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Complementary institutions and economic development: An experimental study



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ABSTRACT

This paper considers the problem of why societies develop differently, a question most recently articulated by [Acemoglu and Robinson \(2012\)](#). We follow [North \(1990\)](#) in defining institutions as the “rules of the game in society.” The question then becomes why do some societies develop functional institutions while others do not? To investigate this question, we develop and examine a specific type of dynamic game (which we call an Institutional Game). Our point is that complementarities among the choices that all societies make as they develop can help to answer this question.

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“Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape interaction”
[[North, 1990](#), p. 3]

1. Introduction

Ever since Adam Smith, one perennial problem for economists is the question of why some economies develop and others do not. [Acemoglu et al. \(2005\)](#) and [Acemoglu and Robinson \(2012\)](#) list three possible explanations. As they explain, the “geography school” would claim that some economies are blessed with better climates and geographical conditions which makes agriculture and engaging in economic activities easier. A second view is that differences in development are the result of differences in the culture of the agents and the norms and conventions they develop to govern their work and social life (see [Weber, 1930](#); [Greif, 1994](#); [Fernández, 2008, 2012](#)). Finally, there is the institutional view, of which [Acemoglu and Robinson \(2012\)](#), along with [North \(1990\)](#), [North and Thomas \(1973\)](#), [Williamson \(1985\)](#) and others are the main advocates, which claims that differences in economic development can be best attributed to differences in the institutions that different societies develop. For Acemoglu and Robinson, those societies that develop or inherit efficient economic institutions, specifically those that foster strong property rights and proper incentives, prosper while those whose institutions are dysfunctional suffer.

We view economic (and political) institutions as the set of rules (game forms) by which economic (and political) activity is governed. As quoted above, [North \(1990\)](#) states that economic institutions are “the rules of the game in a society or, more formally, are the humanly devised constraints that shape interaction.” Using this as our definition, the question then

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becomes why are some countries playing different games than others and why are some playing good games (i.e. games that lead to efficient outcomes) and others playing bad or dysfunctional games (games whose strategy sets are limited or only contain inferior equilibria)?

For [Acemoglu and Robinson \(2012\)](#), institutions are the end product of social conflict where different groups in society pursue their own selfish interests sometimes at the expense of the greater good. When elites are in power (or where political power is not shared broadly), the groups in control have the ability to seek rents at the expense of the general population and this prevents the proper set of property rights and incentives from being established. Sometimes these elites are the remnants of previous colonial experiences and sometimes they emerge on their own, but the set of institutions existing today is an outcome of this dynamic political economy exercise.

We agree that institutions often arise in this way, but take a more general approach following [Schotter \(1981\)](#) who looks at the emergence of social institutions. In that analysis, the set of institutions we have today is the result of decisions made in the past to solve a set of problems that all societies face. The solutions to these common problems determine the institutional structure of the economy today, an object we call the “Final Game.” For example, all societies must, at some point as they evolve, decide on a legal system (common or civil), (see [Glaeser and Shleifer, 2002; La Porta et al., 1998](#)), a banking system, a religion (Judaism, Christianity, Islam, Hinduism, etc.), a political system (monarchy, parliamentary democracy, etc.), a set of inheritance laws (primogeniture or ultimogeniture), a system of property rights (common or private), a constitution, family structure (liberal or authoritarian) (see [Todd, 1983, 1990](#)) (strong or weak) ([Alesina and Giuliano, 2010, 2015](#)), etc. We will call these problems, which in our analysis are themselves games, the “Formative Games.” In total, the Formative Games and Final Game constitute a dynamic game we call the Institutional Game.

The interesting point, and focus of this paper, is that the solutions chosen to solve one of these problems places constraints on the strategies the society has when facing other problems. For example, say that a society decides to adhere to Islam in the “Formative Game” where religion is chosen. This solution, however, has implications for the type of banking system they can then employ since, under Islam, interest is not allowed and a whole set of rules become relevant when conducting Islamic banking (see [Kuran, 2011](#)).¹

A further example may be the choice of legal systems which, as [La Porta et al. \(1998\)](#) have demonstrated, may have significant consequences for the way debtors and lenders and property rights are protected. Here, how a society decides on the legal system places constraints on the way stockholders are protected under bankruptcy and hence alters the strategies available to agents in other financial games they play. In other words, the existence of a solution to one societal formative problem creates constraints on the strategies available when trying to solve others. It is these complementarities and externalities that we are interested in here.

Closely tied to the legal system is the choice of a constitution. For example, the Magna Carta is a seminal document aimed at limiting the strategic choices of royalty and asserting the rights of barons. Countries that base their constitutions on the principles laid out there are able to protect themselves from exploitation by elites and create a Final Game with a legal system more amenable to growth. In the American experience, when our Founding Fathers wrote the original constitution and Bill of Rights they were intentionally binding the hands of future generations about a wide variety of strategies they might use. Although laws can evolve and strategy restrictions reversed, evidence suggests that such reversals are difficult. For example, in determining that state militias could arm themselves against the tyranny of the federal government, the American Bill of Rights restricted our current ability to control guns today, leading to a heavily armed citizenship as opposed to say, Canada or England, whose constitution has no such provisions.

Likewise, in a more contemporary setting, countries in the European Union who adopt the Euro give up sovereignty over their currency. This means that countries, such as Greece, have limited strategies for dealing with economic crises. They cannot control their currency and may be prone to longer and more devastating economic recessions. Finally, again as [Acemoglu and Robinson \(2012\)](#) demonstrate, choices made during a country’s colonial experience can have dramatic effects on the Final Game played by that society.

The key point of our paper is that, in the presence of complementarities, choices early on in development (the Formative Games) have a long-lasting impact on the final institutional structure of a society (the Final Game). Those societies that navigate their way successfully through these Formative Games determine efficient institutions while those who don’t are left with inefficient Final Games.

In this paper we focus on three factors which we think are important in determining the difficulty different societies face when navigating this institutional maze. These factors are expected to affect the difficulty of the institutional task for different reasons; some behavioral and some theoretical. Each factor determines an experimental treatment whose effects on efficiency we examine.

The first factor is the order in which societies face the Formative Games they do. Though we set up the experiment so that order will not theoretically matter, we expect that it could have effects for two behavioral reasons. In our experiments, we have subjects face three Formative Games: a Trust Game, a Prisoner’s Dilemma and a Pure Coordination Game. The way they navigate these games affects the Final Game they eventually play. In one treatment, we have subjects play these games in the order Trust → Prisoner’s Dilemma → Pure Coordination, while in another the order is the opposite: Pure

¹ Obviously, religion plays an important role in the cultural theories of economic development as [Weber \(1930\)](#) describes.

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