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The nexus of economic and institutional evolution☆

Bilin Neyapti *, Yavuz Arasil

Bilkent University, Dept. of Economics, Bilkent Ankara 06800, Turkey

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ABSTRACT

The current state of the development economics literature ascribes an indisputable central role to institutions. This paper presents a formal model of institutional evolution that is based on the dynamic interactions between formal and informal institutions and economic development; the main features of the model is consistent with the fundamental theories that shed light to institutional evolution, namely the collective action and transaction cost theories, as well as dialectics. As informal institutional quality accumulates like technological know-how, while the level of formal institutional quality is chosen by the government to maximize welfare, subject to the economic and political costs. The solution of the model yields a punctuated trajectory of formal institutional evolution. Simulations reveal that the extent of diversity in informal institutional quality across a country delays formal institutional reforms. We also observe that, both the optimal quality of formal institutions and welfare are higher the more homogeneous is the country with respect to its informal institutions or the cultural attributes.

1. Introduction

With the increased contention about the inadequacy of markets alone to deliver economic efficiency, the new institutional economics literature (pioneered by Williamson, 1985, and North, 1990) has gained prominence since the 1990s. The policy counterpart of this has appeared in the Second Washington consensus, coined in the term: “institutions matter”. The intertwined nature of the relationship between institutions and economic development has also been the focus of earlier scholars, such as Hayek, Veblen and Marx. While the role of institutions on economic development has been acknowledged widely, the analyses of the role of institutions have been mostly very descriptive, however, as it is also very difficult to decipher as the cause or the effect of economic outcomes in empirical studies. Nonetheless, numerous studies have demonstrated the significant association of the measures of governance and polity with economic performance. Although the channels of association between economic outcomes and institutions have been suggested in political economy, institutional economics and game theory literatures, a unified formal model of institutional evolution vis a vis macroeconomic dynamics has so far been lacking.[1] This paper presents an original formal model in a step to fill this gap in the literature.

Economic institutions, formal or informal, are transaction cost-reducing agents that contribute to economic efficiency by helping agents to reveal preferences, form expectations and internalize externalities. *Informal* institutions are norms and traditions; they are the unwritten rules of the game and, shape the way economic agents interact in social life or in production processes. Hence, *culture* encompasses the numerous aspects of informal institutions that evolve slowly albeit continuously with the evolution of elements that are endogenous to a society. *Formal institutions*, on the other hand, are the written rules and their enforcement characteristics, ranging from constitutions to legislations that regulate the interactions between the government and individuals, and contracts among the private agents.[2]

While formal rules of a society can be changed overnight, the effectiveness of those rules depends on whether they conform to the prevailing informal institutions or not. When in conflict with the prevailing norms and culture, formal rules are usually not adhered to and thus fail to deliver their proposed outcomes. Hence, formal rules cannot be considered as institutions without effective enforcement. Boettke et al. (2008) and Williamson (2009) both argue that informal institutions are more dominant in explaining the development process than formal institutions that need to adapt to the former for their effectiveness.[3] In a similar vein, Easterly et al. (2006) point at the crucial role of social cohesion in the choice of the level of institutional quality that affects, in turn, economic growth.

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* Corresponding author. Tel.: +90 312 290 2030; fax: +90 312 266 5140.
E-mail addresses: neyapti@bilkent.edu.tr (B. Neyapti), avuzarasil@gmail.com (Y. Arasil).

[1] An exception is arguably that of Acemoglu (2006), which however possess several ad-hoc aspects of evolution and also does not distinguish between the formal and informal institutions whose evolutions are different in important ways.

[2] Williamson (2009) defines informal institutions as private constraints and formal institutions as constraints defined and enforced by the government.

[3] Boettke et al. (2008) argue that indigenously introduced endogenous institutions are stickier (more path-dependent) than the exogenously-imposed or guided adoption of institutions.

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This paper contributes to the literature of institutional economics by modeling formally the differential patterns of the *endogenous* evolution of formal and informal institutions in relation with economic development.[4] We conjecture that the path-dependent pattern of formal institutions gets punctuated when economic inefficiencies lead reform pressures to build up. Such a pattern of institutional change is consistent with the fundamental arguments in the institutional economics literature that can be summarized as follows: i) formal institutional reforms may be costly for at least some part of the society due to the *creative destruction* that are likely to be generated by those reforms; ii) given continuous economic progress, the persistence or time-dependence of institutions resulting from the *status-quo* bias leads to inconsistency and conflict within the production processes, and hence pose a deterrent to long-term growth; and iii) a punctuation in the path-dependent pattern indicates that the cost of maintaining the prevailing institutions may eventually exceed the cost of reform. As a result, while economic growth may follow a continuous progress, formal institutions are conjectured to follow a pattern that exhibits intermittent changes, which is consistent with the observed phenomena.[5]

Although the common characteristics of formal institutions, which are called the *best-practice* with regard to their ability to reduce or eliminate economic inefficiencies, can be freely available information, not all the countries are willing or able to adopt them. From a political economy perspective, Levi (1988) argues that a government who expects a long tenure has an incentive to improve economic institutions. Holcombe and Boudreaux (2013) support this argument with an empirical analysis; they show that the average tenure of an autocrat is positively related with the institutional quality, suggesting that a long-tenured autocrat's interests are likely to be aligned with those of the encompassing interests. Olson's collective action theory (1982) argues, however, that special interest groups may get empowered over time in especially stable democracies, and engage in distributional lobbying activities that favor *status-quo* and thus resist reforms, resulting in *institutional sclerosis*. Accumulation of such lobbies results in inefficient resource allocation. Similarly, Acemoglu and Robinson (2000) explain the resistance of the politically powerful to institutional development by the potential revenue losses of via creative destruction. Acemoglu and Robinson (2012) refer to the same argument to explain the emergence and persistence of *extractive institutions*.

Hall and Jones (1999) incorporate institutions as a factor that augments total productivity. This paper considers formal institutions as a specific form of technology. Similar to the regulatory authority that is responsible for technology adoption in Bellettini and Ottaviano (2005) (BO, henceforth), the government in our model chooses the level of formal institutions.[6] Our model departs from BO in various respects, however. First, we solve a (politically-oriented) government's period by period optimization problem, given that political choices are usually not made with a long-term perspective. We assume that the income levels of economic agents are positively associated with their degree of influence on the decision of institutional reform.[7] Second, we differentiate between the evolution processes of the formal and informal institutions.

We consider that reforming formal institutions is a form of technological change that may benefit some agents at the expense of others, as in creative destruction. Those who benefit from the prevailing institutional network resist the change via political lobbying activities. Since short-tenured governments may tend to accommodate the demands of an organized minority, this may hinder the adaptive changes in formal institutions.[8] Institutional persistence is punctuated once the costs of maintaining the status-quo exceed the cost of reform.[9]

The literature on institutional evolution ranges from the adaptive approach of North (1990) to the historical and path-dependence approaches, exemplified by Kuran (2004), and the political-economy approach of Acemoglu (2006). Acemoglu proposes a framework of institutional change where the society is composed of three classes: the workers, the middle-class and the elite. Both the elite and the middle class invest, but their productivities differ. Inefficiencies arise in the form of the elite's rent extraction and/or property rights enforcement, or preventing the technology adoption by the middle class. The probability of a political power shift (from, elite to the middle class) develops as the middle class incomes rise. The change of institutions is explained by the middle class ending the domination of the elite with some exogenous probability. Institutions are hence modeled by Acemoglu primarily as the agents of income distribution, rather than being determined by it.[10] Other formal models of institutional evolution usually utilize a game-theoretic framework. Desierto (2005) models the evolution of institutional and technological change together, albeit without any consideration of interest groups. Yao (2004) models institutional change in relation to the welfare distribution. These two studies, however, do not differentiate between the evolution of formal and informal institutions. Given that a game itself imposes a built-in institutional structure, this paper does not adopt a game-theoretic approach.[11]

Hence, this paper differs from the existing literature in several aspects. First, it extends the framework of Neyapti (2013) by modeling explicitly the interactions between the formal and informal institutions, on the one hand, and each of their relation with the economic development process, on the other.[12] Second, we model explicitly the cost of inefficiency that arises from the inconsistencies between the two types of institutions.[13] In order to model the interest group dynamics, we consider, for simplicity, two economic sectors or social groups that are distinguished by the initial levels of their capital and informal institutional development. The differential developments of two groups' informal institutions identify their business culture or the way these groups conduct business, which, combined with different levels of physical capital, account for the differences in their *modes* of production.[14] The differences in the mode of production across the sectors thus imply different preferences, underlying the diverse demands for formal institutions. By contrast, the supply of formal (economic) institutions, which constitute the legal aspects of production relations, is common to the economy. Formal institutions are chosen by the government to

[4] Neyapti (2013) presents the first formal model that yields a punctuated pattern of institutional change.

[5] Roland (2004) likens such a pattern of institutional change to tectonic pressures building before an earthquake. Earlier studies that utilize the *punctuated equilibrium* concept (originally developed by biologist Eldredge and Gould, 1972), to explain institutional evolution mostly belong to the political economy literature, and is pioneered by Baumgartner and Jones (1993).

[6] BO explain the process of technology adoption by the differential behavior of the young and the old with regard to innovation and learning by doing.

[7] While this formulation of lobbying power for collective action is simplistic, theorizing endogenous coalition formation has been admitted to be rather difficult (see, for example, Grossman and Helpman, 2001).

[8] Adaptive change means that institutions evolve to eliminate new transaction costs that emerge as economies develop.

[9] Based on Arthur (1988), North (1990) argues that institutional inefficiencies arise due to multiple equilibria; bad luck in persistence of an efficient technology; lock-in; and path-dependence.

[10] Acemoglu distinguishes between the *political* and *economic* institutions, the former of which determines *de-jure* and the latter represents de-facto political power.

[11] As Aoki (2007) argues, institutions are "not summary representations of exogenous data of the game such as technology and preferences, but a summary representation (rules cum beliefs) regarding how the game is being played".

[12] The taxonomy of formal and informal institutions studied here does not coincide with that of political and economic institutions in Acemoglu (2006). We conjecture that formal institutions that are once supported by powerful interest groups may eventually pose a political constraint for their own actions due to the dynamics of the economics and interest groups. This highlights the importance of taking into account the evolution of informal institutions as distinct from that of formal institutions. Mathers and Williamson (2011), Williamson and Mathers (2011) and Williamson and Kerekes (2011) also emphasize the distinction between formal and informal institutions.

[13] Kane (1988) provides a thorough discussion of a similar dialectical process in the context of financial regulation.

[14] The term *mode of production*, as in historical materialism, stands for the combination of production relations and factors of production.