

INNOVATION AND NEW FORMS OF ECONOMIC GOVERNANCE

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Abstract. The purpose of the paper is to study the connection between technological progress on the one hand, and systems of economic governance, on the other hand. A simple model of economic governance is introduced, deriving the functional capacity of social structures to carry out technological progress from their capacity to appropriate capital. That capacity is grounded both in efficiency and legitimation. That broad theoretical frame is applied to the coexistence of constitutional states and other forms of economic governance. Empirical evidence indicates that constitutional states are losing their capacity to appropriate capital. Additional, contextual evidence suggests two other patterns of social change. On the one hand, demographic growth is slowing down. On the other hand, absorption of innovation in the global economy, back in the past strongly correlated with the fiscal intervention of governments, presently seems to have disconnected from the economic power of constitutional states.

Key words: economic governance, innovations, social change.

Introduction

December the 12th, 2015, the Framework Convention in Climate Change was signed in Paris, under the auspices of United Nations. It marks an important step in facing the seemingly biggest challenge for our civilisation, namely the passage from fossil fuels to renewable energies, as well as the implications of the already happening climate change. The Framework Convention is based on the concept of nationally determined contributions, from the part of signatory states. Thus, constitutional state seems to be the pivotal structure of economic governance in that global, institutional scheme. Yet, new forms of economic governance are emerging. They can be tentatively grouped into three categories: libertarian, collaborative, and corporate. Libertarian initiatives seem to have gathered power after the 2008-2009 financial crisis. It is to notice that the libertarians have evolved. During the period between 1950 through 1980, their ideology focused on the private property of assets, especially real estate, as expressed for example by Heath (1957) or by McCallum (1970). Presently, the libertarian doctrine seems to be grounded in the notion of social flexibility: modern libertarians assume that society is a form of technology. As such, it develops through diversity, and experimentation. Flexible social structures based

on private contracts are claimed to be much more apt to achieve these ends than the constitutional state (e.g. King 2005; Janeba 2006; Francis, Francis 2011).

On the other hand, collaborative structures are emerging in very close connection with technological innovation. This is the so-called ‘open source’ culture, reflected, among others, in intellectual property based on the notion of creative commons (which is *de facto* collective property). This type of social structures takes the form of fluid, flexible networks, based on adherence through action rather than on formal contracts. Three-dimensional printing, and the production of software are currently among the most preferred domains of those networks. An excellent account of developments in those structures is provided by Rifkin (2014).

At the corporate level, interesting developments are taking place in the domain of international trade. The movement of trade facilitation, finds a very explicit expression in the Trade Facilitation Agreement (TFA), negotiated Bali, December 2013, under the auspices of the World Trade Organization. The TFA explicitly states that the principle of national sovereignty has produced too many non-tariff barriers to trade, and those barriers should be abolished in order to develop international trade. World Trade Organisation claims that especially the developing countries should give up some of the legal procedures they practice as for imported goods, in order to be able to have gains from trade. In parallel, regional agreements, like the Transatlantic Trade and Investment Partnership between the United States and the European Union, or the Transpacific Trade Partnership between the United States and Asian countries are being negotiated, in quite an intriguing secrecy. They all make a new generation of international agreements, and progressively introduce a new notion, namely a systematic primacy of corporate business interests over the interests of constitutional governments. That primacy seems to find its expression in a general principle that when national sovereignty comes in the way of international business, business should have priority.

Are we facing as deep a shift in the paradigm of public governance as these initiatives suggest, or are they just foam on the surface? If there is a paradigm shift, is it functional or dysfunctional regarding the ambitious goals of the Framework Convention on Climate Change? The present paper attempts to tackle this issue. The next chapter provides theoretical foundations for such an assessment, and makes the grounds for presenting empirical evidence, which follows.

1. Theoretical model of economic governance

The starting point of the theoretical reflection is the question whether at all, and to what extent social systems can improve endogenously. In this article, it is assumed that social systems have the capacity to learn through interaction and experimentation, i.e. they have the capacity to generate new, functional patterns of collective behaviour by experimenting with various strategies and

sharing information about their outcomes. The accumulation of learning is imperfect, as the theory of games with imperfect recall, by Selten (1975), suggests.

Besides the possible control of territory, hierarchical social structures have the capacity to control capital goods, through the acquisition of binding, enforceable claims on resources, or through force. Capital goods controlled exclusively through force have no measurable market value. The capacity of any social structure to impact or control the overall allocation of capital in the economic system depends on the share of the total capital stock that the given social structure can appropriate.

The current state of technology is reflected in the allocation of resources – capital and labour – between various technologies. Each individual technology is represented by a production function. The latter can display perfect substitution between capital and labour, in the Cobb-Douglas manner, or an imperfect one. Technological change means significant (i.e. more than random) change in the distribution of resources over the set of available technologies.

Systems of economic governance can be understood as complex sets of institutions pertaining to the appropriation and employment of valuable resources. Consistently with the relatively recent developments of the old institutional school, institutions emerge and change, as the outcome of linguistically logical statements about reality (Hodgson 1993, 2000, 2006; Searle 2005). Those linguistic structures give rise to recurrent forms of action, as described in the classical sociological theory by Parsons et al. (1965). Recurrent patterns of action transform, in turn, into the rules of social games with imperfect information, as described by Harsanyi (1953, 1966, 1967, 1968). Some of those rules are selected to be the constitutive rules of legal systems, and they become secondary rules of recognition as for the primary legal rules of conduct, consistently with Herbert Hart's theory of law (Hart 1961). In other words, any institutionalized system of economic governance emerges and acquires relative stability as the outcome of past strategies applied by social agents. Any presently observable form of economic governance is behaviourally logical, and, in the same time, lagging on current events, to the extent that it is grounded in collective, past experience.

The institutional structure of an economic system can be represented as a total of shares in the capital stock, held by different types of social structures. The capacity, on the part of any type of social structures, to produce technological change depends on their relative share in the capital stock. In a simplified form, that institutional structure can be represented as a binomial distribution of capital between the constitutional states on the one hand, and all the other types of social structures, on the other hand. Those other types of social structures are, most of all: corporate structures, local communities and social networks of various types (e.g. collaborative commons as defined by Jeremy Rifkin). The current state of that binomial distribution, at a given point in time,

represents the cumulative outcomes of collective learning until that moment.

It is further assumed that the capacity of constitutional states to appropriate capital depends both on the strictly spoken efficiency of employment that they use that capital for, and on political legitimation granted to governments. Economic systems may be adjusting, on the long run, to the fact that governments tend to distort the marginal efficiency of capital when they appropriate it (e.g. Meade 1958; Modigliani 1961; Diamond 1965). As for the concept of legitimation, it can be understood in two, slightly distinct ways. On the one hand, legitimation is a set of rules in itself, and those rules emerge in a discursive process, according to the theory of discursive politics by Habermas (1975, 1979, 1996; Fraser 1990). On the other hand, at any given moment, the political system has some definite capacity to represent collective interests, and assure the hold of the represented social groups on the capital stock available. Probably the best exposition of that second meaning of legitimation is to find in the so-called pork barrel theory, as developed by Weingast (Weingast et al. 1981; Weingast 1995, 1981).

Significant institutional changes leading to the emergence of the presently known constitutional state took place on the rising tide of demographic revivals after major demographic slumps, associated with big waves of technological change. There were three such big revivals after big depressions (e.g. Braudel 1981, 1983: 514-555). The first one is to notice between 1100 and 1350, and it was that mounting flow of population that made the background for the first entity recognized as a modern state, namely to the kingdom of Two Sicilies under Frederick II (1194-1250). During this period, Europe developed its system of agriculture and food supply. That system reached the limits of its capacity about 1350. Between 1350 and 1450, the European continent experienced a significant demographic and economic depression. The trend reversed after 1450, and it was the turn of wind power and waterpower to be harnessed with the technology of mills. That technological wave was associated with another leap in the institutional development of the state: it was precisely when the three monarchs that Francis Bacon called ‘Three Wise Men’, namely: Henry VII Tudor, Louis XI of France, and Ferdinand of Spain, created really modern states, with armies, financial systems and distinct administrative structures. After 1650, until about 1750, Europe experienced still another demographic depression, and we can notice that the pattern of constitutional, republican state that we know today emerged only after 1750, and its emergence was associated with the development of large – scale industry. It is to notice that each of the big technological waves in question required an important reallocation of capital. The institutions of the state could be possibly an active participant in such reallocation. Some theorists even go to claiming that state as an institution mostly developed in order to provide accurate protection and robustness to private

property rights (e.g. Schlatter 1951). Basing on those presumptions, the present article assumes that the demographic component has significant impact upon institutional change, and technological progress. Demographic growth means that each consecutive generation comprises more people than the previous one. New social roles can emerge as more people inhabit the same territory and use the same resources, and the system of social norms, legal rules include, becomes more and more complex. The faster the demographic growth is, the faster increases the required complexity of institutions. As demographic growth slows down, the pressure on institutional complexity decreases. Social systems might find themselves with something, which fault of a better expression can be designated as an ‘overhang of institutional complexity’: institutions adapted to handle quick emergence of new social roles become excessively complex regarding the current pace of social change.

On the other hand, demographic growth corresponds of a quantitative expansion of product markets, and of the labour market. Following the classical Smithsonian assumption, it can be presumed that in the presence of relatively quick demographic growth, domestic markets of individual constitutional states expand relatively fast, too. Conversely, when demographic growth slows down, or reverts to demographic depression, domestic markets shrink, too. It can be assumed, following the theory of business cycles by Joseph Schumpeter (Schumpeter 1939: 461), that technological innovation needs absorption in the form of new products and new businesses, if said innovation is supposed to change the economic system. That absorption is relatively easier in the presence of quick demographic growth. As population grows at a slower pace, or depresses, expansion of individual businesses is still possible, but it requires more effort in international trade. Thus, relatively slow demographic growth creates pressure to increase international trade in order to implement fully the technological change. This, in turn, makes national borders an obstacle to the absorption of innovation. Summing up, the demographic context can profoundly influence the functional value of constitutional state, as compared to and coexisting with other possible forms of economic governance.

2. Empirical evidence

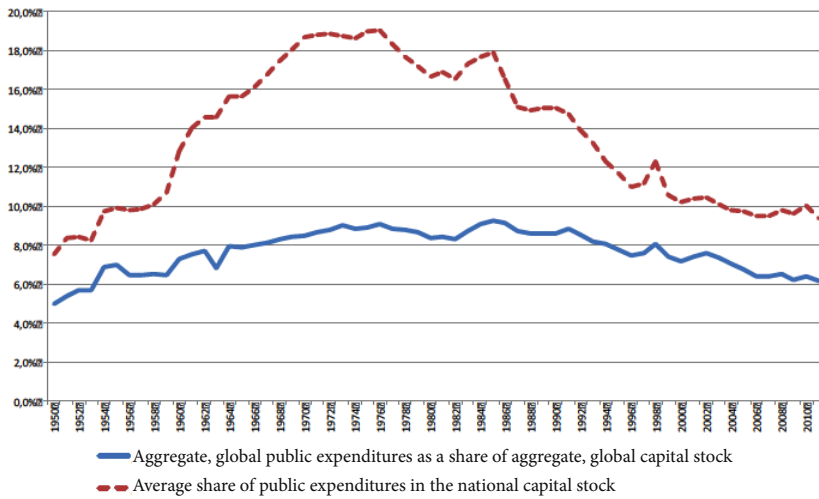
The theoretical foundations of institutional change, presented above, make the background for empirical investigation. Empirical evidence, provided further in this chapter, attempts to reconstruct the big, broad trends that take place at the scale of the whole planet. That investigation starts with the main background factor, namely the quantitative expansion of the global population, and of the global population as well.

We are living a period, which, fault of a better word, can be called ‘global slowdown’. Demographic growth of the global population, as measured by the World Bank, was of 1,2% in 2014, as compared to 1,73% in 1990. It means that

constitutional states might currently contain, in their institutions, an excess of complexity, and that domestic markets of individual states might not offer enough opportunities for the growth of local businesses, and for the absorption of innovation. National borders might be becoming more and more an obstacle, rather than a stable benchmark. Interestingly enough, mankind is moving more and more, too. The international migrant stock, i.e. the number of people born in a country other than that in which they live, measured as percentage of the global population, was of 2,51% in 1965, and climbed to 3,09% in 2010. In the same time, economic growth is slow, and likely to slow down even more. Deflation, especially in the prices of raw materials and fossil resources, becomes a fact. On the whole, more threats than opportunities loom at the horizon. Some experts say directly that global growth falls short of expectations. According to the World Trade Organization, growth in global trade since 2011 through 2014, and in the first half of 2015, marked a historical slowdown. Up until 2010, global trade used to grow twice as fast as global GDP. Since 2011, that pattern seems to have been broken, and trade has been growing at a pace close to that of global output. Focused studies, conducted by the World Bank, regarding the global outcomes of digital technologies, show that the global diffusion of digital technologies is rather a somehow sluggish evolution, instead of being the so-called ‘digital revolution’.

A system of economic governance can be judged as distinct from an older one, when it is correlated with a significantly different distribution of capital across the social system. A significant change in the respective shares in the available capital stock, appropriated by distinct types of institutionalized organisations, can indicate that a new system of economic governance is emerging. As it comes to comparing constitutional states with all the other types of organizations, the ratio of gross government expenditures, divided by the available capital stock, can be quite informative. It reflects the capacity of constitutional states to appropriate capital, both through taxation and borrowing, for financing current spending. Figure 1 shows the 1950-2011 trend of that basic ratio in two variations: aggregate and distributive average. The former, represented by the continuous line on the graph, measures the ratio of total, global expenditures of all the governments studied (167 countries), divided by the global capital stock. The latter, which finds its illustration in the dotted line, is the arithmetical average of national ratios ‘government spending divided by available capital stock’. Both measures seem to be strongly correlated and follow the same trends, with three distinct periods.

Figure 1. The 1950–2011 trend of the basic ratio in aggregate and distributive average



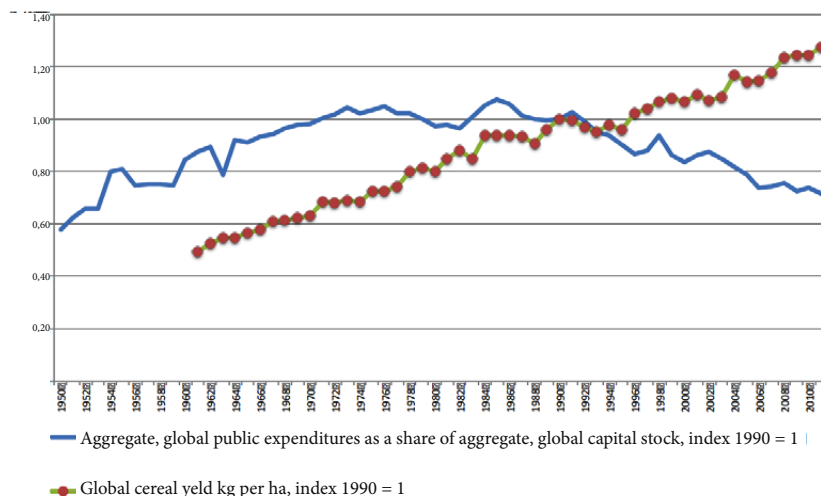
Source: Feenstra et al. 2015.

From 1950 to the mid-1970s, governments appropriate a growing share of the capital stock accumulated. That period roughly corresponds to the widespread tendency to apply Keynesian economic policy in the developed economies. Between the mid-1970s and the mid-1980s, a short saddle is visible: the public sector first recedes, then advances. These are the first years of fashion for monetarism in economic policy. After 1985, when the so-called NCM model of economic governance starts to take root, the trend is clearly descending: the capital stock accumulates much faster than public sectors grow.

Currently, constitutional states seem to be losing their grip upon the available capital stock. It seems that a serious change in the institutional structure of the global economy has been and is taking place. The next step of empirical investigation is to place that institutional change in the context of innovation, and more specifically of technological progress. The theoretical assumptions introduced previously suggest using a measure of technological progress, which reflects well the overall absorption of new technologies in the social system. Thus, commonly used indicators of innovation, e.g. the number of patent applications, seems a little bit out of place. On the other hand, diffusion of innovation is a process of spill-over, from the most advanced fields of technology, down to the most day to day activities. In the basic sectorial structure of economic systems, agriculture is considered to be the least innovative field of activity: it is somewhere at the bottom of that fountain of new ideas. Hence, the indicator of agricultural productivity, as the cereal yield in kg per hectare, published by the

World Bank, seems to be a relevant measure to assess technological progress at the global scale.

Figure 2. Trend of agricultural productivity



Source: Feenstra et al. (2015).

Figure 2 shows the trend of agricultural productivity, compared to the previously presented trend of aggregate, average share of public expenditures in the global capital stock. In order to assure full comparability, both indicators have been indexed on the constant basis of their respective values observable in 1990. Up until the early 1990s, those trends seem to have been strongly correlated. Since then, the correlation has broken, and agricultural productivity has been growing despite the shrinking participation of the public sector in the available capital stock. Technological progress seems to have accommodated to the institutional change. The fiscal intervention of constitutional states seems to matter less and less to the absorption of innovation. Clearly, other social structures are taking the relay.

Conclusions

The present paper is an attempt to assess, what new forms of economic governance are likely to emerge or develop presently and in the near future, as the institutional context for technological progress. The principal technological challenge for humanity as a whole is assumed to be the climate change, with all its implications, whilst the system of economic governance is studied as a dichotomy made of constitutional states on the one hand, and all the other forms of economic governance on the other hand. The theoretical model of economic governance introduced in this article assumes that any form of such govern-

ance emerges and develops through the institutionalization of past experience. When new forms of economic governance are studied, the main question is: what institutions have taken form on the grounds of past events? In other words, however breakthrough a social ideology claims to be, it is always based on what people have actually practiced for generations. Constitutional states have emerged as a rational response to the conjoint necessity of stabilizing legal systems and claims on capital goods on the one hand, and organizing quickly growing populations in limited territories. Other presently observable forms of economic governance, like the libertarian communities, or collaborative commons, seem to be an antithesis to constitutional states rather than autonomous social inventions. In other words, the present article claims that those alternative forms of economic governance occupy as their own the social space left free by constitutional states.

The economic power of constitutional states, as measured by their capacity to appropriate fiscally the available capital stock, has been decreasing since approximately 1975. Global technological progress, as measured by the index of agricultural productivity, had been strongly correlated with the fiscal participation of constitutional states in the capital stock, until the early 1990s. Since then, the correlation seems to have broken, and the global absorption of innovation takes place more and more outside of fiscal stimulation. Demographic growth is slowing down, national markets grow much slower than, for example, two decades ago. Constitutional states might represent, right now, an excess of institutional complexity, and the principle of national sovereignty might be becoming a burden to technological progress rather than a guarantor of legal security. Those observations allow formulating a tentative and cautious thesis that the allegedly new forms of economic governance, alternative to constitutional states, will be gaining in importance over the decades to come. Assuring the technological progress necessary to tackle the climate change with all the adjacent challenges might require a much larger than today recruitment of organizations other than national governments.

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