



On comprehensive wealth, institutional quality and sustainable development—quantifying the effect of institutional quality on sustainability

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ABSTRACT

This paper shows a significant and causal positive relationship between good institutions and sustainability. While sustainability is measured with the adjusted net saving (ANS) indicator, institutional quality is measured using an average of six dimensions of governance. An instrumental variable is used to account for endogeneity. Rearranging the set-up and running the regression on the net national savings rate lead to results displaying a much smaller and weaker effect. This finding suggests that compared to the saving of physical capital, the saving of non-physical capital is influenced more strongly by institutional quality.

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1. Introduction

Decisions concerning the depletion rate of a natural resource or the harvesting rate of a renewable resource is based on long-term planning, and maximizing long-term utility may involve waiting, e.g. until stocks are re-grown or until resource prices reach a certain level. Thus, it is crucial to the decision making process of an individual that he can rely on the institutions around her to persist. An individual must be able to rely on the fact that his rights will continue to be enforced in the future. Institutions should therefore guarantee a stable framework in which the individual can decide on (sustainable) depletion rates. This example illustrates one way in which institutions may influence savings decisions not only for physical capital but also for natural capital.

With this intention, this paper explores the impact of institutional quality on the change in comprehensive wealth in a cross-country framework. The goal of the paper is to quantify the effect that institutional quality has on adjusted net saving (hereafter referred to as ANS), an indicator that measures the change in wealth using a broad definition of capital. This effect is shown not only to be positive, but also statistically and economically significant. An instrumental variable is used to establish a one-directional impact of institutions on ANS, i.e. to rule out reverse causality.

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There exists a large and well-established literature on the effects of institutional quality on economic growth.¹ Against the background of current research the contribution of this paper is to focus on the impact institutional quality has on the changes in comprehensive wealth rather than on individual parts of capital. It aims to present the overall effect, rather than explain the detailed mechanisms at work.

Atkinson and Hamilton (2003) suggest that a country's institutions may play an important role for an economy's sustainability, particularly in resource-abundant countries. The importance of institutions and especially of secure property rights for savings decisions is outlined especially well in Acemoglu et al. (2001). The so-called resource curse – many resource-abundant countries suffer from low rates of economic growth – which has been explained among other things by the quality of institutions (e.g. Rodrik et al., 2002), makes it interesting to investigate how institutional quality affects ANS, e.g. by determining the ability to invest natural resource rents in long-lasting investments. Therefore, the paper first aims to answer if institutional quality has an impact on ANS rates.

The nature of many aspects of natural and intangible capital provides another reason why institutions could be particularly important for the difference between ANS and the saving of physical capital (net national saving). Therefore, the paper tests in a second step if there is a difference between the impact institutions have on ANS and their impact on the saving of physical capital.

The rest of the paper is organized as follows: after the theoretical framework is presented in the following section, the estimation method and the data sets are introduced. This is followed by a presentation of the regression results and a subsequent discussion of them in the third section. Finally, the paper presents a number of checks for the results' robustness and ends with a brief conclusion.

2. In retrospect: the framework of institutions and sustainability

The first issue which needs to be accurately defined is the nature of 'institutions'. Institutions are conceptualized as written and unwritten rules and norms that organize the life of individuals and thereby affect their welfare (Glaeser et al., 2004). In this way they provide the framework in which interactions in an economy take place (World Bank, 2002); this as opposed to policies, which are defined as rules that imply goals and desired outcomes. In response to the discussion of its measurement scholars have suggested a number of indicators in an effort to represent institutional quality. Following Glaeser et al. (2004), institutions are first and foremost constraints and one of their key features is their permanent character. The three most common measures for institutional quality are the relative risk of expropriation by the government, the level of government effectiveness and quality of constraints on the executive. While the former two measures concentrate on the constraints placed on individuals external to the government, the latter one gauges restrictions for the executive body. Therefore, they measure conceptually different things, although all three display parts of what can be thought of as underlying 'true' institutions. In light of the arguments put forward in Glaeser et al. (2004), the set of governance indicators developed by Kaufmann et al. (2008) is used in this paper (to be introduced in Section 3.2).

One of the fundamental problems in measuring the impact of institutional quality is the question of causality: Although there is a positive correlation between institutional quality and ANS, the direction of the causality is not clear. Therefore, in order to assess the impact of institutions on the change in comprehensive wealth, an exogenous factor has to be found, which can be used as an instrument for institutions but at the same time is not affected by the level of ANS. Doing so makes measurement of the effect possible while avoiding problems of endogeneity. There have been several attempts to find such a variable: social infrastructure has been instrumented by latitude, ethnolinguistic fractionalization has been used as an instrument for corruption and the quality of legal systems have been approximated using legal origin as an instrument.² The problem with the latter two is that they may have direct effects on performance which makes them invalid as instruments. In contrast, latitude is truly exogenous, but presents flaws when one looks for its relationship to institutional quality.

Acemoglu et al. (2001) take a different approach, and use the mortality rates of European settlers in the colonies at the time of settlement as an instrument for institutional quality today. Their approach is based on the assumption that the mortality rates settlers faced in the colonies were directly related to the type of institutions they set up. The underlying logic of the approach is straightforward: When they took over and formed a colony, the settlers brought their institutions with them; when they did not settle themselves, they built institutions that allowed them to exploit the local population. In places that provided a healthy environment for settlers, they replicated European institutions, i.e. copies of their home institutions, under which well-enforced property rights were established. Those early institutions were highly persistent, and thus even after independence of the respective colony, settler mortality rates a hundred years ago continue to shape current institutions. This approach is used as a departing point for the present analysis.

Sustainable development is the second concept which is especially relevant to the analysis presented here. In this context, sustainable development is defined as *non-declining human welfare over time* (Pearce et al., 1989). On a national level, this implies that as long as the average individual is not becoming worse off, a country is developing in a sustainable way. Since the stock of natural resources and their depletion rates play a vital role for the rate of future returns, the population's welfare

¹ For an introduction see e.g. Acemoglu (2009).

² For a discussion see Acemoglu et al. (2001).

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