CHAPTER 11

Conservation of Capital: homeomorphic mapping from intangible aggregate macro-economic CDR space into tangible micro-economic production spaces

Reference: Ridley and Ngnepieba (2018).

The parsimonious capitalism, democracy, rule of law (CDR) *growth model is the first global time invariant cross country model. It is the first to incorporate aggregate exogenous and endogenous sources of capital into a model for converting capital to real gross domestic product adjusted for purchasing power parity. Aggregate capital is distributed to micro-economic units of production. This mapping is shown to be homeomorphic from intangible aggregate macro-economic* CDR *space into tangible micro-economic production spaces, such that under certain prescribed conditions capital is conserved.*

Keywords: CDR index, GDP, Capitalism, Democracy, Rule of Law, Entrepreneurship

1. Introduction

A number of classical, neo-classical and modern economic growth models have been presented over time. The first model to include entrepreneurship was presented by Schumpeter (1911)(1928)(1954). Solow (1956)(1957) presented a neoclassical aggregate production function that has been widely adopted by economists. His adaptation of the Cobb-Douglas (1928) production is based on fixed capital. But, it does not include human capital ideas of imagination and creativity and must come up short when accounting for the totality of capital and growth. Also, since the Solow growth model is a production function stated in the aggregate, it represents a fallacy of composition (Cohen and Harcourt, 2003). There is no such thing as an aggregate production function. There is no way around this obstacle. Houthakker (1955) discusses some micro combinations and suggestions for their aggregation into industries. Leontief (1906-1999) proposed the fixed proportions production function. The purpose of this paper is to explore aggregation to a national level. We show that under certain abstract configurations of productions units, an aggregate production function that is equivalent to the sum of individual production units is theoretically possible. But, these configurations are limited, restrictive and short of a miracle, most unlikely to occur in practice.

A better way to capture total capitalization for explaining what is responsible for economic growth is the Ridley (2016)(2017a)(2017b)(2017c), Ridley, Davis and Korovyakovskaya (2017) and Ridley and Khan (2019) CDR growth model: $g=f(C,D,R)$. It is the most recent heterodox model that shows that the way capital is converted to real gross domestic product (GDP) is the same all over the world. Essentially, the catalyst rule of law (R) attracts intangible capital (C), and the catalyst democracy (D) deploys it optimally to create tangible wealth in the form of products and services. The catalysis is as described by Berzelius (1779-1848) in that D and R speed up the C to GDP conversion process but are not themselves changed by the process. The purpose of this paper is to show how capital from the aggregate real gross domestic product adjusted for purchasing power parity (G) can be distributed to micro-economic

10.2478/9788395771361-011