without exaggeration that the great extent and rapid increase of international trade, in being the principal guarantee of the peace of the world, is the great permanent security for the uninterrupted progress of the ideas, the institutions, and the character of the human race.
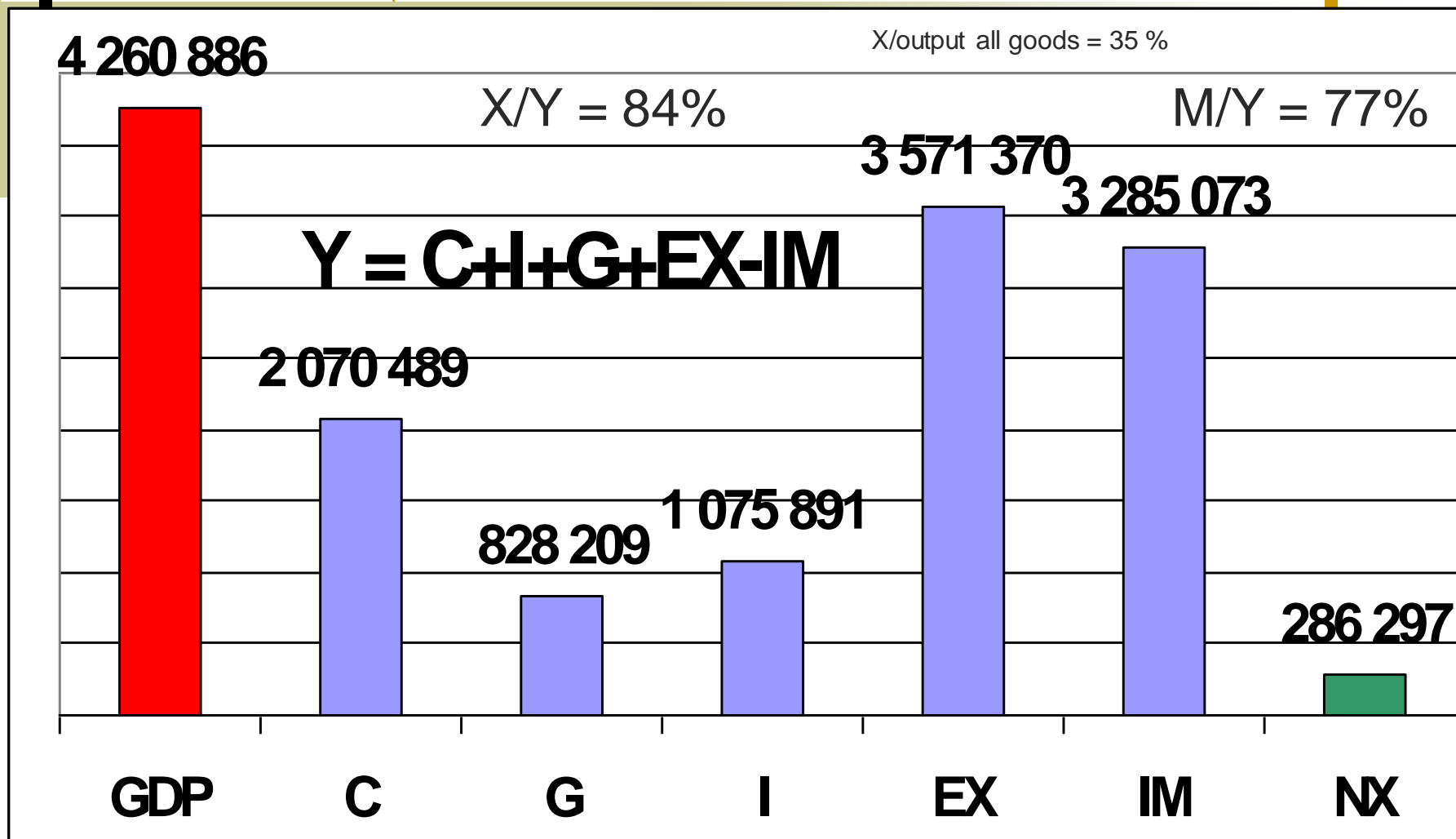
John Stuart Mill (1848) - *Principles of Political Economy*

GDP in the CR in 2014 in mil. CZK (expenditure method) (data source: www.czso.cz)

X/output all goods = 35 %

X/Y = 84%

M/Y = 77%

$$Y = C+I+G+EX-IM$$

Label	Value
GDP	4 260 886
C	2 070 489
G	828 209
I	1 075 891
EX	3 571 370
IM	3 285 073
NX	286 297

Structure of the International trade in the Czech Republic

Imports	2010	Exports
100		100
4,7	0 Food and live animals	3,0
0,6	1 Beverages and tobacco	0,7
2,7	2 Crude materials, inedible	3,0
9,6	3 Mineral fuels, lubricants	3,7
0,2	4 Animal and vegetable oils	0,2
10,7	5 Chemical products	6,5
17,8	6 Manufactured goods by material	17,2
43,4	7 Machinery, transport equipment	54,6
10,3	8 Manufactured articles	11,1
0,1	9 Commodities not classified	0,1

Structure of the International trade in the Czech Republic

Imports	2015	Exports
100		100
5,0	0 Food and live animals	3,7
0,7	1 Beverages and tobacco	0,9
2,2	2 Crude materials, inedible	2,3
6,8	3 Mineral fuels, lubricants	3,0
0,3	4 Animal and vegetable oils	0,3
11,5	5 Chemical products	6,3
17,4	6 Manufactured goods by material	16,2
44,8	7 Machinery, transport equipment	55,1
11,0	8 Manufactured articles	12,1
0,3	9 Commodities not classified	0,2

Territorial Structure

Exports, total (2010)	**2 532 797**	
Developed market economies	**2 284 640**	**90,20%**
European Union	**2 126 339**	**83,95%**
Eurozone	**1 675 624**	**66,16%**
EFTA	**55 739**	**2,20%**
Other developed market economies	**102 562**	**4,05%**
Developing economies	**100 631**	**3,97%**
European transition economies	**20 226**	**0,80%**
Commonwealth of Independent States	**100 599**	**3,97%**
Other [2]	**25 049**	**0,99%**
Unspecified	**1 651**	**0,07%**

Territorial Structure

Exports, total (2015, mil. CZK)	**3 582 803**	
Developed market economies	**3 256 166**	**90,9 %**
European Union	**2 988 190**	**83,4 %**
EFTA	**74 181**	**2,1 %**
Other developed market economies	**193 795**	**5,4 %**
Developing economies	**158 504**	**4,4 %**
European transition economies	**18 594**	**0,5 %**
Commonwealth of Independent States	**102 347**	**2,9%**
Other	**44 436**	**1,2 %**
Unspecified	**2 756**	**0,1 %**

Territorial Structure

Exports (2015, mil. CZK)		
Germany	1 168 838	32,6 %
Slovakia	320 737	9,0 %
Poland	210 914	5,9 %
United Kingdom	187 473	5,2 %
France	181 135	5,1 %
Austria	147 923	4,1 %

Territorial Structure

Italy	135 165	3,8 %
Hungary	104 208	2,9 %
Netherlands	97 988	2,7 %
Spain	93 036	2,6 %
USA	84 803	2,4 %
Belgium	82 633	2,3 %

Territorial Structure

Russia	71 601	2,0 %
Switzerland	56 909	1,6 %
Sweden	52 925	1,5 %
Romania	45 562	1,3 %
Turkey	43 400	1,2 %
China	41 145	1,1 %
Denmark	34 322	1,0 %
Japan	19 430	0,5 %

Territorial Structure

Imports, total (2010)	2 411 556	
Developed market economies	1 722 116	71,41%
European Union	1 527 883	63,36%
Eurozone	1 212 372	50,27%
EFTA	47 264	1,96%
Other developed market economies	146 969	6,09%
Developing economies	187 182	7,76%
European transition economies	7 396	0,31%
Commonwealth of Independent States	184 682	7,66%
Other 2)	301 288	12,49%
Unspecified	8 893	0,37%

Territorial Structure

Imports, total (2015, mil. CZK)	**3 158 460**	
Developed market economies	**2 288 455**	**72,5 %**
European Union	**2 073 111**	**65,6 %**
EFTA	**42 318**	**1,3 %**
Other developed market economies	**173 026**	**5,6 %**
Developing economies	**254 057**	**8,0 %**
European transition economies	**14 715**	**0,5 %**
Commonwealth of Independent States	**157 628**	**5,0 %**
Other	**423 087**	**13,4 %**
Unspecified	**20 518**	**0,6 %**

Territorial Structure

Imports (2015, mil. CZK)

Germany	829 515	26,3 %
China	407 789	12,9 %
Poland	249 086	7,9 %
Slovakia	164 007	5,2 %
Italy	128 128	4,1 %

Territorial Structure

Russia	98 191	3,1 %
France	97 665	3,1 %
Austria	95 582	3,0 %
Netherlands	83 900	2,7 %
Korea	76 427	2,4 %
Hungary	75 533	2,4 %
USA	74 599	2,4 %
United Kingdom	66 093	2,1 %

Country	Balance, total (2015, mil. CZK)
China	- 366 644
France	83 470
Japan	-32 367
Germany	339 323
Netherlands	14 088
Poland	-38 172
Austria	52 341
Russian Federation	-26 590
Slovakia	156 730
United Kingdom	121 380
United States	10 204

Balance of payments, Czech Republic, 2014 In mil. of CZK

	(+)	(−)	Balance	Notes
A. Current Account	3794720,9	3768621,4	26099,5	
Trade balance			238893,7	
Exports	3043200,1			
Imports		2804306,4		
Balance of services			55877,4	NX = 294771,1
Credit	522039,3			X = 3565239 M = 3270468
Debit		466161,9		
Income balance (n.f.p.)			-258962,8	
Credit	149657,2			
Debit		408620,0		
Current transfers (n.f.t.)			-9708,7	
Credit	79824,4			
Debit		89533,1		
B. Capital Account			32170,0	
Credit	32305,4			
Debit		135,5		
C. Financial Account	137659,7	118546,4	25159,6	… CR imported capital (NCF is negative)
Direct investment			133632,6	
Abroad (export of capital)		-32228,8		
In the CR (import of capital)	101403,8			
Portfolio investment			-90268,9	
Assets		76559,2		
Liabilities	-13709,7			
Financial derivatives			6046,2	
Other investment			-24250,3	
Assets		74216,0		
Liabilities	49965,6			
D. Net errors and omissions, valuation changes			-10306,4	
E. Change in reserves (-increase)			-73122,7	(E in new BP part of C)

The Open Economy

- The key macroeconomic difference between **open economy (OE)** and closed economy (CE):
- Spending need not equal output of goods and services.
  - b/c a country can spend more than it produces by borrowing from abroad,
  - or it can spend less than it produces and lend the difference to foreigners.
- Saving need not equal investment.

The Open Economy

- In <u>CE</u>, all output is sold domestically:
- Y = C + I + G

- In <u>OE</u>, some output is sold domestically and some is exported to be sold abroad:
- $Y = C^d + I^d + G^d + X$ **Expenditures on an open economy's output Y**

- Y … output produced in OE

- C^d … consumption of domestic goods and services
- I^d … investment in domestic goods and services
- G^d … government purchases of domestic goods and services
- X … exports of domestic goods and services

The Open Economy

- $Y = C^d + I^d + G^d + X$ **Identity**

- $C^d + I^d + G^d$ … domestic spending on domestic goods and services

- X … foreign spending on domestic goods and services.

- However, people, firms and government do not spend their incomes just on goods domestically produced !

The Open Economy

- C (total consumption) = $C^d + C^f$
  - C^f … consumption of foreign goods and services
- I (total investment) = $I^d + I^f$
  - I^f … investment in foreign goods and services
- G (total government purchases) = $G^d + G^f$
  - G^f … government purchases of foreign goods and services

- $(C + I + G) = (C^d + I^d + G^d) + (C^f + I^f + G^f)$

- Domestic spending on all goods and services **=** domestic spending on domestic goods and services **+** domestic spending on foreign goods and services

The Open Economy

$$Y = C^d + I^d + G^d + X$$

$$C = C^d + C^f \quad I = I^d + I^f \quad G = G^d + G^f$$

$$Y = (C - C^f) + (I - I^f) + (G - G^f) + X$$

$$Y = C + I + G + X - (C^f + I^f + G^f)$$

Expenditure on imports (M)

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

$$Y = C + I + G + (NX) \quad \textbf{Net exports}$$

The Open Economy

- $Y = C + I + G + NX$
- $NX = Y - (C + I + G)$
- Net Exports = Output − Domestic Spending
- *If output exceeds domestic spending, a country exports the difference: net exports are positive (X>M).*
- *If output falls short of domestic spending, a country imports the difference: net exports are negative (X<M).*
- => In an open economy, domestic spending need not equal the output of goods and services.

International capital flows

- We already know that: (If we neglect Net Factor Payments (n.f.p.) and Net Foreign Transfers (n.f.t.)

➢ $NS = S + BS$

➢ $NS = (Yd - C) + (TA - TR - G)$

➢ $NS = (Y - TA + TR - C) + (TA - TR - G)$

➢ $NS = Y - C - G$

➢ Because: $Y = C + I + G + NX => Y - C - G = I + NX$

➢ Then: $NS = I + NX$ (national saving = national investment)

➢ $NS - I = NX$

Inter...

$$NS - I = NX \qquad S = I + NX$$

nat... ...ving = dom. inv. + net foreign investment

Difference between national saving and domestic investment is called **net capital outflow** (or net foreign investment).

> **Country takes foreign loans to finance the excess of imports of goods and services over exports of goods and services.**

If national saving exceeds domestic investment => net capital outflow is positive (NCF>0), and a country lends to foreigners more than foreigners lend to the country.

NS- I > 0 => NCF>0 => NX > 0 … Country is a net exporter of capital (i.e. net lender) and also of goods and services (X > M)

If national saving falls short of domestic investment => net capital outflow is negative (NCF<0), and a country lends to foreigners less than foreigners lend to the country.

NS- I < 0 => NCF<0 => NX < 0 … Country is a net importer of capital (i.e. net borrower) and also of goods and services (X < M)

NS- I = 0 => NCF = 0 => NX = 0 … Export and import of capital are equal as are exports and imports of goods and services (X = M)