What is country international competitiveness?

Rodolfo Helg, 2013

Introduction

Competitiveness is a highly utilized term for defining the economic status of a country:

thousand of time in the last 10 years we have read that EU countries are lagging behind the US, that they lack competitiveness.

What does it mean?

Introduction

- Defining “competitiveness” at the country level
- The principle of comparative advantage
- Determinants of competitiveness

Competitiveness: definition

For a **firm**, competitiveness *usually* refers to a *zero sum game* with competitors.

The environment in which this competition takes place is local, regional, national, international.

Competition among firms can be for market shares: Coke can only gain mkt. share at the expenses of Pepsi.

A firm can go bankrupt.

(in the third lecture we will analyze the characteristics of firms that are competitive at the international level)

Competitiveness: definition

Has it the same meaning for **countries**?

First, here the environment is (by definition) only international.

Second, do countries compete on international mkts.? No! This is a typical Mercantilist misunderstanding. Paul Krugman and many others have criticized this approach.
At the country level what matters is the concept of comparative advantage (see later).

Competitiveness: definition

If Italian firms in the textile and clothing business are loosing out to Chinese or Indian firms this means that Italy is loosing its comparative advantage in this sector.
Italian economy doesn't go bankrupt (even if some Italian firms will), but the Italian economy undergoes an industrial restructuring and will move resources in to new sectors of comparative advantage.
During last century the United Kingdom has been a clear example of this restructuring (textile- coal- steel- financial services…).

Competitiveness: definition

Many commentators, nonetheless have continuously adopted the Mercantilist approach and have described international competition as an head to head match (cfr. much of the debate in the US during the '80s wrt. the Japanese success; now similar attitude is adopted for Chinese and Indian competition).
One policy corollary of this approach is the use of protectionist measures.

Competitiveness: definition

Should we throw away this concept when referred to a country? This should be the logical consequence.

However, it is still commonly utilized. Hence two meanings can be identified:

- The mercantilist one (see above)
- The "acceptable" one (see below)

Competitiveness: the "acceptable" definition

Various authors (Porter etc.) / institutions (EU Commission, OECD Secretariat, WEF, IMD etc.) have adopted a different and acceptable definition

- "Competitiveness is understood to mean high and rising standards of living of a nation with lowest possible level involuntary unemployment, on a sustainable basis". (European Commission)

Competitiveness: definition

• The similar OECD definition: it refers to the ability of a country to "produce goods which meet the test of international mkts. while simultaneously maintaining and expanding the real income of its people over the long term".

• Another: our main definition of *competitiveness* has been "the set of institutions and economic policies supportive of high rates of economic growth in the medium term." (Porter, Sachs and Warner, 2001, for the WEF Report)

Competitiveness: definition

The focal point of these definitions is the **absolute economic growth of a country** (not economic growth of a country relative to another one).
So whenever you will find the term "country competitiveness" read "country economic growth".
As a consequence one of the most important determinants of country competitiveness (read: "real per capita income growth") is the evolution of its **absolute productivity**.

Competitiveness: definition

International trade doesn't have necessarily anything to do with it.
If one country manage to obtain high productivity in autarky (because of the past investment in human capital, the existence of the appropriate incentive system in the economy etc.) this country will have high standard of living (this obviously doesn't mean that trade is not important in increasing domestic productivity……).

Competitiveness: definition

Competitiveness at the country level doesn't imply rivalry among country as it is the case at the firm level.

"In defining competitiveness we are not claiming that one country's competitiveness means another country lack of competitiveness" (Jeffrey Sachs 2001, when he collaborated with WEF).

Competitiveness: definition

One easy way to understand the difference between the direct determinants of trade and those of per capita income is to introduce the concept of **comparative advantage** via the simplest model of international trade:

the Ricardian trade model.

The Ricardian trade model

For our purposes the major messages arising from this model are:

- Trade is determined by comparative advantages and it is a positive sum game from the countries' point of view

- Per capita income is determined by absolute advantages (labour productivity in this model)

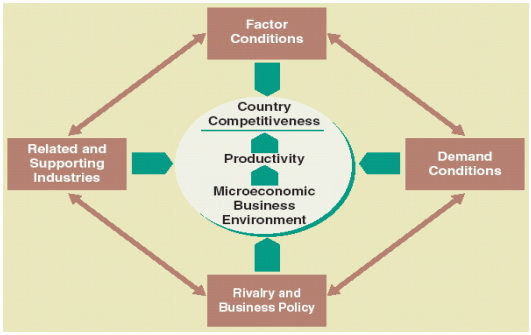
Competitiveness: from Ricardo to Porter

Another trade model by Heckscher and Ohlin (H-O) is structured around the comparative advantage set up, but with a richer set of elements describing the economy than the Ricardian one.

In this model, comparative advantages are generated by the interplay of country relative factor abundances and industry factor intensities.

Factor endowments play a role also in the Porter's Diamond. This is a much less rigorous, but much richer model than the HO one.

Competitiveness: Porter's Diamond



How to measure competitiveness

- The Real Effective Exchange Rate
- The rate of growth of per capita income
- Synthetic indices

The Real Effective Exchange Rate (REER)

At the **firm level**, for a product we can distinguish:

-price competitiveness: this is determined by production costs, the profit margin and the exchange rate

-non-price competitiveness: this involves design of product, quality, post-sale services etc.

The Real Effective Exchange Rate (REER)

At the **country level** there is an analogy for price competitiveness. This can be thought as a measure of average price competitiveness of the domestically produced products.

As a consequence, this measure gives a summary view of the average price competitiveness of a country's products

(**ATTENTION**: it is not a measure of country competitiveness in the Mercantilist meaning)

The Real Effective Exchange Rate (REER)

The name of this measure for the bilateral case is: Real Exchange Rate (RER):

$$RER = (P/P^*) \times E$$

where: P = domestic price level; P*=foreign price level; E = nominal exchange rate (price of domestic currency in units of foreign currency).

(note the link between RER and Purchasing Power Parity Law)

The Real Effective Exchange Rate (REER)

A more utilized measure takes into account the average price competitiveness of a country products with respect to a large number of countries. It is the Real Effective Exchange Rate (REER):

REER = weighted average of bilateral RER

Where the weights take into account the relevance of a country as an export mkt and/or import mkt for the country of reference.

The Real Effective Exchange Rate (REER)

Computation of REER can be different due to:

- Number of trading partner countries

- Weighting scheme adopted: simple or double weighting

- Aggregator: usually arithmetic or geometric weighted average

- Type of price adopted: GDP deflator, consumer prices, producer prices, unit labour costs

[memo:
ULC = cost of labour per unit of output produced = (W/LP), where W = total labour compensation per hour worked; LP = labour productivity]

The Real Effective Exchange Rate (REER)

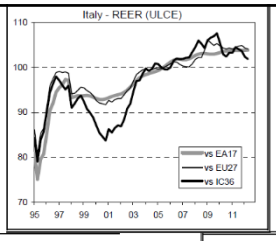
An application:

Italian products have lost considerably price competitiveness in the last 10 years. Is this loss due to the introduction of the Euro?

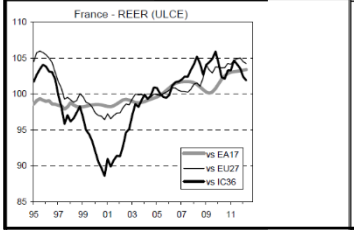
Analysis: let's utilise the Italian REER based on unit labour costs in the manufacturing sector compared to that other leading European countries

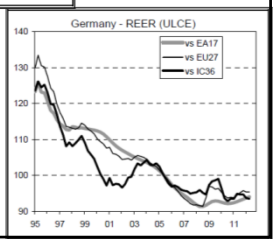
(source: Price and Competitiveness, EU Commission).

The Real Effective Exchange Rate (REER)



Source:
EC, Price and cost competitiveness, First-Second Quarter 2012





The Real Effective Exchange Rate (REER)

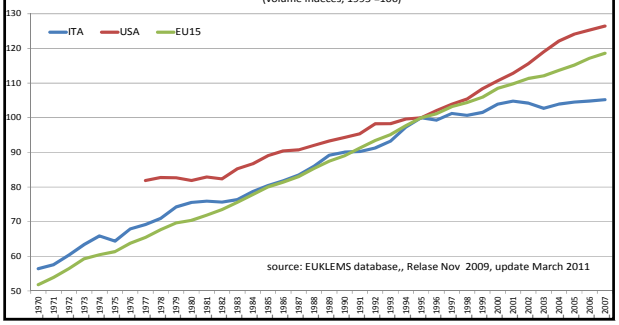
Both France and Germany experience a much better evolution.

memo: the REER utilized is based on Unit Labour Cost which depends on labour compensation (+) and on labour productivity (-)

The **dynamics of the euro is not the major explanation** of the worsening price competitiveness of Italian goods.
During this period total labour compensation in Italy had a moderate evolution. On the contrary, a **sharp deceleration of labour productivity growth has taken place in Italy.**

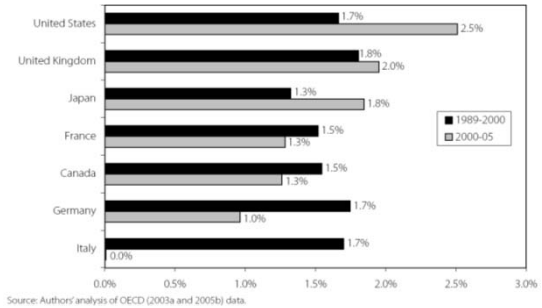
The Real Effective Exchange Rate (REER)

HOURLY LABOUR PRODUCTIVITY
Total Industry
(volume indeces, 1995 =100)



The Real Effective Exchange Rate (REER)

FIGURE 8B Productivity growth rates in G-7 countries



Source: Authors' analysis of OECD (2003a and 2005b) data.

Economic growth

A different measure of country competitiveness is the rate of growth of the economy (in absolute and/or per capita terms). This measure is more in line with the "acceptable" definitions of country competitiveness.

An application:

relative slow rate of growth of the European economy with respect to that of the US especially after the second half of the '90s.

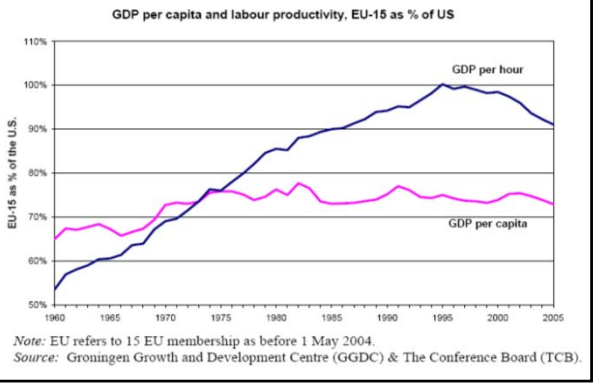
Economic growth

After the WW II Europe converged to the US both in terms of **GDP per capita** and in terms of **labour productivity** (= GDP per hour worked).

This catching-up pattern experienced two major breaks in the last 30 years:

- Break 1: GDP per capita convergence ended after 1975
- Break 2: labour productivity convergence was reversed after 1995

Economic growth: two breaks in economic convergence



Note: EU refers to 15 EU membership as before 1 May 2004.
Source: Groningen Growth and Development Centre (GGDC) & The Conference Board (TCB).

Economic growth

There are two different interpretations for break 1:

a) The glass is half empty (Sapir Report)

b) The glass is half full (Blanchard)

Economic growth

- **Half empty**

UE experienced:

strong convergence in GDP per capita for 2 decades and a half
weak convergence in the '70s

divergence after the first half of the '90s

EU GDP per capita in 1970 and in 2000 is the 70% of the US one

Economic growth

- **Half full**

This is true, but it is valid only for **output per capita.**

The picture is much less negative when we consider **output per hour worked**: EU is approx 90% of the US one.

The difference is due to the fact that European employees work less hours during the year.

Economic growth

$$\Delta\%(GDP/Pop) =$$
$$= \Delta\%(GDP/Hours) + \Delta\%(Hours/Pop)$$

GDP per capita growth =
Hourly labour productivity growth +
Hour worked per capita growth

The difference is due to the fact the European employee work a smaller number of hours per year wrt to US citizens.

Economic growth

- **Half full (continues)**

for example, between 1970 and 2000 the number of hours worked per person decreased by 23% in France and increased by 26% in the US

The Europeans have “decided” to increase leisure rather than income…

But this is not the only explanation available

GDP per capita: expanded decomposition

$$GDP/Pop = (GDP/Hours) * (Hours/Pop) =$$

(a)

$$= \frac{GDP}{Hours} * \frac{Hours}{N.Empl.} * \frac{N.Empl}{Lab.Force} * \frac{Lab.Force}{Pop_{15\text{-}64}} * \frac{Pop_{15\text{-}64}}{Pop}$$

- Labor Productivity (b)
- Average Hours Worked (d)
- 1-Unemployment Rate (e)
- Labor Force Participation Rate (f)
- (g)

GDP per capita: expanded decomposition

source: Gomez-Salvador, Musso, Stocker, Turunen (ECB, October 2006)

Table 2 Decomposition of annual growth in GDP per capita

(average percentage changes and percentage points per annum)

	GDP per capita	GDP per hour worked	Labour utilisation	Hours worked per person employed	Unemployment rate	Labour force participation	Share of working age population in total population
	a = b + c	b	c = sum d to g	d	e	f	g
1981-1990							
Euro area	2.0	2.5	-0.5	-0.7	-0.2	-0.1	0.5
United States	2.2	1.4	0.8	-0.1	0.2	0.7	0.0
Gap US – EA	0.2	-1.1	1.3	0.6	0.4	0.8	-0.5
1991-1995							
Euro area	1.1	2.3	-1.2	-0.4	-0.6	-0.2	0.0
United States	1.2	1.1	0.0	0.2	0.0	0.0	-0.1
Gap US – EA	0.1	-1.2	1.2	0.6	0.6	0.2	-0.1
1996-2000							
Euro area	2.5	1.7	0.9	-0.4	0.5	0.8	-0.1
United States	2.9	2.1	0.8	0.2	0.3	0.0	0.2
Gap US – EA	0.4	0.5	-0.1	0.6	-0.2	-0.8	0.3
2001-2005							
Euro area	1.2	0.7	0.5	-0.2	-0.1	0.9	-0.1
United States	1.6	2.6	-1.0	-0.6	-0.2	-0.3	0.2
Gap US – EA	0.4	1.8	-1.4	-0.4	-0.2	-1.1	0.3

Sources: ECB calculations based on data from the European Commission, the OECD and the Groningen Growth and Development Centre (Total Economy Database, May 2006, http://www.ggdc.net).
Note: Positive contributions from unemployment reflect a decline in the unemployment rate.

Economic growth

- Blanchard's explanation focus on the second term on the right (however, it's decline explains only one third of the decline hours per capita)

Other explanations:

- Prescott (2004): all decline in hours per capita was caused by higher labour taxes in Europe
- Ljungqvist-Sargent (2006): European welfare system increases unemployment and reduces labour force partecipation
- Alesina, Glaeser, Sacerdote (2006): decline in hours is mainly due to the political pressure by trade unions and left-wing parties to reduce hours and lower the retirement age

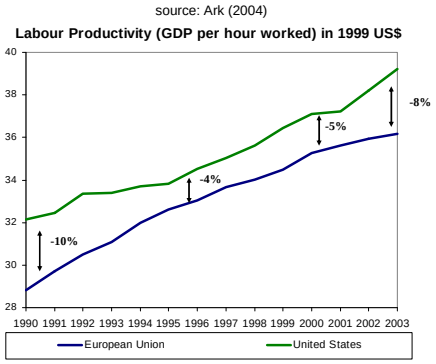
Economic growth: break 2

But in the last 10 years European performance in terms of hourly labour productivity has not been good (break 2)…….

…..probably because of the slower diffusion of information technologies and management practices matter!

Economic growth

source: Ark (2004)



Synthetic measures

A third way to measure is to create an index on the basis of may variables. The chosen variables are usually thought to influence economic growth.

In the last 10 years a proper industry of these measure

The two most famous indices are those contained in the Global Competitiveness Report by the World Economic Forum (WEF) and The World Competitiveness Yearbook by IMD.

Application of Porter's ideas

Porter's ideas have been applied to generate measures of country competitiveness. When applied to firm the concept of competitiveness is straightforward.

Attention when you use it for a country (differently form a firm a country cannot go bankrupt).

In this case the correct approach is to think of competitiveness as the set of conditions the favour economic growth).

In the last 10 years a proper industry has emerged to measure competitiveness at the country level.

The two most famous indices are those contained in the Global Competitiveness Report by the World Economic Forum (WEF) and The World Competitiveness Yearbook by

Application of Porter's ideas

I concentrate on the WEF production (choice independent of any value judgement!).

This year has come out on September the 7th:

Global Competitiveness Report 2012-2013

An **interview with Xavier Sala-i-Martin**, Director and Senior Economist GCR

The Global Competitiveness Index 2013-2014

Country/Economy	GCI 2013-2014 Rank	GCI 2013-2014 Score	GCI 2012-2013 Rank	GCI 2012-2013 Change
Switzerland	1	5,67	1	0
Singapore	2	5,61	2	0
Finland	3	5,54	3	0
Germany	4	5,51	6	2
United States	5	5,48	7	2
Sweden	6	5,48	4	-2
Hong Kong SAR	7	5,47	9	2
Netherlands	8	5,42	5	-3
Japan	9	5,40	10	1
United Kingdom	10	5,37	8	-2
Norway	11	5,33	15	4
Taiwan, China	12	5,29	13	1
Qatar	13	5,24	11	-2
Canada	14	5,20	14	0
Denmark	15	5,18	12	-3
Austria	16	5,15	16	0
Belgium	17	5,13	17	0
New Zealand	18	5,11	23	5
United Arab Emirates	19	5,11	24	5
Saudi Arabia	20	5,10	18	-2
Australia	21	5,09	20	-1
Luxembourg	22	5,09	22	0
France	23	5,05	21	-2
Malaysia	24	5,03	25	1
Korea, Rep.	25	5,01	19	-6
Brunei Darussalam	26	4,95	28	2
Israel	27	4,94	26	-1
Ireland	28	4,92	27	-1
China	29	4,84	29	0
Puerto Rico	30	4,67	31	1
Iceland	31	4,66	30	-1
Estonia	32	4,65	34	2
Oman	33	4,62	32	-1
Chile	34	4,61	33	-1
Spain	35	4,57	36	1
Kuwait	36	4,56	37	1
Thailand	37	4,54	38	1
Indonesia	38	4,53	50	12
Azerbaijan	39	4,51	46	7
Panama	40	4,50	40	0
Malta	41	4,50	47	6
Poland	42	4,46	41	-1
Bahrain	43	4,45	35	-8
Turkey	44	4,45	43	-1
Mauritius	45	4,45	54	9
Czech Republic	46	4,43	39	-7
Barbados	47	4,42	44	-3
Lithuania	48	4,41	45	-3
Italy	49	4,41	42	-7
Kazakhstan	50	4,41	51	1

Country/Economy	GCI 2013-2014 Rank	GCI 2013-2014 Score	GCI 2012-2013 Rank	GCI 2012-2013 Change
Portugal	51	4,40	49	-2
Latvia	52	4,40	55	3
South Africa	53	4,37	52	-1
Costa Rica	54	4,35	57	3
Mexico	55	4,34	53	-2
Brazil	56	4,33	48	-8
Bulgaria	57	4,31	62	5
Cyprus	58	4,30	58	0
Philippines	59	4,29	65	6
India	60	4,28	59	-1
Peru	61	4,25	61	0
Slovenia	62	4,25	56	-6
Hungary	63	4,25	60	-3
Russian Fede	64	4,25	67	3
Sri Lanka	65	4,22	68	3
Rwanda	66	4,21	63	-3
Montenegro	67	4,20	72	5
Jordan	68	4,20	64	-4
Colombia	69	4,19	69	0
Vietnam	70	4,18	75	5
Ecuador	71	4,18	86	15
Georgia	72	4,15	77	5
Macedonia, F	73	4,14	80	7
Botswana	74	4,13	79	5
Croatia	75	4,13	81	6
Romania	76	4,13	78	2
Morocco	77	4,11	70	-7
Slovak Repub	78	4,10	71	-7
Armenia	79	4,10	82	3
Seychelles	80	4,10	76	-4
Lao PDR	81	4,08	n/a	n/a
Iran, Islamic F	82	4,07	66	-16
Tunisia	83	4,06	n/a	n/a
Ukraine	84	4,05	73	-11
Uruguay	85	4,05	74	-11
Guatemala	86	4,04	83	-3
Bosnia and H	87	4,02	88	1
Cambodia	88	4,01	85	-3
Moldova	89	3,94	87	-2
Namibia	90	3,93	92	2
Greece	91	3,93	96	5
Trinidad and	92	3,91	84	-8
Zambia	93	3,86	102	9
Jamaica	94	3,86	97	3
Albania	95	3,85	89	-6
Kenya	96	3,85	106	10
El Salvador	97	3,84	101	4
Bolivia	98	3,84	104	6
Nicaragua	99	3,84	108	9
Algeria	100	3,78	110	10

Country/Economy	GCI 2013-2014 Rank	GCI 2013-2014 Score	GCI 2012-2013 Rank	GCI 2012-2013 Change
Serbia	101	3,77	95	-6
Guyana	102	3,77	109	7
Lebanon	103	3,77	91	-12
Argentina	104	3,76	94	-10
Dominican Re	105	3,76	105	0
Suriname	106	3,75	114	8
Mongolia	107	3,75	93	-14
Libya	108	3,73	113	5
Bhutan	109	3,73	n/a	n/a
Bangladesh	110	3,71	118	8
Honduras	111	3,70	90	-21
Gabon	112	3,70	99	-13
Senegal	113	3,70	117	4
Ghana	114	3,69	103	-11
Cameroon	115	3,68	112	-3
Gambia, The	116	3,67	98	-18
Nepal	117	3,66	125	8
Egypt	118	3,63	107	-11
Paraguay	119	3,61	116	-3
Nigeria	120	3,57	115	-5
Kyrgyz Republi	121	3,57	127	6
Cape Verde	122	3,53	122	0
Lesotho	123	3,52	137	14
Swaziland	124	3,52	135	11
Tanzania	125	3,50	120	-5
Côte d'Ivoire	126	3,50	131	5
Ethiopia	127	3,50	121	-6
Liberia	128	3,45	111	-17
Uganda	129	3,45	123	-6
Benin	130	3,45	119	-11
Zimbabwe	131	3,44	132	1
Madagascar	132	3,42	130	-2
Pakistan	133	3,41	124	-9
Venezuela	134	3,35	126	-8
Mali	135	3,33	128	-7
Malawi	136	3,32	129	-7
Mozambique	137	3,30	138	1
Timor-Leste	138	3,25	136	-2
Myanmar	139	3,23	n/a	n/a
Burkina Faso	140	3,21	133	-7
Mauritania	141	3,19	134	-7
Angola	142	3,15	n/a	n/a
Haiti	143	3,11	142	-1
Sierra Leone	144	3,01	143	-1
Yemen	145	2,98	140	-5
Burundi	146	2,92	144	-2
Guinea	147	2,91	141	-6
Chad	148	2,85	139	-9

Application of Porter's ideas

In the report they generate a country ranking based on the **Global Competitiveness Index**

This index is a weighted average of other indices, which are themselves weighted averages of publicly available hard data and information provided in the Forum's Executive Opinion Survey.

Application of Porter's ideas

The **Global Competitiveness Index** is intended to measure factors that contribute to driving productivity and competitiveness.

It is composed by *12 basic pillars*

(i.e. 12 subsets of economic variables)

Application of Porter's ideas

Figure 1: The 12 pillars of competitiveness