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THE WORLD DIVIDED INTO FOUR: POVERTY, EMERGENCE, BOOM AND AFFLUENCE

Saccone Donatella
(University of Pollenzo and OEET)
and
Deaglio Mario
(University of Turin and OEET)

Rationale

On the one hand…

Traditional taxonomies of economies conventionally consider the **level** of per capita income as the benchmark on which countries' economic performances are measured and classified:

-World Bank (WB) classification system (1978 and revised in 1989);

-IMF World Economic Outlook;

-UNDP classification.

⟶ economic development considered in **static terms**. By focalizing on the *level* of the selected variables in a precise moment in time, **not enough attention on the dynamics** that occur over a time span. In other words, countries on the basis of what they are (or have been) neglecting the *rate* at which they are evolving or regressing.

Rationale

On the other hand…

an extensive economic literature on growth regimes focuses on **growth *rates*** and classifies countries into **fast and steady-growth vs slow and volatile-growth economies** (Pritchett, 2000; Jerzmanowski, 2006; Byrne, 2010; Kerekes, 2012; Lamperti and Mattei, 2016).

While these studies fully capture the dynamics related to the processes of economic growth, they do not venture into a broader debate on economic development and its different phases.

Rationale

We propose a classification of economies that:

a) embeds both the dimensions –***levels*** **and** ***rates*** - in a single framework;

b) is defined in ***relative*** terms,

i.e. economies are classified according to their relative level of per capita income and their relative rate of economic growth (economic position of the world *mean economy* taken as the benchmark on which we classify, in relative terms, the performances of the countries in the world)

Rationale

Three advantages:

1) **differentiation** between sluggish and dynamic low-income countries, as well as between booming and mature high-income countries;

2) **contribution to the literature on the definition of emerging economies** (Arnold and Quelch, 1998; Hoskisson et al., 2000; Jain, 2006; The Boao Forum for Asia, 2009; Vercueil, 2012; Saccone, 2017);

3) **reproducibility** of the methodology, based on two simple measures - per capita income and its rate of growth - that are available for most countries and years.

Methodology - classification

Two cut-off thresholds calculated on a sample of *n* countries:

1) **mean of the average per capita income of the *n* countries** over period ***T=15 yrs*** ⟶ it divides relatively low from relatively high-income economies;

2) **mean of the average annual growth rate of per capita income across the *n* countries** over the same period ⟶ it divides relatively low from relatively high-growth countries.

Methodology - classification

By studying the position of each country relatively to the two thresholds, we identify four categories of economies in a sample of 122 countries (95.5 per cent of world total population) in two subsequent fifteen-year periods (1985-99 and 2000-14):

1) ***POOR ECONOMIES (low income-low growth)***, where both the parameters are below the averages.

2) ***EMERGING ECONOMIES (low income-high growth)***, that have a lower than average per capita income but a higher than average rate of growth.

3) ***BOOMING ECONOMIES (high income-high growth)***, in which both the parameters are above the averages.

3) ***AFFLUENT ECONOMIES (high income-low growth)***, characterized by a higher than average per capita income but a lower than average rate of growth.

Methodology – determinants of membership

We draw from the **empirical literature on economic growth** (Barro, 1991, 2000 and 2013; Bloom and Williamson, 1998; Bassanini and Scarpetta, 2001; Bloom et al., 2010; Choudhry and Elhorst, 2010).

The determinants considered here encompass **eight dimensions**: physical capital accumulation, human capital endowment, demography, structural change, economic openness, income inequality, macroeconomic stability and institutional quality.

Model: **multinomial logit** (it allows the dependent variable to have more than two outcomes, where outcomes have no natural ordering (Hosmer at al., 2013; Long and Freese, 2014). Three **unordered outcomes**:

- 0 if the country profile corresponds to a **poor economy**
- 1 if the country profile corresponds to an **emerging economy**
- 2 if the country profile corresponds to a **booming or** an **affluent economy**

Methodology – determinants of membership

Basic outcome: 'emerging economy' ⟶ double comparison btw poor and emerging economies and btw emerging and high-income economies (booming and affluent countries).

Interpretation of ML results: the estimated coefficients express the multinomial log-odds of outcome *j* relative to another outcome that is chosen as a benchmark (i.e. comparative interpretation, where an outcome is taken as the basis on which the *relative* probabilities of the other outcomes are measured).

Sample size guidelines for ML: a minimum of 10 observations per regressor (Schwab, 2002; Hosmer et al., 2013). When we move to the econometric analysis: number of countries drops from 122 to 104 (1985-99) and to 106 (2000-14).

Steps for model identification:

1) regression with the six determinants presenting the highest number of observations (demography, physical capital accumulation, structural change, economic openness, macroeconomic policy, inequality)

2) we add human capital and institutional quality (Obs.=87).

3) likelihood-ratio test for each independent variable (Freese and Long, 2000)

4) we drop the regressors that do not pass the test at a 90 percent confidence level and re-run the regression using Akaike and Bayesian information criteria (AIC and BIC) for the comparison with the full model.

Methodology – determinants of membership

VARIABLES

Demographic dimension: age dependency ratio

Human capital: illiteracy rate

Physical capital accumulation: investment growth rate

Structural change: percentage of urban population

Economic openness: export growth rate

Macroeconomic stability: inflation

Institutional quality: Fraser index of economic freedom

Inequality: Gini coefficient

All the level independent variables are taken at the beginning of period in order to avoid possible endogeneity problems

After the model has been indentified, we further check the robustness of results by repeating the procedure using alternative proxies for each determinant.

Results

- In both periods **almost two-thirds of the world was below the cut-off income threshold**. In particular, **strong and persistent concentration of low-income/low growth economies in Sub-Saharan Africa**, accounting for almost the 40% of poor economies in both periods. Conversely, **East European and Central Asian low-income countries succeeded in taking-off and made a leap forward**: while in 1985-99 they represented the largest share of poor economies (45%), in period 2000-14 the most part of them joined the group of emerging economies, in general presenting high rates of growth after the recovery from the post-communist transition.
- In both periods the **highest concentration of countries was in the low-income category of emerging economies** (43 and 45 countries respectively). While in period **1985-99** this category was especially represented by **Latin American countries**, in period **2000-14** it was characterized also by a huge presence of **East Asian, East European and Central Asian countries**. It is noticeable also a **slight representation of Sub-Saharan Africa in emerging economies**, with four countries maintaining the membership **across the two periods** (**Ghana, Mozambique, Nigeria and Uganda**).

3. Classification of economies by region

	1985-99		2000-14	
POOR ECONOMIES	**n°**	**%**	**n°**	**%**
East Asia & Pacific	0	0.0	0	0.0
Europe & Central Asia	17	44.7	4	12.1
LAC	3	7.9	9	27.3
MENA	4	10.5	6	18.2
North America	0	0.0	0	0.0
South Asia	0	0.0	1	3.0
Sub Saharan Africa	14	36.8	13	39.4
Total	38	100.0	33	100.0
EMERGING ECONOMIES				
East Asia & Pacific	9	20.9	7	15.6
Europe & Central Asia	6	14.0	18	40.0
LAC	13	30.2	7	15.6
MENA	4	9.3	2	4.4
North America	0	0.0	0	0.0
South Asia	4	9.3	3	6.7
Sub Saharan Africa	7	16.3	8	17.8
Total	43	100.0	45	100.0
BOOMING ECONOMIES				
East Asia & Pacific	6	19.4	5	55.6
Europe & Central Asia	20	64.5	3	33.3
LAC	0	0.0	1	11.1
MENA	3	9.7	0	0.0
North America	2	6.5	0	0.0
South Asia	0	0.0	0	0.0
Sub Saharan Africa	0	0.0	0	0.0
Total	31	100.0	9	100.0
AFFLUENT ECONOMIES				
East Asia & Pacific	0	0.0	3	8.6
Europe & Central Asia	4	40.0	22	62.9
LAC	1	10.0	0	0.0
MENA	5	50.0	8	22.9
North America	0	0.0	2	5.7
South Asia	0	0.0	0	0.0
Sub Saharan Africa	0	0.0	0	0.0
Total	10	100.0	35	100.0

Source: our calculations based on the Total Economy Database, Conference Board.

Results

- **East and South Asian countries over-performed**, showing a persistent process of emergence (Bangladesh, Cambodia, China, India, Indonesia, Myanmar, Philippines, Sri Lanka, Thailand, Vietnam) along with a number of both steady (Hong Kong, Singapore, Taiwan) and new (Malaysia and South Korea) booming economies across the two periods.
- **Middle East and North Africa**, on the contrary, were characterized by a high **irregularity between the affluence of oil-exporting countries and the poverty** of the rest of the region.
- As regards the two high-income categories, we can observe a strong **concentration** of countries in the group of **booming economies** in period 1985-99, while in the following period the most part of them moved to the group of **affluent economies**. This was above all caused by a substantial slowdown in the relative rate of growth of North American and Western European countries, together with Japan, Australia and New Zealand.

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Source: our calculations based on the Total Economy Database, Conference Board.

Table 1. Results of multinomial logistic regressions (period 1985-99)

	(1)	(2)	(3)	(4)
POOR EC.				
Age dependency ratio	0.0628*	0.0769*	0.0573	
Export growth	-0.1686***	-0.2091**	-0.1457*	-0.1386*
Investment growth	-0.0023	0.0062	0.0122	
Urban population %	0.0183	0.0202	0.0231	0.0048
Inflation	-0.0001	-0.0001	-0.0001	
Gini coeff.	-0.0645	-0.0545	-0.0162	
Illiteracy rate		-0.0090	-0.0032	
Economic freedom index			-0.2480	-0.2854
Constant	-2.0488	-3.5451	-3.3768	1.2548
BOOMING & AFFLUENT EC.				
Age dependency ratio	-0.1032	-0.1130*	-0.0677	
Export growth	-0.0034	-0.0351	-0.0339	0.0178
Investment growth	-0.0063	-0.0269	-0.0477	
Urban population %	0.0955***	0.0912***	0.0786**	0.0898***
Inflation	-0.0012	-0.0010	-0.0003	
Gini coeff.	-0.0268	-0.0407	-0.6915	
Illiteracy rate		0.0275	0.0297	
Economic freedom index			1.0541*	1.1050***
Constant	1.2472	2.6473	-3.9339	-11.7469***
Obs.	104	95	87	87
McFadden's R^2	0.4302	0.4711	0.4740	0.3697
LR TEST FOR COMBINING CATEGORIES (P>chi2)				
Poor-Emerging Ec.	0.003	0.005	0.157	0.099
Emerging-Booming&affluent Ec.	0.000	0.000	0.000	0.000
Poor-Booming&affluent Ec.	0.000	0.000	0.000	0.000

Note: ***p < 0.01, **p < 0.02, *p < 0.05. For the sake of readability, Gini coefficient was multiplied by 100.

Table 3. Results of multinomial logistic regressions (period 2000-14)

	(1)	(2)	(3)	(4)
POOR EC.				
Age dependency ratio	0.0995***	0.1321**	0.1481**	0.1498***
Export growth	-0.1500	-0.4055**	-0.3254	-0.2517
Investment growth	-0.4283***	-0.6517***	-0.6645***	-0.4806***
Urban population %	0.0286	0.0595*	0.0725**	0.0593*
Inflation	-0.0121	-0.0051	-0.0158	
Gini coeff.	0.0631	0.0060	0.0339	0.0960
Illiteracy rate		0.0945**	0.0775	
Economic freedom index			-0.9354	-1.3047 °
Constant	-7.5558**	-6.8606	-4.7069	-5.4205
BOOMING & AFFLUENT EC.				
Age dependency ratio	-0.2267*	-0.3236*	-0.6768	-0.3157*
Export growth	-0.9398***	-1.4183***	-2.3661	-1.1959**
Investment growth	-0.1049	-0.0565	0.0635	0.1046
Urban population %	0.0778***	0.0975***	0.1220*	0.0699*
Inflation	-0.3007***	-0.4219***	-0.3338	
Gini coeff.	-0.2237**	-0.3917***	-0.6798	-0.2908*
Illiteracy rate		0.0861	0.2951	
Economic freedom index			3.6725	3.2408**
Constant	23.0822***	36.4340***	42.4029	7.3880
Obs.	106	96	87	87
McFadden's R^2	0.6541	0.7232	0.7476	0.7008
LR TEST FOR COMBINING CATEGORIES (P>chi2)				
Poor-Emerging Ec.	0.000	0.000	0.000	0.000
Emerging-Booming&affluent Ec.	0.000	0.000	0.000	0.000
Poor-Booming&affluent Ec.	0.000	0.000	0.000	0.000

Note: ***p < 0.01, **p < 0.02, *p < 0.05, °p<0.10. For the sake of readability, Gini coefficient was multiplied by 100.

Results and policy implications

Table 5. Determinants of relative membership probability by category.

Pr POVERTY vs EMERGENCE	Pr BOOM&AFFLUENCE vs EMERGENCE
Age dependency ratio - high fertility rate (+)	Age dependency ratio (-)
Export growth in 1985-99 (-)	Percentage of urban population (+)
Investment growth in 2000-14 (-)	Export growth in 2000-14 (-)
Income share held by richest 1% in 1985-99 (+)	Income inequality (-)
	Government size in 1985-99 (-)
	Economic freedom (+)

Note: + and – indicate respectively a positive and negative statistical relation between the determinants and the relative membership probability.

1) Important change in the **nature of economic emergence**: from participation to global markets to high rates of domestic investment growth (i.e. **from external to domestic dynamism**), where **rates are more important than levels** (investments and exports).
2) **Demographic and redistributive policies** are both part of a linear path that can lead a country to emerge and, then, to gain the high-income status.
3) **No support for the Kuznets-based hypothesis**: policies that redistribute income from the elites, represented by the richest 1%, to the rest of population may help low-income economies in achieving higher-than-average rates of growth.
4) The **institutional setting** is the main factor leaving emerging economies behind high-income countries.

WHAT'S NEXT?

The results of our analysis have been obtained through a comparative approach of statics. In other words, we have studied in specific periods of time what factors have determined the probability of a country to belong to a category rather than to another. From this basis, future research should focalize on specific cases of transitions across the categories and study their determinants from a dynamic perspective.

THANK YOU FOR YOUR ATTENTION!