



University of
St Andrews

Redefining Economic Development

The Role of Noneconomic Factors

Ludovine A. Tarsia | 100000374 | lt25@st-andrews.ac.uk

Supervised by Dr. Kais Bouslah and Dr. José Manuel Liñares-Zegarra | School of Management
Undergraduate Research Internship Programme (URIP)

REFOCUSING THE NOTIONS OF GROWTH AND DEVELOPMENT

As noted by G. Myrdal (1974), the pre-1970s neoclassical methodology treats the quantitative increase in per capita income (GDP/capita) as conducive to qualitative socio-institutional change. Economic growth and economic development have therefore been used interchangeably and important structural transformations within societies have remained largely unexplained. According to both R. Brinkman (1997) and F. Cracolici (2010) this has had conceptual and methodological consequences on how economic growth and development have been studied so far.

Significant research contributions have given the notion of economic growth a more nuanced meaning, describing it as affected by other aspects of social order: political stability, the organisation of education and labour, cultural identities as well as wider aspects of social wellbeing ranging from health to happiness. These relationships have however not been considered within the boundaries of a systematic theoretical framework.

Economic growth, associated commonly with growth in GDP, is actually to be viewed as only one of many aspects of economic development, which comprises both economic and noneconomic factors.

AIMS OF THE RESEARCH

We sought to devise a model which could test the impact of a series of noneconomic systems on economic development. Based on the existing literature, hypotheses were formulated on the expected impact of the noneconomic variables. To test the hypotheses effectively, the chosen noneconomic systems were brought down to their "PURE" income-independent form before regressing them against measures of economic development. Economic development is represented in the model by the concept of Total Factor Productivity.

THE HYPOTHESES TO TEST:

- "Political Systems (understood as the complex interaction of political stability and bureaucratic efficiency) highly impact economic development"
- "Labour and Education Systems moderately impact economic development"
- "Cultural Systems do not significantly impact economic development"
- "Social Wellbeing systems significantly impact economic development"

THE CONCEPTUAL MODEL

$$1 \quad NE = \gamma + \rho E + \omega$$

The chosen systems of noneconomic factors were condensed into index terms through the Principal Component Analysis (PCA) function. The noneconomic systems were then stripped of their income-dependent components by regressing them against measures of economic growth.

$$2 \quad NE_{PURE} = \gamma + \omega$$

A new variable was generated, capable of capturing noneconomic systems as isolated terms. The variable was labelled NE_{PURE} and represents all income-independent noneconomic factors.

$$3 \quad TFP = \alpha + \beta NE_{PURE} + \epsilon$$

NE_{PURE} was regressed against Total Factor Productivity to test the hypotheses and assess the impact of noneconomic systems on economic development

GAPS IN CURRENT LITERATURE

• No clear-cut distinction between economic growth and economic development. This is needed to separately study the impact of economic and noneconomic factors on the economic health of a given country.

• No comprehensive and accessible model capable of assessing the impact of noneconomic factors on the level of economic development of a given country.

DATA SOURCE AND SAMPLE

• Data for the systems labelled "political", "economic and labour" and "social wellbeing" was sourced with the World Bank (WB) database

• Data for the "cultural" systems was sourced with the Quality of Government Codebook (QoG)

• The Sample covers a total of 104 countries across the period from 1990 to 2012 (missing values treated as unaltered from previous years)

TFP Total Factor Productivity is our chosen measure of economic development. It is technically defined by Robert C. King and Ross Levine (1993) as "Real per Capita GDP Growth - (0.3) * The Growth Rate of the Capital Stock per Person"

NE This is the index term of four Noneconomic Systems:

- Political Systems measured by Institutional efficiency and Democracy Status
- Labour and Education systems measured by the Total Literacy rate, the level of School Enrolment, Expenditure per Student Employment and Measures of Talent
- Social Wellbeing Systems measured by levels of Human Poverty, Health Services Provision, Survival rate, Gender Bias, Gender Empowerment, Inequality and Environmental Sustainability
- Cultural Systems measured by indicators of Social Values

E This term represents All Economic Factors. It comprises:

- Economic Growth measured by GDP per capita
- Financial Development measured by Liquid liabilities to GDP (%), Bank credit to bank deposits (%), Central bank assets to GDP (%), Bank private credit to GDP (%), Stock market turnover ratio (value traded/capitalization) (%)

All data was elaborated with STATA (v. 12) software

CHALLENGES:
Choosing the best available measure for the variables
Designing a model that reflected our vision of the relationships

OUTCOMES

POLITICAL SYSTEMS

Contrary to expectations, the "PURE" components of political systems were only moderately significant. This can be explained by the high dependence of the chose variables on the macro-economic environment. The residual "PURE" term is therefore possibly not the best representative of the impact of political systems in their entirety.

LABOUR AND EDUCATION SYSTEMS

Contrary to expectations, labour and education systems were found to be statistically significant in their "PURE" form and therefore capable of highly impacting TFP (economic development).

CULTURAL SYSTEMS

Cultural systems cannot be said to impact TFP significantly in their "PURE" form. Cultural systems are long-term processes which are not largely susceptible to the shocks of information of the external economic environment and do not necessarily interact with the productive systems of a given country.

SOCIAL WELLBEING SYSTEMS

Most convincing is the evidence given for social wellbeing systems. The results yield high levels of significance for all "PURE" components. This is also due to the amount of data that is available for the chosen variables.

IMPLICATIONS

The advantage of extracting the income-independent components from the noneconomic systems is in appreciating the true impact of these factors beyond changes in the financial arrangements of a given country. This allows policy makers to make informed choices about how to prioritise areas of reform with respect to increasing levels of total factor productivity—i.e. economic development.

Our study concludes that social well-being and labour and education systems in their "PURE" form can significantly impact economic development, regardless of considerations on economic growth, whereas political systems must be assessed keeping economic growth in high regard. Cultural systems, predictably, do not seem to strongly affect economic development to the same extent and, as such, should not necessarily be prioritised within the context of emerging and developing economies.

FUTURE DEVELOPMENTS

Further research can be deployed to assess the sign of the correlation between Total Factor Productivity (TFP) and noneconomic factors. As a methodological alternative, an index term may be generated with PCA for every year within the given data. Also in terms of methodology, alternatives can be elaborated for the treatment of the missing variables in the data for each system.

LIMITATIONS OF THIS MODEL:

- The model is highly sensitive to the choice of variables and is likely to yield different results in a separate set of circumstances
- The categorisation of variables is accusable of subjectivity

ACKNOWLEDGEMENTS

I feel privileged to have actively contributed to the research agenda Dr. Bouslah and Dr. Liñares-Zegarra and would like to thank them for their guidance and support throughout the project. I would also like to take the opportunity to thank the Dean of Arts and Dean of Science for the experience.