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Is Social Capital Part of the Institutions Continuum and is it a Deep Determinant of Development?

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Abstract

There is a growing literature which analyses, using cross-country data, whether institutions or geography is the most important deep determinant of economic development. The empirical proxies for institutions used in this literature focus on the definition of institutions, formal and informal. This study argues that the concept of informal institutions is similar to social capital. However, the social capital and 'institutions as a deep determinant' literatures rarely acknowledge the existence of the other. It is argued that social capital meets the criteria for being a deep determinant of development and that both the cross-country literature on social capital, and the deep determinants of development literature, could be enriched by empirically modelling social capital as a deep determinant of development.

Keywords: social capital, institutions, determinants of development

JEL classification: Z13, O11

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1 Introduction

There is a growing literature which analyses, using cross-country data, whether institutions or geography is the most important deep determinant of economic development. Key contributions to this literature include Hall and Jones (1999), Acemoglu et al. (2001, 2002), Rodrik et al. (2002), Sachs (2003), Easterly and Levine (2003) and Olsson and Hibbs (2005). This literature typically cites North's (1990) definition of institutions as being 'the rules of the game in a society or, more formally, [they] are the humanly devised constraints that shape human interaction'. However, the empirical proxies for institutions that are used in this literature focus on what North (1990: 3) defined as formal institutions; informal institutions, which North argued were more important than formal institutions, are not considered. This study argues that proxies for informal institutions, which North argues are more important than formal institutions, should be incorporated in this deep determinants literature.

This study also argues that the notion of social capital is similar to North's notion of informal institutions. Social capital can be a difficult term to pin down, but most definitions include (at least one of) the degree of trust, co-operative norms and associational memberships or networks within a society. Economists have become increasingly interested in social capital, following the seminal work of Coleman (1988) (a sociologist) and Putnam et al. (1993) (a political scientist). Since the publication of these studies a vast quantity of research on social capital has been published by economists, as well as by researchers from other academic disciplines. Isham et al. (2002) report that citations for social capital in the *EconLit* database have been doubling every year since the late 1990s. Further evidence of increasing interest in social capital by economists is that a new sub-category on social norms and social capital (Z13) was recently added to the *Journal of Economic Literature* codes. However, as noted by Fafchamps and Minten (2002), the concept of social capital is still regarded with suspicion by many economists.

Hence, this study puts forward two main arguments. The first is that in terms of its definition, and the arguments advanced as to why social capital is likely to affect economic performance, social capital is a very similar concept to what North (1990) defined as informal institutions. Social capital can therefore be viewed as part of the institutions continuum. The second argument is that ideally proxies for social capital/informal institutions should be included in deep determinants regressions. This would enrich the deep determinants literature by including information on both ends of the institutions continuum. It will also make it possible to model interactions between formal institutions and social capital, and may offer some guidance on how to deal with the problem of endogeneity in the social capital literature. Thinking of social capital as a deep determinant of development also has implications for what control variables should be included in empirical work.

Section 2 will briefly review the literature on defining social capital, with a view to highlighting the similarities between the concepts of social capital and informal institutions. Section 3 will summarise some of the key arguments in the literature as to why social capital is likely to affect economic performance. It will be argued that these arguments are consistent with viewing social capital as a deep determinant of development. Section 4 will discuss how social capital is measured in the existing cross-country literature, and comment on how these, or other, measures of social capital could be usefully incorporated in the institutions as a deep determinant literature. Section 5 will summarise the potential advantages of modelling social capital in a deep determinants framework and Section 6 will conclude.

2 Social capital: is it the same thing as informal institutions?

Defining social capital is not an easy task, as social capital means different things to different people and many different definitions have been proposed in the literature. For that reason, this study will review some of the most widely cited definitions of social capital that have been proposed in the literature, without trying to make a judgement as to which definition is superior. This will make it possible to compare social capital to informal institutions, while recognising that not everyone agrees on how social capital should be defined.

Most definitions of social capital include at least one, and in several cases two or more, of the following: trust, networks and group memberships, and a shared set of co-operative norms. The term social capital has been around for some time, with Woolcock (1998) arguing that it was first used in its modern sense by Hanifan (1920). Readers interested in the development of the term from that time are referred to Woolcock. For the purposes of this study, we will confine our attention to how the term social capital has been defined since the work of Coleman (1988), focusing on some of the most commonly cited definitions. An excellent review of how social capital is defined in the recent literature can be found in Durlauf and Fafchamps (2004). Appendix Table A1 reproduces the key definitions of social capital as summarised by Durlauf and Fafchamps, with some additions. Note that Knack (2002) splits social capital into two components: government and civil, a point that is discussed more fully below.

A concept that appears in several of these definitions is that of co-operative norms. These norms may include forming orderly queues at airport check-ins, farmers helping their neighbours to harvest crops, showing respect for other drivers on the road, not parking in car parks reserved for the disabled unless you are disabled, and so on. Networks and associational memberships also appear in several of these definitions. Associational memberships may include membership in sports teams, choral societies, church or religious groups etc. Networks can be thought of as the people you know or interact with, which includes informal interactions, in addition to associational memberships. Associations can be split into horizontal and vertical associations.

Horizontal associations are those in which members relate to each other on an equal basis (a sports club, for example), whereas vertical associations are those ‘characterized by hierarchical relationships and unequal power among members’ (Grootaert 1999: 5). The Catholic Church is sometimes used as an example of a hierarchical association (La Porta et al. 1997). Associations can also be split into those which promote the interests of their members only (a revolving credit scheme) and those which aim to promote the interests of members and non-members alike (such as those formed for the purpose of charity work).

With regard to trust, it is important to note that there are different spheres of trust. At one end of the continuum is trust in people you interact with on a regular basis (such as friends and family), and at the other end is trust in those you do not know. Some researchers (Whitely 2000, for example) refer to trust in those you do not know as generalized trust. Uslaner (2002: 5) defines generalized trust slightly differently as the idea that ‘most people can be trusted’ and defines particularised trust as trust in one’s own kind. Putnam (2000) and Holm and Danielson (2005) refer to trust in those you interact with regularly as thick trust, and trust in those you do not know as thin trust. Related to the notion of different spheres of trust is the distinction between bonding, bridging and linking social capital. Building on Granovetter’s (1973) notion of weak and strong ties, Woolcock (2001) defines bonding social capital as links with family, friends and neighbours, bridging social capital as ties that are slightly more distant, such as with workmates and acquaintances, and linking social capital as the ability to benefit from ties with those outside one’s immediate group of contacts.

It seems likely that trust and co-operation will be built up by repeated interactions with others; hence networks and associational memberships can be seen as a source of trust and co-operation. In fact, some researchers (Woolcock 2001, for example) prefer to define social capital as norms and networks, and see trust as being a *consequence* of social capital, rather than part of social capital per se. Uslaner (2002), on the other hand, argues that trust is the *cause*, not the consequence, of interactions with others.

Fafchamps and Minten (2002) and Bezemer et al. (2004) also prefer to think of social capital as networks. Fafchamps and Minten (2002: 173-4) argue that definitions of social capital fall into two camps. The first, which they argue includes those of Coleman (1988) and Putnam et al. (1993), sees ‘social capital as a “stock” of trust and an emotional attachment to a group or society at large that facilitate the provision of public goods’. The second type of definition sees social capital as ‘an individual asset that benefits a single individual or firm’, which is sometimes referred to as ‘social network capital’ to avoid confusion. Bezemer et al. (2004: 3) use the term ‘relational capital’ to denote this individual level of social capital, defining it as ‘productive contacts that individuals use in achieving sold output’. They further suggest using the terms ‘social network’ or ‘communal social capital’ to denote the membership of clubs. The most commonly cited definition from Table A1 is probably Putnam et al. (1993), which

emphasises trust, norms and networks. These notions appear in most definitions, with norms and networks featuring the most prominently.

A key argument of this study is that there is a significant degree of overlap between the concepts of social capital and (informal) institutions. North's (1990) definition of institutions is the most frequently cited, in both the social capital and institutions literatures. North (1990: 3) defines institutions as 'the rules of the game in a society or, more formally, [they] are the humanly devised constraints that shape human interaction'. If North's definition were to end here, then it would perhaps be possible to argue that the concept of institutions is quite different to that of social capital. Perhaps the rules of the game are those imposed by the state, with social capital referring to the informal norms or conventions that have evolved over time without these being codified in statute. However, North goes further and distinguishes between formal and informal institutions.

Formal institutions are defined by North (1990) as rules that human beings devised (a good example being laws and regulations enacted by governments) whereas informal regulations include conventions and codes of behaviour. North uses the analogy of rules in sports to make the distinction clear. The written rules of a sport are analogous to formal institutions, whereas unwritten codes of conduct, such as an acceptance that it is unacceptable to kick an opponent in the head, are analogous to informal institutions.¹ North (p.36) argues that people in the Western world tend to think of life being ordered by formal rules, when in fact their actions are guided more by informal constraints, such as 'codes of conduct, norms of behavior and conventions'. He goes on to argue that 'underlying these informal constraints/institutions are formal rules, but these are seldom the obvious and immediate source of choice in daily interactions'. The implication is that informal institutions are actually more important than formal institutions. It is also important to note that North acknowledges institutions are not always easy to classify into formal and informal, but suggests the two should be seen as opposite ends of a continuum, with taboos, customs and traditions at one end, and written constitutions at the other. North's notion of institutions, once broadened to include informal institutions, includes the concepts of norms of behaviour and social conventions, hence it seems to overlap significantly with the notion of social capital. This is especially true if it is acknowledged that North discusses the importance of co-operation. Although North says little about trust, co-operation does presuppose some degree of trust. A key theme of North (1990) is that good institutions will encourage co-operation and reduce transactions costs, notions that also feature prominently in the social capital literature.

¹ It is true, of course, that in the vast majority of sports it is against the rules to kick an opponent in the head. However, in some sports, there is an unwritten code of conduct that although it may be acceptable to punch an opponent, which is also against the rules, that kicking an opponent in the head goes beyond the pale.

The above arguments suggest that the concept of social capital falls within North's definition of institutions. Interestingly, North's followers tend to focus their attention on formal institutions, with informal institutions having disappeared off the radar. In the last few years a literature has flourished examining whether institutions or geography is the most important deep determinant of income per capita. Important contributions in this area include Acemoglu et al. (2001, 2002), Rodrik et al. (2002), Sachs (2003), Easterly and Levine (2003), Olsson and Hibbs (2005), Fielding and Torres (2005) and Owen and Weatherstone (2005).

In terms of definition, deep (or fundamental) determinants of income are distinct from proximate determinants. The proximate determinants can be thought of as variables that would appear in the aggregate production function, such as labour, physical capital, human capital and technology, plus policy related variables such as the rate of inflation or the level of government consumption. The deep determinants can be thought of as the variables that affect the proximate determinants, and are hence the underlying determinants of income per capita. Deep determinants are not necessarily exogenous, but are thought to change only slowly, if at all, over time (Glaeser et al. 2004). In deep determinants regressions the proximate determinants, such as the accumulation of physical and human capital and policy type variables are not included as control variables, as this would mean the indirect effect of a deep determinant on income per capita, via the proximate determinants, would not be picked up.

Within this deep determinants literature, the focus is exclusively on formal, rather than informal, institutions. This literature typically cites North's notion of institutions defining the rules of the game, but the distinction between formal and informal institutions is not discussed. When it comes to measuring institutions, the protection of property rights and the rule of law tend to feature prominently; norms, conventions and codes of conduct do not. This is despite the fact that North (1990: 53) argued

a mixture of informal norms, rules, and enforcement characteristics together defines the choice set and results in outcomes. Looking only at the formal rules themselves, therefore, gives us an inadequate and frequently misleading notion about the relationship between formal constraints and performance.²

One exception is a recent paper by Tabellini (2005), which although not strictly part of this strand of literature,³ argues that institutions can be interpreted broadly to include

² It could be argued that measures of the extent to which property rights are protected and the rule of law prevails will be a function of both formal rules and informal institutions, hence these measures are picking up informal institutions to some extent. However, if informal institutions are omitted from the analysis, this precludes any other effect of informal institutions on income, over and above the effect via property rights and the rule of law.

³ Tabellini does not include any geographic variables, hence does not contribute to the debate as to whether institutions or geography is the most important deep determinant of development.

systems of belief and social norms, which Tabellini describes as cultural variables. Rather than including formal and informal institutions as explanatory variables in the same equation, historical data on formal institutions are used as instruments for culture. This paper is discussed in more detail in Section 4.6.

It is also interesting to consider the extent to which the two literatures (social capital and the institutions as a deep determinant) acknowledge the existence of the other. An interesting experiment is to compare the reference lists of two recent survey papers, both of which are to appear in the *Handbook of Economic Growth*, Durlauf and Fafchamps (2004) on social capital and Acemoglu et al. (2004) on institutions. Of the more than 150 references cited in Acemoglu et al. (2004), only three of them (Durlauf and Fafchamps 2003, an earlier version of Durlauf and Fafchamps 2004; Knack and Keefer 1997; Putnam et al. 1993) are from the social capital literature. Durlauf and Fafchamps also cite just over 150 references, but none of them are from the deep determinants literature. They do, however, cite North (1990).

The preceding discussion begs the question of whether ‘informal institutions’ more accurately describes the concept being defined than ‘social capital’.⁴ Use of the term social capital has led to debates about whether social capital is social, and more commonly, whether it is capital, and, if it is, what this implies for how it enters the production function (see, for example, Woolcock 1998; Collier 2002; Paldam and Svendsen 2000; Narayan and Pritchett 1999; Arrow 2000; Sobel 2002).⁵ Such debates could be avoided if the term ‘social capital’ were replaced with ‘informal institutions’. An alternative would be to simply focus on the notions of trust, norms and networks as separate entities, rather than relying on an all encompassing term such as social capital. However, this is unlikely to happen. ‘Social capital’ rolls a little more easily off the tongue, than does ‘informal institutions’, and has a softer, more interdisciplinary ring to it. Which may not be a bad thing. If use of the term social capital encourages communication across academic disciplines, then more social capital has been created in the form of networks. In the words of Woolcock (1998: 188) ‘[i]n social capital, historians, political scientists, anthropologists, economists, sociologists, and policymakers—and the various camps *within* each field—may once again begin to find a common language within which to engage one another in open, constructive debate, a language that disciplinary provincialisms have largely suppressed over the last one-hundred-and-fifty years.’

Before ending this section on defining social capital, it should be noted that Knack (2002) splits social capital into government and civil social capital. In a definition not

⁴ Dasgupta (2000), in reviewing the social capital literature, uses the phrase informal institutions, and asks in passing whether social capital is merely another name for good institutions. However, this point is not developed.

⁵ The standard argument against social capital being a form of capital is that the accumulation of social capital does not necessarily require sacrifice (see for example Arrow 2000).

included in Table A1, Grafton and Knowles (2004) distinguish between civic social capital and public institutional social capital, with the latter being proxied by measures of corruption and democracy. Grootaert (1999: 5), also not included in Table A1, talks about a macro level of social capital which ‘includes institutions such as government, the rule of law, civil and political liberties, etc.’ These notions of government, public institutional and macro social capital sound identical to formal institutions. Collier (2002: 19) notes that ‘many people restrict the term “social capital” to civil social capital’. Given the similarity between institutions and government, public institutional and macro, social capital, it would seem wise to restrict definitions of social capital to civil social capital.

3 Social capital and economic performance

This section of the study reviews the key arguments in the literature as to how social capital may affect economic performance, with a view to determining whether social capital can be considered a deep determinant of income, in the sense that it influences either the level of total factor productivity or the accumulation of labour or physical or human capital. Many arguments have been put forward in the literature as to why social capital may improve economic performance. Most of these arguments can be classified under the following headings: increasing the number of mutually beneficial trades, solving collective action problems, reducing monitoring and transactions costs (which could alternatively be referred to as solving principal-agent conflicts) and improving information flows. It is beyond the scope of this study to review every argument in the literature as to why social capital may affect economic performance; instead a small number of examples will be reviewed under each of the headings listed above.

3.1 Increasing the number of mutually beneficial trades

It has been recognised for centuries that a high degree of trust and co-operation will increase the number of mutually beneficial trades. For example, the eighteenth century Scottish philosopher David Hume (cited in Putnam et al. 1993: 163) discussed the importance of co-operation, and implicitly trust, using the example of two corn farmers. If two corn farmers’ crops ripen at different times, but they do not have enough time to harvest their own crops, it makes sense for each farmer to assist with the other’s harvest. However, this may not occur if the two farmers do not trust each other. The farmer whose crop ripens last may suspect that if she helps with her neighbour’s harvest, this may not be reciprocated.

It is, of course, possible to argue that a monetary transaction could take place to overcome the lack of co-operation outlined in Hume’s example of the corn farmers. If Farmer B, whose crop ripens last, suspects Farmer A will not reciprocate she could offer to work for Farmer A for a day’s wages, and then hire Farmer A to help harvest her own corn in the future. However, this transaction, like all transactions, will require a degree of trust. Farmer B may fear that having worked for Farmer A for a day, she may not be

paid. Anticipating this, she may demand the wages in advance, but then Farmer A will worry that Farmer B will take the money, and not provide a day's labour. At some point, an element of trust is required. As noted by Arrow (1972) virtually all transactions require an element of trust, meaning that an absence of trust reduces the number of mutually beneficial trades that can take place. Arrow suggests that a lack of trust explains much of the economic backwardness observed in the world.

Another example of trust leading to a greater number of trades is the development of revolving credit schemes to overcome incomplete, or non-existent capital markets. The success of such schemes requires that members do not free ride. In a world governed by self-interest, some members may be tempted to borrow money from the scheme, and then refuse to continue to make contributions. It is also important that people have good information about those whom they are thinking of joining with in a scheme. A high degree of trust (worthiness) is required to ensure that members do not free ride, and individuals who are well networked will have good information about other potential members of the scheme (Narayan and Pritchett 1999; Grootaert, 1998). In the words of Coleman (1988: S103) 'one could not imagine a rotating-credit association operating in urban areas marked by a high degree of social disorganization—or, in other words, by a lack of social capital.' Social networks will also facilitate lending in the absence of revolving credit schemes. Grootaert (1998: 5) argues that members of a soccer team will be more likely to lend money to each other than to people they do not know. Hence the existence of networks, and the trust associated with them, are likely to increase the supply of informal credit. Informal credit is going to be especially important in LDCs where formal credit markets are typically not as well developed as in the industrialized countries.

3.2 The resolution of collective action problems

Societies with high degrees of social capital may find it easier to solve collective action problems than societies less well endowed with social capital. For example, a set of norms may evolve over time governing the use of common property resources. A set of norms to prevent a fishery being over-fished may include not fishing during the spawning season, releasing under-sized fish and not catching more fish than a family can eat. With regard to the provision of public goods, these are more likely to be provided, without recourse to government funding, in societies where co-operative behaviour is the norm. The same can be said for internalising externalities.

Community-based institutions may also be formed to manage common property resources; several examples are given in Ostrom (1990). For example, for many centuries Spanish farmers have formed organizations to manage irrigation canals (huertas). The farmers elect officials, whose job it is to determine who may draw water at what time, to police the system and to settle disputes between members. Similar community-based institutions have evolved to manage irrigation schemes in many other countries including Nepal and India. It could be argued that these community-based

institutions sound like a form of de facto government, but, if they are, they represent a decentralized, bottom-up form of government. The fact that it may be difficult to determine whether these community-based institutions should be classified as formal or informal institutions highlights the point that social capital (informal institutions) and formal institutions are at opposite ends of the same continuum, with, for example, community-based institutions falling somewhere in between.

The standard textbook solution to collective action problems requires some action on the part of the government: defining and enforcing property rights in the case of common property resources, public funding in the case of public goods, and taxes or subsidies in the case of externalities. However, this requires strong formal institutions. In cases where formal institutions are weak, which may well be the case in many developing countries, social capital may act as a substitute for formal institutions.

3.3 Reducing monitoring and transactions costs

In a low-trust environment, entrepreneurs will assume that workers will shirk unless closely supervised, so to reduce this risk supervisors will be hired, reducing productivity. Woolcock (1998) argues that in many developing countries hospitals and schools may exist, but the doctors and teachers are often not at work. The issue of monitoring workers may also act as a constraint on firm size in low-trust economies. Once a firm reaches a certain size, the owner operator has to delegate a degree of managerial decision making to others, especially in semi-independent parts of the company. Paldam and Svendsen (2000) argue that a lack of social capital prevents small firms growing into large firms in many parts of Africa for this very reason.

Anticipating problems with workers shirking, employers may respond by only employing people already known to them, rather than employing the person best qualified to do the job. In a society that is divided along ethnic or religious lines, preference may be given to hiring those from the same ethnic and/or religious group as the employer, in the belief that they can be trusted more. In this scenario, the most skilled workers may not be employed, which has obvious consequences for the productivity of the firm.

With regards to transactions costs, Fafchamps and Minten (2002: 175) argue that when trust is present agents can 'lower their guard and economize on transactions costs such as the need to inspect quality before buying, or the need to organize payment in cash at the time of delivery'. They go on to argue that trust 'enables agents to place and take orders, pay by check, use invoicing, provide trade credit, and offer warranty', noting that these features of markets are taken for granted in developed countries, but are often lacking in developing countries.

3.4 Improving the flow of information

The more people interact with each other, be this in choral societies, sports groups, religious or educational organizations, the better the information they will have about each other, making it easier, for example, to set up revolving credit schemes and the like. It may also improve the flow of information about best practice techniques, making the introduction of new technologies more likely, hence increasing the level of productivity. Networks and membership of groups may also help overcome the impediments to information flows due to social divergence: the phenomena whereby individuals are more likely to communicate with those with similar incomes, education, ethnicity, etc, as themselves, rather than with people from a diverse range of backgrounds (see Grafton et al. 2004a, b).

3.5 The negative effects of social capital

So far only the positive effects of social capital have been considered. It has to be acknowledged that there are also cases where social capital can have negative effects. It was argued above that social capital may have a positive effect on the adoption of new techniques. However, it is also possible that some customs or norms may *hinder* the introduction of new techniques. For example, Rogers (1983) discusses the example of a Peruvian village whose inhabitants largely refuse to boil their drinking water because, according to local custom, only the sick are permitted to drink boiled water. This example draws attention to the fact that social capital is not always a force for good. It is quite possible that farmers and business people may be reluctant to introduce new techniques that would improve productivity, because this would go against the established way of doing things.

It is also possible that some networks or associations may hamper the adoption of new techniques. As noted by Paldam (2000), guilds, trade organizations and unions often try to hinder change. Networks can also lead to collusion on the part of firms, at the expense of consumers (Fafchamps and Minten 2002). Social networks, such as guilds, cartels, the mafia, political organizations and lobbying groups may provide benefits for members, but this can often come at the expense of non members (Ogilivie 2004).

Nooteboom (2005: 2) argues that in developing countries high degrees of personalized trust may actually ‘lock people into closed, localized, cohesive communities that keep them from opening up to wider perspectives of development, from efficiency and innovation, in wider, more dispersed groups’. For this to occur would require that the radius of trust be limited. If people were just as likely to trust strangers as to trust those they interact with regularly, the problem would not occur. However, if the radius of trust is limited, this may impede economic development.

Bezemer et al. (2004: 13) argue that market-based economic development requires that ‘inefficient search institutions such as informal networks and trust need to be replaced

with more efficient (typically formally defined) market institutions'. Hence they argue that although informal networks and trust may reduce monitoring and search costs, compared to the alternative of their being no search devices at all, that they can only do this up to a certain point. Ultimately, sustained economic growth is going to require these informal mechanisms be replaced by more formal market-based institutions, which may not happen if this is not in the interests of the political elite. Hence high levels of social capital may hinder the adoption of the formal institutions required to promote economic development.

3.6 The interaction between social capital and formal institutions

Some of the arguments outlined above suggest that social capital can act as a substitute for formal institutions. For example, in the absence of strong formal institutions, social capital may make it easier to resolve collective action problems. The arguments regarding the provision of credit suggest that social capital can act as a substitute when formal credit markets are not well developed. In such cases, social capital may be expected to have a more marked effect on economic performance in countries where formal institutions are weak. Empirically, if an interaction term between social capital and formal institutions is included in a cross-country regressions explaining income per capita we would expect the interaction term to be negative, controlling for the level of social capital and formal institutions.

An alternative argument is that formal institutions, such as laws protecting property rights, are likely to be more effective when the level of trust is high. In addition, formal arrangements regarding the provision of public goods are also likely to be undermined in societies where cheating on your taxes is an acceptable norm. As argued by Durlauf and Fafchamps (2004: 14), '[p]ublic good delivery is best accomplished when the power of the state to tax and mobilize resources is combined with trust and community involvement'. If this argument is accepted, then formal institutions are likely to be more effective in countries with high levels of social capital. In this case, the interaction term would be expected to be positive, having controlled for the levels of social capital and institutions.

The preceding paragraphs have argued that social capital (informal institutions) and formal institutions can either be substitutes or complements. This has important implications for empirical work, as it suggests that it is important not only to control for both social capital and formal institutions, but to include an interaction term to capture interactions between the two. The only cross-country empirical study that includes proxies for both social capital and formal institutions is Knack and Keefer (1997), discussed in Section 4 below, but no interaction term is included. Future empirical work could be enriched by including such an interaction term.

3.7 Social capital: factor of production or deep determinant?

It is sometimes argued in the literature that social capital can be thought of as a new factor of production (for example, Paldam and Svendsen 2000), which would mean social capital is a proximate determinant of development. However, the arguments discussed above tend to suggest that social capital will affect the accumulation of *other* factors of production, or affect the level of total factor productivity, rather than social capital being a new factor of production in its own right. For example, if social capital leads to the establishment of informal credit markets, this will facilitate the accumulation of physical and human capital. If high levels of trust and co-operation lead to farmers helping to harvest their neighbours' crops, more labour is being used. When social capital helps resolve collective action problems, efficiency is increased. If social capital reduces transactions and monitoring costs, or leads to the introduction of new technologies, this will increase the level of total factor productivity. Hence, thinking of social capital as a new factor of production may not be the best way to capture the effect of social capital on output. A more useful way forward, especially in the cross-country literature, may be to think of social capital as a deep, determinant of income, in the same way it has become standard in recent times to model the effects of geography and institutions on income per capita.

4 Measuring social capital in cross-country studies

The previous section of the study argued that, in terms of the arguments as to why social capital will affect income, social capital should be modelled as a deep determinant of development. However, to be considered a deep determinant of development, a variable must also meet the criterion of changing only slowly over time. This section of the study will critique the social capital proxies used in past cross-country empirical work and discuss how much they vary over time. Before proceeding, it should be acknowledged that the majority of empirical studies on social capital use micro data, collected at the individual or household level, rather than cross-country data. This micro literature will not be reviewed here, given that the focus of this study is on modelling social capital as a deep determinant of economic development, in the same way formal institutions have been modelled, using cross-country data. Readers interested in a review of the micro literature are referred to Durlauf and Fafchamps (2004) and Knowles (2005, an earlier version of this study).

Section 4.1 will discuss how social capital is typically measured in the existing cross-country literature analysing the effect of social capital on economic variables, such as economic growth and the rate of investment. The discussion will be confined to measures of civil social capital, on the grounds that measures of government social capital are really measures of formal institutions. Section 4.2 will discuss the extent to which these social capital proxies are likely to be valid and Section 4.3 will discuss the extent to which these proxies vary over time. Section 4.4 will discuss how highly

correlated are measures of formal and informal institutions. Section 4.5 will make some suggestions regarding additional proxies for which data could be collected in the future. Section 4.6 will ask whether any lessons can be learnt from the deep determinants literature with regard to dealing with the problem of endogeneity with regard to social capital.

4.1 Social capital proxies used in the existing cross-country literature

Many definitions of social capital include, at least one of, the degree of trust, co-operative norms and networks within a society. A widely cited empirical paper that proxies for all three of these variables is Knack and Keefer (1997), who use three different proxies for social capital: TRUST, CIVIC and GROUPS. These three measures of social capital are derived from the World Values Survey (Inglehart 1994). There have been four different waves of the World Values Survey carried out at different points in time, although only two waves had been conducted at the time Knack and Keefer carried out their work.

TRUST measures the percentage of individuals in a country who answered ‘most people can be trusted’ to the question ‘generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people’. CIVIC is an index which ranges from 5 to 50, where respondents were asked to assign a score between 1 and 10 as to whether they agreed that certain behaviours were justified, with a 1 indicating the behaviour was never justified and a 10 indicating that the behaviour was always justified. The five behaviours are (1) claiming a government benefit to which you are not entitled, (2) avoiding a fare on public transport, (3) cheating on taxes if you have the chance, (4) buying something that you knew was stolen and (5) accepting a bribe in the course of one’s duties. Knack and Keefer transform the data so that a score of 50 indicates the *highest* possible level of CIVIC and a score of 5 indicates the *lowest* possible level of CIVIC. GROUPS is the average number of groups people belong to in each country.

From the perspective of development economics, it needs to be noted that the sample of countries for which Knack and Keefer present data on TRUST, CIVIC and GROUPS is dominated by developed countries. Of the 29 countries included in their sample, only 10 (South Korea, India, South Africa, Argentina, Nigeria, Chile, Portugal, Mexico, Turkey and Brazil) are developing countries. The developing countries do not fare particularly well in terms of the social capital measures, especially in the case of TRUST, with only South Korea getting an above average score. In Brazil, only 6.7 percent of the sample think others could generally be trusted; in Turkey the figure is only 10 percent, compared to a sample average of 36 percent. Two more waves of the World Values Survey have been compiled since Knack and Keefer was published. The latest wave (Inglehart et al. 2004) includes data for 33 developing countries, as well as several former communist states from Eastern Europe. For the 33 developing countries, the average value of TRUST is 23.5, whereas for the developed countries in the sample it is

42. Whether these data can be taken as reliable evidence that social capital is low in developing countries will be discussed in Section 4.2.

Turning to the results of empirical work using the World Values survey data, Knack and Keefer find that TRUST and CIVIC are both positively correlated with growth in output per worker, and with the average rate of investment, across countries, when these variables are included in Barro-style regressions. The GROUPS variable is found to not have a statistically significant effect in explaining both investment and growth. Zak and Knack (2001) update the empirical work of Knack and Keefer, with a larger sample of countries, but include only TRUST as a social capital proxy, not CIVIC nor GROUPS. The empirical results obtained are broadly consistent with Knack and Keefer. La Porta et al. (1997) examine the effect of TRUST on a range of proxies for economic development, using cross-country data. Controlling for the level of income per capita, TRUST is found to be significantly positively correlated with the quality and adequacy of infrastructure, high school completions, the adequacy of the education system and the rate of economic growth. TRUST is found to be significantly negatively correlated with the infant mortality rate and the inflation rate. Tabellini (2005) finds TRUST to be positively correlated with income per capita, both across countries, and across European regions. Heliwell (1996) finds measures of trust and associational memberships from the World Values Survey to be *negatively* correlated with growth for a sample of 17 OECD countries.

Knack and Keefer's TRUST measure is based on a question about generalized trust. The early waves of the World Values Survey also ask questions about peoples' trust in family and fellow nationals, as well as the more general question that Knack and Keefer focus on. Whitely (2000) combines the responses to all three questions into a social capital index using principal components analysis, and finds a significant positive correlation between this index and income per capita across countries, with social capital having a bigger influence on income per capita than does human capital.

In an often overlooked section of their paper, Knack and Keefer examine the effect of *TRUST* on output per worker, physical capital per worker, human capital per worker and the level of total factor productivity. *TRUST* is significantly positively correlated with the first three of these variables, as long as no other control variables are included. However, when measures of property rights, openness and distance from the equator are included as control variables, the only equation in which *TRUST* is significant is that explaining human capital per worker. Given the range of control variables included, these results could be considered a deep determinants-of-development equation. Note, however, that no attempt is made to control for endogeneity, other than arguing that, as *TRUST* is measured for an earlier time period than the dependent variables, it is predetermined. Neither do Knack and Keefer include an interaction term for social capital and formal institutions. Recall also that Knack and Keefer's sample is dominated by developed countries.

4.2 How valid are the social capital proxies?

It is important to acknowledge some potential problems with these measures of social capital. Whether peoples' answers to the TRUST question are correlated with how trusting they are of others, and/or how trustworthy they are, in economic experiments has been studied by Glaeser et al. (2000) for the USA and Holm and Danielson (2005) for Tanzania and Sweden. Both studies were carried out on under-graduate economics students, so the results may not be representative of the whole population. Glaser et al. find there is no correlation between peoples' answers to the TRUST question and how trusting they are of others, but that there is a positive correlation between TRUST and how *trustworthy* an individual is. Holm and Danielson find that there is no correlation between how trusting people claim to be (or how trustworthy they are) and their behaviour in experiments in Tanzania, but there is in Sweden.

The Holm and Danielson experiments also provide information on whether people are more trusting in Sweden than in Tanzania. This is an interesting comparison to make, as Sweden has one of the highest TRUST scores (66 per cent) in the fourth wave of the World Values Survey, whereas Tanzania has one of the lowest (8 per cent). In the experiment the subjects were divided into two different groups, A and B. Each individual was paired with a member of the opposite group, but they did not know the identity of the person with whom they were paired. Each person in Group A was allocated a sum of money. They then had to decide how much money they would transfer to the person they were paired with in Group B, and this amount of money was tripled. The person in Group B, then had to decide how much of the money to transfer, if any, to the person in Group A. Holm and Danielson interpret the amount of money transferred by the person in Group A as a measure of the degree of trust, and the amount of money returned by the person in Group B as a measure of trustworthiness. In Sweden 51 per cent of the money was transferred, and 35 per cent returned; in Tanzania 53 per cent of the money was sent and 37 per cent returned. These differences are not statistically significant. When participants were asked the generalized trust question from the World Values Survey, 74 per cent said others could be trusted in Sweden and 41 per cent said others could be trusted in Tanzania. The figure for Tanzania is vastly different to that reported in the World Values Survey, although it is possible this is because university students are more trusting than the population in general. Holm and Danielson's results suggest that, when evaluated on the basis of experiments, the level of trust is just as high in Tanzania as in Sweden, whereas in the World Values survey the measure of TRUST differs by a factor of eight. This calls into question the generalization from the World Values survey that TRUST is typically higher in developed countries than in developing countries.

Another potential problem with the trust question from the World Values Survey is that it does not really pin down who 'most people' are. Does this mean people you come into contact with regularly (thick trust), people like yourself (particularized trust) or anyone in your own village or country (thin, or generalized, trust)? As argued by

Guinnane (2005), neither does the question make it clear *how much* trust you are being expected to place in others. If you say you do trust others, does this mean you would trust them with a small sum of money or a large sum of money, or perhaps even your life?

Knack and Keefer argue that the validity of TRUST is confirmed, to some extent, by an experiment conducted by the *Readers' Digest*, who dropped a number of wallets in various countries around the world to see how many would be returned. The proportion of wallets returned was higher in countries with higher measures of TRUST, with a correlation of 0.67. With regard to the whether the question makes it clear how wide the radius of trust is, Uslaner (2002) presents evidence from a US survey that when respondents are asked to elaborate on their answers to the TRUST question, the majority of respondents include strangers in their definition of 'most people', suggesting the question is measuring generalized trust.

Knack and Keefer suggest that CIVIC is a measure of the strength of norms of civic cooperation within a society. However, this variable may be better interpreted as a measure of civic virtue. This is because a country is assigned a low value of CIVIC if, for example, everyone thinks it is alright to cheat on their taxes. However, if *everyone* were to cheat on their taxes, this could represent a civic norm. The CIVIC variable is perhaps best interpreted as a measure of trustworthiness. At a more practical level, another problem with CIVIC is that it does not exhibit much variation across countries. The maximum score is 42.43 and the minimum score 34.55, with a standard deviation of 2.3. There is much more variation across countries for both TRUST (range of 6.7 to 61.2) and GROUPS (range of 0.38 to 1.70). One potential weakness of the GROUPS variable is that it only takes into account the number of associations an individual belongs to, rather than taking into account how committed members are to the group.

It has been argued above that the social capital measures typically used in cross-country studies may well be measured with error. However, the same is probably true, to at least the same extent, with regard to the empirical proxies used in the formal institutions literature. Hence, if the social capital proxies are to be discounted on these grounds, so too should the proxies commonly used for formal institutions in the deep determinants literature. The two datasets most commonly used to proxy for formal institutions are the ICRG (International Country Risk Guide), also known as the Political Risk Services, measure of protection against expropriation risk (used by Hall and Jones 1999; Acemoglu et al. 2001, 2002), and the Kaufmann et al. (2002) dataset (used by Rodrik et al. 2002). These datasets are based on assessments by experts of, for example, the risk of expropriation in different countries, and are therefore subjective measures. Hence, there is no reason to believe these data are more reliable than, for example, survey-based measures of trust.

Glaeser et al. (2004) have also pointed out that the ICRG and Kaufmann et al. measures do not measure formal constraints on the executive, which is how North (1990) defined formal institutions. Instead these variables tend to measure outcomes, in the sense that countries ruled by dictators who happen to choose to protect property rights, are awarded a high score, despite that fact that such countries cannot be classed as having good institutions, in the sense of there being constraints on executive power. Glaeser et al. also point out that these commonly used measures of institutions exhibit a lot of variation over time, so don't meet the criterion for being a deep determinant of changing only slowly over time.

Hence, although the World Values survey measures of social capital may not be ideal, they may be no worse than the proxies commonly used for formal institutions. This does not change the fact, however, that the search should continue for superior measures of social capital across countries. Possible alternatives will be discussed in Section 4.5.

4.3 How much does social capital vary over time?

This study has argued that social capital can be thought of as part of the institutions continuum, which suggests that social capital could be empirically modelled as a deep determinant of economic development, in the same way that formal institutions have been. For social capital to be considered a deep determinant also requires that it will change only slowly over time. Although social capital can be eroded quickly, it is often argued that social capital takes a long time to build (see, for example, Putnam et al. 1993; Putnam 2000). North (1990: 6) argues that informal constraints embodied in customs, traditions, and codes of conduct are more impervious to deliberate policies and will change more slowly over time than will formal institutions.

Whether or not social capital does change slowly over time will be evaluated by examining data on TRUST, from the World Values Survey, given that this is the most common proxy for social capital used in the cross-country literature. Although potential problems with the World Values Survey data have been acknowledged above, it is currently the only dataset available on social capital for a broad cross-section of countries. Whether TRUST is relatively stable over time can be assessed by comparing the TRUST data from the four different waves of the World Values Survey, for countries that have data for more than one wave. For the 60 countries that fall into this category, the average standard deviation within countries is 4.25, which does not seem particularly high. There are, however, some countries for which the measure of TRUST varies significantly over time, although this is not the norm. For example, Canada has a score of 52 in the second wave of the World Values Survey and a score of only 39 in the fourth wave. The USA has a score of 52 in the second wave and a score of only 36 in the fourth wave. This may represent a reduction in the level of trust in these countries, or alternatively, represent measurement error.

4.4 How highly correlated are formal and informal institutions?

It is important to consider how highly correlated the standard measures of informal and formal institutions are. If the correlation is high, then little new information will be introduced by including measures of informal institutions in the deep determinants literature. The correlation coefficient between TRUST and Acemoglu et al.'s (2001, 2002) measure of the risk of expropriation risk is 0.45, with Kaufmann et al.'s (2002) rule-of-law index it is 0.46, and with Glaeser et al.'s (2004) measure of constraints on the executive it is 0.35. None of these correlations is particularly high. Examination of the dataset underlying these calculations shows there are a number of countries with high values of TRUST, but low values for the various measures of formal institutions (China, Iran and Indonesia, for example) and vice versa (Singapore and Portugal, for example). Adding proxies for social capital (informal institutions) to the deep determinants literature would, therefore, add new information. Note however, that earlier sections of the paper have acknowledged potential problems with the World Values Survey data. Hence, the World Values survey data may not be the best to use for this purpose, although they are currently the only such data available for a broad cross-section of countries. The next section of the study will discuss alternative measures of social capital that could be developed in the future.

4.5 Suggestions for alternative social capital proxies

The World Bank has recently designed a social capital questionnaire, the Integrated Questionnaire for the Measurement of Social Capital (SC-IQ), which they propose incorporating into household surveys of poverty. Details of the questionnaire, which has already been piloted in Albania and Nigeria, are given in Grootaert et al. (2004). The questionnaire includes questions on six dimensions of social capital: (1) groups and networks, (2) trust and solidarity, (3) collective action and co-operation, (4) information and communication, (5) social cohesion and inclusion and (6) empowerment and political action. The survey is incredibly detailed, including 95 questions under the six headings. Thirty-three of the questions relate to groups and networks. Alternatively, a core questionnaire has been designed, which includes what the World Bank considers to be the 27 key questions from the longer survey.

The use of this questionnaire will hopefully lead to a rich dataset that can be used by social capital researchers. The questionnaire has been specifically designed with micro studies in mind, and there is no suggestion that the World Bank envisages aggregating these data into country measures. However, as long as the households surveyed are representative of the whole population of a specific country, and if the survey methods and questions remain consistent across countries, and if the data are collected for a large number of developing countries, the data should lend themselves to being aggregated into nation-wide measures of social capital, in the same way that researchers have used the World Values Survey data. The key advantage of the World Bank dataset, from the perspective of development economists, would be that it will focus on developing

countries, whereas the World Values Survey includes a large number of developed countries and East European transition economies.

Rather than relying on survey-based data, another possibility in terms of trust data is to use data collected in experiments, such as the experiment conducted by Holm and Danielson (2005) in Tanzania and Sweden, which are described earlier in the study. Such experiments do not necessarily have to involve the use of computers or other equipment, so it is feasible that they could be carried out in developing countries, even in remote areas. Researchers planning to collect survey data on social capital in different villages could potentially also use similar experiments to that of Holm and Danielson to generate a measure of village-wide trust.

4.6 The problem of simultaneity

The only papers that attempt to address the issue of simultaneity in the existing cross-country social capital literature are Knack and Keefer (1997), Zak and Knack (2001), and Tabellini (2005). Simultaneity is a potential problem as it is possible that people can afford to be more trusting, or belong to more groups, in countries where the economy is growing more quickly. Controlling for such simultaneity bias requires finding instruments that are both correlated with social capital (good instruments), but which have no independent correlation with the dependent variable (valid instruments). Knack and Keefer instrument for TRUST with the percentage of a country's population belonging to the largest ethnolinguistic group and the number of law students as a proportion of all tertiary students. Whether these variables are valid instruments is questionable, given that they may well have an independent effect on the dependent variable. Rather than using the Knack and Keefer instruments for TRUST, Zak and Knack use the shares of the population that are Catholic, Muslim or Eastern Orthodox as instruments, arguing that these hierarchical religions have negative effects on trust. Again, it could be argued that these variables may have an independent effect on growth, making them invalid instruments. In critiquing these instruments, Durlauf and Fafchamps (2004: 53) argue '[w]e are not aware of any social capital study using aggregate data that addresses causality versus correlation for social capital and growth in a persuasive way. While this is a broad brush with which to tar this empirical literature, we believe it is valid.'

A useful starting point for thinking about addressing the problem of simultaneity, with regard to social capital (informal institutions), is to consider how this issue has been tackled to date with regards to formal institutions in the deep determinants literature. Hall and Jones (1999) argue that measures of the degree of Western European influence and distance from the equator can be used to instrument for institutions. The argument is that institutions which protect property rights and encourage production, rather than diversion, were first developed in Western Europe. Hence countries more exposed to Western European influence are more likely to have adopted these institutions. The

logic behind using distance from the equator as an instrument is that Europeans did not settle near the equator.

Another instrument, which has drawn much comment in the literature, has been proposed by Acemoglu et al. (2001), who argue that settler mortality during the colonial period can be used as an instrument for current institutions. Their argument is that the colonial powers set up one of two types of institutions in their colonies. In countries where mortality rates were low enough for Europeans to settle, institutions were established that protected the property rights of the population in general. However, in regions where mortality rates were too high for permanent settlement to be viable, the European powers were more concerned with extracting raw materials as quickly as possible, and, therefore, set up institutions geared to that end. As institutions tend to persist over time, countries where mortality rates for settlers were low have inherited institutions that protect property rights. They argue further that rates of settler mortality in the past are uncorrelated with health levels today, precluding an independent effect of settler mortality on current income per capita. Hence, they argue, settler mortality is a valid instrument. The validity of settler mortality as an instrument has been questioned on various grounds. Glaeser et al. argue that it is just as likely that settlers took their human capital with them, as it is that they took their institutions with them, when they emigrated. If human capital has persisted over time, and if human capital affects income per capita, instruments relying on settlement patterns are no longer valid instruments. Glaeser et al. also report that the correlation between settler mortality and current health levels is high, which also calls into question the validity of the settler mortality instrument.

Drawing on this literature, Tabellini (2005) uses the settler mortality variable as an instrument for TRUST in cross-country regressions explaining income per capita, and finds that TRUST is positively correlated with income per capita. However, given that the settler mortality instrument is only available for a limited number of countries, the sample size is limited to 20 countries. In his regressions examining the effect of TRUST and other cultural variables⁶ on income per capita across European regions, he uses historical data on both formal institutions (data from 1600-1850) and literacy levels (data from 1880) as instruments for culture. Tabellini argues that formal institutions will shape culture, as, for example, an authoritarian regime will breed mistrust. However, past institutions will have no independent effect on income per capita across regions, once country dummies have been included, which will pick up the effect of current national institutions on income per capita.

⁶ The other cultural variables are measures of the extent to which individuals feel they have the freedom to shape their own destiny, the extent of tolerance and respect for others, and whether people view children obeying their parents as being an important quality.

Tabellini has shown that the settler mortality instrument used in the formal institutions literature can also be used as an instrument for variables like TRUST. As new and better instruments are found for formal institutions, it is possible they could also be used as instruments for informal institutions, given that formal institutions and informal institutions are simply different ends of the same continuum. It should be noted, however, that if formal institutions and social capital are to both be included as explanatory variables, two instruments need to be found for the purposes of identification, which may explain why Tabellini did not include formal institutions as a control variable in his cross-country equations. Another potential problem with this suggestion is that formal and informal institutions may evolve in quite different ways. If Acemoglu's argument is to be believed, institutions have typically been imposed externally. It is likely that informal institutions, on the other hand, evolve endogenously from within a country. If this is true, then a variable that is a good instrument for formal institutions may not always be a good instrument for informal institutions. Another possibility is that there may be some cultural variables that could be used as instruments for social capital, such as religious affiliation, but this requires that such variables have no independent effect on income per capita.

5 How will the social capital and institutional literatures be enriched by modelling social capital as a deep determinant of development?

This study has argued that social capital is a similar concept to what North (1990) defined as informal institutions. Furthermore, if social capital is considered to be part of the institutional continuum, it could be modelled empirically as a deep determinant of economic development in the same way formal institutions has been. This section of the study will summarize how the deep determinants of development and social capital literatures would be enriched if this were to happen.

The 'capital' in 'social capital' leads many to assume that it is a form of capital, to be added to the list of reproducible capitals along with physical and human capital. However, it was argued in Section 3 of the study that social capital is best thought of as a deep determinant of economic development, which largely affects income via its affect on the accumulation of other factors of production or the level of total factor productivity (the proximate determinants), rather than as a factor of production in its own right. If social capital is not a form of capital, then the term 'informal institutions' may be a more useful descriptor. Whether social capital (informal institutions) is viewed as a proximate or deep determinant is not merely a semantic point. The framework used to analyse how social capital affects income has implications for how its effects should be analysed empirically.

If social capital is thought of as a factor of production, then the effects of social capital on income are best modelled, as a proximate determinant of development, in a production function framework, controlling for the effects of other factors of production

such as physical and human capital. This is how the effects of social capital have typically been analysed in the existing cross-country studies on social capital. For example, Whitley (2000) controls for the accumulation of physical and human capital and Knack and Keefer (1997) and Zak and Knack (2001) control for investment in physical capital. However, if social capital (informal institutions) is thought to be a deep determinant, controlling for physical and human capital is inappropriate. This is because physical and human capital are both proximate determinants of income that are, in part, explained by the level of social capital. Including them as control variables in the regression equation means the indirect effect of social capital on income per capita, via these proximate determinants, will not be picked up. If social capital really is a deep determinant of development, then the control variables should be the other potential deep determinants of development, such as formal institutions and geographic variables, not the proximate determinants such as human and physical capital accumulation.

As was argued in Section 4.5, following the lead of the deep determinants literature may assist in the choice of instruments for social capital. Tabellini (2005) has shown that the settler mortality variable that has been used as an instrument for formal institutions can be used as an instrument for TRUST. Other variables that have been used as instruments for formal institutions could conceivably be used as instruments for social capital (informal) institutions, given that formal and informal institutions represent different ends of the same continuum.

The existing deep determinants literature will also be enriched by considering the role of social capital (informal institutions). There are a large number of studies analysing the effect of institutions on income per capita, within a deep determinants framework. However, in these studies the focus is almost entirely on formal institutions, especially those related to property rights. Bardhan (2005: 500) criticises this literature for having too narrow a view of institutions arguing '[t]his preoccupation of the literature with the institution of security of property rights, often to the exclusion of other important institutions, severely limits our understanding of the development process.' However, Bardhan extends this literature by including additional proxies for formal, rather than informal, institutions. North (1990) argued that informal institutions, such as cooperative norms, are more important than formal institutions, meaning that the current deep determinants literature may well suffer from omitted variables bias. Remaining true to North's definition of institutions requires including proxies for informal institutions. It is also important to control for possible interactions between formal and informal institutions. Failure to consider the role of informal institutions would not matter so much if formal and informal institutions were highly correlated, but it has been argued earlier that this is not the case.

6 Conclusion

This study has argued that social capital is a similar notion to what North (1990) defined as *informal* institutions. North defined *formal* institutions as rules devised by human beings, whereas *informal* institutions are codes of conduct and conventions of behaviour. Formal institutions can be considered analogous to the written rules of a sport, with informal institutions being analogous to unwritten codes of conduct generally adhered to by the players. Institutions can sometimes be difficult to categorise into formal and informal, so it can be useful to think of institutions forming a continuum, with written constitutions at one end, and taboos, customs and traditions at the other. Towards the middle of the continuum will come community-based institutions, such as those that exist in many parts of the world to manage common property resources.

There are many different definitions of social capital used in the literature, but most of these definitions include at least one of the notions of trust, a shared set of co-operative norms, and networks and/or associational memberships. Hence, in terms of its definition, social capital seems similar to the notion of informal institutions. Social capital researchers often argue that social capital will improve economic performance by reducing transactions costs and encouraging co-operation, a point also made by North with regard to informal institutions. Although North (1990) is frequently cited by researchers in both the social capital literature and the institutions as a deep determinant literature, neither group of researchers tends to acknowledge the work of the other.

This study has argued that when empirically estimating the effect of social capital on economic development across countries, social capital can be added to the list of deep determinants of economic development, along with formal institutions and geography. Deep determinants are variables that affect income per capita (or other proxies of economic development), via their effect on the proximate determinants, such as factor accumulation or total factor productivity. They are also variables that change very slowly, if at all, over time. Section 3 of the study reviewed a selection of the arguments as to why social capital is likely to affect economic performance. These arguments suggested that social capital is likely to affect either the level of total factor productivity, or the rate of factor accumulation, hence it seems sensible to think of social capital as a deep determinant, rather than a proximate determinant. In addition, data were presented in Section 4 suggesting that social capital does not vary much across time within a given country. Thinking of social capital as a deep determinant of economic development, therefore, seems reasonable. As discussed in Section 5, whether social capital is a deep, or proximate, determinant of development has implications for which control variables should be included in regressions analysing the effect of social capital on the level of income per capita.

Including measures of social capital (informal institutions) in deep determinants regressions will, of course, require that data of reasonable quality be available for a large number of countries. This study has, at times, made reference to possible measures from the World Values Survey, while acknowledging that these data are far from perfect. Over time, the ideal would be for experimental data to be collected that measure the degree of trust and co-operative norms in different countries. The literature on institutions as a deep determinant of economic development has focused exclusively on the effect of formal institutions on income per capita, despite North's suggestion that informal institutions are more important. This institutions as a deep determinant literature will be enriched by considering both ends of the institutions continuum.

Appendix

Table A1: Commonly cited definitions of social capital

Author(s)	Definition
Coleman (1988: S95)	'...obligations and expectations, information channels, and social norms.'
Coleman (1990: 304)	'...social organization constitutes social capital, facilitating the achievement of goals that could not be achieved in its absence or could be achieved only at a higher cost.'
Putnam et al. (1993: 167)	'features of social organization, such as trust, norms, and networks that can improve the efficiency of society.'
Fukuyama (1997: 378-9)	'...the existence of a certain set of informal rules or norms shared among members of a group that permits co-operation among them. The sharing of values and norms does not in itself produce social capital, because the norms may be the wrong ones... The norms that produce social capital... must substantively include virtues like truth telling, the meeting of obligations and reciprocity.'
Knack and Keefer (1997: 1251)	'Trust, co-operative norms, and associations within groups.'
Narayan and Pritchett (1999: 872)	'...the quantity and quality of associational life and the related social norms.'
Putnam (2000: 19)	'...connections among individuals—social networks and norms of reciprocity and trustworthiness that arise from them.'
Ostrom (2000: 176)	'...the shared knowledge, understandings, norms, rules and expectations about patterns of interactions that groups of individuals bring to a recurrent activity.'
Woolcock (2001: 13)	'...the norms and networks that facilitate collective action...it is important that any definition of social capital focus on its sources rather than consequences... This approach eliminates an entity such as 'trust' from the definition of social capital.'
Lin (2001: 24-5)	'...resources embedded in social networks and accessed and used by actors for actions. Thus the concept has two important components: (1) it represents resources embedded in social relations rather than individuals, and (2) access and use of such resources reside with the actors.'
Bowles and Gintis (2002: 2)	'...trust, concern for one's associates, a willingness to live by the norms of one's community and to punish those who do not.'

Knack (2002: 42)	'I use the term government social capital to refer to institutions that influence people's ability to co-operate for mutual benefit. The most commonly analysed of these institutions ... include the enforceability of contracts, the rule of law, and the extent of civil liberties permitted by the state.' 'Civil social capital encompasses common values, norms, informal networks, and associational memberships that affect the ability of individuals to work together to achieve common goals.'
Sobel (2002: 139)	'Social capital describes circumstances in which individuals can use membership in groups and networks to secure benefits.'
Durlauf and Fafchamps (2004: 5)	'(1) social capital generates positive externalities for members of a group; (2) these externalities are achieved through shared trust, norms and values and their consequent effects on expectations and behaviour; (3) shared trust, norms and values arise from informal forms of organizations based on social networks and associations.'
World Bank (2005)	'[T]he norms and networks that enable collective action.'

Source: Author's illustration.

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