ECONOMIC STUDIES

DEPARTMENT OF ECONOMICS
SCHOOL OF BUSINESS, ECONOMICS AND LAW
UNIVERSITY OF GOTHENBURG
194

Essays on Institutions, Inequality and Development

Ann-Sofie Isaksson

UNIVERSITY OF GOTHENBURG

ISBN 978-91-85169-56-6
ISSN 1651-4289 print
ISSN 1651-4297 online

Printed in Sweden,
Geson Hylte

Contents

Paper 4: *Institution building with limited resources: Establishing a supreme audit institution in Rwanda*

Acknowledgements

First of all, I wish to thank my supervisor, Arne Bigsten, for invaluable support and advice over the years. By encouraging me to go to Tanzania as an undergraduate you got me interested in development economics, and since then you have always made time for my questions and concerns. Not the least, many thanks for our fun and inspiring times together in Rwanda!

My sincere thanks also to my assistant supervisor, Måns Söderbom, for extremely helpful suggestions and guidance throughout this process, to Annika Lindskog for the fun we had working together on our paper, and to friends at the Department for stimulating discussions, insightful comments, and good times at conferences and parties!

I am very grateful to Eva-Lena Neth-Johansson for all the practical assistance throughout my time in the Ph.D. programme, and to Debbie Axlid for excellent editorial assistance.

Financial assistance from Sida/SAREC and the Wallander-Hedelius Foundation is gratefully acknowledged. The latter enabled me to visit the London School of Economics for one academic year. Many thanks to the students and staff at STICERD, LSE for a very inspiring year!

Finally I wish to thank my family and friends for keeping me half-sane and reminding me of what matters 'in the real world'. Most of all, I want to thank (my) Måns. Without you there would have been no thesis, no fun, no nothing.

Ann-Sofie Isaksson

Gothenburg, Sweden, December 2010

Summary of the thesis

The thesis consists of four self-contained papers.

Paper 1: *Social divisions and institutions: Assessing institutional parameter variation*

A great number of studies have by now demonstrated the positive association between different measures of institutional development and economic performance (see e.g. Knack and Keefer 1995; Hall and Jones 1999; Acemoglu et al. 2001; Rodrik et al. 2004), and several scholars now point to the need to contextualize the discussion of institutions and their role in the development process (North 1994; Djankov et al. 2003; Rodrik 2008). Against this background, a pressing question when evaluating the relation between property rights institutions and economic performance should be: property rights for whom? Rich and poor, men and women, people of different ethnic origins, large-scale corporations and small-scale peasants – do they all receive the same protection? Put differently, is there variation in property rights protection within countries, and if so, how does this affect institutional payoffs measured at the country-level?

This paper investigates the hypothesis that the association between property rights institutions and income per capita is weaker in countries with high social divisions. The argument is that social divisions should have a negative effect on perceived institutional inclusiveness, which in turn should depress institutional payoffs. Absent a property rights indicator that captures the perceived inclusiveness of institutions, social divisions should then weaken the observed association between property rights institutions and income.

In line with the social division hypothesis, the results of empirical estimations for a cross-section of countries suggest a weaker association between property rights institutions – as measured by a standard property rights index – and income in countries marked by ethnic fractionalization and income inequality. The results point to the importance of carefully evaluating whether the institutions indicator captures the institutional framework applying to a broad cross-section of the population, and how a failure of it to do so could affect one's conclusions. Published in *Public Choice*

Paper 2: *Preferences for redistribution: A country comparison of fairness judgements*

To understand the great variation in support for income redistribution, we need to go beyond rational economic self-interest explanations and incorporate ideas of what individuals consider fair. One could in this context make a distinction between fairness concepts focusing

only on outcomes, such as strict egalitarianism, and those accounting for individual inputs contributing to those outcomes. This paper seeks to explain within- and across-country variation in redistributive preferences in terms of self-interest concerns and an input-based concept of fairness. The former predicts a negative relation between an individual's relative income and his or her support for income redistribution. The latter we examine by exploring how holding certain beliefs regarding the causes of income differences affects support for redistribution.

According to an input based fairness concept, people expect their outcome of an exchange to be correlated to inputs – e.g. effort, skills and talent – seen as relevant for that exchange (Adams, 1965). Furthermore, it is suggested that one should make a distinction between inputs for which the individual could be considered directly responsible – 'responsible inputs', and those that are beyond the individual's control – 'arbitrary inputs', and that fair distributions are based on responsible inputs only (Dworkin, 1981; Roemer, 2002). If people in their fairness judgments distinguish between inputs in this fashion, then those who believe that income determinants to a greater degree are 'responsible' should consider the prevailing income distribution fairer and thus be less inclined to support redistribution, whereas those who to a larger extent view them as 'arbitrary' should see the existing income differences as more unfair and accordingly be more supportive of redistribution.

Results of estimations based on data for over 20,000 respondents across 25 countries indicate that both self-interest considerations and input-based fairness concerns help explain redistributive preferences. In line with an input based fairness concept, we find that those who believe that income differences are due to 'arbitrary' factors are more supportive of redistribution than those who believe that they originate in 'responsible' factors. While differences in beliefs on what causes income differences seem to be important for explaining within-country variation in redistributive preferences, they do little to explain across-country differences. Differences in the effects of holding certain beliefs, however, are important for explaining across-country variation in redistributive preferences, suggesting considerable heterogeneity across societies in what is considered as fair.

Published in *Journal of Economic Behavior and Organization*

Paper 3: *Political participation in Africa: The role of individual resources*

Motivated by the importance of broad-based citizen engagement for equitable democratic development, and by the sparse existing evidence on patterns of political participation in the

emerging African democracies, this study explores the role of individual resources in explaining African political participation.

The influential resource perspective (Brady et al., 1995), used to explain the higher rates of political participation among resource rich citizens often observed in established democracies, stresses that political participation is costly and requires inputs in terms of individual resources like skills and time. If citizens in young developing country democracies face comparatively high participation costs and have more limited individual resource endowments than citizens in more established democracies, this explanatory framework should be particularly relevant in the African setting.

On the contrary, however, empirical findings drawing on new data for more than 27 000 respondents in 20 emerging African democracies suggest surprisingly weak explanatory power of the resource perspective. In some cases, the relatively resource poor actually participate to a greater extent than the more resource rich. The results are encouraging in that they indicate fairly broad-based political participation – which should be a prerequisite for a well-functioning democracy – but also call attention to the need to evaluate the motivational forces behind the decision to take part.

Paper 4: *Institution building with limited resources: Establishing a supreme audit institution in Rwanda*

Developing countries tend to have great needs in terms of institution building but limited resources available for building institutional capacity. Does this call for alternative institutional solutions? Several recent studies in fact suggest that institution building in developing countries requires a 'second-best mind-set' (Djankov et al., 2003; Dixit, 2004; Acemoglu et al., 2006; Rodrik, 2008). Yet, we have little knowledge of the specific tradeoffs between first-best benchmarks and second-best solutions facing developing country institutions in their start-up phase.

This study considers the establishment of a supreme audit institution (SAI) in Rwanda. While operating with highly set ideals – their role is ultimately to help to ensure that public funds reach the poor rather than end up in corrupt pockets – developing country SAIs also tend to face severe operational constraints. We investigate the interplay between the programmatic ideal of SAI independence and operational constraints in terms of staff capacity in the development of a supreme audit oversight function in Rwanda. Doing so, we hope to shed light on institution building with limited resources, highlighting potential trade-offs

between best-practice institutional benchmarks and local operational constraints in a developing country institution-building process.

Drawing on data from document studies and key informant interviews, the empirical results suggest that capacity constraints – within the institution as well as among its major stakeholders – negatively impact important aspects of SAI functional independence, but also that there are arguments for compromising the programmatic ideal of SAI independence in order to effectively tackle operational constraints in terms of staff capacity. In more general terms, our findings highlight that institution building bounded by operational constraints requires careful sequencing of reform, an awareness of institutional interdependencies, and efforts in terms of translating the legal institutional framework into practice.

References

Acemoglu, D., Johnson, S., and Robinson, J. A. (2001) "The colonial origins of comparative development: an empirical investigation", *American Economic Review*, 91(5), pp. 1369-1401.

Acemoglu, D., Aghion P. and F. Zilibotti (2006) "Distance to Frontier, Selection, and Economic Growth", *Journal of the European Economic Association*, 4(1), pp. 37-74.

Adams, J. S. (1965) "Inequity in social exchange", in Berkowitz, L., (Ed.). *Advances in Experimental Social Psychology*, Vol. 2. New York: Academic Press, pp. 267-299.

Brady, H. E., Verba, S. and K. Lehman Schlozman (1995) "Beyond Ses: A resource model of political participation", *The American Political Science Review*, 89(2), pp. 271-294.

Dixit, A. K. (2004) *Lawlessness and Economics: Alternative Modes of Governance*, Princeton, NJ: Princeton University Press.

Djankov, S. E., Glaeser, R. La Porta, F. Lopez-de-Silanes, and Shleifer, A. (2003) "The new comparative economics", *Journal of Comparative Economics*, 31(4), pp. 595-619.

Dworkin, R., (1981) "What is equality? Part 1: Equality of welfare", *Philosophy and Public Affairs* 10, pp. 185-246.

Hall, R. E. and Jones, C. I. (1999) "Why do some countries produce so much more output per worker than others?", *The Quarterly Journal of Economics*, 114(1), pp. 83-116.

Knack, S. & Keefer, P. (1995) "Institutions and economic performance: Cross-country tests using alternative institutional measures", *Economics and Politics*, 7(3), pp. 207-227.

North, D. C. (1994) "Economic performance through time", *The American Economic Review*, 84, 359-368.

Rodrik, D., Subramanian, A., & Trebbi, F. (2004) "Institutions rule: The primacy of institutions over geography and integration in economic development", *Journal of Economic Growth*, 9, pp. 131-165.

Roemer, J. E. (2002) "Equality of opportunity: A progress report", *Social Choice and Welfare* , vol. 19, pp. 455-471.

Rodrik, D. (2008). Second best institutions. NBER Working Paper no. W14050, June 2008.

Paper 1

Public Choice
DOI 10.1007/s11127-010-9632-7

Social divisions and institutions: assessing institutional parameter variation

Ann-Sofie Isaksson

Received: 11 August 2009 / Accepted: 23 February 2010

Abstract This paper investigates the hypothesis that the association between property rights institutions and income is weaker in countries with high social divisions. It argues that social divisions should have a negative effect on perceived institutional inclusiveness, which in turn should depress institutional payoffs. Absent a property rights indicator that captures the perceived inclusiveness of institutions, social divisions should then weaken the observed association between property rights institutions and income. The empirical results support this hypothesis, and highlight the importance of evaluating whether the institutions measure used captures the institutional framework applying to the population at large.

Keywords Property rights · Institutions · Social divisions · Parameter heterogeneity

JEL Classification O10 · O17 · P14 · P26

1 Introduction

We know that 'institutions matter'. A great number of studies have by now demonstrated the positive association between different measures of institutional development and economic performance (see, for example, Knack and Keefer 1995; Hall and Jones 1999; Acemoglu et al. 2001; Rodrik et al. 2004), and several scholars now point to the need to contextualize the discussion of institutions and their role in the development process (North 1994; Djankov et al. 2003; Rodrik et al. 2004; Mukand and Rodrik 2005; Rodrik 2008; Williamson 2009). The impact of a formal institutional setup depends on a country's specific institutional needs, enforcement strategies and informal institutions, the arguments go, and there is not necessarily a clear mapping from a specific institutional arrangement to an economic outcome.

Keeping in mind the need to contextualize the discussion of institutions and their role in the development process, a pressing question when evaluating the relation between property

A.-S. Isaksson (✉)
Department of Economics, University of Gothenburg, Box 640, 405 30 Göteborg, Sweden
e-mail: ann-sofie.isaksson@economics.gu.se

Published online: 10 March 2010

rights institutions and economic performance should be: property rights for whom? Rich and poor, men and women, people of different ethnic origins, large-scale corporations and small-scale peasants—do they all receive the same protection? Put differently, is there variation in property rights protection within countries, and if so, how does this affect institutional payoffs measured at the country-level?

The aim of this paper is to investigate the hypothesis that the association between property rights institutions and income per capita is weaker in countries marked by social divisions. The argument is that institutional payoffs should increase with perceived institutional inclusiveness, which in turn should be negatively affected by the level of social divisions. If social divisions have a negative effect on the extent to which the institutional framework is perceived to incorporate the different segments of economic actors in society, and our institutional indicators do not take account of this perceived inclusiveness (or lack thereof), they should also have a negative influence on the strength of the observed association between property rights institutions and income per capita. The results of empirical estimations for a cross-section of countries support this hypothesis and highlight the importance of evaluating the extent to which the property rights indicator used captures the level of protection for society at large.

If not taken into account, parameter heterogeneity, i.e., systematic coefficient variation in cross-section data, constitutes a form of regression misspecification (Temple 2000; Brock and Durlauf 2001; Zietz 2006).[1] The above argument suggests the existence of institutional parameter heterogeneity along a social division dimension, in particular if—as is standard in the literature—using an institutional indicator that is poorly suited to capture the inclusiveness of the institutional framework. Against this background, evaluating institutional parameter variation along a social division dimension is an important contribution that should help contextualize the well established association between institutions and economic performance and shed light on the importance of considering the property rights applying for a broad cross-section of the population as opposed to a limited segment of economic actors.

2 Social divisions and institutional payoffs

Institutions can be defined as formal and informal rules that shape the incentives in human exchange, whether political, social or economic (North 1990). Economists usually interpret the concept in a narrow sense, assessing how conducive these rules are to desirable economic behavior (Rodrik et al. 2004). This paper follows in this tradition, focusing on property rights institutions (hence, 'institutions' refer to property rights protection). Besley and Ghatak (2009) define property rights as the institutional framework in place for protection of the right of an owner of a good or asset to use it for consumption and income

[1] Against this background it is surprising that the cross-country institutions literature contains so few studies evaluating, or even allowing for, institutional parameter variation Two papers that focus on variation in the institutional parameter (measuring 'institutions' in terms of the 'social infrastructure' variable of Hall and Jones 1999, covering factors ranging from law and order to average tariff rates) are that of Eicher and Leukert (2006), who find a stronger institutional coefficient in non-OECD than in OECD countries, and that of Cavalcanti and Novo (2005), who find the payoffs from better institutions to be lower at the top of the conditional distribution of international incomes. Other papers (e.g., Baliamoune-Lutz 2005; Baliamoune-Lutz and Ndikumana 2007; Mehlum et al. 2006; and Rodrik 1999) allow for institutional interaction effects, but focus on how institutions affects the impact of another explanatory variable, rather than on the variation in the institutional parameter.

generation, to transfer it to another party and to use it to contract with other parties. As such, property rights are essential for investment and trade, and thus for economic development in a wider sense. My main proxy for property rights is a very influential indicator (used by, e.g., Knack and Keefer 1995; Hall and Jones 1999; Acemoglu et al. 2001, 2002) focusing on the risk of expropriation facing foreign investors (see Sect. 3.1).

The second key concept—social divisions—refers to societal cleavages involving inequality, in terms of economic conditions, social status, or both. As such, it could be seen as the antithesis of social cohesion, describing a situation where citizens feel they are part of the same community, face shared challenges and reap similar societal benefits (Easterly et al. 2006). Social divisions can exist along several dimensions, such as income, class, ethnicity and gender, and what constitutes the most salient dividing lines is likely to vary across societies.[2] To capture social divisions this paper considers cleavages along an economic and an ethnic dimension, as proxied by measures of income inequality and ethnic diversity (see the discussion in Sect. 3.1).

A significant literature argues that divisions along these lines have a negative impact on institutional development per se (as opposed to on institutional payoffs). With respect to ethnic divisions, several studies suggest an adverse effect of ethnic diversity on institutions and government policies, and thereby on economic performance (see, for example, Easterly and Levine 1997; La Porta et al. 1999; Collier 2000; Alesina et al. 2003; Aghion et al. 2004). The basic argument is that societies with ethnic cleavages tend to have difficulties in agreeing on public goods provision and to be prone to rent seeking whereby leaders create rents for the group in power at the expense of society at large. Moreover, Leeson (2005) suggests causation from institutions to fractionalization, describing how heterogeneous agents in pre-colonial Africa relied on social-distance reducing signals (such as adopting someone else's religious practices) to enable trade, and how colonial rulers put an end to this bridging across groups by introducing noise into these signals.[3]

Turning to social divisions along economic lines, several studies suggest that income inequality can be detrimental to institutional development.[4] Glaeser et al. (2003), Sonin (2003) and Hoff and Stiglitz (2004) model how the rich and politically powerful can subvert institutions for their own benefit. Chong and Gradstein (2007) find evidence of a two-way causation—that income inequality undermines institutions, but also that poorly developed institutions create inequality. Finally, a few empirical papers propose negative effects of *both* income inequality and ethnic fractionalization on institutional development and thereby on economic performance (Easterly 2001b; Keefer and Knack 2002; Easterly et al. 2006).

[2] See the discussion of Anthias (1998) and Erdmann (2007).

[3] This constitutes just a small part of a large literature on ethnic divisions; a wealth of studies analyze how ethnic identities are shaped (see, e.g., Eifert et al. 2009), how ethnic affiliations affect party systems and voting behavior (see, e.g., Mozaffar et al. 2003, and Lindberg and Morrison 2008), and how ethnic divisions relate to conflict (see, e.g., Collier and Hoeffler 2004, and Basuchoudhary and Shughart II 2007). For in-depth analysis of ethnic group affiliations and ethnic conflict, see Horowitz (1985) and Hardin (1995).

[4] Again, the literature relating income inequality to institutional development is just a small fraction of the extensive literature focusing on the association between income inequality and economic performance (for a good overview see Benabou 1996). Several studies suggest that inequality has a negative effect on growth and investment. Arguments include that inequality motivates redistribution, which in turn creates growth-reducing distortions (see, for example, Persson and Tabellini 1994, and Alesina and Rodrik 1994), that it fuels political instability (see, for example, Alesina and Perotti 1996), and that in the presence of credit constraints it causes the poor to under-invest (see, for example, Galor and Zeira 1993). Barro (2000), on the other hand, finds no *overall* relation between income inequality and growth, but rather that inequality retards growth in poor countries and stimulates growth in richer countries.

The papers arguing that ethnic fractionalization and income inequality impact negatively on institutional development have in common that they suggest that a lack of social cohesion hinders societies from building institutions that serve an all-encompassing interest. Hence, the argument is that different forms of social divisions can undermine institutions per se, and given the importance of well functioning institutions for economic development, thereby also have a negative effect on economic performance. This paper proposes an alternative (but not contradictory) mechanism; that social divisions undermine institutional *payoffs*, that is, the impact of institutions on economic performance.

The argument is that social divisions should negatively affect perceived institutional inclusiveness, which in turn should depress institutional payoffs. Acemoglu et al. (2002) argue that good institutions should secure property rights for a 'broad cross-section' of society. The inclusiveness of the institutional framework, depending on de jure regulations as well as their de facto application, has to do with the extent to which institutions live up to this criterion, i.e., how well they incorporate the different segments of economic actors in society. Importantly, what should matter for agents' economic behavior is the *perceived* inclusiveness of the institutional framework—that is, the extent to which each and every individual perceives that his or her property rights are protected (see the arguments of Kaufmann et al. 1999). Although perceived and actual property rights are likely to be highly correlated, the distinction is relevant; irrespective of de facto property rights, there may be variation across groups in the extent to which people perceive that property rights offer them protection. This situation seems particularly pertinent in a country marked by social divisions.

My conjecture is that perceived institutional inclusiveness is negatively affected by social divisions. Although social divisions in terms of ethnic fractionalization or income inequality do not automatically imply perceptions of injustice,[5] comparing a country marked by social divisions to a more cohesive society, it seems reasonable to assume that in the former people are *on average more likely to perceive* property rights institutions as protecting some groups more than others.

However, whether we observe that social divisions negatively affect institutions per se, or institutional payoffs, ultimately depends on how we define and measure property rights institutions. If one thought of property rights protection as the extent of protection *perceived by citizens in general*, then if social divisions, as suggested here, have a negative effect on the perception of institutional inclusiveness this would, by definition, be the same as saying that they impact negatively on property rights institutions as such. Hence, if in line with this definition measuring property rights using an indicator based on country averages from comparable national surveys asking a representative sample of the population about how they perceive the security of property rights in their country, social divisions would, if negatively affecting the perception of institutional inclusiveness, bring down the country's average property rights score. However, I am not aware of any study taking this approach. The argument that social divisions instead depress institutional payoffs takes as a point of departure the country level property rights measures used in the literature today.

These indicators tend to focus on assessments of the protection of a small segment of economic actors, like foreign investors (see the discussion of the ICRG measure in Sect. 3.1),

[5]There are, for example, experimental and survey based evidence that when assessing the fairness of a distribution people take into account the inputs—such as effort, skills or luck—contributing to that distribution (see, for example, Hoffman and Spitzer 1985; Fong 2001; Cappelen et al. 2007; and Isaksson and Lindskog 2009). If people believe that the prevailing distribution is based on factors under individual control, such as hard work, they may view it as just even though it is unequal, whereas if they believe it is based on factors outside individual control, such as political favoritism or inheritance, they may regard it as unjust.

or on expert judgments of formal economic and judicial structures (see the discussion of the Heritage Foundation and World Bank Doing Business indicators in Sect. 3.1). In particular, there is no survey based property rights measure, in line with the hypothetical indicator described above, aiming to capture perceptions of property rights protection among citizens at large. While such a measure would surely be problematic in many respects, not the least in terms of comparability, it should at least aim at capturing the property rights applying for 'a broad cross section of society'. With respect to expert judgments of the property rights protection facing foreign investors, on the other hand, although probably overlapping the perceptions of property rights protection among citizens in general, it seems a strong assumption that they should be identical. Hence, if social divisions negatively affect the perception of institutional inclusiveness, using a standard measure of property rights two countries could thus get the same institutional 'score', but different institutional payoffs, depending on their levels of social divisions.

Having said this, let us consider why perceived lack of inclusiveness, whether based in actual circumstances or not, should weaken the observed positive association between property rights institutions and economic performance in countries marked by social divisions. Two mechanisms appear important here. First, there should be a direct coverage effect. If property rights induce desirable economic behaviors such as investment and trade, these behavioral effects should increase with perceived institutional coverage. In other words, if some segments of society feel, rightly or not, that the existing property rights institutions offer them no protection, then the effects of these institutions on economic behavior should be less widespread. Second, there might be a compliance effect; if citizens feel that the institutional framework does not protect their interests, they should be less inclined to comply with its rules. As pointed out by Keefer and Knack (2002) the costs of enforcing property rights depends on the legitimacy of those rights—to what extent they are accepted by society at large. If property rights institutions are seen as protecting the property of one group more than that of another, then the legitimacy of those institutions should be reduced in the eyes of the people who perceive themselves as disadvantaged, making them less willing to live by the regulations put forward.[6]

Consider the case of property rights to land. In many developing countries customary and formal land rights coexist, giving rise to ambiguities and overlapping claims to plots. Studying land rights in Ghana, Goldstein and Udry (2008) find that the security of tenure is highly dependent on social status. According to their findings, the risk of losing one's plot when leaving it fallow is substantial, and importantly, varies considerably depending on the individual's position in the local political and social hierarchy; a man holding a political office faces a 20% risk of losing his land—for a woman not holding a political office this figure is doubled. In line with this variation their results indicate that lower agricultural returns among women are attributable to women's lower social status, in turn giving them less secure tenure, which discourages investment in land. Hence, social divisions affect the de facto land rights of individuals; had men and women the same social status, or in the absence of social status differentials in general, we would not have observed these differences in tenure security. While this example illustrates a case of *actual* variation in property rights across groups within a country marked by social divisions, we need not go that far. As noted above, what matters for economic behavior is *perceived* property rights protection. Hence,

[6]The findings of Hellman and Kaufmann (2002), who find that perceived inequality of influence is associated with a negative assessment of the fairness and impartiality of courts, with being less inclined to use courts to resolve business disputes (coverage), and with lower levels of tax compliance and higher levels of bribery (compliance), could be said to support these arguments.

for social divisions to affect institutional payoffs it would suffice if in countries marked by social divisions it is more likely that some groups *perceive* that property rights offer them no protection.

How is this form of variation in property rights protection captured in country level measures of property rights? If measuring property rights protection as perceived by each and every individual in Ghana—in line with the hypothetical survey based property rights indicator discussed above—the lower protection among women would bring down the country average, and an estimated payoff to property rights protection would be based on this average. A property rights indicator assessing the risk of expropriation facing foreign investors, or measures focusing on legal structures (i.e., de jure rights rather than de facto protection), on the other hand, do not take account of within-country variability in effective protection. In a cohesive country this variability need not be substantial. However, in a country marked by social divisions it seems likely that some groups (like women in Ghana) will fall short of the reported standard.[7]

To sum up, the argument suggests that unless our property rights indicator captures the property rights protections perceived by all segments of economic actors in society, the measured association between property rights institutions and economic performance should vary with the perceived inclusiveness of property rights institutions, in turn negatively influenced by the degree of social divisions.

3 Empirical estimation

Above it was argued that the association between property rights institutions and economic performance should vary with social divisions. Let us now turn to the strategy and data used for investigating the empirical support for this claim. In line with the cross-country institutions literature I use linear regression, regressing the measure of economic performance on explanatory variables including an interaction term between the institutions indicator and the social division measure. The benchmark OLS regression thus takes the form:

$$\log y_i = \alpha + \beta Inst_i + \gamma Socdiv_i + \delta Inst_i \cdot Socdiv_i + \varphi \mathbf{X}_i + \varepsilon_i \quad (1)$$

where y_i is income per capita in country i, $Inst_i$ is the institutions indicator, $Socdiv_i$ is the social division measure, $Inst_i \cdot Socdiv_i$ is the interaction term allowing the institutional parameter to vary with social divisions, $\mathbf{X}_i$ is a vector of control variables, and ε_i is an error term. The existence of institutional parameter heterogeneity along a social division dimension is evaluated by interpreting the interaction term parameter δ, associated marginal effects and the results of split sample estimations.

Focusing on a cross-section of countries one faces familiar problems of simultaneity and omitted variables. First, it does not seem unreasonable that institutions and income are

[7] One cannot rule out that foreign investors in fact experience *lower* protection than other segments of economic actors in a country, or that effective institutional protection is stronger, say, for the poor majority than for the rich minority. Using an institutional indicator based on the conditions of foreign investors, or based on de jure rather than effective protection, would then understate, rather than overstate, the property rights applying to citizens in general. With this caveat in mind, however, I would still argue that in a country marked by social divisions, if effective property rights differ across groups it is more likely that it is the poor farmer rather than the multinational corporation that belongs to the disadvantaged group in terms of property rights protection. For example, with the possible exception of Hugo Chavez' Venezuela, it is difficult to think of a country with a highly unequal income distribution where the poor would have stronger effective property rights than the rich elite.

mutually reinforcing, i.e., that institutions promote economic development and economic development enables institution building. Trying to establish the causal effect of institutions, a substantial literature attempts to get around this simultaneity problem by instrumenting for institutional development (see, for example, Hall and Jones 1999, and Acemoglu et al. 2001). Second, if the degree of income inequality differs across sectors of the economy then there are reasons to believe that structural economic change should lead to variation in inequality over a country's development process (see the literature relating to the 'Kuznets curve', originally Kuznets 1955, and later e.g., Bourguignon and Morrison 1990). In the literature linking ethnic divisions to economic performance, finally, measures for ethnic fractionalization have in fact generally been treated as exogenous (see, for example, Easterly and Levine 1997; La Porta et al. 1999; and Alesina et al. 2003). However, to the extent that ethnic divisions are socially constructed (see, e.g., Horowitz 1985; Hardin 1995) a legitimate concern is that the salience of ethnic cleavages might change over time in response to economic incentives (see, e.g., Alesina and La Ferrara 2005) or institutional structures (see, e.g., Leeson 2005).

In theory, these problems can be approached by instrumenting for the key explanatory variables. However, finding valid instruments (uncorrelated with the model error term) is difficult even when using micro-data, and with the country as the unit of analysis it is, if not impossible, then at least very problematic (Besley and Ghatak 2009). For instance, while the aforementioned attempts at instrumenting for institutions (Hall and Jones 1999; and Acemoglu et al. 2001) were novel, the validity of the instruments used can be questioned (for a critical discussion of the exogeneity of instruments in recent IV approaches see Glaeser et al. 2004; Deaton 2009; and Bazzi and Clemens 2009). Moreover, being interested in whether the association between property rights institutions and income is weaker in countries with high social divisions, the focus in this paper lies on the existence of an interaction effect between institutions and social divisions rather than on their respective point estimates. Reverse causality from economic development to institutions or social divisions should not by itself bias this interaction effect—only to the extent that these (reverse) causal effects vary systematically with institutions or social divisions should they bias the result.

Against this background there are strong arguments for keeping the analysis simple. With the purpose of this paper and the above discussion in mind, cautiously interpreting the robustness of OLS correlation patterns seems preferable to using IV estimation with questionable instruments. Importantly then, the results are not meant to be interpreted in terms of 'impacts' or 'effects'. Rather, focus lies on examining the *variation in the strength of the association* between property rights institutions and income. By including a range of control variables proposed in the literature, and allowing the intercept as well as the institutional slope term to vary across regions, I seek to minimize the influence of omitted variables on the key parameter estimates. I take care to test the results using a range of different specifications, and am cautious when it comes to interpreting the point estimates.

3.1 Variables and data

The dependent variable is log GDP per capita in 2005 obtained from the World Development Indicators. I use income levels, rather than growth, considering that the focus explanatory variable is slow moving and has reasonably developed over a considerable period of time, meaning that measuring 'institutions' today, the institutional indicator should still pick up institutional developments from far back. With the aim to uncover contextual variation in the effect of a slow moving variable it seems appropriate to consider its relation to a variable that in a similar fashion captures long run development. And whereas income levels capture

long run development, growth rates are transient (for arguments along these lines, see Hall and Jones 1999).

One approach, common in the literature (see, e.g., Acemoglu et al. 2001), would be to consider longer-term growth. Doing so, however, initial period income (included to control for convergence tendencies) will pick up a considerable portion of the long run influence of institutions on economic performance, meaning that one is left to consider the recent variation in the outcome and explanatory variables. With little recent variation in institutions (the institutional indicator in focus is in fact only available for the period 1982–1997), and considering that my aim is not merely to uncover the overall institutional parameter, but the *contextual variation* in this parameter, income seems a more appropriate outcome variable for my purposes. However, in an extended working paper version of this paper I also run a set of estimations using different growth spans as dependent variable. The results are mixed, but as expected provide more evidence of the hypothesized parameter variation for growth averaged over longer periods (see Isaksson 2009).

To proxy for property rights institutions I use the measure of protection against risk of expropriation, developed by the International Country Risk Guides (ICRG). This indicator is a subjective assessment of the risk to foreign investors of 'outright confiscation and forced nationalization' of property, ranging from 1–10, with higher values meaning better protection against expropriation. Even though this measure focuses on risks to foreign investors it is perhaps the most influential indicator used to proxy for property rights institutions (see, for example, Knack and Keefer 1995; Hall and Jones 1999; and Acemoglu et al. 2001, 2002). For instance, although Acemoglu et al. (2002) argue that good institutions should secure property rights for a broad cross-section of society they use the ICRG variable that focuses on risks to foreign investors as one of their main indicators to capture institutional development. The fact that the ICRG measure has had a wide impact in the institutions literature, in spite of its inability to capture the degree of property rights protection for a broad cross-section of society, makes it interesting to use in this context.

As noted, however, the extent to which the institutional parameter varies with social divisions should depend on the institutional indicator used. In particular, if social divisions affect the association between institutions and income via a negative influence on the perceived inclusiveness of the institutional framework, then the better the institutional indicator takes account of the inclusiveness of institutions, the less institutional parameter heterogeneity along a social division dimension we should observe. Ideally then, one would want to compare the results obtained when using a range of different measures that to varying extents capture the inclusiveness of property rights institutions. It is very difficult, if at all possible, to find a property rights proxy that perfectly captures the perceived property rights protection for society as a whole. However, different measures should have varying success on this account, and the ICRG measure, focusing on the situation faced by foreign investors, should reasonably be in the least successful end of this spectrum.

I consider four alternative property right indicators (see alt. inst. 1–4 in Table A.1). Unlike the ICRG indicator, the first three of these measures do not explicitly focus on the conditions of foreign investors, and thus it seems likely that they better capture the inclusiveness of institutions. Even though being based on expert judgments of economic and judicial structures (alt. inst. 1–2) and on a rating of property rights in an 'executive opinion survey' (alt. inst. 3), rather than on the views of general citizens, at least these measures set out to capture property rights in general and not those applying for a very limited segment of investors. Alt. inst. 4, on the other hand, assesses the risk facing foreign investors in the repatriation of profits. Hence, just like the benchmark indicator it is an ICRG measure focusing on risks facing foreign investors rather than the population at large. As such, it should

do a poor job of capturing the inclusiveness of property rights institutions, which according to the above argument means that we should observe institutional parameter variation along a social division dimension.

To capture social divisions I focus on ethnic fractionalization and income inequality. The main ethnic fractionalization variable used is that of Alesina et al. (2003), which gives the probability that two individuals selected randomly from the population belong to different ethnic groups. Although recently constructed this measure has become well established in the literature and is available for a great number of countries. However, considering social divisions along an ethnic dimension one has to keep in mind that ethnicity is a complex concept that does not lend itself to easy measurement. In the words of Erdmann (2007:11) it "denotes a historically and socially constructed identity [...] that is multifaceted, changeable and has multiple meanings", or as Fearon (2003) puts it—it is a 'slippery concept'. Ethnic group boundaries can be thought of in terms of attributes like color, language, or religion (Horowitz 1985). Hence, there is not necessarily one right way to specify the set of ethnic groups in a country, and even if there was, ethnic diversity does not necessarily imply inequalities across ethnic groups, or ethnic tensions, just as ethnic tensions can be severe in countries with comparatively little ethnic diversity. For these reasons, ethnic fractionalization indicators should be seen as rough proxies for social divisions along ethnic lines, and to make sure that the results are not contingent upon the choice of specific indicator one should consider a range of different measures.

To evaluate the sensitivity of the results to different ethnic diversity measures I also consider the ethnolinguistic fractionalization indicator of Easterly and Levine (1997), the ethnic measure of Fearon (2003), and the language fractionalization measure of Alesina et al. (2003). To investigate whether ethnic *polarization*, rather than fractionalization, matters for the association between institutions and income I use the measure of Montalvo and Reynal-Querol (2005) (based on Esteban and Ray 1994). Finally, in an attempt to capture the depth of ethnic divisions—I also consider Fearon's (2003) measure of cultural diversity, aiming to capture the cultural distance between ethnic groups by estimating the proximity between their languages.

To capture social divisions along economic lines I consider income inequality as measured by the Gini index. As already noted, income inequality does not automatically imply perceptions of injustice. However, comparing more unequal to less unequal countries, it seems reasonable that on average perceptions of injustice are more widespread in the former. The Gini index is a measure of statistical dispersion with a theoretical range of 0–100, with 0 representing perfect equality (that each unit receives an equal share of income), and 100 indicating perfect inequality (that a single unit receives all income).

The Gini measure used here is obtained from the Standardized World Income Inequality database (SWIID) (Solt 2009). Comparing income inequality across countries and over time is problematic because inequality figures are often based on different income definitions (e.g., net and gross) and on different reference units (e.g., household and individual). One is faced with a trade-off between comparability and coverage; greater comparability tends to come at a cost of limited coverage (see, for example, the measure from the Luxembourg Income Study 2009), and wider coverage over time and across countries tends to imply limited comparability (see, for example, the measure of Deininger and Squire 1996). This SWIID Gini measure used here, focusing on inequality in terms of net household disposable income, has the advantage that it seeks to maximize comparability for the broadest possible set of countries and years (for more information on the methods used in constructing this Gini indicator, see Solt 2009). To evaluate the sensitivity of results to different income inequality measures, however, I also consider the share of income held by the richest and

poorest deciles, the richest, poorest, and three middle quintiles, as well as the ratio of the income of the richest decile to the poorest decile, and of the richest quintile to the poorest quintile.

Ethnic fractionalization and income inequality capture divisions along different lines and hence constitute different phenomena. Nevertheless, the focus is on these two variables for a reason, namely that they can be viewed as examples of 'social divisions'. If ethnic fractionalization and income inequality individually affect the institutional parameter, and do so because of the shared feature that they represent forms of social divisions, then the two variables should have a combined influence on the institutional coefficient. To examine if this is the case I also consider a composite social division indicator—the first principal component between the ethnic fractionalization and the income inequality indicators (i.e., a weighted average capturing the maximum proportion of the total variation, see e.g., Kumaranayake and Vyas 2006).

Furthermore, believing that social divisions affect the institutional parameter through a negative influence on the perceived inclusiveness of institutions, in an alternative approach I instead interact the institutional indicator with a variable that could be said to proxy for perceived inclusiveness directly. It is based on the executive opinion survey in the World Economic Forum 'Global competitiveness report' asking respondents to rate whether government officials in their country (1 = usually favor well-connected firms and individuals, 7 = are neutral).

Turning to the set of control variables, in line with the literature stressing the geographic determinants of economic performance (Gallup et al. 1998; Sachs 2003) and that highlighting the role of international economic integration (Sachs and Warner 1995; Frankel and Romer 1999; Dollar and Kraay 2003) I include controls for distance to equator, for being located in the tropics, for being landlocked, and for exports and imports relative to GDP. A variable capturing whether the country has been engaged in civil war in the recent period is included considering that a potential negative influence of social divisions on income could work via this mechanism. Considering that expropriation often occurs in resource extraction sectors, I include an indicator capturing the share of energy and mineral rents in income. Moreover, to control for the stock of human and physical capital I include controls for school enrollment and capital investment. For a restricted sample I include an alternative trade variable and controls for colonial influence and political tradition.[8] To further limit the extent of unobserved cross-country heterogeneity all estimations include region dummies. The benchmark sample consists of 96 countries, and is limited only by data availability. For variable definitions, descriptive and summary statistics see Tables A.1–A.3 in Appendix.

4 Results

This section evaluates the hypothesis that the association between property rights institutions and income is weaker in countries marked by social divisions. First it discusses the results of benchmark estimations where the institutional parameter is allowed to vary with the measures included to capture social divisions, i.e., ethnic fractionalization, income inequality, and the composite social division indicator, and then moves on to evaluate the sensitivity of the findings.

[8]The geographically predicted trade share of Frankel and Romer (1999), a dummy for ex-colony status, and dummies for being of French, British, German, Socialist or Scandinavian legal origin.

4.1 Social divisions and the institutional parameter

Table 1 presents the results of regressions allowing the institutional slope term to vary with ethnic fractionalization (Panel A), income inequality (Panel B) and the composite social divisions indicator (Panel C). Looking at Panels A and B one can first of all note that as expected the institutional parameter is positive and statistically significant throughout, and that the coefficients of the social divisions indicators, ethnic fractionalization and Gini respectively, are positive in the presence of the interaction term.[9] Most interesting for our purposes, however, is that the interaction term between the institutions indicator and the measures of social divisions—ethnic fractionalization and Gini—has a negative and statistically significant parameter in all estimations, supporting the hypothesis that the association between property rights institutions and income is weaker in societies with high levels of social divisions.

The statistically significant interaction effect implies that the impact of each of the two constituent variables (institutions and ethnic fractionalization, and institutions and income inequality, respectively) depends on the value of the other, and hence that they cannot be interpreted in isolation (Braumoeller 2004). To get a picture of the marginal effect of a change in institutions predicted by the model one has to consider both the institutional parameter, the parameter of the interaction term, and the level of the other component in the interaction term:

$$\Delta \log y = \Delta inst[\beta_{\text{inst}} + \delta_{\text{Inst}\cdot\text{socdiv}} \cdot Socdiv].$$

Based on Regression 6 in Table 1 we can see that with ethnic fractionalization at its mean level, the model predicts a one unit improvement in the institutions index to be associated with a 66% higher income per capita. With ethnic fractionalization at a level one standard deviation above and below its mean, however, the same institutional improvement is instead associated with a predicted income rise of 42% and 93% respectively. Similarly, with the Gini index at its mean level, a one unit improvement in the institutions index is predicted to be associated with a 68% greater income per capita. With a Gini score one standard deviation above and below the mean, on the other hand, the same institutional improvement is predicted to come with a 38% and a 106% greater income respectively (all marginal effects are statistically significant at the 1% level).

As noted, (see the discussion in Sect. 3) one should be cautious when interpreting the point estimates. What one can say, however, is that the predicted income increases associated with an institutional improvement vary substantially with the level of social divisions; the greater the degree of ethnic fractionalization or income inequality the smaller the predicted income increase associated with a given institutional improvement.

One cannot be sure that the negative interaction effect is driven by a weaker association between property rights institutions and income in countries with strong social divisions. An alternative interpretation would be that it is a varying association between *social divisions* and income at different levels of *institutional development* that drives the result. The negative interaction effect would then imply that the better the institutions, the worse (less positive or more negative) would be the association between social divisions and income. The theoretical motivation for this seems unclear. Still, to approach this issue, let us consider a number of sample splits (see Table A.4).

[9] Considering that my primary focus is on variation in the institutional parameter I do not wish to draw any conclusions about the causal effects of ethnic fractionalization and income inequality.

Table 1 Social divisions and institutional parameter variation (OLS estimation). Dependent variable is log GDP per capita in 2005

Panel A: Ethnic fractionalization						
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	4.588***	3.127***	2.940**	2.919**	2.983**	2.804*
	(1.370)	(1.093)	(1.176)	(1.159)	(1.228)	(1.460)
Institutions	0.487***	0.864***	0.818***	0.813***	0.769***	0.751***
	(0.094)	(0.114)	(0.120)	(0.118)	(0.117)	(0.130)
Ethnic	−0.217	3.310**	3.244**	3.743**	3.627**	3.999**
	(0.491)	(1.545)	(1.548)	(1.550)	(1.514)	(1.576)
Inst-ethnic		−0.557***	−0.517**	−0.565***	−0.558***	−0.585***
		(0.204)	(0.207)	(0.207)	(0.202)	(0.209)
R-squared	0.84	0.83	0.83	0.84	0.85	0.86
Panel B: Income inequality						
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	4.588***	−2.420	−2.973	−2.389	−1.838	−1.154
	(1.370)	(2.184)	(2.206)	(2.278)	(2.332)	(2.383)
Institutions	0.487***	1.455***	1.526***	1.440***	1.344***	1.283***
	(0.094)	(0.248)	(0.275)	(0.287)	(0.286)	(0.290)
Gini	−0.004	0.147***	0.168***	0.156***	0.139***	0.133***
	(0.015)	(0.045)	(0.049)	(0.050)	(0.050)	(0.050)
Inst-Gini		−0.020***	−0.022***	−0.020***	−0.019***	−0.019***
		(0.006)	(0.006)	(0.007)	(0.006)	(0.006)
R-squared	0.84	0.83	0.84	0.85	0.85	0.86
Panel C: Composite social division indicator						
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	4.314***	4.082***	4.207***	4.296***	4.250***	4.488***
	(1.139)	(0.900)	(0.998)	(0.997)	(1.062)	(1.064)
Institutions	0.485***	0.634***	0.613***	0.598***	0.547***	0.512***
	(0.089)	(0.076)	(0.078)	(0.079)	(0.081)	(0.083)
Socdiv	−0.094	1.551***	1.702***	1.719***	1.550***	1.590***
	(0.186)	(0.502)	(0.517)	(0.514)	(0.508)	(0.504)
Inst-Socdiv		−0.230***	−0.239***	−0.234***	−0.225***	−0.224***
		(0.062)	(0.065)	(0.065)	(0.063)	(0.063)
R-squared	0.84	0.84	0.85	0.85	0.86	0.87

Notes: 96 observations; Standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; In addition to the reported variables: **Regression 1** includes all benchmark controls, Region dummies, Distance to equator, Landlocked, Tropical, Trade share, Energy/Mineral, Education, Investment, War, and the social division variable *not* in focus (i.e. in Panel B, when focusing on the Gini index, I also control for ethnic fractionalization); **Regression 2** includes region dummies; **Regression 3** includes the variables of (2) plus the geographical controls (Distance to equator, Landlocked, Tropical); **Regression 4** includes the variables of (3) plus Trade share and Energy/Mineral; **Regression 5** includes the variables of (4) plus Education and Investment; **Regression 6** includes the variables of (5) plus War, and in Panels A and B the social division variable *not* in focus, i.e. the full set of benchmark controls

Splitting the sample at the median ethnic fractionalization score and allowing all slope terms to vary between the two groups the institutional parameter in the less fractionalized group is 0.87 and highly statistically significant, whereas in the more fractionalized group it is not statistically different from zero (the difference between the two coefficients is statistically significant at the 1% level). If, for the purpose of comparison, instead splitting the sample at the median level in the *institutions index*, thus allowing all slope terms to vary for countries with 'better' and 'worse' institutions, there is no statistically significant difference between the ethnic fractionalization parameters of the two groups. Doing the same for the Gini estimation, the institutional parameter in the low Gini group is almost four times the size of that in the high Gini group (the difference is statistically significant), while the results of a sample split at the median level of the institutions index does not allow us to reject that the two groups have similar Gini parameters. These estimations seem to indicate that what drives the identified interaction effect is the institutional parameter varying with social divisions rather than the social division parameter varying by the level of institutions.

So far, we have considered the different dimensions of social divisions separately. Using the composite social division indicator—the first principal component between the ethnic fractionalization and income inequality indicators—we can look for a combined influence of these aspects of social divisions on the institutional parameter. Panel C of Table 1 presents regressions where the institutional parameter is allowed to vary with the composite social division indicator. Before including the interaction term between the social division composite variable and the institutions indicator (Regression 1) the parameter of the social division variable is not statistically significant, seemingly suggesting that on its own the composite division measure does little to explain income per capita. When including the interaction term (Regressions 2–6), however, the social division parameter comes out positive, and the interaction term parameter is as expected negative, both being statistically significant.[10] Evaluating the predicted marginal effects of an institutional improvement at different levels of social divisions, and comparing the results of split sample estimations, the results are qualitatively the same as when done for the estimations using the individual ethnic fractionalization and income inequality indicators above. Hence, it seems that ethnic fractionalization and income inequality share a common feature, which affects the institutional parameter.

4.2 Social divisions and regional variation in the institutional parameter

Inspecting the regional variation in social divisions, Sub-Saharan Africa (henceforth Africa) has the highest score on the composite social division indicator, and Europe the lowest. Knowing this one would, in line with the social division hypothesis put forward, predict that Africa has a smaller and Europe a larger institutional parameter than the rest of the sample.

[10]The interaction effects identified in Table 1 are robust to the inclusion of the alternative trade variable of Frankel and Romer (1999), and to controls for colonial influence and political tradition. Moreover, when in line with the arguments of e.g., Collier (2001) including the square of the ethnic fractionalization measure, and when in line with the hypothesis that the relationship between income and income inequality is characterized by an inverted U-shape (Kuznets 1955) including a squared Gini term (see also Tam 2008, who instead suggest a 'political Kuznets curve', i.e., an inverted U-shape in the relation between income inequality and democratic development, arguing that the traditional economic Kuznets curve might just proxy for the political Kuznets curve), the interaction effect remains. The squared terms, on the other hand, are not statistically significant.

Also, finding the lowest levels of social divisions in Europe and the highest in Africa, a reasonable question is whether the weaker institutional parameter identified in countries with high social divisions could be driven by omitted variables related to the level of economic development. Table 2 presents the results of estimations allowing the institutional slope term to vary across regions. To investigate whether the institutional parameter varies systematically across the specified regions according to the hypothesized pattern, Regressions 1–6 allow the institutional parameter to vary across regions, but not with social divisions. To make sure that the weaker institutional parameter observed in countries with high social divisions is not driven up unobserved regional variation, Regressions 8–14 expose the institutions-social divisions interaction variable to the regional interaction terms, one at a time, as well as all in combination (Regression 7, where the institutional parameter is allowed to vary only with social divisions, is included as a point of reference).

As expected from their average levels of social divisions, the coefficient of the interaction term between the institutions indicator and the Africa dummy (Regression 1) comes out negative and statistically significant, and the parameter of the interaction term between the institutions indicator and the Europe dummy (Regression 2) is positive and statistically significant, suggesting a weaker institutional parameter in the African sample and a stronger one in the European. Except for the institutions-EAP (East Asia Pacific) interaction term coefficient (Regression 3), which is positive and statistically significant at the 10% level, the interactions based on the regions occupying middle positions in terms of their levels of social divisions are not statistically significant.

As it turns out the institutions-social division interaction effect is surprisingly robust to the inclusion of the regional interaction terms. In contrast, the regional interaction effects are far from stable. Even in the final regression, which allows the institutional slope term to vary with social divisions as well as across all regions, the social division interaction effect, unlike the regional interactions, remains statistically significant and remarkably stable. This should strengthen the case for that the identified weaker association between property rights institutions and income per capita in countries with high social divisions is not simply picking up unobserved regional variation. Rather, considering that the African and European interaction effects do not survive the inclusion of the institutions-social division interaction, it seems social divisions could help explain the observed regional institutional parameter variation.

4.3 Sensitivity of results

In Table 2 we saw that the ‘institutions—social divisions’ interaction effect was robust to allowing the institutional slope term to vary across regions, thereby controlling for the influence of unobserved factors varying systematically across these regions. Could the observed interaction effect instead be driven by the institutional parameter varying with some other variable included in the model? Or is institutional parameter variation—along any of the benchmark variables—the rule rather than the exception? To investigate this I expose the focus interaction term to alternative institutional interactions, systematically allowing the institutional parameter to vary with all other benchmark controls. Table 3 presents the results of this exercise, exposing the focus interaction term to the alternative institutional interactions, one at a time (Regressions 2–9) as well as all in combination (Regression 10).

Again, the ‘institutions-social divisions’ interaction effect is remarkably stable to the inclusion of the alternative institutional interaction terms. In contrast to the highly statistically significant institutions-social divisions interaction term parameters in Regressions 2–9,

Table 2 Allowing the institutional slope term to vary across regions and with social divisions. Dependent variable is log GDP per capita in 2005

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Constant	3.029**	5.231***	4.740***	4.050***	4.231***	4.403***	4.488***	4.413***	4.568***	4.675***	4.050***	4.423***	4.662***	−4.335
	(1.237)	(1.227)	(1.142)	(1.179)	(1.145)	(1.210)	(1.064)	(1.309)	(1.191)	(1.085)	(1.088)	(1.072)	(1.131)	(37.598)
Institutions	0.600***	0.404***	0.436***	0.508***	0.506***	0.476***	0.512***	0.518***	0.504***	0.486***	0.552***	0.527***	0.493***	1.399
	(0.099)	(0.098)	(0.091)	(0.092)	(0.092)	(0.099)	(0.083)	(0.101)	(0.099)	(0.088)	(0.086)	(0.086)	(0.093)	(3.809)
Socdiv	−0.065	−0.092	−0.079	−0.079	−0.125	−0.096	1.590***	1.550**	1.547***	1.451***	1.749***	1.546***	1.601***	1.481*
	(0.182)	(0.183)	(0.183)	(0.187)	(0.190)	(0.188)	(0.504)	(0.650)	(0.580)	(0.528)	(0.509)	(0.510)	(0.507)	(0.807)
Inst-Africa	−0.391**							−0.021						−0.908
	(0.167)							(0.216)						(3.826)
Inst-Europe		0.357*							0.033					−0.852
		(0.194)							(0.215)					(3.814)
Inst-EAP			0.442*							0.210				−0.685
			(0.233)							(0.233)				(3.810)
Inst-SA				−0.350							−0.598			−1.411
				(0.397)							(0.372)			(3.825)
Inst-MENA					−0.245							−0.183		−1.032
					(0.290)							(0.272)		(3.819)
Inst-LAC						0.045							0.089	−0.803
						(0.201)							(0.188)	(3.815)
Inst-Socdiv							−0.224***	−0.218**	−0.218***	−0.205***	−0.242***	−0.221***	−0.226***	−0.208*
							(0.063)	(0.085)	(0.074)	(0.067)	(0.063)	(0.063)	(0.063)	(0.106)
R-squared	0.85	0.85	0.85	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87

Notes: 96 observations in all estimations; Standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All estimations include a constant term and benchmark controls (Region dummies, Distance to equator, Landlocked, Tropical, Trade share, Energy/Mineral, Education, Investment, and War)

Table 3 Allowing the institutional slope term to vary with social divisions and all benchmark controls. Dependent variable is GDP per capita in 2005

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Institutions	0.51***	0.54***	0.50***	0.47***	0.43***	0.54***	0.33	0.71**	0.54***	0.37
	(0.08)	(0.19)	(0.09)	(0.14)	(0.12)	(0.08)	(0.35)	(0.29)	(0.08)	(0.69)
Socdiv	1.59***	1.65**	1.62***	1.74***	1.65***	1.34**	1.51***	1.56***	1.36**	1.26
	(0.50)	(0.63)	(0.52)	(0.65)	(0.51)	(0.52)	(0.53)	(0.51)	(0.52)	(0.77)
Inst-socdiv	−0.22***	−0.23***	−0.23***	−0.25***	−0.23***	−0.20***	−0.21***	−0.22***	−0.19***	−0.19*
	(0.06)	(0.08)	(0.06)	(0.09)	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)	(0.11)
Inst-dist.eq.		−0.00								−0.00
		(0.01)								(0.01)
Inst-land.			0.03							0.01
			(0.11)							(0.13)
Inst-tropic				0.08						−0.07
				(0.21)						(0.29)
Inst-trade					0.00					0.00
					(0.00)					(0.00)
Inst-energy/mineral						−2.04*				−1.54
						(1.11)				(1.48)
Inst-education							0.00			0.00
							(0.00)			(0.00)
Inst-investment.								−0.01		−0.00
								(0.01)		(0.02)
Inst-war									−0.23*	−0.17
									(0.14)	(0.18)
R-squared	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87

Notes: 96 observations in all estimations; Standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All estimations include a constant term and benchmark controls (Region dummies, Distance to equator, Landlocked, Tropical, Trade share, Energy/Mineral, Education, Investment, and War)

Table 4 Allowing the institutional parameter to vary with Socdiv and Inclusive. Dependent variable is log GDP per capita in 2005

	(1)	(2)	(3)
Institutions	0.535***	0.062	0.193
	(0.089)	(0.210)	(0.220)
Socdiv	1.419**		0.871
	(0.549)		(0.557)
Inclusive		−0.505	−0.287
		(0.530)	(0.547)
Inst-Socdiv	−0.206***		−0.127*
	(0.068)		(0.071)
Inst-Inclusive		0.100*	0.068
		(0.060)	(0.063)
R-squared	0.86	0.87	0.87

Notes: 89 observations; standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All regressions include a constant term and benchmark controls (Region dummies, Distance to equator, Landlocked, Tropical, Trade share, Energy/Mineral, Education, Investment, and War)

only two of the alternative interactions (institutions-energy/mineral and institutions-war) are weakly statistically significant. Moreover, when including all the institutional interactions in combination (Regression 10), although problematic in terms of collinearity, the institutions-social division interaction term parameter remains stable and is statistically significant at the 10% level. None of the alternative interaction term coefficients are close to being statistically significant in this estimation. Seemingly then, the identified interaction effect between institutions and social divisions is not driven by the institutional parameter varying systematically with some other variable included in the model. Rather, this paper's focus interaction clearly stands out as being the central dimension for institutional parameter variation in the model.

We have seen that the negative 'institutions-social divisions' interaction effect is very stable to the inclusion of alternative institutional interaction terms. But what if we allow the institutional parameter to vary with a variable included to proxy for perceived institutional inclusiveness directly (see Sect. 3.1 or Table A.1)? Believing that social divisions affect the institutional parameter through a negative influence on the perceived inclusiveness of institutions, such an interaction should presumably help explain the observed institutions-social divisions interaction effect. Table 4 compares the results obtained allowing the institutional parameter to vary with the composite social division indicator (Regression 1), the inclusiveness measure (Regression 2), and along both dimensions (Regression 3). As expected, the parameter of the institutions-inclusiveness interaction term is positive (although statistically significant at the 10% level only), suggesting a stronger institutional parameter in countries with an institutional framework perceived to be more inclusive. When included in combination only the original interaction (*inst-socdiv*) remains statistically significant. However, compared to how very stable it was when facing the alternative institutional interactions above, it now drops considerably in size and is statistically significant only at the 10% level. Based on this, it seems the perceived inclusiveness of institutions could help explain the observed institutional parameter variation along a social division dimension.

The results do not appear to be driven by influential observations. Using robust regression (estimated using 'rreg' in STATA), down-weighting observations with particularly large residuals, the negative institution-social division interaction effects remain statistically significant at the 1% level. In fact, they become slightly larger in absolute terms. Furthermore, they are robust to omitting the observations in the top and bottom deciles of the key explana-

tory variables (institutions and social divisions), as well as to excluding the respective regions, one at a time. Similarly, excluding influential observations identified (using DFBETA) to have a particularly large effect on the interaction term parameter, it remains statistically significant and stable.[11] Moreover, inference should not be biased by heteroskedasticity. Visual inspection of the residuals plotted against the key independent variables reveals no apparent trend in the residual variances, according to the White test we cannot reject the hypothesis of homoskedastic disturbances, and using robust standard errors the institution-social division interaction term parameters remain stable and statistically significant in all benchmark specifications of Table 1.

Neither do the results seem to be contingent upon the choice of ethnic fractionalization and income inequality measures (see Tables A.5–A.6). If instead of using the ethnic fractionalization measure of Alesina et al. (2003) we consider the ethno-linguistic fractionalization variable of Easterly and Levine (1997), the ethnic measure of Fearon (2003), the language fractionalization measure of Alesina et al. (2003), and Fearon's (2003) measure of cultural diversity aiming to capture the distance between groups, the negative and statistically significant interaction effect between the fractionalization and institutions measure remains. Only when using the polarization measure of Montalvo and Reynal-Querol (2005), which aims to capture how far the distribution of ethnic groups is from the bipolar distribution (two groups of equal size), the estimation suggests no statistically significant interaction effect.[12] If instead of using the Gini index focusing on the share of income held by the richest and poorest deciles, the richest, poorest, and three middle quintiles, and the ratio of the income of the richest decile to the poorest decile, and of the richest quintile to the poorest quintile, the parameter of the interaction term between the inequality indicator and the institutions measure is statistically significant (except in Regression 7 in Table A.6, using the ratio of the richest to poorest decile, where it is only close to being so at the 10% level) and of the expected sign.

What about the sensitivity of key results to the use of alternative property rights indicators? As noted, whether the institutional parameter varies with the level of social divisions should depend on the extent to which the specific property rights indicator used captures the inclusiveness of institutions. If social divisions affect the institutional parameter through a negative influence on the perceived inclusiveness of institutions, then the better the institutional indicator captures institutional inclusiveness the less institutional parameter heterogeneity along a social division dimension we should observe. Considering that it focuses on the situation of foreign investors the main property rights indicator, the very influential ICRG measure of risk of expropriation, could hardly be said to capture inclusiveness. Hence, using alternative indicators that better capture the property rights protection of the population at large we should expect less institutional parameter heterogeneity along a social division dimension.

Table 5 presents the results of estimations using four alternative property rights indicators (see Sect. 3.1). As expected, for the first three of these indicators—which do not explicitly

[11] The DFBETA statistic is calculated for each observation of the concerned variable. For a particular observation it gives the change in the concerned variable coefficient resulting from omitting the observation, scaling this difference by the estimated standard error of the coefficient when the observation is deleted. The standard cut-off value for DFBETA, above which the observation is considered influential, is the absolute value of $2/\text{sqrt}(n)$, where n is the number of observations. Thirteen such cases are identified for the institutions-social division interaction term, namely Japan, Namibia, The Gambia, Iran, Mongolia, Malawi, Mail, Albania, Switzerland, Madagascar, Guyana, Greece, and Botswana.

[12] It has been suggested that while polarization indicators are better at explaining civil war (Montalvo and Reynal-Querol 2005) fractionalization measures better explain economic performance (Alesina et al. 2003).

Table 5 Using alternative property rights institutions measures. Dependent variable is log GDP per capita in 2005

Alt. inst.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
var. used is:	Inst.1	Inst.2	Inst.3	Inst.4	Inst.1	Inst.2	Inst.3	Inst.4	Inst.1	Inst.2	Inst.3	Inst.4
Alt. inst.	0.36***	0.13***	0.77***	0.81***	0.64***	0.16	1.14***	1.19**	0.32***	0.06**	0.69***	0.49***
	(0.05)	(0.05)	(0.13)	(0.21)	(0.13)	(0.11)	(0.27)	(0.50)	(0.05)	(0.03)	(0.09)	(0.12)
Ethnic	0.33	−1.65*	0.31	2.67*								
	(0.83)	(0.95)	(1.48)	(1.43)								
Alt.inst-eth.	−0.06	−0.17**	−0.16	−0.96**								
	(0.14)	(0.08)	(0.29)	(0.44)								
Gini					0.05**	−0.04	0.05	0.03				
					(0.02)	(0.02)	(0.04)	(0.04)				
Alt.inst-Gini					−0.01**	−0.00	−0.01*	−0.02*				
					(0.00)	(0.00)	(0.01)	(0.01)				
Socdiv									0.50*	−0.49*	0.20	0.76
									(0.26)	(0.27)	(0.47)	(0.47)
Alt.inst-soc.									−0.07*	−0.04*	−0.08	−0.31**
									(0.04)	(0.02)	(0.08)	(0.13)
Observations	94	88	89	96	94	88	89	96	94	88	89	96
R-squared	0.88	0.81	0.87	0.82	0.89	0.81	0.88	0.82	0.89	0.81	0.88	0.82

Notes: Standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All estimations include a constant term and all benchmark controls (Region dummies, Distance to equator, Landlocked, Tropical, Trade share, Energy/Mineral, Education, Investment, and War). **Alt. inst. 1:** is a property rights indicator obtained from the Heritage foundation (ranging from 1–10, with 10 meaning stronger property rights), assessing the extent to which 'a country's laws protect private property rights and the degree to which its government enforces those laws'; **Alt. inst. 2:** is a variable based on a country ranking of the ease of enforcing contracts (rescaled and adjusted so that a higher value means it is easier to enforce contracts), obtained from the World Bank's Doing Business indicators; **Alt. inst. 3:** is a variable based on business leader survey responses to the question 'property rights in your country, including over financial assets, are (1 = poorly defined and not protected by law, 7 = clearly defined and well protected by law)', obtained from the World Economic Forum; **Alt. inst. 4:** is a variables based on an ICRG assessment of the risk facing foreign investors in the repatriation of profits (ranging from 0–4, with 4 meaning less risk) (see Table A.1)

focus on the property rights of foreign investors and hence should not be as problematic as the focus indicator in terms of not capturing inclusiveness—the results in terms of the hypothesized institutional parameter heterogeneity are now weaker. Interacting the alternative property rights measures, one at a time, with the Gini, ethnic fractionalization and composite social division indicators the interaction term parameters all come out negative, but for alt. inst. 1–3 they are only statistically significant in some of the estimations.[13] In fact, out of the four alternative property rights indicators only alt. inst. 4, which just as the benchmark variable focuses on the risk facing foreign investors rather than the population at large, has a statistically significant interaction term parameter when interacted with all three social division variables. Hence, while the identified institutional parameter variation was robust to using different social division measures, it varies with the specific property rights indicator used. Seemingly, institutional parameter heterogeneity along a social division dimension is most important when using measures more problematic in terms of failing to capture the inclusiveness of institutions.

5 Conclusions

This paper investigated the hypothesis that the observed association between property rights institutions and income per capita is weaker in countries marked by social divisions. The hypothesis was based on the argument that social divisions should have a negative influence on the perceived inclusiveness of property rights institutions, which, if lacking a property rights indicator that perfectly captures the perceived inclusiveness of property rights protection, in turn should reduce the strength of the observed association between property rights institutions and income.

In line with the social division hypothesis, the results suggested a weaker association between property rights institutions and income in countries with high social divisions, as measured in terms of ethnic fractionalization, income inequality and a composite social division indicator. The findings were robust over a wide range of specifications, including when altering the sample, when allowing the institutional slope term to vary across regions and with all other benchmark controls, and when using a wide range of alternative ethnic fractionalization and income inequality measures.

In contrast, the results were sensitive to allowing the institutional parameter to vary with a proxy for institutional inclusiveness, and to using alternative property rights indicators—both of which add support to the idea that social divisions affect the institutional parameter through a negative influence on the inclusiveness of institutions. First, allowing for a smaller institutional parameter in countries with a less inclusive institutional framework could seemingly help explain the observed institutional parameter variation along a social division dimension. Second, if social divisions affect the institutional parameter through a negative influence on the perceived inclusiveness of institutions, then the better the institutional indicator captures institutional inclusiveness the less institutional parameter heterogeneity along a social division dimension we should observe. The main property rights indicator used, the very influential ICRG measure of risk of expropriation, focuses on the situation of foreign investors and is thus arguably very problematic in terms of not taking account of the inclusiveness of institutions. In line with this, when using alternative property rights indicators

[13] Moreover, unlike the original interaction effect, which remained remarkably stable when allowing all regions different institutional slope terms, these interactions do not withstand the inclusion of the institution-region interaction terms.

seemingly less problematic in terms of inclusiveness, the hypothesized parameter variation was not nearly as robust as when using the standard ICRG measure. Considering how stable the identified interaction effect was to other alterations in the specification, these departures from the standard results are worth stressing.

From an empirical point of view, the results of this paper highlighted the problems with neglecting institutional parameter heterogeneity along a social division dimension, particularly when using property rights measures that focus on very limited segments of economic actors. In more general terms, it points to the importance of carefully evaluating whether the institutions indicator captures the institutional framework applying to a broad cross-section of the population, and how a failure of it to do so could affect one's conclusions. For policy, the results underscore the importance of building inclusive property rights institutions applying to a broad cross section of the population. This involves evaluating the de jure rights as well as the de facto application of these rights.

Acknowledgements I would like to thank the Editor and two anonymous referees for very helpful comments. I am also grateful to Arne Bigsten, Michael Clemens, Karl Ove Moene, Ola Olsson, Måns Söderbom, colleagues at University of Gothenburg, and seminar participants at the 2007 CSAE conference at Oxford University, the 2007 EEA conference, and the Development Workshop at University of Gothenburg for valuable discussion (the usual disclaimer applies). I gratefully acknowledge financial help from Sida/SAREC.

Appendix

Table A.1 Variable descriptions

Dependent variable

Log GDP per capita in 2005 (constant US$). Source: World Development Indicators (WDI).

Property rights measures

Institutions: Valuation of the risk of 'outright confiscation and forced nationalization' of property. Ranges from 1–10, with higher values meaning less risk of expropriation. Here measured as the 1982–1997 average. From Glaeser et al. (2004). Originally developed by the International Country Risk Guide (ICRG).

Alternative measures used for robustness checks: Alt. inst. 1: Scaled to range from 1 to 10, with 10 meaning stronger property rights. Measures the extent to which 'a country's laws protect private property rights and the degree to which its government enforces those laws'. It also assesses the likelihood that private property will be expropriated and analyzes the independence of the judiciary, the existence of corruption within the judiciary, and the ability of individuals and businesses to enforce contracts'. Source: The Heritage Foundation (2007); Alt. inst. 2: Country ranking on the 'enforcing contracts' component (but rescaled and adjusted so that a higher value means it is easier to enforce contracts) in the ease of doing business ranking. Source: World Bank (2007) (Doing Business indicators); Alt. inst. 3: Business leader survey responses (evaluations on a scale from 1–7) to the question 'property rights in your country, including over financial assets, are (1 = poorly defined and not protected by law, 7 = clearly defined and well protected by law)'. Source: World Economic Forum (2008); Alt. inst. 4: Assessment of the risk facing foreign investors in the repatriation of profits, 0–4 with 4 meaning less risk (2009), source: International Country Risk Guides (ICRG).

Social division measures

Ethnic: Measures the probability that two randomly selected individuals in a country belong to different ethnic groups: $\text{Ethnic}_j = 1 \sum_{i=1}^{N} s_{ij}^2$ where s_{ij} is the share of group i ($i = 1 \ldots N$) in country j. Source: Alesina et al. (2003).

Gini: Average net Gini (1986–2005), 0–100, Source: Solt (2009).

Socdiv: The first principal component between Ethnic and Gini

Table A.1 (*Continued*)

Alternative measures used for robustness checks: ELF: Ethnolinguistic fractionalization of Easterly and Levine (1997); Fearon ethn.: Ethnic fractionalization measure of Fearon (2003); Lang. fract.: Language fractionalization measure of Alesina et al. (2003); Polarization: Polarization measure of Montalvo and Reynal-Querol (2005); Cult. fract. cultural diversity measure of Fearon (2003); Poorest20, Richest20, Poorest10, Richest10, Middle60: the income shares held by the richest and poorest 20 and 10 percent and the middle 60 percent of the population (average 1985–2005), Source: WDI; Ratio20 and Ratio10: ratio of inc. share of richest 20 and 10% to poorest 20 and 10% (average 1985–2005), source: WDI. Inclusive: Business leader survey responses (evaluations on a scale from 1–7) to the question 'When deciding upon policies and contracts, government officials in your country (1 = usually favor well-connected firms and individuals, 7 = are neutral)". Source: World Economic Forum (2008).

Control variables: Landlocked: 1 if country is landlocked, 0 otherwise. Source: Easterly (2001a); Distance to equator: Absolute value of country's latitude in degrees. Source: Easterly (2001a); Region dummies: Africa: 1 if country belongs to Sub-Saharan Africa, 0 otherwise; EAP: 1 if country belongs to the East Asia Pacific region, 0 otherwise; Europe: 1 if country belongs to Europe, 0 otherwise; LAC: 1 if country belongs to the Latin America and the Caribbean region, 0 otherwise; MENA: 1 if country belongs to the Middle East and Northern Africa region, 0 otherwise; NA: 1 if country belongs to North America, 0 otherwise; SA: 1 if country belongs to South Asia, 0 otherwise. Source: Easterly (2001a); Trade share: (exports + imports)/GDP, averaged over the 1990s. Source: WDI; Tropical: 1 if country is tropical, 0 otherwise. Source: Easterly (2001a); Energy/Mineral: Energy and mineral rents as share of GNI (1999); War: 1 if involved in a civil war between 1960 and 1999, 0 otherwise (civil war defined as an internal conflict with at least 1000 battle-related deaths per year). Constructed from Collier and Hoeffler (2004). Education: Average gross primary school enrollment 1985–2005 (%). Source: WDI; Investment: Average gross capital formation (% GDP) 1985–2005. Source: WDI.

Interaction terms: multiplicative terms between the component variables

Table A.2 Descriptive statistics for key variables

Country	Inst.	Ethnic	Gini	Socdiv	Country	Inst.	Ethnic	Gini	Socdiv
Albania	7.26	0.22	31.45	−0.91	Japan	9.72	0.01	29.94	−1.44
Algeria	6.76	0.34	38.02	−0.29	Jordan	6.56	0.59	38.92	0.31
Argentina	6.31	0.26	44.23	−0.14	Kenya	6.41	0.86	51.32	1.55
Australia	9.38	0.09	30.83	−1.22	Luxembourg	10.00	0.53	25.30	−0.56
Austria	9.74	0.11	26.11	−1.44	Madagascar	4.69	0.88	46.97	1.36
Bangladesh	5.41	0.05	33.67	−1.17	Malawi	6.86	0.67	52.64	1.22
Belgium	9.69	0.56	25.04	−0.52	Malaysia	8.15	0.59	43.87	0.56
Bolivia	5.60	0.74	53.90	1.43	Mali	4.00	0.69	48.20	1.02
Botswana	8.01	0.41	56.26	0.84	Malta	7.88	0.04	28.50	−1.45
Brazil	7.88	0.54	51.61	0.88	Mexico	7.47	0.54	47.55	0.66
Bulgaria	9.04	0.40	26.79	−0.76	Mongolia	7.95	0.37	36.21	−0.33
Burkina Faso	4.85	0.74	51.30	1.29	Morocco	6.71	0.48	39.77	0.12
Cameroon	6.46	0.86	50.22	1.50	Mozambique	6.81	0.69	43.30	0.76
Canada	9.72	0.71	29.55	0.06	Namibia	5.40	0.63	71.75	2.16
Chile	7.80	0.19	47.62	−0.11	Netherlands	9.98	0.11	25.83	−1.46
China	8.11	0.15	35.74	−0.82	New Zealand	9.74	0.40	31.34	−0.53
Colombia	7.35	0.60	51.26	0.99	Niger	5.55	0.65	46.61	0.85
Costa Rica	7.04	0.24	42.99	−0.25	Norway	9.85	0.06	23.96	−1.66
Cote d'Ivoire	7.06	0.82	42.61	1.00	Pakistan	6.15	0.71	33.43	0.27

Table A.2 (*Continued*)

Country	Inst.	Ethnic	Gini	Socdiv	Country	Inst.	Ethnic	Gini	Socdiv
Cyprus	8.49	0.09	27.79	−1.38	Panama	6.06	0.55	51.52	0.90
Czech rep.	9.88	0.32	23.69	−1.10	Papua New Guinea	7.74	0.27	50.80	0.25
Denmark	9.72	0.08	23.52	−1.63	Paraguay	6.90	0.17	55.88	0.30
Dominican rep.	6.36	0.43	45.70	0.32	Peru	6.21	0.66	51.42	1.12
Ecuador	6.76	0.66	51.19	1.10	Philippines	5.79	0.24	44.41	−0.17
Egypt	6.80	0.18	34.72	−0.81	Poland	7.81	0.12	28.53	−1.28
El Salvador	5.21	0.20	47.69	−0.08	Portugal	9.01	0.05	33.90	−1.15
Ethiopia	6.05	0.72	42.10	0.76	Romania	7.56	0.31	26.86	−0.96
Finland	9.72	0.13	22.66	−1.57	Russia	8.50	0.25	37.47	−0.53
France	9.71	0.10	27.73	−1.36	Senegal	5.93	0.69	44.14	0.81
Gambia	8.38	0.79	54.17	1.55	Sierra Leone	5.71	0.82	51.67	1.48
Germany	9.89	0.17	27.51	−1.23	Slovak Rep.	9.00	0.25	21.93	−1.34
Ghana	6.22	0.67	40.52	0.57	South Africa	7.35	0.75	57.35	1.64
Greece	7.48	0.16	33.20	−0.95	Spain	9.55	0.42	32.05	−0.45
Guatemala	5.16	0.51	52.80	0.88	Sri Lanka	6.54	0.42	36.69	−0.20
Guinea	6.67	0.74	45.79	0.99	Sweden	9.50	0.06	22.71	−1.72
Guinea-Bissau	4.62	0.81	49.72	1.36	Switzerland	9.99	0.53	29.34	−0.34
Guyana	5.96	0.62	47.36	0.82	Tanzania	6.89	0.74	42.13	0.79
Haiti	4.18	0.10	55.03	0.09	Thailand	7.64	0.63	44.91	0.72
Honduras	5.41	0.19	50.73	0.06	Trinidad & Tobago	7.29	0.65	39.82	0.47
Hungary	9.08	0.15	29.53	−1.16	Tunisia	6.51	0.04	40.87	−0.79
Iceland	9.70	0.08	23.62	−1.63	Turkey	7.29	0.32	42.52	−0.09
India	8.07	0.42	33.68	−0.36	Uganda	4.80	0.93	41.03	1.15
Indonesia	7.48	0.74	34.65	0.39	United Kingdom	9.76	0.12	33.54	−1.01
Iran.	4.69	0.67	41.28	0.60	United States	9.98	0.49	35.75	−0.09
Ireland	9.72	0.12	32.45	−1.07	Uruguay	6.94	0.25	44.44	−0.14
Israel	8.51	0.34	32.86	−0.56	Venezuela	7.11	0.50	42.10	0.27
Italy	9.46	0.11	32.86	−1.06	Zambia	6.67	0.78	54.90	1.58
Jamaica	7.04	0.41	49.33	0.47	Zimbabwe	6.03	0.39	61.08	1.05

Table A.3 Summary statistics for key variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Log GDP p. c. in 2005	96	7.90	1.66	4.90	10.82
Institutions	96	7.46	1.64	4.00	10.00
Ethnic	96	0.42	0.26	0.01	0.93
Gini	96	40.09	10.65	21.93	71.75
Socdiv	96	0.00	1.00	−1.72	2.16

Table A.4 Split sample estimations. Dependent variable is log GDP per capita in 2005

Panel A: 'High' and 'low' ethnic fractionalization, and 'good' and 'bad' institution samples				
	(High Ethnic)	(Low Ethnic)	(Good Inst.)	(Bad Inst.)
Institutions	0.132	0.868***		
	(0.121)	(0.140)		
Ethnic			−1.388	0.034
			(0.950)	(0.597)
Panel B: 'High' and 'low' Gini, and 'good' and 'bad' institution samples				
	(High Gini)	(Low Gini)	(Good Inst.)	(Bad Inst.)
Institutions	0.249**	0.942***		
	(0.117)	(0.154)		
Gini			−0.047	0.005
			(0.039)	(0.019)
Panel C: 'High' and 'low' Socdiv, and 'good' and 'bad' institution samples				
	(High Socdiv)	(Low Socdiv)	(Good Inst.)	(Bad Inst.)
Institutions	0.276**	0.832***		
	(0.116)	(0.127)		
Socdiv			−0.695*	0.047
			(0.388)	(0.221)

Notes: standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All regressions include a constant term and the full set of benchmark controls; The benchmark sample is split at the median level of the concerned variable; In **Panel A** the difference between the institutional parameter in the high and low ethnic fractionalization samples is statistically significant at the 1% level, but there is no statistically significant difference between the ethnic parameters in the good and bad institutions samples; In **Panel B** the difference between the institutional parameter in the high and low Gini samples is statistically significant at the 1% level, there is no statistically significant difference between the Gini parameters in the good and bad institutions samples; In **Panel C** the difference between the institutional parameter in the high and low social divisions samples is statistically significant at the 1% level, whereas the difference between the Socdiv parameters in the good and bad institutions samples just reaches statistical significance at the 10% level ($p = 0.09$)

Table A.5 Using alternative ethnic indicators. Dependent variable is log GDP per capita in 2005

Alternative ethnic variable used is:	(1) ELF	(2) Fearon ethn.	(3) Lang. fract.	(4) Polarization	(5) Cult. fract.
Institutions	0.499***	0.826***	0.707***	0.428***	0.720***
	(0.109)	(0.142)	(0.124)	(0.110)	(0.121)
Alt. ethnic var.	0.025*	4.406***	4.573***	1.179	5.474***
	(0.013)	(1.645)	(1.460)	(1.397)	(1.893)
Inst-alt.ethnic	−0.003**	−0.647***	−0.582***	−0.123	−0.759***
	(0.002)	(0.218)	(0.196)	(0.176)	(0.268)
Observations	83	91	94	87	92
R-squared	0.92	0.86	0.86	0.90	0.86

Notes: standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All Regressions include a constant term and all benchmark controls. For variable definitions see Table A.1

Table A.6 Using alternative income inequality indicators. Dependent variable is log GDP per capita in 2005

Alt. inequality variable used is:	(1) Richest20	(2) Richest10	(3) Poorest20	(4) Poorest10	(5) Middle60	(6) Ratio20	(7) Ratio10
Institutions	1.526***	1.225***	0.139	0.243	−0.791*	0.691***	0.642***
	(0.390)	(0.288)	(0.174)	(0.154)	(0.455)	(0.148)	(0.138)
Inequality	0.156***	0.156***	−0.534**	−1.009**	−0.206***	0.124*	0.050*
	(0.055)	(0.056)	(0.222)	(0.489)	(0.072)	(0.065)	(0.030)
Inst-inequality	−0.021***	−0.021***	0.063**	0.110*	0.029***	−0.018*	−0.007
	(0.008)	(0.008)	(0.028)	(0.059)	(0.010)	(0.011)	(0.005)
Observations	97	97	97	97	96	97	97
R-squared	0.84	0.84	0.84	0.84	0.84	0.84	0.83

Notes: standard errors in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%; All Regressions include a constant term and all benchmark controls. Note that high values on Poorest20, Poorest10 and Middle60 imply less inequality, why the interaction terms incorporating these variables (according to the argument in this paper) should be positive. For variable definitions see Table A.1

References

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: an empirical investigation. *American Economic Review*, *91*(5), 1369–1401.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2002). Reversal of fortune: geography and institutions in the making of the modern world income distribution. *The Quarterly Journal of Economics*, *117*(4), 1231–1293.

Aghion, P., Alesina, A., & Trebbi, F. (2004). Endogenous political institutions. *The Quarterly Journal of Economics*, *119*(2), 565–611.

Alesina, A., Devleeschaauwer, A., Easterly, W., Kurlat, S., & Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth*, *8*(2), 155–194.

Alesina, A., & La Ferrara, E. (2005). Ethnic diversity and economic performance. *Journal of Economic Literature*, *43*, 762–800.

Alesina, A., & Perotti, R. (1996). Income distribution, political instability and investment. *European Economic Review*, *81*(5), 1170–1189.

Alesina, A., & Rodrik, D. (1994). Distribution politics and economic growth. *The Quarterly Journal of Economics*, *109*, 465–490.

Anthias, F. (1998). Rethinking social divisions: some notes towards a theoretical framework. *The Sociological Review*, *46*(3), 505–535.

Baliamoune-Lutz, M. (2005). Institutions, social capital, and economic development in Africa: an empirical study. International Centre for Economic Research Working Paper Series, No. 18.

Baliamoune-Lutz, M., & Ndikumana, L. (2007). The growth effects of openness to trade and the role of institutions: new evidence from African countries (Working Paper 2007-05). University of Massachusetts Amherst.

Barro, R. J. (2000). Inequality and growth in a panel of countries. *Journal of Economic Growth*, *5*(1), 5–32.

Basuchoudhary, A., & Shughart II, W. F. (2007). On ethnic conflict and the origins of transnational terrorism (Mimeo).

Bazzi, S., & Clemens, M. (2009). Blunt instruments: on establishing the causes of economic growth (Working paper number 171). Centre for Global Development.

Benabou, R. (1996). Inequality and growth. *NBER Macroeconomics Annual 1996*, 11–73.

Besley, T., & Ghatak, M. (2009). Property rights and economic development. Centre for Economic Policy Research Discussion Paper Series, No. 7243.

Bourguignon, F., & Morrison, C. (1990). Income distribution, development and foreign trade. *European Economic Review*, *34*(6), 1113–1132.

Braumoeller, B. F. (2004). Hypothesis testing and multiplicative interaction terms. *International Organization*, *58*, 807–820.

Brock, W. A., & Durlauf, S. N. (2001). Growth empirics and reality. *The World Bank Economic Review*, *15*(2), 229–272.

Cappelen, A. W., Hole, A. D., Sørensen, E. Ø., & Tungodden, B. (2007). The pluralism of fairness ideals: an experimental approach. *The American Economic Review*, *97*, 818–827.
Cavalcanti, T., & Novo, A. (2005). Institutions and economic development: how strong is the relation? *Empirical Economics*, *30*(2), 263–276.
Chong, A., & Gradstein, M. (2007). Inequality and institutions. *The Review of Economics and Statistics*, *89*(3), 454–465.
Collier, P. (2000). Ethnicity, politics and economic performance. *Economics and Politics*, *12*(3), 225–245.
Collier, P. (2001). Implications of ethnic diversity. *Economic Policy*, *116*(32), 127–167.
Collier, P., & Hoeffler, A. (2004). Greed and grievance in civil war. *Oxford Economic Papers*, *56*(4), 563–595.
Deaton, A. (2009). Instruments of development: randomization in the tropics, and the search for the elusive keys to economic development (Mimeo). Princeton University
Deininger, K., & Squire, L. (1996). A new dataset measuring income inequality. *World Bank Economic Review*, *10*(3), 565–591.
Djankov, S., Glaeser, E., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2003). The new comparative economics. *Journal of Comparative Economics*, *31*, 595–619.
Dollar, D., & Kraay, A. (2003). Institutions, trade, and growth. *Journal of Monetary Economics*, *50*, 133–162.
Easterly, W. (2001a). Global Development Network Growth Database. Available at http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20701055~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html. Accessed 5 March 2010.
Easterly, W. (2001b). The middle class consensus and economic development. *Journal of Economic Growth*, *6*, 317–335.
Easterly, W., & Levine, R. (1997). Africa's growth tragedy: policies and ethnic divisions. *Quarterly Journal of Economics*, *112*(4), 1203–1250.
Easterly, W., Ritzen, J., & Woolcock, M. (2006). Social cohesion, institutions, and growth. *Economics and Politics*, *18*(2), 103–120.
Eicher, T., & Leukert, A. (2006). Institutions and economic performance: endogeneity and parameter heterogeneity (Working Paper January 2006). University of Washington Ifo Institute for Economic Research and Ludwig-Maximilians-Universität München.
Eifert, B., Miguel, E., & Posner, D. N. (2009). Political competition and ethnic identification in Africa (Mimeo).
Erdmann, G. (2007). The cleavage model, ethnicity and voter alignment in Africa: conceptual and methodological problems revisited (Working paper No. 63). German Institute of Global and Area Studies (GIGA).
Esteban, J.-M., & Ray, D. (1994). On the measurement of polarization. *Econometrica*, *62*(4), 819–851.
Fearon, J. D. (2003). Ethnic and cultural diversity by country. *Journal of Economic Growth*, *8*, 195–222.
Fong, C. (2001). Social preferences, self-interest, and the demand for redistribution. *Journal of Public Economics*, *82*, 225–246.
Frankel, J. A., & Romer, D. (1999). Does trade cause growth? *American Economic Review*, *89*(3), 379–399.
Gallup, J. L., Sachs, J. D., & Mellinger, A. D. (1998). Geography and economic development. National Bureau of Economic Research Working Paper, No. w6849.
Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. *Review of Economic Studies*, *60*(1), 35–52.
Glaeser, E. L., La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (2004). Do institutions cause growth? *Journal of Economic Growth*, *9*, 271–303.
Glaeser, E., Scheinkman, J., & Shleifer, A. (2003). The injustice of inequality. *Journal of Monetary Economics*, *50*(1), 199–222.
Goldstein, M., & Udry, C. (2008). The profits of power: land rights and agricultural investment in Ghana. *Journal of Political Economy*, *116*(6), 981–1022.
Hall, R. E., & Jones, C. I. (1999). Why do some countries produce so much more output per worker than others? *The Quarterly Journal of Economics*, *114*(1), 83–116.
Hardin, R. (1995). *One for all: the logic of group conflict*. Princeton: Princeton University Press.
Hellman, J., & Kaufmann, D. (2002). The inequality of influence (Draft for presentation at Stanford Corruption Workshop, January 2003).
Heritage Foundation (2007). The index of economic freedom. http://www.heritage.org.
Hoff, K., & Stiglitz, J. E. (2004). After the big bang? Obstacles to the emergence of the rule of law in post-communist societies. *The American Economic Review*, *94*(3), 753–763.
Hoffman, E., & Spitzer, M. L. (1985). Entitlements, rights, and fairness: an experimental examination of subjects' concepts of distributive justice. *Journal of Legal Studies*, *14*, 259–297.
Horowitz, D. L. (1985). *Ethnic groups in conflict*. Berkeley: University of California Press.

Isaksson, A. (2009). Social divisions and institutions: assessing institutional parameter variation (Working Papers in Economics, No. 282). University of Gothenburg.
Isaksson, A., & Lindskog, A. (2009). Preferences for redistribution: a country comparison of fairness judgments. *Journal of Economic Behavior and Organization*, *72*(3), 884–902.
Kaufmann, D., Kraay, A., & Zoido-Lobatón, P. (1999). Governance matters (Working paper No. 2196). Washington, DC: World Bank.
Keefer, P., & Knack, S. (2002). Polarization, politics and property rights: links between inequality and growth. *Public Choice*, *111*, 127–154.
Knack, S., & Keefer, P. (1995). Institutions and economic performance: cross-country tests using alternative institutional measures. *Economics and Politics*, *7*(3), 207–227.
Kumaranayake, L., & Vyas, S. (2006). Constructing socio-economic status indices: how to use principal component analysis. *Health Policy and Planning*, *21*(6), 459–468.
Kuznets, S. (1955). Economic growth and income inequality. *The American Economic Review*, *45*(1), 1–28.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). The quality of government. *Journal of Law, Economics and Organization*, *15*(1), 222–279.
Leeson, P. T. (2005). Endogenizing fractionalization. *Journal of Institutional Economics*, *1*(1), 75–98.
Lindberg, S. I., & Morrison, M. K. C. (2008). Are African voters really ethnic or clientelistic? Survey evidence from Ghana. *Political Science Quarterly*, *123*(1), 95–122.
Luxembourg Income Study (2009). Key figures. Available at http://www.lisproject.org/key-figures/key-figures.htm. Accessed 5 March 2010.
Mehlum, H., Moene, K., & Torvik, R. (2006). Institutions and the resource curse. *The Economic Journal*, *116*, 1–20.
Montalvo, J. G., & Reynal-Querol, M. (2005). Ethnic polarization, potential conflict and civil wars. *The American Economic Review*, *95*(3), 796–816.
Mozaffar, S., Scarritt, J. R., & Galaich, G. (2003). Electoral institutions, ethnopolitical cleavages, and party systems in Africa's emerging democracies. *American Political Science Review*, *97*(3), 379–390.
Mukand, S. W., & Rodrik, D. (2005). In search of the Holy Grail: policy convergence, experimentation, and economic performance. *American Economic Review*, *95*(1), 374–383.
North, D. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.
North, D. C. (1994). Economic performance through time. *The American Economic Review*, *84*, 359–368.
Persson, T., & Tabellini, G. (1994). Is inequality harmful for growth? *The American Economic Review*, *84*(3), 600–621.
Rodrik, D. (1999). Where did all the growth go? External shocks, social conflict, and growth collapses. *Journal of Economic Growth*, *4*, 385–412.
Rodrik, D. (2008). Second best institutions (NBER Working Paper No. W14050, June 2008).
Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: the primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, *9*, 131–165.
Sachs, J. D., & Warner, A. M. (1995). Economic reform and the process of global integration. *Brooking Papers on Economic Activity*, *1*, 1–118.
Sachs, J. D. (2003). Institutions don't rule: direct effects of geography on per capita income. NBER Working Paper, No. 9490, NBER.
Temple, J. (2000). Growth regressions and what the textbooks don't tell you. *Bulletin of Economic Research*, *52*(3), 181–205.
Solt, F. (2009). Standardizing the world income inequality database. *Social Science Quarterly*, *90*(2), 231–242. SWIID Version 2.0, July 2009.
Sonin, K. (2003). Why the rich may favor poor protection of property rights. *Journal of Comparative Economics*, *31*(4), 715–731.
Tam, H. (2008). An economic or political Kuznets curve? *Public Choice*, *134*(3–4), 367–389.
Williamson, C. R. (2009). Informal institutions rule: institutional arrangements and economic performance. *Public Choice*, *139*(3–4), 371–387.
World Bank (2007). Doing business project: economy rankings. Available at http://www.doingbusiness.org/economyrankings/. Accessed 5 March 2010.
World Economic Forum (2008). The global competitiveness report 2008–2009. World Economic Forum, Geneva.
Zietz, J. (2006). Detecting neglected parameter heterogeneity with Chow tests. *Applied Economics Letters*, *13*, 369–374.

Paper 2

Journal of Economic Behavior & Organization 72 (2009) 884–902

Contents lists available at ScienceDirect

Journal of Economic Behavior & Organization

journal homepage: www.elsevier.com/locate/jebo

Preferences for redistribution—A country comparison of fairness judgements

Ann-Sofie Isaksson, Annika Lindskog*

Department of Economics, University of Gothenburg, Box 640, 405 30 Göteborg, Sweden

ARTICLE INFO

Article history:
Received 6 May 2008
Received in revised form 11 August 2009
Accepted 11 August 2009
Available online 19 August 2009

JEL classification:
D63
D31
D01

Keywords:
Redistribution preferences
Fairness

ABSTRACT

This paper seeks to explain within- and between-country variation in redistributive preferences in terms of self-interest concerns and an input-based concept of fairness, which we examine by looking at the effects of beliefs regarding the causes of income differences. Results of estimations based on data for 25 countries indicate that both factors are indeed important determinants of redistribution support, in line with hypothesised patterns. We find that while differences in beliefs on what causes income differences seem to be important for explaining within-country variation in redistributive preferences, they do little to explain between-country differences. Differences in the *effects* of holding certain beliefs, however, are important for explaining between-country variation in redistributive preferences, suggesting considerable heterogeneity across societies in what is considered as fair.

1. Introduction

Rational economic self-interest fails to explain the wide spread in support for income redistribution.[1] Judging from standard economic reasoning, according to which individuals are motivated by self-interested utility maximization, this is puzzling. However, based on a vast experimental literature there is a growing consensus that people are motivated by forces other than self-interest, and particularly so by fairness considerations.[2]

One could in this context make a distinction between fairness concepts focusing only on outcomes, such as strict egalitarianism,[3] and those accounting for individual inputs contributing to those outcomes. The general idea that the fair distribution should depend on individual inputs is well established, both in the normative literature on justice and in positive analyses of what people consider to be just. According to equity theory dating back to social psychologist Adams (1965), people expect their outcome of some exchange to be correlated[4] to inputs seen as relevant for that exchange, such as effort, skills and talent. Which inputs are considered relevant and how correlated individuals wish these inputs to be to the outcome should according to Adams depend on societal norms that individuals learn by socialisation. Dworkin (1981a,b), and later

* Corresponding author.
E-mail addresses: Ann-Sofie.Isaksson@economics.gu.se (A.-S. Isaksson), Annika.Lindskog@economics.gu.se (A. Lindskog).

[1] See for example Fong et al. (2005).
[2] See for example Burrows and Loomes (1994), Cappelen et al. (2007) and Clark (1998).
[3] See also the influential inequality aversion model of Fehr and Schmidt (1999), or fairness concepts stressing basic needs. See Konow (2003) for a good discussion of different fairness ideals.
[4] Interpreting Adam's equity theory in a strict sense, outcomes should even be *proportional* to inputs. For experimental evidence on this theme, see for example Van Dijk and Wilke (1994) or Clark (1998).

0167-2681/$ – see front matter © 2009 Elsevier B.V. All rights reserved.
doi:10.1016/j.jebo.2009.08.006

Roemer (2002), distinguish between inputs for which the individual could be considered directly responsible – 'responsible inputs', and those that are beyond the individual's control – 'arbitrary inputs', and argue that fair distributions should be based on responsible inputs only. If people in their fairness judgements actually distinguish between inputs in this fashion, then those who believe that income determinants to a greater degree are 'responsible' should consider the prevailing income distribution fairer and thus be less inclined to support redistribution, whereas those who to a larger extent view them as 'arbitrary' should see the existing income differences as more unfair and accordingly be more supportive of redistribution.[5]

With respect to empirical estimation of redistributive preferences, these arguments first of all motivate going beyond standard economic self-interest explanations. More specifically, they point to the importance of incorporating individual beliefs about the causes of income differences, and in particular beliefs on income determinants that could be seen as being under varying degrees of individual control. Second, they highlight the importance of studying preferences for redistribution in a country-comparative framework. Whether or not due to actual variation in what determines final incomes, beliefs about the causes of income differences are likely to vary across societies.[6] This should create corresponding differences in redistribution support. Similarly, judgements on the extent to which perceived income determinants are under individual control are likely to vary among individuals and communities. This variation too could be due to differences in norms as well as in actual circumstances. Regardless of which, the implication is that the relationship between beliefs about the causes of income differences and redistributive preferences is likely to vary with context, and not the least across countries, thus highlighting the importance of allowing for cross-country parameter heterogeneity.[7]

Against this background, this paper seeks to explain within- and between-country variation in redistributive preferences in terms of both self-interest concerns and an input-based concept of fairness captured by beliefs about the causes of income differences, allowing the effect of beliefs to differ among countries. More specifically, we will address the following two hypotheses:

Hypothesis 1. Both economic self-interest and an input-based fairness concept, where individuals judge the fairness of income determinants according to their perceived degree of 'responsibility', matter for redistributive preferences.

Hypothesis 2. Differences in beliefs about income determinants and differences in the effects of these beliefs both contribute to explain the cross-country variation in preferences for redistribution.

Several papers demonstrate reasons why a person's redistributive preferences do not necessarily correspond to his or her current pecuniary interest. Perceived prospects of future upward mobility and risks of future downward mobility may imply that a poor person sees redistribution as against her interest and that a rich person sees it as favouring her interests (Buchanan and Tullock, 1962; Piketty, 1995; Bénabou and Ok, 2001; Ravallion and Lokshin, 2000). Views on the incentive costs of redistribution are also likely to influence preferences for redistribution (Piketty, 1995). Moreover, Corneo and Grüner (2000) show, theoretically and empirically, that social competition and status concerns can have important influences on preferences for redistribution, and make the middle class align with the higher class to limit redistribution.

Explicitly relating beliefs about the causes of income differences to redistributive preferences is, however, a relatively new approach in the economics literature. Out of the few previous investigations, our study mostly resembles that of Fong (2001), who to our knowledge is the only one to explicitly distinguish between responsible and arbitrary inputs.[8] She examines a US sample and finds beliefs about causes of income differences to be important (and working in the expected directions) for explaining redistributive preferences. A few other studies also lend support to the importance of an input-based concept of fairness for redistributive preferences. Alesina and La Ferrara (2005) and Piketty (1995), for example, both confirm that in the US, those who believe that society offers equal opportunities to people who put in effort are more averse to redistribution.

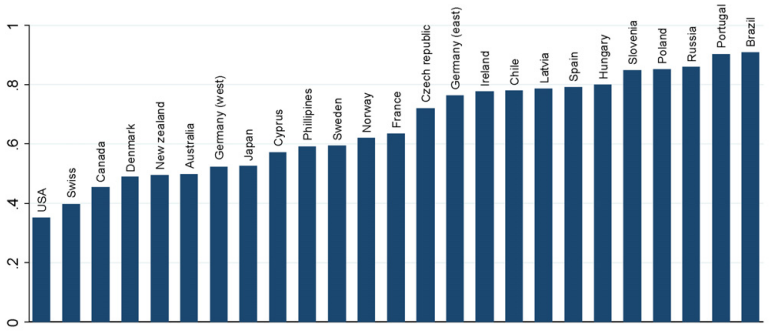
However, if there is country variation in beliefs about what causes income differences and in judgements of what income determinants could be considered under individual control one cannot necessarily expect these results to hold outside of the United States. In fact, related research efforts call attention to the need for cross-country-comparative work in the area. Based on a comparison of former East and West Germany showing that former East Germans are more in favour of redistribution than West Germans, even when controlling for their lower incomes, Alesina and Fuchs-Schündeln (2007) argue that individuals' preferences concerning government welfare provision are shaped by the economic regime in which they live. Similarly, Alesina et al. (2001) dedicate an extensive article to the issue of why the US does not have the same type of welfare state as Europe, and their evaluation does not speak to the advantage of basing conclusions of general attitudes towards redistribution on US evidence only.

[5] Cappelen and Tungodden (2006) add some nuance to this general claim, showing that if there are negative correlations between different non-responsibility (what we refer to as arbitrary) factors, one cannot expect a monotonic relationship between the responsibility assigned to people and the ideal level of redistribution. However, the general formulation put forward here should still hold.

[6] One reason for this variation could be differences in the redistributive policies pursued by the countries in question, in turn giving country variation in perceived and/or actual income earning possibilities (see for example the article on multiple welfare states equilibriums by Alesina and Angeletos, 2005). Whether country differences in beliefs about the causes of income differences are due to actual variation in what determines final incomes is an interesting question, but will not be addressed in this paper. Focus lies on the effect of these beliefs on redistribution support, rather than on their formation.

[7] The relationship between beliefs about the causes of income differences and redistributive preferences could vary between countries for several reasons, something which we get back to in Section 3.2.2.

[8] She refers to them as exogenous and discretionary factors.



[1] *'It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes'*

Fig. 1. Share of respondents agreeing or strongly agreeing with the redistributive statement[1].

In spite of these concerns, the country-comparative material relating redistributive preferences to beliefs about the causes of income differences is meagre. To our knowledge, the only serious study in the area based on a more than one-country sample is the paper by Corneo and Grüner (2002), which looks at 12 countries. Their main focus is the effect of social rivalry and status concerns on preferences for redistribution.[9] However, they also consider, and find a significant effect of, beliefs about the importance of hard work for determining income, and that people in former socialist countries are more supportive of redistribution. However, they do not, as is done in this paper, include variables capturing beliefs on income determinants that could be seen as being under a varying degree of individual control, nor is their approach country comparative in the sense that it allows for cross-country parameter heterogeneity.

This paper thus contributes to the literature by explicitly relating redistributive preferences to beliefs about income determinants under a varying degree of individual responsibility, and by doing so in a country-comparative framework seeking to explain both within-country and between-country variations.

2. Empirical framework

To investigate how preferences for redistribution vary within and between countries we use the ISSP Social Inequality III survey data set from 1999/2000 for 24 countries; Australia, Brazil, Canada, Chile, Cyprus, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Japan, Latvia, New Zealand, Norway, Philippines, Poland, Portugal, Russia, Slovenia, Spain, Sweden, Switzerland, and USA.[10] Since preferences for redistribution have been shown to vary between former East and West Germany (Alesina and Fuchs-Schündeln, 2007), Germany has been divided into its former East and West German regions, giving us an effective sample of 25 countries. In most countries we have an estimation sample of 600 to 1000 observations. The smallest samples are those of eastern and western Germany, with 309 and 511 observations. The largest samples are the French and Brazilian ones, with 1396 and 1327 observations. In the total sample we have 20,250 respondents.

Our dependent variable is the response to the statement, '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*', ranging from 1 for strongly disagree to 5 for strongly agree. In using this variable as our dependent, we have to make the assumption that the responses to the statement actually reflect the degree of redistribution that the respondents want, meaning that people who are more supportive of the statement also desire more redistribution. The fact that responses to this statement are highly correlated with responses to a question about the desired progressiveness or regressiveness of the tax system makes us more confident with regard to this assumption.[11] As can be seen in Fig. 1, which gives the share of respondents agreeing or strongly agreeing with the redistributive statement in the country sub-samples, there is substantial country variation in support for redistribution. The share of respondents supporting the redistributive statement ranges from 34 percent in the US to around 91 percent in Brazil.

[9] Their key finding is that a person is more likely to favour redistribution if people that are either somewhat richer or somewhat poorer than them have a higher job status in relation to their own.

[10] Austria, Bulgaria, Great Britain, Israel, Netherlands, and Northern Ireland are excluded since key variables are missing.

[11] The reason why we do not use the tax question as our dependent variable is the much smaller variation over the five response categories for this question. Extremely few want high income earners to pay a smaller or much smaller share in taxes than low income earners, and these alternatives constitute two of the five response categories.

Turning to our explanatory variables, these could be divided into three major categories: pecuniary self-interest variables, indicators on beliefs about the causes of income differences included to capture the potential influence of input-based fairness concerns, and control variables. With regard to the former, an individual should according to economic thinking want the level of redistribution that maximises the utility derived from his/her current and expected future income. With redistribution going from the 'rich' to the 'poor', support for redistribution should thus be decreasing in both current and expected future relative income. Moreover, it is possible to view redistribution as insurance against income risk. A more risk-averse person should then prefer more redistribution and vice versa, and similarly someone with a high perceived income risk should prefer more redistribution and vice versa. Due to data limitations, however, expected future income, risk-aversion and perceived income risk are omitted; leaving us with relative income[12] to capture self-interest.

Other socio-demographic variables, such as class affiliation and higher education, could also be seen as considered to capturing self-interest, but might just as well capture differences associated with fairness concerns. Just as a more homogenous group is likely to be more equal in terms of omitted self-interest variables (such as expected future income), it seems reasonable that they also have more similar beliefs about how much an omitted 'input' does and should contribute to income. This ambiguity makes it more suitable to view the included socio-demographic indicators as controls for omitted variables rather than as factors in themselves capturing the influence of either fairness or self-interest concerns. The socio-demographic variables included on top of relative income are level of education, father's education, self-reported class belonging, sex and age.

Furthermore, we include a dummy controlling for potential concerns over incentives effects of redistribution (indicating whether the respondent agrees with the statement, '*Large differences in income are necessary for [country's] prosperity*'.[13] The pooled sample estimations also include country dummies to capture unexplained country differences in redistribution support.

To evaluate the potential influence of an input-based fairness concept where individuals judge the fairness of income determinants according to their perceived degree of 'responsibility', we need to include variables capturing beliefs about the importance of income determinants that are arguably under a varying degree of individual control.[14] As noted, views on the degree to which an input could be seen as 'responsible' are likely to differ among individuals. Some inputs, however, are easier to classify than others. Effort, for example, is often put forward as being largely under individual control, whereas factors associated with birth conditions, such as family background, could hardly be seen as something controllable by the individual. Inputs such as intelligence, skills or talents seem to be more controversial. We include three variables to capture beliefs about the importance of certain factors for determining income differences in society: one looks at beliefs about the importance of effort (arguably a responsible factor), another has to do with the importance of family background (arguably an arbitrary factor outside of individual control), and the third captures the perceived importance of intelligence and skills.[15] How to categorise the latter in terms of 'responsibility' is less clear-cut,[16] why the impact of this belief variable on redistributive preferences should be equally ambiguous and thereby occupy a middle position between the effects of the other two belief variables. For variable definitions see Table A1.

Since our dependent variable is discrete and inherently ordered, we use ordered probit for estimation according to the benchmark setup given in Eq. (1):

$$PR_{ic} = \alpha_c \tilde{y}_{ic} + \boldsymbol{\beta}_c' \mathbf{b}_{ic} + \boldsymbol{\delta}_c' \mathbf{x}_{ic} + \varepsilon_{ic} \tag{1}$$

PR_{ic} gives the unobserved redistributive preference of individual i in country c, $\tilde{y}_{ic}$ captures individual relative income, $\mathbf{b}_{ic}$ is the vector of belief PR_{ic} variables, $\mathbf{x}_{ic}$ is the vector of control variables, and ε_{ic} is a standard normally distributed error term. The probability that individual i in country c chooses response alternative k is the probability that the value of the unobserved support for redistribution falls between the cut-points μ_{k-1} and μ_k. Assuming normally distributed error terms

[12] Household income per adult equivalent divided by the country sample average. Note that the difference between relative income and absolute income is only relevant in pooled sample estimations including all four countries.

[13] It would be possible to follow Corneo and Grüner (2002) and control for the effect of status concerns on preferences for redistribution. Following their approach would, however, involve dropping observations from the richest and poorest income group, decreasing the representativeness of our sample and the variation in a key variable. Since status concerns is not our focus we choose not to do this.

[14] Some authors make a clear distinction between arbitrary and responsible inputs (see for example Cappelen and Tungodden, 2006, who refer to a strict 'responsibility cut'). We believe that speaking in terms of different *degrees* of responsibility over inputs, where completely arbitrary and entirely responsible are the two extremes, better reflect popular opinions in this context.

[15] The belief variables are based on questions asking how important the factor is 'for getting ahead', or on agreement with a statement saying that the factor is 'rewarded' in society (see Table A1). Although these formulations could be interpreted in non-monetary terms, we still believe that the answers constitute good approximations of beliefs about factors underlying *monetary* success. Hence we speak of these variables as concerning beliefs about the causes of income/income differences.

[16] Adding to this ambiguity is the dubious nature of the variable formulation. The statement captures both intelligence *and* skills, and many might argue that these two characteristics vary in terms of the extent to which they are acquired through life and thereby in the degree to which they are under individual control.

with mean zero and variance 1, and denoting the normal cumulative distribution function Φ, these are:

$$\begin{aligned} Pr(y_{ic}=1) &= \Phi(\mu_1 - \alpha_c\tilde{y}_{ic} - \boldsymbol{\beta}_c'\mathbf{b}_{ic} - \boldsymbol{\delta}_c'\mathbf{x}_{ic}),\\ Pr(y_{ic}=k) &= \Phi(\mu_k - \alpha_c\tilde{y}_{ic} - \boldsymbol{\beta}_c'\mathbf{b}_{ic} - \boldsymbol{\delta}_c'\mathbf{x}_{ic}) - \Phi(\mu_{k-1} - \alpha_c\tilde{y}_{ic} - \boldsymbol{\beta}_c'\mathbf{b}_{ic} - \boldsymbol{\delta}_c'\mathbf{x}_{ic}),\\ Pr(y_{ic}=5) &= 1 - \Phi(\mu_4 - \alpha_c\tilde{y}_{ic} - \boldsymbol{\beta}_c'\mathbf{b}_{ic} - \boldsymbol{\delta}_c'\mathbf{x}_{ic}), \quad k=2,3,4. \end{aligned} \tag{2}$$

Regression coefficients and cut-points are estimated by the maximum likelihood estimator. When the coefficient is positive, a positive change in the independent variable decreases the probability of the lowest ranked outcome and increases the probability of the highest ranked outcome, but does not reveal the direction of change in probabilities of intermediate outcomes. To be able to say something about the direction of change for intermediate outcomes, as well as of magnitudes of changes, we present the effects of given discrete changes in the independent variables on the probabilities of observing the different outcomes on our dependent variable. For a dummy variable D this is simply calculated as $\Pr(y_{ic}=k)$ evaluated at $D=1$ minus $\Pr(y_{ic}=k)$ evaluated at $D=0$, keeping the remaining variables at their means. Analogously, for the effect of a given change in a continuous variable X, $\Pr(y_{ic}=k)$ is evaluated at two specified values of X.

3. Results

In this section we evaluate our two hypotheses empirically. We start by examining our first hypothesis, considering the extent to which economic self-interest considerations and input-based fairness concerns can help explain redistributive preferences. Then we turn to our second hypothesis, suggesting that both differences in beliefs about income determinants and differences in the effects of these beliefs contribute to explain the cross-country variation in redistributive preferences.

3.1. Explaining preferences for redistribution

Our first hypothesis can be evaluated by considering the results of the benchmark estimation given in Eq. (1), estimated separately for each country as well as for the full sample with country dummies. The first part of this hypothesis, stipulating that self-interest considerations should matter for redistributive preferences, implies that a higher relative income should give a lower support for redistribution, so that $\alpha_c < 0$. The analysis of the second part of the hypothesis, arguing that the effect of beliefs about the causes of income differences differs with the respective inputs' degree of responsibility, rests on accepting the suggested classification of effort as the most 'responsible' input out of the three considered, family background as the least responsible, and intelligence/skills as a less clear-cut one located somewhere between the other two. Then with regard to believing that the concerned inputs are important for determining income, we should have $\beta_c^{effort} < \beta_c^{skills} < \beta_c^{family}$, $\beta_c^{effort} < 0$ and $\beta_c^{family} > 0$.

Table 1 presents the marginal effects from the pooled sample ordered probit estimation of Eq. (1). Figs. 2–5 summarise the results of estimation of Eq. (1) for our 25 country sub-samples, focusing on the effects of movements in our key variables – the belief and relative income indicators.

Let us start by briefly commenting on the pooled sample effects of our control variables (Table 1). As noted in Section 2, omitted belief and self-interest variables makes the parameters of the socio-demographic controls somewhat difficult to interpret; do they reflect differences in norms and beliefs among different groups in society, or do they capture self-interest considerations? At any rate, a number of interesting patterns stand out. Respondents with higher education, respondents whose fathers have higher education, and respondents claiming to belong to the upper class all tend to be less supportive of redistribution (the reverse is true for those who claim to belong to the working class). This could reflect higher expected future relative incomes given current relative income for well-educated people with steeper age-earnings profiles, or that privileged classes have better professional connections and thus face smaller income risks, but could also depend on differences in norms between social groups. Similarly, the fact that women are more likely to support the redistributive statement could reflect a higher perceived income risk among women, a greater degree of risk-aversion or alternatively that women hold different norms regarding what is fair. Moreover, there is a positive age effect on support for the redistributive statement, perhaps reflecting a change over time in popular sentiments towards redistribution. In what follows these socio-demographic variables will be treated as controls for omitted self-interest and belief indicators. The estimation also includes 24 country dummies, where USA, the country with the least support for redistribution, is the reference category. The country effects, all statistically significant at the 1 percent level, are not presented in Table 1, but to get a feeling for their size see Fig. 9, Specification 2. In short, the largest country effects are found in the former socialist countries (in line with the findings of Corneo and Grüner, 2002), in four countries with a recent history of right-wing authoritarian regimes – Brazil, Chile, Portugal, and Spain – and in France.[17] Finally, and as expected, people who claim inequality is needed for prosperity – a variable included to control for concerns about possible incentive effects of redistribution – are less supportive of redistribution.

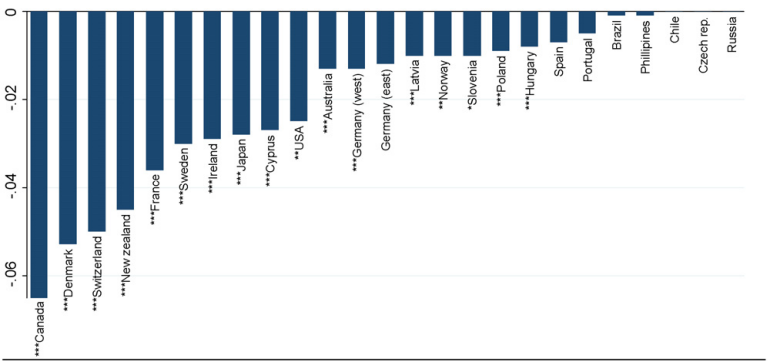
Turning to our self-interest variable, the results of the pooled sample estimation indicate that, as expected, people with a higher relative income tend to be less supportive of redistribution. However, the effect is quite small. Conditional on our

[17] Log-likelihood ratio tests show that the class variables, as well as the country dummies, are jointly important (the test statistics are 274.44 and 2533.11, giving p-values at 0.000).

Table 1
Pooled sample marginal effects[a] on probability of agreeing with the redistributive statement.[b].

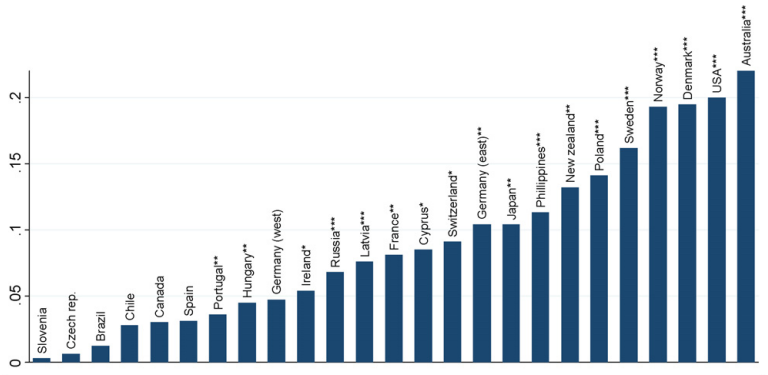
	Marginal effect on choosing response category				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Believe wealthy family important	−0.018***	−0.035***	−0.029***	−0.003***	0.086***
	0.001	0.003	0.003	0.001	0.007
No strong family belief	−0.002	−0.004	−0.003	0.000	0.009
	0.001	0.003	0.002	0.000	0.006
Believe effort rewarded	0.013***	0.024***	0.019***	−0.002***	−0.054***
	0.002	0.004	0.003	0.001	0.008
No strong effort belief	0.011***	0.019***	0.015***	−0.002***	−0.043***
	0.002	0.004	0.003	0.001	0.008
Believe intell./skills rewarded	0.006***	0.011***	0.008***	0.000	−0.024***
	0.002	0.003	0.003	0.000	0.008
No strong intell./skill belief	0.005**	0.009**	0.007**	−0.001	−0.020**
	0.002	0.004	0.003	0.000	0.008
Relative income	0.002***	0.004***	0.003***	0.000	−0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Age	−0.001***	−0.002***	−0.002***	0.000	0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Female	−0.012***	−0.022***	−0.017***	0.000	0.051***
	(0.001)	(0.002)	(0.002)	(0.000)	(0.005)
Higher education	0.012***	0.022***	0.017***	−0.002***	−0.048***
	(0.002)	(0.003)	(0.002)	(0.001)	(0.007)
Father has higher education	0.010***	0.018***	0.014***	−0.002***	−0.041***
	(0.002)	(0.003)	(0.002)	(0.001)	(0.007)
Upper class	0.027***	0.043***	0.031***	−0.011***	−0.090***
	(0.003)	(0.004)	(0.003)	(0.002)	(0.008)
Working class	−0.016***	−0.030***	−0.025***	−0.002**	0.074***
	(0.001)	(0.003)	(0.002)	(0.001)	(0.007)
Inequality necessary for prosperity	0.015***	0.026***	0.020***	−0.003***	−0.058***
	(0.002)	(0.003)	(0.002)	(0.001)	(0.006)
The estimation also includes 24 country dummies.					
Observations	20250				

[a] Dummy variable effects (all except for relative income and age) are for a discrete 0-1 change (for reference categories, see Table A1). The relative income effect is for a one median absolute deviation increase around the median, and the age effect is for an increase from 40 to 50 (approximately equivalent to a one standard deviation change around the mean).
[b] '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*'.
** Significance at the 5% level.
*** Significance at the 1% level.



Based on ordered probit estimation of equation 1 for the country sub-samples. Presents the effects of a one median absolute deviation increase around the median in relative income on the probability of agreeing or strongly agreeing with the statement, '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*'.

Fig. 2. Country variation in the effects of a higher relative income on support for redistribution.

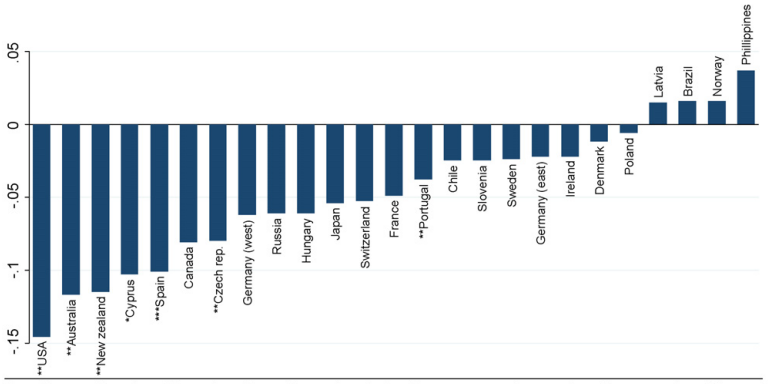


Based on ordered probit estimation of equation 1 for the country sub-samples. Presents the effects of believing it to be 'essential' or 'very important', rather than 'not very important' or 'not important at all', to come from a wealthy family to get ahead on the probability of agreeing or strongly agreeing with statement, '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*'.

Fig. 3. Country variation in the effects of holding the belief 'coming from a wealthy family is important to get ahead' on support for redistribution.

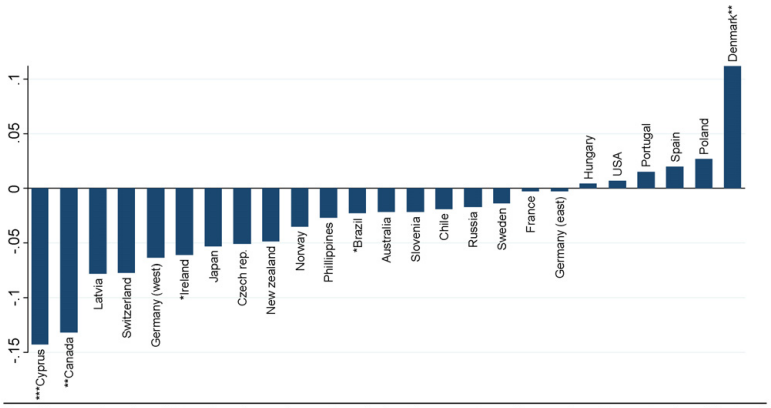
belief- and socio-demographic variables, an increase in relative income from one-half median absolute deviation below the median to one-half median absolute deviation above the median involves a one percentage point reduction in the probability of supporting the redistributive statement. Considering the relative income effects in the individual country sub-samples (Fig. 2), in the great majority of countries a higher relative income is associated with a statistically significant smaller probability to support redistribution. The associations are far from homogenous, however. In Canada, the concerned relative income change involves a 7 percentage point smaller probability to support redistribution. In Hungary the equivalent reduction is around 1 percentage point, i.e. in line with our pooled sample estimate. In 8 countries the relative income effect is not statistically different from zero.

Turning to the effects of holding certain beliefs about what causes income differences, the pooled sample estimates (Table 1) indicate that the belief effects follow the hypothesised pattern. Believing that coming from a wealthy family is



Based on ordered probit estimation of equation 1 for the country sub-samples. Presents the effects of agreeing or strongly agreeing rather than disagreeing or strongly disagreeing to the statement '*In [country] people get rewarded for their effort*' on the probability of agreeing or strongly agreeing with statement, '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*'.

Fig. 4. Country variation in the effects of believing 'effort is rewarded' on support for redistribution.



Based on ordered probit estimation of equation 1 for the country sub-samples. Presents the effects of agreeing or strongly agreeing rather than disagreeing or strongly disagreeing to the statement *'In [country] people get rewarded for their intelligence and skills'* on the probability of agreeing or strongly agreeing with statement, *'It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes'.*

Fig. 5. Country variation in the effects of believing 'intelligence/skills is rewarded' on support for redistribution.

important to get ahead (the reference categories capture believing that the respective inputs are not important/rewarded, see Table A1) is, as anticipated, associated with stronger support for redistribution. In the pooled sample, it involves an 8 percentage point increase in the probability of supporting the redistributive statement, to be compared with the 1 percentage point reduction in the same probability associated with the relative income change. Also in line with our hypothesis, believing that effort is rewarded comes with a 6 percentage point lower probability to support the redistributive statement. Similarly, believing that intelligence/skills are rewarded involves a 2 percentage point lower probability to support the statement. Hence, the pooled sample belief effects vary according to the pattern ($\beta_c^{effort} < \beta_c^{skills} < \beta_c^{family}$), $\beta_c^{effort} < 0$ and $\beta_c^{family} > 0$ suggested by the respective inputs' degree of responsibility. However, looking at the individual country sub-samples reveals considerable heterogeneity.

In the majority of our country sub-samples believing that coming from a wealthy family is important to get ahead is associated with a statistically significant higher probability to support redistribution (Fig. 3). The size of the effect varies across countries, however; holding the belief involves a 4 percentage point higher probability to support redistribution in Portugal and a 22 percentage point higher probability to do so in Australia.

The effects of believing effort is rewarded (Fig. 4) are somewhat less clear-cut, but all statistically significant effects (seven countries) are negative – the decrease ranging from 4 percentage points in Portugal to 15 in the US.

As hypothesised, the effects of beliefs on rewards to intelligence and skills are most ambiguous. As seen in Fig. 5 believing that intelligence/skills is rewarded involves a statistically significant (2–14 percentage point) lower probability to support redistribution in Cyprus, Canada, Ireland and Brazil, and an 11 percentage point *higher* probability to do so in Denmark.

To formally test the joint importance of the belief variables, we perform log-likelihood ratio tests where the unrestricted model includes them and the restricted model does not (see Table A2, Panel 1). The null-hypothesis, that excluding the belief variables does not affect the explanatory power of the model, can be firmly rejected in the absolute majority of country sub-samples. Only in three countries (Chile, Slovenia and Switzerland) can we not reject the null.

To test not only if the belief variables matter, but if they do so in line with the pattern expected from the respective inputs degree of 'responsibility', we perform a number of one-sided tests to evaluate if the parameters follow the hypothesised pattern $\beta_c^{effort} < \beta_c^{skills} < \beta_c^{family}$, $\beta_c^{effort} < 0$ and $\beta_c^{family} > 0$ (see Table A3). The pooled sample tests confirm the hypothesised pattern. In the individual countries the picture is somewhat more mixed. Our hypothesis that the effect of believing family background to be rewarded has a positive effect on support for redistribution, and that this is larger than the effects of effort and intelligence/skills, is supported in the absolute majority of the country sub-samples. Our hypothesis that believing effort to be rewarded has a negative effect on redistribution support is confirmed in 12 of our country samples. For both family and effort, where we cannot reject the null we cannot reject the alternative hypothesis either. We find least support for the hypothesis that the intelligence/skills effect is larger than the effort effect, which is confirmed only in four

countries. In two countries the test actually indicates the reverse, that the effort effect is larger than the intelligence/skills effect.[18]

3.1.1. Omitted variables

When interpreting the results one has to consider the potential influence of omitted self-interest and belief variables on our key parameters. Variables that appear important in this context include the self-interest indicators expected future relative income, risk-aversion and perceived income risks, and variables capturing beliefs regarding the importance of a wide range of inputs which could affect income, for example luck, ethnicity and gender. Since self-interest indicators and beliefs about the causes of income are likely to vary among social groups, the included socio-demographic variables should pick up much of this variation, thus helping to alleviate the problem. Nevertheless, the issue deserves some attention.

First, the relative income estimate may be biased by omitted self-interest variables. For example, expected future income should be positively correlated with current relative income. If we assume that support for redistribution depends on some weighted average of current and expected future income, then the estimated relative income coefficient will be larger than its true effect as it also captures some of the effects from expected future income.

Another potential concern is if omitted belief variables are correlated with relative income, which, if we are interested in isolating the effect of relative income that is due to direct self-interest concerns, could bias the estimated relative income effect. Similarly, omitted self-interest variables could bias the estimated effects of our belief variables.[19] Again, if omitted beliefs and self-interest variables vary across social groups the socio-demographic variables should pick up much of this unobserved variation. For what remains, we naturally cannot investigate the covariations between relative income and omitted belief variables, or between omitted self-interest variables and our belief variables. What we can do is to evaluate the correlation pattern between relative income and our included belief variables, hoping that the latter reveals something about the former; if there is little correlation between included belief variables and relative income it seems less likely that we have a problem of correlation between omitted belief variables and relative income, or between omitted self-interest variables and our included belief variables. As it turns out, there is very low correlation between our relative income indicator and our belief variables. In the pooled sample, correlation coefficients (in absolute terms) range between 0.001 and 0.047. Moreover, testing for multicollinearity of regressors using variance inflation factors and the condition index shows that neither in the pooled sample nor in the country sub-samples do we have a problem of multicollinearity (the variance inflation factors are in the order of 1–2 and the condition numbers range from 2 to 5).

Still, to get a picture of whether relative income affects the beliefs regarding income determinants we run ordered probit regressions with the belief indicators as dependent variables and with relative income and the socio-demographic controls as independent variables (see Tables A4–A6), for the pooled sample as well as the individual country sub-samples. In the pooled sample there is actually a relative income effect on our family and effort variables. However, the effect is very small; a relative income increase of one median absolute deviation around the median involves a 0.3 percentage point smaller probability to believe that coming from a wealthy family is very important or essential to get ahead, and a 0.2 percentage point smaller probability to agree or strongly agree that effort is rewarded. Moreover, in the absolute majority of country sub-samples the effect of relative income is far from statistically significant. For none of the belief variables more than 4 out of 25 countries have significant relative income effects, and for the ones that do, the effects are again small.[20] If we exclude the countries (Brazil, France, Hungary, Latvia and Russia) where a statistically significant relative income effect is found for two belief variables and run a restricted pooled sample estimation, the relative income effect is no longer there, suggesting that the associations identified in the original pooled sample estimation were driven by a small number of countries differing from the overall pattern rather than by increased precision following from more observations. Hence, with the exception of a few countries, we identify no effect of relative income on our belief variables. If the same goes for the omitted belief variables, then their influence should not be a major problem.

An alternative approach could be to argue that the stability of the relative income effect to the inclusion of the belief variables might indicate whether omitted belief variables constitute a problem. Estimating our benchmark model (Eq. (1)) with and without the belief variables[21] it turns out that in the pooled sample as well as in all the country sub-samples the relative income parameter is very stable.

Summing up, problems of omitted variables make it difficult to pin down the exact magnitudes of the effects found. We can nevertheless conclude that on the whole, our relative income indicator appear to capture self-interest considerations and our belief variables fairness concerns. Our estimations suggest that both relative income and beliefs about the causes of income differences are important to explain redistributive preferences, and that they do so according to the pattern suggested in Hypothesis 1. We can, at this stage, also note that there is substantial country variation in redistributive preferences, as well as in the effects of our main explanatory variables on these. In the next section we investigate this variation further.

[18] The tests of the alternative hypotheses are not presented, but are available from the authors.

[19] Of course, omitted beliefs could also bias the estimated effects of the included beliefs. We see this as less of a problem, since then we can assign the effects of belief variables to fairness considerations rather than to self-interest concerns.

[20] A relative income increase of one median absolute deviation around the median in most cases involves a smaller than one (and never more than 1.7) percentage point change in the probability to support the concerned statements.

[21] The results are available from the authors.

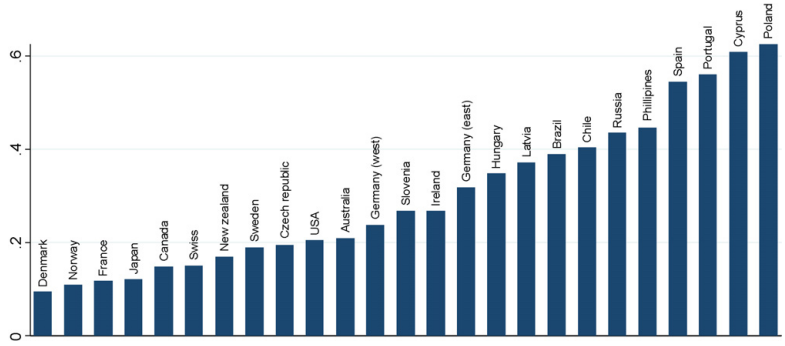


Fig. 6. Share of respondents believing that it is essential or very important to be from a wealthy family to get ahead.

3.2. Explaining country variation in redistributive preferences

Our second hypothesis stipulates that differences in beliefs about the causes of income differences, as well as differences in the *effects* of these beliefs, contribute to explain the cross-country variation in redistributive preferences. We will evaluate this hypothesis in three steps. First, we consider whether beliefs about the causes of income differences differ across countries in a direction consistent with the country variation in redistributive support. Second, we examine whether there is cross-country heterogeneity in the effects of holding certain beliefs regarding what causes income differences on redistributive preferences. Finally, we bring the picture together by addressing the extent to which the discussed differences in beliefs and impacts of these beliefs can explain the observed country variation in redistributive preferences.

3.2.1. Country differences in beliefs about income determinants

Let us start by considering the country variation in beliefs about what causes income differences. Figs. 6–8 give the country shares of respondents who believe that coming from a wealthy family is important to get ahead, or agree to that effort and intelligence/skills are rewarded in the country. As expected, there is substantial country variation in beliefs about income determinants. The share of respondents who believe that it is important to be from a wealthy family to get ahead ranges from 8 percent in Denmark to 62 percent in Poland. For the beliefs about whether effort and intelligence/skills are rewarded, the lowest shares of respondents believing so are found in Russia, where 8 and 10 percent agree with the respective statements, and the highest in the US, where the equivalent shares are 67 and 75 percent.

The above shares give an overview of the country variation in beliefs about the causes of income differences, but do not inform us about the full variation in the belief distributions. To formally test whether the distributions of beliefs differ

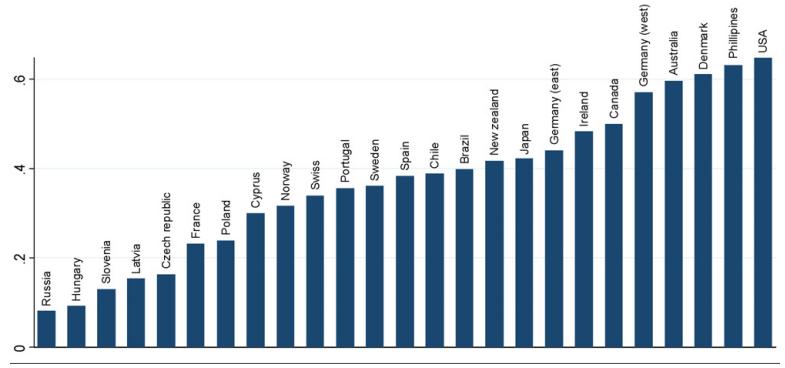


Fig. 7. Share of respondents agreeing or strongly agreeing to the statement 'In [country] people get rewarded for their effort'.

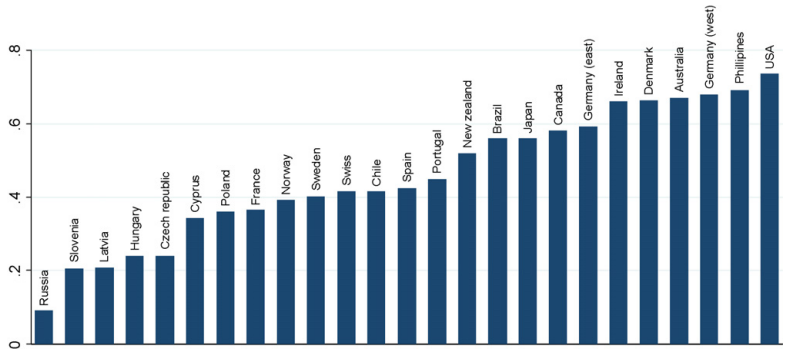


Fig. 8. Share of respondents agreeing or strongly agreeing to the statement 'In [country] people get rewarded for intelligence and skills'.

between countries we perform two-sample Kolmogorov–Smirnov tests of equal cumulative distribution functions.[22] We compare each country with the remaining countries for the three belief variables, resulting in 975 tests. The null-hypothesis of equal cumulative distribution functions was rejected at the five percent level of significance in 938 tests. To draw any conclusions about similarity of distributions in the special cases where we cannot reject the null of equal distributions, a test with an exact *p*-value would be necessary. Overall it seems fair to say that beliefs about the causes of income differences vary across countries.

With effort being classified as the most and family background as the least responsible input, one would predict that the countries that to a greater extent believe that effort is rewarded in society and that family background is not very important for getting ahead will also be the ones least supportive of redistribution (and vice versa). Inspection of Fig. 1 and Figs. 6–8 lends some support to this hypothesis. USA, the country where believing that effort is rewarded is most common (Fig. 7), is also the country with the least support for redistribution (Fig. 1). Other countries where the belief that effort is rewarded is common are the Philippines, Denmark, Australia, Germany (west) and Canada, all of which have comparatively low support for redistribution. Respondents in the former socialist countries in Central and Eastern Europe are generally very sceptical of the claim that effort is rewarded, while at the same time showing strong support for redistribution. A similar pattern can be observed for beliefs concerning the rewards to intelligence and skills (Fig. 8).

Believing that it is important to be from a wealthy family to get ahead (Fig. 6) is most common in Poland, Cyprus, Portugal and Spain, and at least Poland, Portugal and Spain display comparatively strong support for redistribution. Correspondingly, in countries where respondents do not believe that family background is very important for getting ahead – Denmark, Norway, France, Japan and Canada – the support for redistribution is comparatively low. At this stage it thus seems as though country differences in beliefs about income differences could have some relevance for explaining cross-country differences in redistribution support.

3.2.2. *Country differences in the effects of beliefs about income determinants*

Let us now turn to the second step, where we evaluate possible cross-country heterogeneity in the *effects* of the belief variables on redistributive preferences. Figs. 3–5, presenting the effects of belief variables on redistribution support in the respective countries, suggest such heterogeneity to be present. As noted, believing it to be important to be from a wealthy family to get ahead is for the great majority of countries associated with a higher probability to support redistribution. The largest effects of holding this belief are found in the US, Australia, Denmark and Norway, where it implies an approximate 20 percentage point increase in the probability of supporting the redistributive statement. However, in a few countries – Brazil, Canada, Chile, Czech Republic, Germany (west), Slovenia, and Spain – the effect is comparatively small and statistically insignificant. According to the reasoning in this paper, this fact could be interpreted as people from these countries assigning some degree of individual responsibility over family background. While it is difficult to argue that people can affect which family they are born into, the argument that someone who has succeeded in creating wealth should be able to pass this on to his/her children is quite common. The degree of responsibility assigned to an input may not necessarily depend only on perceived *individual* control over that input; conceivably it could also depend on perceived control within a larger entity, such as the family.[23] An alternative interpretation could be that in these countries people are more libertarian in the sense

[22] The Kolmogorov–Smirnov test is non-parametric and sensitive to differences in both the location of the distribution and the shape of the distribution. It is designed for testing the distribution of continuous variables, but has been demonstrated to be applicable to discrete random variables too, in which case it is conservative; i.e. for a given level of significance the null hypothesis of equal empirical distributions will be rejected less or as often as with the exact true test statistic (Conover, 1999; Goodman, 1954; Noether, 1963).

[23] See for example the theoretical model in Alesina and Angeletos (2005).

that they believe a person is entitled to the income he/she earns, irrespective of his/her degree of control over the inputs involved in earning that income.

In the US, believing effort to be rewarded implies an approximate 15 percentage point decrease in the probability of supporting the redistributive statement. In other 'Neo-European' countries – Australia, New Zealand, and Canada – the decrease is of around 10 percentage points. In the Southern European countries Cyprus, Spain, France, and Portugal, in the two former socialist countries Hungary and Czech Republic, and in Japan there are also statistically significant negative effort effects on the probability of agreement with the redistributive statement (ranging from 4 to 10 percentage points).[24] In other countries – the Scandinavian countries Denmark, Norway and Sweden, eastern and western Germany and Switzerland, the remaining four former socialist countries, and in Brazil, Chile, Ireland and the Philippines – however, the effects of believing that effort is rewarded are not statistically significant and do not stand out as large. This could be taken to indicate that in these countries effort is not to the same extent viewed as an input under individual control. Indeed, it is conceivable that depending on social background and other circumstances, individuals do not all have the same choice set regarding how much effort to exert. An alternative interpretation is that people in these countries are more concerned about equal outcomes, regardless of the degree of control they believe people have over important income determinants.

Believing intelligence and skills to be rewarded produces mixed results; in Denmark it implies an 11 percentage point *increase* in the probability of agreeing or strongly agreeing with the redistributive statement, whereas in Brazil, Canada, Cyprus, Latvia and the Czech Republic[25] it comes with a *decrease* in the same probability in the range of 2–14 percentage points. This could be taken to suggest country differences in the degree of responsibility assigned to this input, but could also indicate that the countries differ in the fairness ideals adhered to, with Danes being more concerned with equal outcomes and Brazilians, Canadians, Cypriots, Latvians and Czechs being more libertarian. In other countries the effect of believing intelligence and skills to be rewarded is not statistically different from zero.

We formally test whether the effects of belief variables differ across countries using a number of log-likelihood ratio tests (see Table A2, Panel 2). First, a restricted model in which country differences are only allowed to affect the intercept is firmly rejected in favour of a model that allows different slopes of the belief parameters, thus confirming the suspected presence of cross-country heterogeneity in the belief effects. Next, we test if there is parameter heterogeneity with respect to the beliefs regarding each input separately. For all inputs, the hypothesis of homogenous effects can be safely rejected.

3.2.3. Can the differences in beliefs and the differences in effects of these beliefs help explain cross-country variation in redistribution support?

Let us now turn to the last stage where we address to what extent the identified differences in (1) beliefs and (2) the impacts of these beliefs can explain the large country variation observed in redistributive preferences. Previous literature suggests that differences in people's beliefs are central in this respect (Alesina and Angeletos, 2005). To get an idea of the relative importance of differences in beliefs and differences in the *effects* of these beliefs for explaining cross-country variation in preferences for redistribution, we evaluate how the effect of belonging to a certain country changes as beliefs and beliefs-country interaction terms are added to the model. USA, the country hitherto most studied with regard to preferences for redistribution, and the country with the least support for redistribution controlling for other variables, is the reference country. To be more specific, we estimate the following three equations and focus on whether the parameters in $\boldsymbol{\varphi}$ approach zero as we allow for differences in beliefs (2) and differences in the effects of these beliefs (3).

$$1 \quad PR_{ic} = \boldsymbol{\phi}'\mathbf{country}_{ic} + \boldsymbol{\delta}_c'\mathbf{x}_{ic} + \varepsilon_{ic}$$

$$2 \quad PR_{ic} = \boldsymbol{\phi}'\mathbf{country}_{ic} + \boldsymbol{\beta}'\mathbf{b}_{ic} + \boldsymbol{\delta}_c'\mathbf{x}_{ic} + \varepsilon_{ic}$$

$$3 \quad PR_{ic} = \boldsymbol{\phi}'\mathbf{country}_{ic} + \boldsymbol{\beta}'\mathbf{b}_{ic} + \boldsymbol{\gamma}'\mathbf{b}_{ic}\mathbf{country}_{ic} + \boldsymbol{\delta}_c'x_{ic} + \varepsilon_{ic}.$$

Fig. 9 shows the resulting country effects.

Adding the belief variables to the model marginally reduces the effect of being of a certain nationality.[26] Furthermore, the country effect with beliefs (Specification 2) always falls within the 95 percent confidence interval around the country effect without beliefs (Specification 1).[27] Unexpectedly, differences in beliefs can thus, at most, explain a very small part of the cross-country variation in redistributive preferences.

Allowing for heterogeneity in the effects of beliefs reduces country effects quite substantially (the exceptions are eastern and western Germany where it increases the country effect marginally).[28] The effect of being Australian, Danish or Philippine (rather than American) almost disappears. The effect of being Canadian, Cypriot, Czech, Japanese, New Zealander, or Swedish

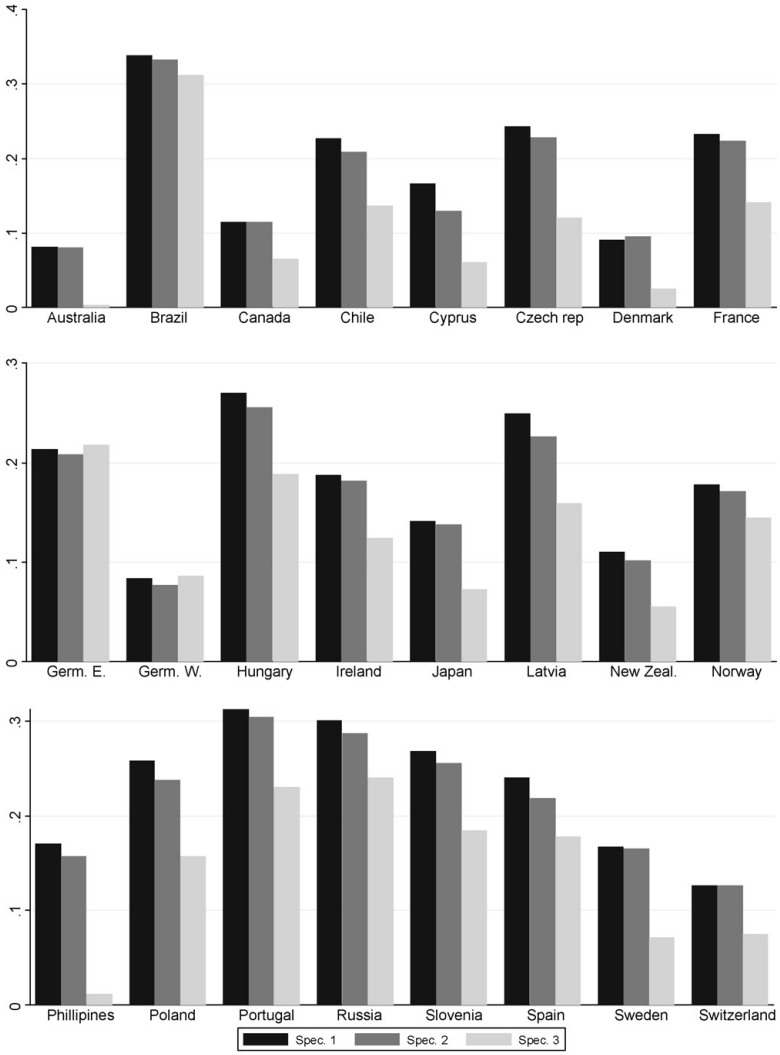
[24] For Canada, Cyprus, France, Hungary, and Japan a negative effect was confirmed using the one-sided test in Table A3, though the effect can only almost be rejected to equal zero at the 10 percent level of significance using a two sided test (Fig. 4).

[25] In the Czech sample it cannot be rejected at the 10 percent level that the effect differs from zero using a two-sided test, but using a one-sided test it can be rejected that the effect is equal to or larger than zero at the 5.5 level of significance.

[26] Comparing other countries with each other, the difference between their country effects (relative to the US) should not have been affected more than marginally either, since all changes in country effects are small and in the same direction.

[27] The estimated country effects and their 95% confidence intervals are available from the authors.

[28] Comparing other countries with each other, the difference between their country effects (relative to the US) increases in some cases, but the fact remains that country effects decrease vis-à-vis the extreme low redistribution support case USA.



Country dummy effects on the probability to agree or strongly agree with the redistributive statement, from ordered probit estimations with the following explanatory variables (see Table A1 for more detail):
Spec. 1: country dummies + other controls
Spec. 2: country dummies + other controls + belief variables
Spec. 3: country dummies + other controls + belief variables + belief*country

Fig. 9. Explaining country variation in redistributive preferences with differences in beliefs and differences in effects of beliefs.

is approximately halved. About one-third of the effect of being Chilean, French, Irish, Latvian, Polish, or Swiss disappears, and roughly one fourth of that of being Hungarian, Portuguese, or Slovenian.[29] Hence, as it seems, a relatively large part of many countries' stronger support for redistribution (compared to the US) could be explained by people in these countries assigning a lower degree of responsibility to inputs believed to be important for income determination. However, for some countries, such as Brazil and Russia, different effects of holding certain beliefs about income determinants on preferences for redistribution does little to explain their stronger support for redistribution, and the stronger support for redistribution in Germany than in the US becomes, if anything, even more puzzling, considering that Germans seemingly assign a higher degree of responsibility to inputs believed to determine income.

The conclusion we can draw from this is that while differences in beliefs on what causes income differences seem to be important for explaining within-country variation in redistributive preferences, they do little to explain between-country differences. Differences in the effects of holding certain beliefs, however, seem to be important for explaining between-country variation in redistributive preferences.

4. Conclusions

The objective of this study was to explain variation in redistributive preferences, within as well as between countries, in terms of self-interest concerns and an input-based concept of fairness. The latter was captured by the effect of beliefs about the causes of income differences. We included beliefs about income determinants arguably under varying degrees of individual control, stipulating that believing a 'responsible' factor to be important for determining income would imply less support for redistribution, whereas believing an input outside individual control to be an important income determinant should bring with it more support for redistribution. Importantly, we argued that these beliefs, and their effects, should vary with context. The country-comparative perspective was therefore central; we aimed to explain not only within-country but also between-country variation in redistributive preferences. Two hypotheses were formulated and tested using data for 25 countries.

Our first hypothesis suggested that both economic self-interest and an input-based fairness concept, where individuals judge the fairness of income determinants according to their perceived degree of 'responsibility', matter for redistributive preferences. This was supported by the data. In the pooled sample, relative income had a negative, although quite modest, impact on preferences for redistribution, and the effects of the variables capturing beliefs about the causes of income differences followed the hypothesised pattern $\beta_c^{effort} < \beta_c^{skills} < \beta_c^{family}$, $\beta_c^{effort} < 0$ and $\beta_c^{family} > 0$. As stipulated, believing effort (a 'responsible input') to be rewarded in society had a negative impact on support for redistribution, whereas believing that family background (an 'arbitrary input') is important for getting ahead was associated with stronger support for redistribution. Also, and as expected, the effect of believing that intelligence/skills (the input arguably most difficult to classify in terms of 'responsibility') are rewarded fell in-between those of believing family or effort to be important income determinants.

On the whole, the country sub-sample estimations supported our hypothesis, but revealed considerable heterogeneity in terms of the magnitude and statistical significance of effects. A higher relative income was generally associated with less support for redistribution, but the size of the effect varied. In the countries where we found statistically significant belief effects, the family effects were positive and the effort effects negative, albeit varying considerably in magnitude. Moreover, and as hypothesised, the family effect was larger than the effort and intelligence/skills effects. Comparing the magnitudes of the effort and intelligence/skills effects, however, the results were mixed – we could not establish that the effect of believing the responsible input effort to be important is smaller than that of believing the more ambiguous input intelligence/skills to be so.

Hence, whereas the aggregate pattern suggested that individuals base their preferences for redistribution on self-interest considerations as well as input-based fairness concerns, the country comparison revealed that this pattern is not necessarily universal.

Our second hypothesis put forward that differences in both beliefs about income determinants, and in the effects of these beliefs, should contribute to explain the cross-country variation in redistributive preferences. We could establish that there is considerable country variation in beliefs about income determinants, and that this variation often follows a pattern that would be expected judging from our input-based fairness concept and the observed country variation in redistribution support. Somewhat surprisingly, however, our analysis suggested that country differences in beliefs about income determinants, at best, could explain very little of the country variation in redistributive support.

Turning to the *effects* of the belief variables, our results showed that these too vary significantly across countries. Believing that coming from a wealthy family is important to get ahead in some countries had basically no effect while in others it involved an over 20 percentage point increase in the probability of supporting redistribution. The effect of believing effort to be an important income determinant varied from being statistically non-discernible from zero to decreasing the probability

[29] For eleven countries (Australia, Chile, Cyprus, Czech Republic, Denmark, France, Japan, Philippines, Poland, Portugal and Sweden) the country effect with beliefs parameter heterogeneity (Specification 3) falls outside of the 95 percent confidence interval of country effects with homogenous (Specification 2) or no (Specification 1) beliefs. For four other countries (Hungary, Latvia, Russia, Slovenia) it falls outside of the confidence interval of the country effect with no beliefs and at the limit of the confidence interval of that with homogenous belief parameters, and for nine countries (Brazil, Canada, Germany (east), Germany (west), Ireland, New Zealand, Norway, Spain, Switzerland) the country effect falls within the confidence intervals of the prior country effects.

of supporting redistribution with around 15 percentage points. With respect to believing intelligence/skills to be rewarded the results were mixed, with both negative and positive but in most cases statistically insignificant effects. Furthermore, our results suggested that this heterogeneity in belief effects is important for explaining country differences in redistribution support. With a few exceptions (Germany, Brazil and to some extent Russia), a quite substantial share of countries' stronger support for redistribution relative to the US could be explained by people in these countries seemingly assigning a lower degree of responsibility to inputs believed to be important for income determination. So, while differences in beliefs on what causes income differences seem to be important for explaining within-country variation in redistributive preferences, they do little to explain between-country differences. Differences in the *effects* of holding certain beliefs, however, appear important for explaining between-country variation in redistributive preferences.

Summing up, our findings indicate that self-interest considerations as well as input-based fairness concerns contribute to explain redistributive preferences, but also that there is substantial country variation, in redistribution support, in key factors explaining redistribution support, as well as in the *effects* of these factors *on* redistribution support. In particular, looking at our results the country most studied in this field – the US – is quite an extreme case, displaying the lowest support for redistribution, the most positive views about the rewards to effort and intelligence/skills, and some of the strongest effects of our belief variables. This tells us that in trying to understand fairness-based and self-interested motivations behind preferences for redistribution we cannot focus on one-country alone – we need to evaluate both within and between-country variations.

Acknowledgements

We would like to thank two anonymous referees, Olof Johansson-Stenman, Arne Bigsten, Karl Ove Moene, colleagues at University of Gothenburg, and seminar participants at the First Nordic Workshop on Behavioural and Experimental Economics in Oslo 2006, the workshop Equality: Theory, Political Economy, and Prospects in Bergen 2007, and at the 2007 EEA conference in Budapest for valuable suggestions and discussion.

Appendix A.

See Tables A1–A6.

Table A1
Variable description.

Variable	Description
Preferences for redistribution	The response to the statement, '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*'; 1 if respondent chooses strongly disagree, 2 if respondent chooses disagree, 3 if respondent chooses neither agree nor disagree, 4 if respondent chooses agree and 5 if respondent chooses strongly agree.
Belief variables	
Believe wealthy family important	1 if respondent answers *essential* or *very important* to the question, '*For getting ahead, how important is coming from a wealthy family*?'; 0 otherwise.
No strong family belief	1 if respondent answers *fairly important* to the question, '*For getting ahead, how important is coming from a wealthy family*?'; 0 otherwise.
Believe family not important	1 if respondent answers *not very important* or *not important at all* to the question, '*For getting ahead, how important is coming from a wealthy family*?'; 0 otherwise. Used as reference category in estimation.
Believe intelligence and skills rewarded	1 if respondent responds *agree* or *strongly agree* to the statement, '*In [country] people get rewarded for their intelligence and skills*'; 0 otherwise.
No strong intelligence/skills belief	1 if respondent responds *neither agree nor disagree* to the statement, '*In [country] people get rewarded for their intelligence and skills*'; 0 otherwise.
Believe intelligence and skills not rewarded	1 if respondent responds *disagree* or *strongly disagree* to the statement, '*In [country] people get rewarded for their intelligence and skills*'; 0 otherwise. Used as reference category in estimation.
Believe effort rewarded	1 if respondent responds *agree* or *strongly agree* to the statement, '*In [country] people get rewarded for their effort*'; 0 otherwise.
No strong effort belief	1 if respondent responds *neither agree nor disagree* to the statement, '*In [country] people get rewarded for their effort*'; 0 otherwise.
Believe effort not rewarded	1 if respondent responds *disagree* or *strongly disagree* to the statement, '*In [country] people get rewarded for their effort*'; 0 otherwise. Used as reference category in estimation.
Self-interest variable	
Relative income	Household income per adult equivalent divided by the country sample average. A common country average was used for eastern and western Germany.
Control variables	
Age	Age in years
Female	1 if female; 0 else
Higher education	1 if respondent has some post secondary school education; 0 else
Father has higher education	1 if respondent's father has completed secondary school; 0 else

Table A1 (*Continued*)

Variable	Description
Upper class	1 if respondent's self reported class is *upper class* or *upper middle class*; 0 else
Working class	1 if respondent's self reported class is *working class* or *lower class*; 0 else
Middle class	1 if respondent's self reported class is *middle class*; 0 else. Used as reference category in estimation.
Inequality necessary for prosperity	1 if respondent respond *agree* or *strongly agree* to the statement, '*Large differences in income are necessary for [country's] prosperity*'; 0 *otherwise*
Country dummies	1 if respondent belongs to the country in question; 0 else. USA used as reference category in estimations.

Table A2
Log-likelihood ratio tests.

Restricted model	Unrestricted model	LR χ^2	*p*-Value
Panel 1: Joint importance of belief variables			
Pooled, excluding belief vars.	Pooled sample benchmark	295.80	0.000
Australia, excluding belief vars.	Australia benchmark	36.99	0.000
Brazil, excluding belief vars.	Brazil benchmark	17.54	0.008
Canada, excluding belief vars.	Canada benchmark	22.39	0.001
Chile, excluding belief vars.	Chile benchmark	8.97	0.175
Cyprus, excluding belief vars.	Cyprus benchmark	51.27	0.000
Czech Rep., excluding belief vars.	Czech Rep. benchmark	28.52	0.000
Denmark, excluding belief vars.	Denmark benchmark	21.27	0.002
France, excluding belief vars.	France benchmark	15.84	0.015
Germany (west), excluding belief vars.	Germany (west) benchmark	15.21	0.019
Germany (east), excluding belief vars.	Germany (east) benchmark	16.92	0.010
Hungary, excluding belief vars.	Hungary benchmark	15.96	0.014
Ireland, excluding belief vars.	Ireland benchmark	11.97	0.063
Japan, excluding belief vars.	Japan benchmark	12.37	0.054
Latvia, excluding belief vars.	Latvia benchmark	19.10	0.004
New Zealand, excluding belief vars.	New Zealand benchmark	20.86	0.002
Norway, excluding belief vars.	Norway benchmark	20.21	0.003
Philippines, excluding belief vars.	Philippines benchmark	26.03	0.000
Poland, excluding belief vars.	Poland benchmark	35.35	0.000
Portugal, excluding belief vars.	Portugal benchmark	21.00	0.002
Russia, excluding belief vars.	Russia benchmark	21.14	0.002
Slovenia, excluding belief vars.	Slovenia	7.43	0.283
Spain, excluding belief vars.	Spain benchmark	20.21	0.003
Sweden, excluding belief vars.	Sweden benchmark	17.73	0.007
Switzerland, excluding belief vars.	Switzerland benchmark	9.44	0.150
USA, excluding belief vars.	USA benchmark	38.95	0.000
Panel 2: Tests of parameter homogeneity			
Pooled sample benchmark	Allow belief parameters to vary for each belief and each country	247.03	0.000
Pooled sample benchmark	Allow family belief parameters to vary for each country	76.78	0.005
Pooled sample benchmark	Allow effort belief parameters to vary for each country	108.77	0.000
Pooled sample benchmark	Allow intelligence and skills belief parameters to vary for each country	98.55	0.000

Based on ordered probit estimations where the dependent variable is the answers to the statement, '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*', ranging from 1 for *strongly disagree* to 5 for *strongly agree*. The belief variables are responses to whether effort and intelligence/skills are rewarded, and to whether it is important to be from a wealthy family to get ahead. These and other explanatory variables in the benchmark model are described in Table A1.

Table A3
One-sided tests of coefficients from ordered probit estimation[a] of the probability to agree with the redistributive statement[b].

Sample	*p*-Value of testing the null hypothesis				
	FAM[c] ≤ 0	EFF[d] ≥ 0	SKI[e] $\geq$ FAM	EFF $\geq$ SKI	EFF $\geq$ FAM
Pooled	0.000	0.000	0.000	0.063	0.000
Australia	0.000	0.019	0.001	0.182	0.000
Brazil	0.098	0.880	0.014	0.957	0.507
Canada	0.270	0.064	0.011	0.704	0.055
Chile	0.124	0.200	0.126	0.457	0.080
Cyprus	0.035	0.036	0.001	0.646	0.005
Czech rep.	0.386	0.011	0.086	0.309	0.023

Table A3 (*Continued*)

Sample	*p*-Value of testing the null hypothesis				
	FAM[c] ≤ 0	EFF[d] ≥ 0	SKI[e] ≥ FAM	EFF ≥ SKI	EFF ≥ FAM
Denmark	0.000	0.385	0.131	0.045	0.001
France	0.009	0.070	0.032	0.207	0.003
Germany (west)	0.176	0.173	0.094	0.504	0.091
Germany (east)	0.012	0.359	0.069	0.470	0.048
Hungary	0.023	0.054	0.122	0.112	0.008
Ireland	0.030	0.243	0.004	0.772	0.075
Japan	0.013	0.097	0.009	0.495	0.005
Latvia	0.002	0.681	0.000	0.936	0.085
New Zealand	0.012	0.020	0.013	0.262	0.000
Norway	0.000	0.658	0.000	0.768	0.001
Philippines	0.000	0.837	0.004	0.830	0.057
Poland	0.000	0.452	0.006	0.245	0.000
Portugal	0.008	0.016	0.175	0.043	0.001
Russia	0.001	0.224	0.033	0.389	0.017
Slovenia	0.450	0.269	0.270	0.490	0.280
Spain	0.145	0.001	0.391	0.017	0.001
Sweden	0.001	0.541	0.013	0.590	0.024
Switzerland	0.038	0.223	0.021	0.589	0.052
USA	0.000	0.006	0.005	0.068	0.000

[a] Based on estimation of Eq. (1).
[b] '*It is the responsibility of the government to reduce the difference in income between people with high incomes and those with low incomes*'.
[c] Coefficient of 'Believe wealthy family important'.
[d] Coefficient of 'Believe effort rewarded'.
[e] Coefficient of 'Believe intelligence and skills rewarded'.

Table A4
Relative income effects[a] on the probability of different responses to the question '*For getting ahead, how important is coming from a wealthy family*?'.

Sample	Not at all important	Not very important	Fairly important	Very important	Essential
Pooled (25 countries)	0.001***	0.001***	0.000***	−0.002***	−0.001***
Pooled (20 countries)[b]	0.000	0.001	0.000	−0.001	−0.000
Australia	0.003	0.004	−0.002	−0.004	−0.001
Brazil	0.001	0.000	0.000	0.000	−0.001
Canada	−0.009	−0.005	0.006	0.006	0.002
Chile	−0.000	−0.000	0.000	0.000	0.000
Cyprus	−0.000	−0.000	−0.001	0.000	0.001
Czech rep.	−0.001	−0.001	0.001	0.001	0.001
Denmark	0.003	0.002	−0.003	−0.002	−0.001
France	−0.003	−0.002	0.002	0.002	0.000
Germany (west)	0.000	0.000	−0.000	−0.000	−0.000
Germany (east)	−0.004	−0.006	−0.000	0.007	0.003
Hungary	0.004**	0.006**	0.000	−0.004**	−0.006**
Ireland	0.002	0.003	−0.001	−0.004	−0.001
Japan	−0.001	−0.001	0.001	0.001	0.000
Latvia	0.004**	0.003**	0.001*	−0.005**	−0.004**
New Zealand	−0.000	−0.000	0.000	0.000	0.000
Norway	0.002	0.003	−0.003	−0.002	−0.000
Philippines	0.001	0.001	0.000	−0.001	−0.001
Poland	0.001	0.002	0.004	−0.002	−0.005
Portugal	−0.003	−0.005	−0.002	0.003	0.007
Russia	0.003*	0.003*	0.001*	−0.002*	−0.004*
Slovenia	−0.004	−0.004	0.001	0.004	0.002
Spain	0.002	0.003	0.002	−0.005	−0.003
Sweden	0.002	0.003	−0.002	−0.003	−0.001
Switzerland	−0.006	−0.007	0.005	0.005	0.003
USA	0.007	0.005	−0.004	−0.007	−0.002

The effects are from ordered probit estimations where the dependent variable is the answer to the question '*For getting ahead, how important is coming from a wealthy family*?', and the explanatory variables included are: relative income, age, female, higher education, father has higher education, upper class, working class, inequality necessary for prosperity, and country dummies.
[a] Measures the effects of a relative income increase of one median absolute deviation increase around the median.
[b] Brazil, France, Hungary, Latvia, and Russia excluded.
* Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

Table A5
Relative income effects[a] on the probability of agreeing with the statement, '*In [country] people get rewarded for their effort*'.

Sample	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Pooled (25 countries)	0.001**	0.001**	0.000**	−0.001**	−0.001**
Pooled (20 countries)[b]	0.000	0.000	0.000	−0.000	−0.000
Australia	−0.000	−0.003	−0.002	0.004	0.001
Brazil	0.011***	0.001***	−0.001***	−0.003***	−0.008***
Canada	−0.001	−0.004	−0.002	0.006	0.001
Chile	0.001	0.002	0.000	−0.002	−0.001
Cyprus	0.002	0.003	−0.001	−0.003	−0.001
Czech rep.	−0.001	0.000	0.000	0.000	0.000
Denmark	−0.001	−0.001	0.000	0.001	0.001
France	−0.008***	−0.011***	0.005***	0.012***	0.002**
Germany (west)	−0.000	−0.002	−0.002	0.004	0.000
Germany (east)	−0.001	−0.002	−0.001	0.003	0.000
Hungary	−0.010**	0.000	0.005**	0.003**	0.002**
Ireland	0.001	0.005	0.001	−0.006	−0.001
Japan	0.003	0.002	0.001	−0.004	−0.003
Latvia	0.002	0.000	−0.001	−0.001	−0.000
New Zealand	−0.002	−0.008	−0.001	0.008	0.003
Norway	0.002	0.004	−0.001	−0.005	−0.001
Philippines	0.000	0.000	0.000	−0.000	−0.000
Poland	−0.002	−0.003	0.001	0.003	0.001
Portugal	−0.002	−0.001	0.000	0.002	0.001
Russia	−0.007*	0.003*	0.002*	0.001*	0.001*
Slovenia	0.006	0.003	−0.004	−0.003	−0.001
Spain	−0.008**	−0.010**	0.001	0.014**	0.003**
Sweden	−0.001	−0.002	−0.001	0.003	0.001
Switzerland	−0.001	−0.002	−0.002	0.003	0.001
USA	−0.001	−0.005	−0.005	0.006	0.005

The effects are from ordered probit estimations where the dependent variable is the answer to the question '*In [country] people get rewarded for their effort*', and the explanatory variables included are: relative income, age, female, higher education, father has higher education, upper class, working class, inequality necessary for prosperity, and country dummies.

[a] Measures the effects of a relative income increase of one median absolute deviation increase around the median.
[b] Brazil, France, Hungary, Latvia, and Russia are excluded.
* Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

Table A6
Relative income effects[a] on the probability of agreeing with the statement, '*In [country] people get rewarded for their intelligence and skills*'.

Estimation sample	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Pooled (25 countries)	0.000	0.000	0.000	−0.000	−0.000
Pooled (20 countries)[b]	0.000	0.001	0.000	−0.001	−0.000
Australia	0.000	0.003	0.002	−0.004	−0.002
Brazil	0.003*	0.001*	0.000	−0.001*	−0.003*
Canada	−0.002	−0.008	−0.005	0.011	0.004
Chile	0.001	0.001	0.000	−0.001	−0.001
Cyprus	0.001	0.001	−0.000	−0.001	−0.000
Czech rep.	−0.001	0.000	0.000	0.000	0.000
Denmark	0.002	0.003	0.003	−0.003	−0.005
France	−0.004*	−0.009*	0.000	0.011**	0.002*
Germany (west)	−0.000	−0.001	−0.000	0.001	0.000
Germany (east)	0.000	0.002	0.002	−0.003	−0.001
Hungary	−0.001	−0.001	0.000	0.001	0.000
Ireland	0.002*	0.013*	0.006*	−0.015*	−0.006*
Japan	0.002	0.002	0.003	−0.003	−0.004
Latvia	−0.007**	−0.002**	0.003**	0.005**	0.001**
New Zealand	0.000	0.001	0.001	−0.002	−0.001
Norway	0.003**	0.009**	0.001*	−0.012**	−0.002**
Philippines	−0.001*	−0.002*	−0.002*	0.001*	0.004*
Poland	−0.002	−0.003	0.001	0.003	0.001
Portugal	0.006	0.004	0.000	−0.006	−0.004
Russia	−0.007**	0.002**	0.002**	0.002**	0.001*
Slovenia	0.001	0.001	−0.000	−0.001	−0.000
Spain	−0.000	−0.000	−0.000	0.000	0.000

Table A6 (*Continued*)

Estimation sample	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Sweden	0.000	0.000	0.000	−0.000	−0.000
Switzerland	−0.001	−0.004	−0.008	0.010	0.003
USA	−0.001	−0.005	−0.006	0.004	0.008

The effects are from ordered probit estimations where the dependent variable is the answer to the question '*In [country] people get rewarded for their effort*', and the explanatory variables included are: relative income, age, female, higher education, father has higher education, upper class, working class, inequality necessary for prosperity, and country dummies.

[a] Measures the effects of a relative income increase of one median absolute deviation increase around the median.
[b] Brazil, France, Hungary, Latvia, and Russia are excluded.
[*] Significance at the 10% level.
[**] Significance at the 5% level.

References

Adams, J.S., 1965. Inequity in social exchange. In: Berkowitz, L. (Ed.), Advances in Experimental Social Psychology, vol. 2. Academic Press, New York, pp. 267–299.
Alesina, A., Angeletos, G.-M., 2005. Fairness and redistribution. American Economic Review 95, 960–980.
Alesina, A., Fuchs-Schündeln, N., 2007. Goodbye Lenin (or not?): the effect of communism on people. American Economic Review 97, 1507–1528.
Alesina, A., Glaeser, E., Sacerdote, B., 2001. Why doesn't the United States have a European-style welfare state? Brookings Papers on Economic Activity 2001, 187–254.
Alesina, A., La Ferrara, E., 2005. Preferences for redistribution in the land of opportunities. Journal of Public Economics 89, 897–931.
Bénabou, R., Ok, E., 2001. Social mobility and the demand for redistribution: the POUM hypothesis. The Quarterly Journal of Economics 116, 447–487.
Buchanan, J.M., Tullock, G., 1962. The Calculus of Consent: Logical Foundations of Constitutional Democracy. University of Michigan Press, Ann Arbor.
Burrows, P., Loomes, G., 1994. The impact of fairness on bargaining behaviour. Empirical Economics 19, 201–221.
Cappelen, A.W., Hole, A.D., Sørensen, E.Ø., Tungodden, B., 2007. The pluralism of fairness ideals: an experimental approach. The American Economic Review 97, 818–827.
Cappelen, A.W., Tungodden, B., 2006. Relocating the responsibility cut: should more responsibility imply less redistribution? Politics, Philosophy and Economics 5, 353–362.
Clark, J., 1998. Fairness in public good provision: an investigation of preferences for equality and proportionality. Canadian Journal of Economics 31, 708–728.
Conover, W.J., 1999. Practical Nonparametric Statistics. John Wiley and Sons Inc., New York.
Corneo, G., Grüner, H.P., 2000. Social limits to redistribution. American Economic Review 90, 1491–1507.
Corneo, G., Grüner, H.P., 2002. Individual preferences for political redistribution. Journal of Public Economics 83, 83–107.
Dworkin, R., 1981a. What is equality? Part 1. Equality of welfare. Philosophy and Public Affairs 10, 185–246.
Dworkin, R., 1981b. What is equality? Part 2. Equality of resources. Philosophy and Public Affairs 10, 283–345.
Fehr, E., Schmidt, K.M., 1999. A theory of fairness, competition and cooperation. Quarterly Journal of Economics 114, 817–868.
Fong, C., 2001. Social preferences, self-interest, and the demand for redistribution. Journal of Public Economics 82, 225–246.
Fong, C., Bowles, S., Gintis, H., 2005. Behavioural motives for income redistribution. The Australian Economic Review 38, 285–297.
Goodman, L.A., 1954. Kolmogorov–Smirnov tests for psychological research. Psychological Bulletin 2, 160–168.
Konow, J., 2003. Which is the fairest one of all? A positive analysis of justice theories. Journal of Economic Literature 41, 1188–1239.
Noether, G.E., 1963. Note on the Kolmogorov statistic in the discrete case. Metrika 7, 115–116.
Piketty, T., 1995. Social mobility and redistributive politics. The Quarterly Journal of Economics 110, 551–584.
Ravallion, M., Lokshin, M., 2000. Who wants to redistribute? The tunnel effect in 1990s Russia. Journal of Public Economics 76, 87–104.
Roemer, J.E., 2002. Equality of opportunity: a progress report. Social Choice and Welfare 19, 455–471.
Van Dijk, E., Wilke, H., 1994. Asymmetry of wealth and public good provision. Social Psychology Quarterly 57, 352–359.

Paper 3

Political participation in Africa:

The role of individual resources

Ann-Sofie Isaksson*

Abstract: The aim of this paper is to examine the role of the resource perspective in explaining African political participation. The resource perspective stresses that political participation is costly and requires inputs in terms of individual resources. If citizens in young developing country democracies face comparatively high participation costs and have more limited individual resource endowments than citizens in more established democracies, the perspective should be particularly relevant in the African setting. On the contrary, however, empirical findings drawing on new data for more than 27 000 respondents in 20 emerging African democracies suggest surprisingly weak explanatory power of the resource perspective. In some cases, the relatively resource poor actually participate to a greater extent than the more resource rich. The results are encouraging in that they suggest fairly broad-based political participation, but also call attention to the need to evaluate the motivational forces behind the decision to take part.

JEL classification: D01, D72, O12, O55.

Keywords: Political participation, Resources, Africa, Afrobarometer.

1 Introduction

Political equality – that the preferences of each citizen should count equally – is at the heart of democracy. Unfortunately, the notion of 'one person one vote' is not sufficient to ensure political equality in this sense; one has to take account of who participates in the political process and whose preferences are represented in politics.

This paper explores political participation in Africa. Drawing on new data on over 27 000 respondents in 20 emerging African democracies, the aim is to examine the role of the resource perspective in explaining African political participation. The empirical findings suggest that the influential resource approach, which stresses that participation is costly and requires inputs in terms of individual resources like skills and time (Brady et al., 1995; Verba

* Department of Economics, University of Gothenburg, Box 640, 405 30 Göteborg, Sweden. E-mail: ann-sofie.isaksson@economics.gu.se, Tel. +46-(0)31-7861249. I am thankful to Arne Bigsten, Michael Bratton, Niklas Harring, Göran Holmqvist, Andreas Kotsadam, Staffan Lindberg, Måns Nerman, Bo Rothstein, Måns Söderbom, Jo Thori Lind and seminar participants at the 2010 NCDE conference in Helsinki and at the Development Workshop at the University of Gothenburg for valuable suggestions (mistakes are of course my own). I gratefully acknowledge financial support from Sida-SAREC.

et al., 1995), does a surprisingly poor job at explaining political participation in Africa; in some cases, we actually see the relatively resource poor participating to a larger extent than the more resource rich. The results are encouraging in that they suggest fairly broad-based political participation, but also call attention to the need to evaluate the motivational forces behind the decision to take part.

Widespread political participation, defined as citizen acts to influence the selection of and/or the actions taken by political representatives, has an intrinsic democratic value. In fact, it makes sense to argue that democracy requires political participation to be legitimate (Bratton et al., 2005). It is widely agreed, however, that the propensity to participate politically is not evenly distributed across citizens (Brady et al., 1995; Verba et al., 1995; Lijphart, 1997; Bartels, 2005; Griffin and Newman, 2005). Rather, studies of Western democracies suggest that those who participate constitute an unrepresentative set of citizens, disproportionally coming from more advantaged groups in society. If policy preferences also vary across socio-economic groups (as suggested in e.g. Verba and Nie, 1972; Verba et al., 1978), and elected officials are more responsive to the preferences of those who participate politically than to those who do not (as suggested in e.g. Bartels, 2005; Boulding and Wampler, 2010; Gilens, 2005; Griffin and Newman, 2005), skewed participation risks translating into skewed government policy. This is very troubling, since it suggests that inequality of influence and resources is cumulative (Dahl, 1961); economic inequality may cause inequality in terms of political participation, which in turn may imply that policies increasingly address the preferences of more well-off citizens, thus adding to economic inequality (Bartels, 2005).[1] Due to this feedback, being aware of participatory inequalities and understanding the reasons for non-participation is not only important because of its intrinsic democratic value; it is also highly relevant from an economic perspective.

A sizeable literature examines the determinants of political participation at the macro, meso and micro levels. Notably though, previous studies have largely focused on Western democracies (see e.g. Verba and Nie, 1972; Wolfinger and Rosenstone, 1980; Brady et al., 1995; and Verba et al., 1995), while relatively little effort has been made to explain mass political participation in developing countries. It is not surprising that the work on African political participation is scarce.[2] The African democracies are young and evolving, and until

[1] For a discussion of the links between political and economic inequality, see also Savoia et al. (2010).

[2] Bratton (1999) examines determinants of political participation in Zambia, Kuenzi and Lambright (2005) investigate correlates of electoral participation in a sample with respondents from ten African countries, Bratton (2008) considers democratic attitudes and behaviours in a sample with respondents from 15 African countries, and Bratton et al. (2010) compare voting patterns across Africa, Asia and Latin America.

recently there have not been any reliable and comparable data on democratic attitudes and behaviour in Africa. We cannot assume, however, that patterns of participation that have gradually evolved since the spread of democratisation in the mid 19th century should be the same as those found in the emerging African democracies (Norris, 2002). In particular, it seems reasonable that the resource perspective, pioneered by the U.S.-based work of Brady, Verba and Schlozman (Brady et al., 1995; Verba et al., 1995), should be especially relevant in developing countries, where citizens are likely to have a weaker resource base and where poorly developed infrastructure should lead to high participation costs. Also, understanding the patterns of political participation in Africa – where poverty is widespread and democratic institutions are still emerging – seems particularly important. For poverty reduction, it should be central that the democratic process represents the many and not the few. And, if political participation is required to legitimise democracy, then studying its determinants in the African context, where the democratic states are younger and more fragile, should be critical (Kuenzi and Lambright, 2007).

To my knowledge, this is the first study that closely examines the role of individual resource differentials in explaining African political participation. As such, and using new and comprehensive data, it will add to our understanding of the prerequisites for broad-based citizen engagement in the emerging African democracies.

2 Resources and participation

The resource perspective, stressing the role of individual resources for meeting the costs of participating, was developed by Brady, Verba and Schlozman in the mid 1990s (Brady et al., 1995; Verba et al., 1995). Earlier studies of political participation linked socio-economic status to participation –finding the better educated and those with higher incomes to be more likely to participate (Verba and Nie, 1972; Wolfinger and Rosenstone, 1980). However, in their influential work on American political participation, Brady, Verba and Schlozman developed this thinking, discussing the causal mechanisms that link socio-economic status to participation. Their findings highlight the differential resource requirements for different forms of participation, for instance indicating that in the U.S., resources in terms of time, money and civic skills matter less for voting than for other political acts.

Being interested in the role of individual resources for meeting the costs of participating, we assume that individuals evaluate the costs and benefits of participating politically, and

decide to participate when the expected net benefit of doing so is positive. Interpreting the costs and benefits of participation in a broad sense, the benefits of political activity refer to the motivational forces behind the decision to take part, such as conflicting interests stimulating engagement (see the discussion in Solt, 2008), the perception of one's participation being decisive, or a will to conform to participatory norms (see e.g. La Due Lake and Huckfeldt, 1998; and Knack and Kropf, 1998). And the costs of political participation refer to its demands in terms of e.g. time, money, knowledge and information. By taking account of how resource differences among people differentially constrain their ability to meet the costs of participating, one could potentially explain a stratified pattern of political activity (Verba et al., 1995). If participation is costly, the individual's decision on whether or not to take part is, just as the decision to consume any good, constrained by a budget restriction determined by the individual's resource base (Solt, 2008). By considering the effects of resources on political participation, one can assess the impact of relaxing the budget constraint relevant for participation.

Against this background, the resource perspective seems particularly important when studying political participation in developing countries with young democratic systems. Compared to citizens in more established democracies, citizens in these countries may face higher participation costs as a result of poorly developed infrastructure (e.g. political infrastructure in terms of polling stations, community meeting halls etc.; physical infrastructure enabling citizens to reach the nearest political infrastructure; and infrastructure for information transmission), or they may have a less developed individual resource base. Both would result in the resource constraint relevant for political participation more often being binding, meaning that the impact of resources on participation should be especially important.

As noted, the conventional finding – often based on studies from the U.S. – is that citizens with low incomes and little education participate less than their richer and more educated counterparts. Comparing across other Western democracies, however, the results are more mixed (Verba et al., 1978; Norris, 2002). Similarly, the sparse evidence available for developing countries offers no clear-cut picture. Bratton (1999), who study political participation in Zambia, Krishna (2002), who studies the determinants of political participation in rural India, Kuenzi and Lambright (2005), who investigate correlates of voting in a sample with respondents from ten African countries, and Bratton et al. (2010), who compare voting patterns in Africa, Asia and Latin America, find no effect of economic standing and mixed effects of education. Considering a sample of 15 African countries,

Bratton (2008), on the other hand, finds comparatively high participation rates among poorer citizens.

The present study focuses on resources in terms of time, money, human capital and information, all of which appear important for political participation in a developing country context. Political participation will always involve investments of time. With little time at hand, you will be restricted in terms of political activity, and arguably particularly so in a developing country with poorly developed infrastructure. Compared to time, the connection between money and participatory acts might appear less direct. However, in a developing country with widespread poverty, lack of money may well restrict an individual from, say, travelling to the polling station or the community meeting hall or from being able to devote time to political participation.[3]

Human capital, next, helps the individual understand the political process and build civic skills such as communication and organisational abilities, and hence facilitates political participation (Verba et al., 1995). In a developing country context, where illiteracy is sometimes widespread, this issue should be particularly pressing. Illiterate citizens have trouble making sense of information about the political process and are constrained in terms of communicating their views.

Information, finally, is often put forth as an important cost of political participation (La Due Lake and Huckfeldt, 1998). How do you vote? For whom do you vote? In what other ways, and for what purpose, should you participate politically? Processing information of this type requires resources in terms of time and human capital. However, considering that we also need the information to be *available*, it appears suitable to consider information access as a resource in its own right. Again, this issue should be particularly pertinent in a developing country context where access to information sources like TV, newspapers and the Internet cannot be taken for granted.

3 Data and empirical setup

The aim of the present paper is to examine the role of the resource perspective in explaining African political participation. To this end, I employ new data from the Afrobarometer

[3] Time and money are clearly closely related; with money you can hire someone to free up time, and using time for political participation has an opportunity cost in terms of foregone income. However, they are not the same. In contrast to money, there is a fixed upper-bound on time, meaning that money can be more unevenly distributed (Verba et al., 1995). Hence, being interested in resources potentially mattering for political participation, both money and time deserve attention.

survey. The Afrobarometer is a comprehensive multi-country survey project collecting data on political and economic attitudes and behaviour of African citizens. As such, it provides a unique opportunity to study mass political participation in a large African multi-country sample. The fourth and most recent wave of the survey, which is used here, was conducted in 2008-2009 and covers over 27 000 respondents from 20 African countries – Benin, Botswana, Burkina Faso, Cape Verde, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. The survey covers a representative sample of each country's voting age population (with a standard sample size of 1200 observations per country, except in Nigeria, South Africa and Uganda where sample sizes are around twice this size) and asks a standard set of questions in all countries, thus allowing for cross-national comparisons.[4] I estimate the following benchmark probit for the political participation PP_{ir} of individual *i* in region *r*:

$$prob\left[PP_{ir}=1\right]=\Phi\left(\mathbf{R}_i\boldsymbol{\alpha}+\mathbf{G}_i\boldsymbol{\beta}+\mathbf{X}_i\boldsymbol{\delta}+\gamma_r\right)$$

That is, the probability that individual *i* in region *r* participates is taken to depend on vectors of resources $\mathbf{R}_i$, socio-demographic group affiliations $\mathbf{G}_i$, and additional individual controls $\mathbf{X}_i$, allowing for region fixed effects γ_r. $\Phi(\cdot)$ denotes the standard normal cumulative distribution function.

That the individual citizen is the unit of analysis does not mean that there is not important country variation in the level and determinants of political participation. Our 20 African sample countries have in common that they are relatively young democracies and that they are poor by international standards. As discussed above, these conditions are relevant when assessing the resource perspective, since they may imply that the resource constraints relevant for political participation more often are binding. At the same time, however, the countries considered are by no means homogenous. Unfortunately, there is a trade-off between scope and depth, and focusing on 20 countries I am unable to closely examine individual country experiences (for a brief overview of the post-independence democratic development of our sample countries, see Table A1; for in-depth accounts of the same see e.g. Bratton and Van de Walle, 1997; and Lindberg, 2006). However, considering that macro level determinants of participation – such as countries' historical experiences, institutional arrangements and

[4] Note, however, that the Afrobarometer is not meant to be generalised to all of Sub-Saharan Africa. The selection of countries is intentionally biased towards liberalising regimes, meaning that authoritarian regimes and countries in conflict are under-represented (Afrobarometer Network, 2007).

economic and political conditions – are likely to affect not only the average level of political participation but also the association between our focus micro level factors and participation, pooled sample estimations accounting for region fixed effects will be complemented by individual country estimations, allowing us to consider country variation in parameter estimates.

3.1 Dependent variable

The outcome variable of interest is political participation. As noted in Section 1, one can think of political participation as citizen acts to influence the selection of and/or the actions taken by political representatives. As such, it can take many forms. On top of voting, which is the most common, and in a sense, the most basic form of political participation, citizens can work in election campaigns, engage in the local community, contact political leaders, attend demonstrations etc. Important for our purposes, political acts like these can vary in what individual resources they require. Moreover, they presumably vary in what information they display, in the extent to which they are mainstream or unconventional, in whether they are undertaken alone or in groups, and in the extent to which they are unequally distributed across citizens (for further discussion see e.g. Verba et al., 1995; and Lijphart, 1997). Acknowledging that political participation is a multidimensional concept that encompasses a wide and heterogeneous set of activities, I cannot claim to capture it in full. What I can do, however, is to make sure to consider both electoral and inter-electoral participation, i.e. voting as well as political activity taking place between elections. Studying participation in the emerging African democracies, where important aspects of political activity take place informally (Bratton et al., 2005), this should be particularly important.

Hence, I consider two alternative dependent variables: voting (electoral participation) and attending community meetings (inter-electoral participation). For voting, I create a dummy variable taking the value one if the respondent reports to have voted in the most recent [year 200X] national election, and zero otherwise. Those who were too young to vote at the time of the election are excluded from the estimation. The data contains information on several forms of inter-electoral participation. However, considering how diverse these activities are – presumably varying on all dimensions described above – using a composite inter-electoral participation index would hide substantial heterogeneity. Instead, I choose to focus on the most common form of inter-electoral participation in the data, namely attending community

meetings.[5] I create a dummy variable taking the value one if the respondent reports to have attended a community meeting during the past year, and zero otherwise (for variable descriptions and summary statistics see Tables A2-A3). In Section 4.2.3 I evaluate to what extent the results can be generalised to other forms of inter-electoral participation.

Figure 1: Share of respondents reporting to have voted in the last national election

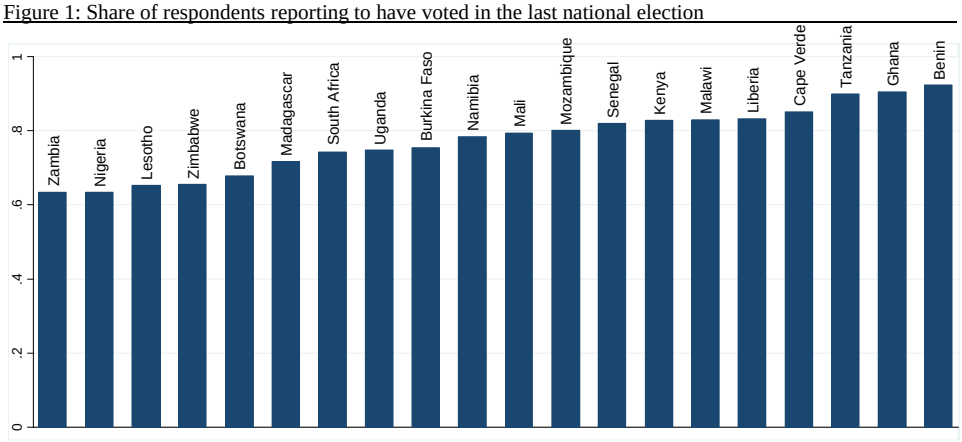
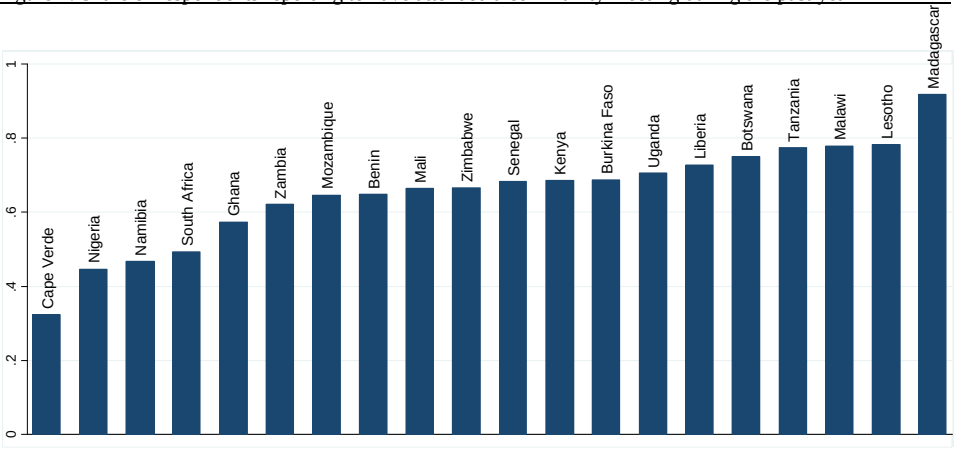


Figure 2: Share of respondents reporting to have attended a community meeting during the past year



[5] The other questions on inter-electoral participation focus on joining with others to raise an issue, taking part in demonstrations or protest marches, and contacting local government officials.

Looking at Figures 1-2, we can note that there is a great deal of country variation in political participation.[6] The share of respondents who report to have voted in the last election ranges from 64 percent in Zambia to 92 percent in Benin, and the share of respondents who report to have attended a community meeting during the past year ranges from 32 percent in Cape Verde to 92 percent in Madagascar. In Botswana, Lesotho, Madagascar and Zimbabwe attending community meetings is actually more common than voting, highlighting the importance of not focusing solely on electoral participation when studying African political participation. In the remaining countries, however, voting is the more common political act. Generally speaking, being engaged in one of the activities means that you are more likely to also engage in the other. The correlation coefficients are modest, though; 0.14 in the full sample, a little bit higher (around 0.19-0.27) in Burkina Faso, Lesotho, Mali, Namibia, Uganda and Zimbabwe, but on the other hand smaller (0.02-0.06) and not statistically significant in Cape Verde, Liberia, Mozambique and Tanzania.[7]

With respect to the high share of respondents reporting to vote, a few notes are in order. Importantly, our self-reported voting shares are not strictly comparable to official country turnout figures, which tend to be lower (see Table A4). First of all, the voting survey question simply asks the respondent whether he/she voted in the 'last [year 200X] national election'. Hence, in the many cases where parliamentary and presidential elections are held concurrently we do not know which of the two the respondent refers to. Moreover, even if the two elections were not held concurrently, it seems likely that respondents may have problems recalling which of the two took place most recently. And if the respondent only took part in one of the two elections, it seems likely that he/she would remember and report the one election he/she in fact took part in, meaning that self-reported voting shares would be inflated compared to the official turnout rates.[8] Second, differences could arise due to sampling. Although the Afrobarometer is meant to be nationally representative with respect to each country's voting age population, it is not unreasonable to assume that there might be some over-sampling of individuals, say those with a steady address, who are also more likely to

[6] Observations are weighted using within country weights adjusting the sample to be nationally representative with respect to region, urban-rural distribution etc.

[7] Out of the observations that do not have missing values on either 'voting' or 'meeting', 54 percent engages in both activities, 23 percent only votes, 13 percent only attends community meetings, and 11 percent takes part in neither of the activities.

[8] The fact that our voting measure excludes those who claim not to remember whether they voted could also inflate the self-reported voting shares. Arguably, it is convenient to opt for this response if, in fact, you did not vote. However, considering that very few respondents (around 0.5%) actually chose the 'don't know' response category, the possible consequences for self-reported voting shares should be minor. I investigate this further in Section 4.2.3.

vote. Still, considering that casting a ballot is often viewed as a civic duty, to some extent the discrepancy between self-reported voting shares and official turnout rates is most likely due to survey respondents over-reporting voting. The official and self-reported turnout figures are significantly correlated however (see Table A4), and provided that the degree of over-reporting does not vary systematically with individual resources, it should not bias our estimates. Nevertheless, in Section 4.2.3 I evaluate the sensitivity of results to respondents over-reporting voting.

3.2 Explanatory variables

The explanatory variables considered can be divided into resource indicators, regional controls, socio-demographic group affiliations and additional individual controls. The resource indicators capture individual resource endowments in terms of human capital, money, information and time. To measure human capital I use dummies indicating whether the respondent's highest level of education is at primary, secondary or post-secondary level (using respondents with no schooling as the reference category). To capture economic standing (there is no income variable in the data), I follow Bratton et al. (2005) and create a 'lived poverty index' based on the responses to the question, 'Over the past year, how often, if ever, have you or anyone in your family gone without: (a) enough food to eat, (b) enough clean water for home use, (c) medicines or medical treatment, (d) enough fuel to cook your food?', with response categories ranging from 0 for 'never' to 4 for 'always' for each item (for further discussion of this measure see Bratton, 2008). Similarly, to proxy for resources in terms of information, I create an index based on responses to the question, 'How often do you get news from the following sources: a) radio, b) television, and c) newspapers?', with response categories ranging from 0 for 'never' to 4 for 'every day'. To proxy for time availability, finally, I include a dummy variable indicating whether the respondent has full-time employment. While individuals in full-time employment tend to be more resource rich in terms of money and human capital, they arguably have less time on their hands. In Section 4.2.2 I evaluate the sensitivity of results to using alternative resource variables.

To what extent can the resource estimates be interpreted causally? Being concerned with the role of resources for meeting the costs of participating politically implies that we are interested in evaluating causal effects. Here, a few notes are in order. Whereas reverse causality from participation to our resource variables should not be a major concern – childhood education precedes political involvement, and it seems a fair assumption that for

the absolute majority of adults, work- and family-related decisions are prior to political participation[9] – we need to consider omitted variable bias. And while the comprehensive data material at hand has obvious advantages in terms of external validity – it covers real life political decisions of over 27000 respondents across 20 African countries – it offers no source of exogenous variation in resource endowments that could help us ensure internal validity. Hence, to evaluate the effects of our resource variables on participation we need to consider our theoretical priors and carefully control for confounding factors. The theoretical predictions are clear. Thinking of resources as means to meet the costs of participation, more is better – having more of the relevant resources should ease the resource constraint on participating, and thus enable more participation. To be able to evaluate the role of resources for meeting the costs of participating, however, requires holding the costs and benefits of participating constant.

First of all, we need to control for contextual variation in the costs and benefits of political participation. Comparing across countries, participation costs and benefits are likely to vary with factors like democratic tradition, economic conditions, and political institutions (see e.g. Jackman, 1987; Lijphart 1997; Posner and Simon, 2002; Kostadinova, 2003; Fornos et al., 2004; and Lindberg, 2006b). However, even if the interest is in within country variation in participation, as in the present paper, assuming homogenous participation costs and benefits appears inappropriate. For instance, participation costs and benefits could presumably vary across regions within countries depending on access to political and physical infrastructure, e.g. distance to the nearest polling station and the quality of the road to get there, the salience of local policy concerns and community variation in participatory norms (see e.g. La Due Lake and Huckfeldt, 1998; Knack and Kropf, 1998; Krishna, 2002; Norris, 2002). If the concerned resource endowments also vary systematically across regions, this could bias our estimates. 246 sub-national region dummies[10] included in all estimations should help pick up the influence of contextual factors affecting the costs and benefits of political participation.

Second, we need to control for individual level factors that could affect the costs and benefits of participation, and potentially contaminate the resource estimates. I divide these

[9] Although we cannot rule out that someone can choose, say, a line of work as a result of political engagement (Verba et al. (1995) this ought to be quite rare. Moreover, whereas you might seek information more often before an election if you plan to vote, the information variable focuses on information exposure on a more regular basis.

[10] The region dummies refer to the first-order administrative division in a country, in the survey manual denoted 'region/province' (Afrobarometer Network, 2007). Since the number and size of regional units vary across countries they are not strictly comparable. Nevertheless, they help us control for sub-national variation in factors affecting the costs and benefits of participation.

factors into socio-demographic group affiliations and additional individual controls. To begin with, we know that political participation tends to vary across socio-demographic groups. In particular, earlier studies based on smaller African samples suggest a gender-gap in participation (Bratton, 1999; Bratton and Logan, 2006; Bratton et al., 2010), greater turnout among older citizens (Bratton et al., 2005, 2010; Kuenzi and Lambright, 2005) and among citizens living in rural areas (Bratton, 1999; Kuenzi and Lambright, 2005; Bratton et al., 2010). While it seems plausible that individual resources, such as skills and time, are differentially available to these socio-demographic groups, we cannot assume that they are the only factors generating the observed socio-demographic variation in participation. If there are indeed other factors at play (say, differences in participatory norms), not accounting for the socio-demographic group affiliations will bias the resource estimates. Hence, I control for gender, urban/rural residence and age. Dummy variables are used to indicate whether the respondent is female and whether he/she lives in a rural area. Age is simply measured as age in years (plus its square term).

The additional individual controls refer to individual attributes that are arguably closely related to both political participation and resource endowments. In particular, it seems reasonable to suppose that people with different resource endowments also vary in terms of civic engagement, needs, networks, and policy preferences – factors that may also affect participation.

With respect to civic engagement, the information variable will presumably not only capture information *availability*; it is also likely to pick up a tendency to *seek out* information, meaning that both participation and information exposure could be influenced by omitted variables related to civic engagement. To control for civic-mindedness, I include a control for political interest. With respect to need, the poor may be more susceptible to clientelist appeals of political representatives, which in turn may stimulate participation (for studies on clientelism in African politics, see e.g. Wantchekon, 2003; Lindberg and Morrison, 2008; and Vicente, 2008). To proxy for the influence of clientelism, I include a variable on the respondent's attitudes towards clientelist activity (assuming that people who are more favourable to clientelism also are more likely to accept/seek clientelist offers). Regarding network effects, a person's education and employment status will influence what people he/she comes in contact with, and certain socio-economic groups may be more inclined to discuss politics and may hold stronger norms of democratic participation. Consider the case of education. It should help the individual develop the human capital needed to meet the costs of participation and to build politically relevant social capital (La Due Lake and Huckfeldt,

1998). Being interested in isolating the effect of the former, one would have to control for the latter. To proxy for networks, or politically relevant social capital, I include a variable indicating whether the respondent discusses politics with friends. With respect to policy preferences, it is not unreasonable to assume that resource endowments affect what policy issues lie close at heart, and that policy preferences could motivate political participation. In particular, your economic standing will not only determine whether you can, say, afford to take the bus to the polling station, it will also help define your pecuniary interest in distributional conflict – potentially an important motivation behind participation (see the discussion in Solt, 2008). To control for distributional policy preferences, I use a question asking the respondent to rate how the government deals with narrowing the gap between rich and poor.

Importantly, the additional individual controls are not interpreted causally,[11] but are included in separate estimations as proxies for omitted factors that could otherwise bias our resource estimates.

4 Results

This section evaluates the role of individual resource endowments in explaining African political participation. After considering the results of the benchmark estimations we move on to assess to what extent the findings are sensitive to alternative samples and specifications.

4.1 Resources and participation – main findings

Regressing our political participation measures – voting and meeting – on the resource variables and regional controls (Table 1, Regressions 1 and 4), the results are unexpected. Whereas poverty is significantly related to political participation, the association is in the unexpected direction if viewing money as a resource constraining participation – the poorer you are, the more likely you are to participate. On average, a one standard deviation higher poverty index score implies an approximately 1 percentage point higher probability to vote, and a 2 percentage point higher probability to attend community meetings. Similarly, the

[11] Not only are these factors likely to affect participation, it is also reasonable to assume that participating politically stimulates political interest, helps build politically relevant social capital, makes a person more exposed to clientelist appeals, as well as possibly contributes to stronger views on certain policy issues. Also, political interest and to some extent politically relevant social capital are very proximate to our outcome measure political participation, and thus presumably driven by a similar set of explanatory factors.

indicator included to capture restricted time availability – if the respondent is employed full time – is positively related to both voting and attending community meetings. Compared to people who are not in full-time employment – and conditional on education, information and economic standing – citizens working full-time are around 4 percentage points more likely to vote and 5 percentage points more likely to attend community meetings. Viewing time as a resource relevant for political participation, and believing that people in full-time employment are comparatively restricted in terms of the time they have to spend on political activity, this is surprising. Likewise, education is not significantly related to attending community meetings, and actually negatively related to voting; compared to people with no schooling, a person with secondary or post-secondary education is 6-7 percentage points less likely to vote. Believing that human capital is required for citizens to understand the election process – who the candidates are, what they stand for etc. – and that it facilitates active participation in community meetings, this is surprising.

Table 1: Political participation in Africa: The role of resources (probit marginal effects)

Dependent variable is:	(1) Voting	(2) Voting	(3) Voting	(4) Meeting	(5) Meeting	(6) Meeting
Resources						
Poverty	0.009**	0.004	0.004	0.024***	0.017***	0.017***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Full-time	0.036***	0.014	0.013	0.049***	0.006	0.004
	(0.008)	(0.009)	(0.008)	(0.011)	(0.012)	(0.012)
Education_Primary	-0.014	0.013	0.007	0.007	0.030***	0.021*
	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)
Education_Secondary	-0.059***	0.012	0.001	-0.026	0.050***	0.036**
	(0.016)	(0.014)	(0.014)	(0.016)	(0.016)	(0.016)
Education_Post-sec.	-0.070***	-0.001	-0.021	0.014	0.068***	0.043**
	(0.020)	(0.017)	(0.017)	(0.019)	(0.018)	(0.018)
Information	0.012***	0.016***	0.008*	0.026***	0.033***	0.020***
	(0.005)	(0.005)	(0.005)	(0.007)	(0.007)	(0.007)
Socio-demographic groups						
Rural		0.045***	0.042***		0.108***	0.104***
		(0.010)	(0.010)		(0.011)	(0.010)
Female		-0.022***	-0.013*		-0.075***	-0.060***
		(0.007)	(0.007)		(0.008)	(0.008)
Age		0.020***	0.019***		0.021***	0.021***
		(0.001)	(0.001)		(0.001)	(0.001)
Age squared		-0.0002***	-0.0002***		-0.0002***	-0.0002***
		(0.0000)	(0.0000)		(0.0000)	(0.0000)
Add. individual controls	no	no	yes	no	no	yes
Region dummies	yes	yes	yes	yes	yes	yes
Observations	23070	23070	23070	25893	25893	25893

Notes: Standard errors (clustered by the 246 regions) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights. The within country weights adjust the samples to be nationally representative with respect to gender, region, urban-rural distribution etc. The across country weights adjust all country samples to the same size (N=1200). For a description of the additional individual controls see Table A2.

Only information is significantly related to participation in the expected direction. On average, a one standard deviation higher score in the information index implies a roughly 1 percentage point higher probability to vote and a 3 percentage point higher probability to attend community meetings. Hence, at this stage, only information comes across as a resource potentially relevant for meeting the costs of political participation

These results should not necessarily be taken at face value, however; to evaluate the explanatory power of resources as a means of meeting the costs of participating we need to control for systematic variation in the costs and benefits of participating. As discussed in Section 3.2, the sub-national region dummies included in all estimations should help control for contextual factors that could create regional variation in the costs and benefits of political participation. However, there is still the possibility that our resource variables pick up omitted individual level factors affecting the decision to participate politically.

Table 2: Group means in terms of political participation and resource endowments

	Rural	Urban	Male	Female	Age<30	Age 30-49	Age >49	Full sample
Voting	0.792	0.736	0.792	0.752	0.656	0.816	0.852	0.772
Meeting	0.721	0.547	0.703	0.610	0.556	0.709	0.751	0.657
Education*	0.345	0.643	0.502	0.407	0.599	0.423	0.225	0.454
Information	-0.346	0.535	0.107	-0.154	0.082	-0.024	-0.239	-0.023
Poverty	0.082	-0.153	-0.020	0.012	-0.101	0.033	0.115	-0.004
Full-time	0.141	0.234	0.214	0.135	0.136	0.229	0.138	0.175

Notes: Observations are weighted using combined within×across weights (see the description in Table 1). *Refers to having some secondary school or more education. The group difference in means are statistically significant at the 1% level, except for male vs. female poverty where the difference is significant at the 5% level (for the age categories, the significance test is based on an F-test of all parameters being equal to zero).

We know that political participation tends to vary across socio-demographic groups. A quick look at the group means in Table 2 reveals that in line with previous studies based on smaller African samples, in our 20 sample countries women tend to be less politically active than men, rural citizens participate to a greater extent than their urban counterparts, and older people participate more than younger individuals. Moreover, the groups vary in terms of resource endowments; with the exception of our proxy for time availability, women, older citizens and people living in rural areas tend to be more resource poor than their respective comparison groups. Given our priors that the concerned resources are relevant for meeting the costs of participating politically, one would thus expect that these groups participate comparatively little. For women this is true. For older people and citizens living in rural areas, on the other hand, we see the opposite – i.e. relatively high participation rates. Hence, while accounting for resource differentials could presumably help explain the lower participation

among women compared to men, the key to explaining the relatively high participation rates among older people and citizens living in rural areas seemingly lies outside the resource perspective. Introducing the socio-demographic group affiliation variables into the regressions (Table 1, Regressions 2 and 5), the participatory inequalities remain.[12] Apparently, factors other than resource differentials contribute to the observed socio-demographic variation in participation.

Returning to the resource estimates, looking at Regressions 2 and 5 it appears that some of the unexpected results from the previous estimations were driven by relatively high participation rates among comparatively resource poor socio-demographic groups (older citizens and citizens living in rural areas). Education, poverty and working full-time are no longer significantly related – in the unexpected direction – to voting. Similarly, working full-time is no longer significantly related – again in the unexpected direction – to attending community meetings. On the other hand, we can still observe the expected positive association between information exposure and political participation, and in addition we now actually see the expected positive association between education and community meeting attendance. Compared to people with no schooling, a person with primary school education is 3 percentage points more likely to attend community meetings. For individuals with secondary or post-secondary education the difference is about twice that (the difference in magnitude being statistically significant). Yet again, the unexpected result that community meeting attendance is higher among the poor remains. And in the cases where the statistically significant relationships in the unexpected direction are no longer present, there are still no signs of the *expected* associations that would suggest that the concerned resources were relevant for meeting the costs of participation.

To sum up the results so far, it seems the resource perspective does a surprisingly poor job at explaining African political participation. If a resource is relevant for meeting the costs of participation, more of that resource should mean more participation. If anything, however, the estimations suggest that having *little* time (i.e. working full-time) and *little* money (i.e. being poorer) is associated with *more* participation. Hence, rather than constraining participation, it seems working full-time and being poor is related to motivational factors that stimulate participation. Education and information, on the other hand, come out as potentially relevant for meeting the costs of participation. However, education seems to matter only for

[12] In an alternative setup (not presented) I start by including the socio-demographic group affiliation variables alone, and introduce the resource variables in a second set of estimations. Controlling for the individual resource base the observed gender gap shrinks somewhat, the age effects remain stable, and the unexplained rural-urban participation divide becomes even wider.

taking part in community meetings, and whereas information appears to matter for both voting and attending community meetings it has relatively modest effects.

Are the resource estimates driven by omitted factors related to the individual resource base, as opposed to what we are trying to measure, i.e. the importance of the respective resources for meeting the costs of participating? When (in line with the discussion in Section 3.2) including controls for politically relevant social capital, political interest, clientelism and distributional policy preferences[13] (Regressions 3 and 6), the resource estimates remain qualitatively the same. Time and money still do not come out as a factors constraining political participation; poverty is still uncorrelated with voting and positively related to attending community meetings, and there are still no signs of a negative association between political participation and being full-time employed. Hence, the unexpected positive relation between poverty and community meeting attendance remains stable in the face of controls for distributional policy preferences and attitudes towards clientelism. And similarly, controlling for people in full-time employment having access to more politically relevant social capital or being more civic-minded – factors which could counteract the supposed negative effect of having little time – working full-time still does not stand out as a factor constraining political participation. The positive effects of education (on attending community meetings) and information (on both voting and attending community meetings) remain, but drop in size and become somewhat weaker in terms of statistical significance. Hence, accounting for higher levels of politically relevant social capital among the well-educated and a tendency of civic minded individuals to seek information, resources in terms of human capital and information still seem to bear some relevance for meeting the costs of participation.

The fact that the results remain qualitatively the same in the face of controls so closely related to political participation (e.g. political interest), seems to indicate that they are quite stable. Still, however, our explanatory framework suggests that if a resource is relevant for meeting the costs of participation, more of that resource should mean more participation. Finding the opposite – as in the case of the observed greater community meeting attendance among the poor – indicates that some other factor, not considered here, is at play. What we can say, is that when controlling for potentially confounding factors, the results still suggest that the concerned resources are not important enough to dominate these unknown factors.

[13] Due to the endogeneity concerns discussed in Section 3.2, I view these indicators merely as proxies for omitted variables and do not interpret their estimates.

4.2 Further testing

The results so far indicate that the resource perspective has weak explanatory power in our African sample. This section explores the robustness of our findings.

4.2.1 Individual country estimations

First of all, and as discussed in Section 3, macro level determinants of participation – such as countries' historical experiences, institutional arrangements and economic conditions – are likely to affect not only the average level of political participation in a country, but also the association between our focus micro level factors and participation. To evaluate the extent of country variation in the resource estimates, I run separate regressions (equivalent to Regressions 2 and 5 in Table 1) for the 20 country sub-samples (see Table 3).

The pooled sample estimations offer no support for the view that time and money are resources relevant for meeting the costs of participating. If anything, they suggest that the poor and those with little time on their hands are more likely to participate politically. This is mirrored in the individual country sub-samples. Poverty is significantly related to voting in only 5 countries (see Table 3, Panel A), and the association tends to be weakly statistically significant and of varying sign. In line with the pooled sample estimate, community meeting attendance is more common among the poor in 7 countries (see Table 3, Panel B). Only in one country (Lesotho) are there signs of the expected negative association (weakly statistically significant) between poverty and community meeting attendance. Similarly, in the relatively few countries where we observe a statistically significant association between political participation and working full-time (5 for voting and 7 for attending community meetings) it is most often positive. For voting, the expected negative association can be observed in only 1 country (Zambia), and for attending community meetings in 2 (Cape Verde and Lesotho).

Turning to education and information, the pooled sample estimations suggest that they have some relevance for meeting the costs of participation. Looking at the individual country estimations, the pooled sample pattern – suggesting that community meeting attendance increases with education – can be observed in 9 countries. The suggested effects are sizeable; in Cape Verde, Kenya and Zimbabwe people with secondary school education are over 20 percentage points more likely to attend community meetings than those with no education.

Table 3: Estimations by country (probit marginal effects)

Panel A: Dependent variable is voting

	Benin	Botsw.	Burk.F.	CapeV.	Ghana	Kenya	Lesotho	Liberia	Madag.	Malawi	Mali	Mozam.	Namibia	Nigeria	Senegal	S.Afr.	Tanzania	Uganda	Zambia	Zimbab.
Resources																				
Poverty	0.01	-0.03	0.01	0.02*	-0.01	0.04**	0.01	-0.00	-0.05**	-0.01	0.01	0.02	-0.03**	0.00	0.02	-0.01	-0.01	-0.01	0.03	0.03*
	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Full-time	-0.03	0.08**	0.01	0.01	0.02	0.02	0.00	-0.02	0.01	-0.00	-0.06	0.07*	0.04	0.02	0.10***	-0.01	-0.00	0.07**	-0.12**	0.00
	(0.04)	(0.04)	(0.05)	(0.03)	(0.02)	(0.03)	(0.06)	(0.04)	(0.04)	(0.05)	(0.07)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.06)	(0.05)
Ed_Prim.	-0.00	0.06	-0.06*	0.04	-0.08**	0.02	0.04	0.03	0.06	-0.06	-0.01	-0.06	0.18***	0.04	0.05	-0.04	0.06	0.04	0.03	0.09
	(0.02)	(0.05)	(0.04)	(0.04)	(0.03)	(0.05)	(0.06)	(0.03)	(0.06)	(0.05)	(0.03)	(0.07)	(0.05)	(0.06)	(0.03)	(0.08)	(0.05)	(0.04)	(0.07)	(0.08)
Ed_Sec.	-0.01	0.05	-0.05	0.04	-0.09**	0.05	-0.06	0.09**	0.03	-0.14**	0.07	-0.04	0.20***	0.05	0.08**	-0.04	0.00	0.04	0.08	0.16*
	(0.02)	(0.07)	(0.05)	(0.04)	(0.04)	(0.05)	(0.07)	(0.03)	(0.07)	(0.07)	(0.06)	(0.08)	(0.07)	(0.06)	(0.04)	(0.07)	(0.05)	(0.04)	(0.07)	(0.09)
Ed_Post.	0.01	-0.00	0.05	0.03	-0.07	0.11***	0.09	0.01	-0.15	-0.13	0.09**	-0.21	0.12**	0.01	0.05	-0.00	-0.12	0.05	0.01	0.13
	(0.03)	(0.08)	(0.07)	(0.05)	(0.07)	(0.04)	(0.09)	(0.05)	(0.11)	(0.11)	(0.04)	(0.15)	(0.05)	(0.06)	(0.05)	(0.08)	(0.13)	(0.05)	(0.09)	(0.09)
Info.	0.01	-0.05**	0.01	0.03**	0.02	0.02	0.03	0.02	-0.01	-0.00	0.06***	-0.02	0.00	0.02	0.01	0.03*	0.03**	-0.02	0.04*	0.06***
	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Soc.dem.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Reg.dum.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	1082	1000	1002	1057	919	987	1079	1009	1227	933	1120	731	927	1901	1065	1950	859	2146	1009	1067

Panel B: Dependent variable is meeting

	Benin	Botsw.	Burk.F.	CapeV.	Ghana	Kenya	Lesotho	Liberia	Madag.	Malawi	Mali	Mozam.	Namibia	Nigeria	Senegal	S.Afr.	Tanzania	Uganda	Zambia	Zimbab.
Resources																				
Poverty	0.07***	0.06***	0.01	0.02	0.03	-0.01	-0.02*	0.00	0.01	-0.02	0.04**	0.03	-0.02	0.03**	0.07***	0.05***	-0.00	-0.01	0.02	0.03*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Full-time	0.11**	-0.05	-0.02	-0.06*	0.05	0.04	-0.15***	-0.00	0.03*	-0.05	-0.12	0.10**	-0.03	0.11***	0.04	-0.04	0.06*	-0.00	-0.00	-0.02
	(0.05)	(0.04)	(0.06)	(0.04)	(0.04)	(0.04)	(0.06)	(0.05)	(0.02)	(0.05)	(0.08)	(0.05)	(0.04)	(0.03)	(0.05)	(0.03)	(0.03)	(0.04)	(0.05)	(0.05)
Ed_Prim.	-0.01	0.07	0.08**	0.08	-0.08	0.16**	0.01	0.05	0.04	0.04	0.01	0.03	0.04	0.12**	-0.02	-0.13	0.14**	0.06	-0.12	0.04
	(0.04)	(0.05)	(0.04)	(0.06)	(0.05)	(0.07)	(0.05)	(0.04)	(0.03)	(0.04)	(0.04)	(0.08)	(0.09)	(0.06)	(0.04)	(0.08)	(0.06)	(0.04)	(0.08)	(0.07)
Ed_Sec.	-0.05	0.12**	-0.02	0.23***	-0.11*	0.20***	-0.02	0.07*	0.01	0.05	0.10	0.04	0.08	0.14**	0.01	-0.13	0.17***	0.09**	-0.09	0.22***
	(0.05)	(0.06)	(0.05)	(0.07)	(0.06)	(0.08)	(0.06)	(0.04)	(0.03)	(0.04)	(0.07)	(0.08)	(0.09)	(0.06)	(0.05)	(0.09)	(0.04)	(0.04)	(0.08)	(0.08)
Ed_Post.	-0.05	0.13**	0.06	0.30***	-0.12	0.22***	-0.04	0.14***	0.03	0.08	0.00	-0.04	0.14	0.12*	0.09	-0.07	-0.05	0.07	-0.08	0.16**
	(0.10)	(0.05)	(0.08)	(0.09)	(0.09)	(0.06)	(0.08)	(0.04)	(0.03)	(0.06)	(0.08)	(0.12)	(0.10)	(0.06)	(0.07)	(0.09)	(0.13)	(0.05)	(0.10)	(0.07)
Info.	0.04*	0.05***	0.03	0.03*	0.05**	0.05**	0.01	0.09***	0.01	0.00	0.08***	0.01	-0.01	0.02	0.05*	0.04**	0.00	0.06***	0.06***	-0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Soc.dem.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Reg.dum.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	1147	1156	1068	1184	1092	1046	1152	1148	1283	1108	1184	1041	1188	2069	1126	2242	1037	2355	1126	1141

Notes: Robust standard errors in parentheses; *significant at 10%, **at 5%, ***at 1%; Observations are weighted using within country weights adjusting the sample to be nationally representative with respect to region, urban-rural distribution etc.; 'Soc. dem.' refers to the socio-demographic group affiliations and 'Reg. dum.' to the 246 region dummies (see Table A2).

At the same time, however, in 10 countries none of the education variables have statistically significant effects, and in Ghana, there is actually a weakly statistically significant negative association between secondary education and participating in community meetings. With respect to voting, the pooled sample results suggest that people with no schooling vote to the same extent as people with primary, secondary or post-secondary education. Looking at the individual country estimations, education is positively related to voting in 6 countries – however, only in Namibia does more than one of the educational dummies come out positive and significant, in 11 countries there is no statistically significant association, and in Ghana, Malawi and Burkina Faso there are actually signs of a negative relation between education and voting. Turning to information, finally, the pooled sample pattern – suggesting a positive association between information exposure and political participation – can be observed in 6 countries for voting and 11 countries for attending community meetings. Again, however, a considerable number of countries – particularly in the case of voting – do not display a statistically significant relation between political participation and the resource variable, and in Botswana information exposure is actually negatively related to voting.

From looking at the individual country estimations, we can conclude that there is still next to none support for the view that time and money are resources relevant for meeting the costs of participating, and that the association between education and information on the one hand and political participation on the other is far from uniform across countries.

4.2.2 Alternative resource measures

Are the results contingent on the choice of resource indicators? The finding that the poor are, if anything, more likely to participate was stable to the inclusion of regional and individual level controls, but what if we use an alternative variable to capture economic standing? The poverty index used in the benchmark setup has the advantage that it contains a lot of information. On the other hand, it is not the most clear-cut measure in terms of interpretation, and using it imposes linearity on the association between economic standing and participation. This association is not necessarily uniform over the income distribution; comparing the political participation of the poor and the non-poor might not generate the same conclusions as a comparison of the non-poor and the affluent.

To approach this issue, in an alternative set of estimations (Table A5, Regressions 1 and 5) I use dummy variables distinguishing between the non-poor (45 percent of the

respondents), the somewhat poor (38 percent), and the very poor (17 percent).[14] The basic conclusion – that the poor, if anything, participate more than the better off – remains the same. In fact, according to these estimations, the poor are more likely both to vote and to attend community meetings. For both activities, the statistically significant difference lies between the non-poor and the poor (i.e. there is no statistically significant difference between the somewhat poor and the very poor), with the poor being around 2-3 percentage points more likely to participate.

Still, as much as 45 percent of the respondents fall in the non-poor category, and there might be considerable variation within the groups. As noted, there is no income variable in the data. However, there is a question asking the respondent to describe their own present living conditions. Admittedly, this question need not necessarily be interpreted in monetary terms. However, considering that it follows right after a question asking what the respondent thinks of the economic conditions in the country, it seems likely that it is. Creating five dummy variables, corresponding to the response categories 'very bad' (20 percent of the respondents), 'fairly bad' (29 percent), 'neither good nor bad' (23 percent), 'fairly good' (24 percent) and 'very good' (4 percent), we get a measure that is more detailed than the above poverty dummies, while still allowing for non-linearities in the association between economic standing and participation. According to a set of estimations utilising these variables (Table A5, Regressions 2 and 6), there is no statistically significant difference between the five groups in terms of voting. For community meeting attendance, the only (weakly) statistically significant difference lies between those who rate their living conditions as 'fairly bad' and those who answer 'neither good nor bad', with the former being 2 percentage points more likely to participate. Hence, although there are now less signs of the unexpected higher participation among the poor, the results still follow the pattern that, if anything, the poor tend to participate more.

Information, next, was the only of our resource variables that seemed to matter for both voting and attending community meetings. The information proxy used in the benchmark setup – an index covering the extent to which the respondent gets news from a variety of sources – has the advantage that it contains a lot of information. Again, however, it is not the most clear-cut measure in terms of interpretation, and using it imposes linearity on the association between information and political participation. If instead of using the information

[14] Based on the question 'Over the past year, how often, if ever, have you or anyone in your family gone without enough food to eat?'. I classify the respondent as non-poor if the answer is 'never', as somewhat poor if the answer is 'once or twice' or 'several times', and as very poor if the answer is 'many times' or 'always'.

index we focus on the most common information source – radio – we get similar results, with more straightforward interpretations (Table A5, Regressions 3 and 7). Those who report to own a radio are 4 percentage points more likely to vote and 6 percentage points more likely to attend community meetings. Controlling for political interest and politically relevant social capital (not presented) does not change this pattern. Similarly, if instead of the information index we use dummy variables indicating how often the respondent gets news from a radio - seldom, medium of often[15] - (Table A5, Regressions 4 and 8) thereby allowing for non-linearities in the association between information and participation, the basic conclusion remains the same. However, whereas in the voting estimation those who often get radio news stand out by participating more than others (the difference being around 3 percentage points), in the community meeting estimation it is instead those who seldom get news from the radio who stand out by participating less (9 percentage points less than those who report to often get radio news). Again, controlling for political interest and politically relevant social capital does not change this pattern.

Our time indicator, finally, did not stand out as relevant for participation. Focusing on whether a person has full-time paid employment the variable is meant to capture time availability. On the other hand, it does not capture self-employment (e.g. on the household farm) or work within the household. Arguably, these activities – although time consuming – involve a greater flexibility of time use, allowing for a break to go to the polls or to visit the community meeting hall. The ideal, however, would be to have a measure of reported time use on different activities, including wage work, as well as self-employment and household work. Round 2 of the Afrobarometer – although lacking a number of our other focus indicators, most notably the question on voting – actually has this information. Using this data, it turns out that reporting to spend a lot of time working – within as well as outside the household – is positively correlated with attending community meetings (the results are available upon request). That is, busier people participate more, meaning that again, time does not stand out as a major constraint on participation.

[15] 'Seldom' refers to 'never' or 'less than once a month' (16 percent of the respondents), 'medium' to 'a few times a month' (7 percent of the respondents), and 'often' to 'a few times a week' or 'every day' (77 percent of the respondents).

4.2.3 The dependent variables

Turning to our dependent variables, the comparatively great number of missing observations on the voting indicator (see Table A3) is due to excluding (the 2,916) respondents who were not of voting age at the time of the last national election. Could the difference in effective sample be what generates variation in resource estimates between the voting and community meeting estimations? As it appears, no; restricting the sample to observations that have no missing values on either indicator (Table A6, Regressions 1-2) the results remain the same.

Another potential concern with the voting indicator, although applying to a small number of observations (less than 0.5% of the effective sample), could be that it excludes those who claim not to remember whether they voted. Presumably, this response could serve as an escape from having to admit that you did not vote, meaning that non-voters would be over-represented among the excluded observations. In an alternative voting regression (Table A6, Regression 3) I therefore use a voting indicator which assumes that these respondents in fact did not vote (i.e. instead of being coded as missing values, they are given zeros on the voting dummy). The results remain unchanged.

To further evaluate the sensitivity of the results to respondents over-reporting voting, in an alternative estimation (Table A6, Regression 4) I restrict the sample to include only respondents from the five countries with the smallest discrepancy between self-reported voting share and official turnout (Cape Verde, Ghana, Liberia, Namibia and Zambia).[16] Reassuringly, the results stand. Similarly, if restricting the sample to only include observations where the interviewer judges the respondent as honest[17] (Table A6, Regression 5) does not change the basic results.

Another concern would be if people's voting behaviour (or tendency to over-report voting) is affected by restricted civil liberties or democratic practices in their country of residence. Reasonably, an individual could have plenty of resources in terms of time, money, information and human capital, but still abstain from voting due to voter intimidation or as a result of perceiving the election as unfair (see e.g. Lindberg, 2004; and Collier and Vicente, 2009). To check if this is why we find that the resource perspective has relatively weak

[16] In cases where presidential and parliamentary elections are held concurrently and their official turnout rates differ, the higher official turnout rate of the two is used in the calculation (considering that it seems more likely that the survey respondent refers to the more popular and widely known of the two elections).

[17] Based on the question: 'What was the respondent's attitude towards you during the interview? Was he/she: honest, in between, or misleading?' with 79 percent of the respondents being judged as 'honest', 19 as 'in between' and 2 as 'misleading'. Being a subjective judgement on part of the interviewer we cannot assume that this assessment is true and fair. Nevertheless, the question is useful as a rough check of data reliability.

explanatory power, in two alternative voting regressions (Table A6, Regressions 6-7) I restrict the sample to include only countries judged as 'free' by Freedom House, and countries with Polity IV democracy scores higher than five (see Table A1). The basic results stand.[18]

Our second dependent variable – community meeting attendance – is meant to shed light on political participation taking place between elections. Looking at our data, attending community meetings constitutes an important form of inter-electoral participation. What could be a potential concern, however, is that we have no information on the issues addressed in the meetings referred to or on the extent to which our respondents take active part in the discussions. With respect to the former, considering that the survey question on community meeting attendance is part of a block of queries asking about 'actions that people take as citizens' it seems likely that attending community meetings is interpreted as a form of civic engagement, rather than as taking part in, say, a social gathering. Nevertheless, it is not evident that the meetings referred to always deal with issues of a clearly political nature. With regard to the latter, simply showing up at a meeting to some extent involves a decision to take part. Still, though, we cannot be sure whether respondents who report to have attended community meetings took active part in the same or attended passively (see the discussion in Bratton, 2008). If attending community meetings is a passive form of political participation, maybe this is why we find the individual resource endowments to be of limited relevance?

To check if the findings are relevant for different forms of inter-electoral political participation, and not just for attending community meetings, I construct a composite variable based on the first principal component of four binary indicators revealing if during the past year the respondent has 1) attended a community meeting, 2) joined others to raise an issue, 3) taken part in a demonstration or protest march, and 4) contacted a local government representative. Using this indicator as dependent variable in an OLS estimation (Table A6, Regression 8) the results remain qualitatively the same. As it seems, the findings obtained when focusing on community meeting attendance could be relevant for other forms of inter-electoral participation as well.

5 Conclusions

Motivated by the importance of broad-based citizen engagement for equitable democratic development and by the sparse existing evidence on patterns of political participation in the

[18] In regression 7, working full-time is again positively related to voting.

emerging African democracies, this study explored the role of individual resources in explaining African political participation. If citizens in developing countries with young democratic systems face comparatively high participation costs and have a less developed individual resource base compared to citizens in more established democracies, this should mean that the resource constraints relevant for political participation more often are binding. Against this background, our starting point was that the influential resource perspective, which stresses that political participation is costly and requires inputs in terms of individual resources, should be particularly relevant in the African setting. The empirical findings indicate otherwise, however.

Empirical analysis of a unique data material, covering political and economic attitudes and behaviour of over 27 000 respondents across 20 African countries, suggest surprisingly weak explanatory power of the resource perspective. The estimations offer no support for the view that time and money are resources relevant for meeting the costs of participating. If anything, they suggest that poorer citizens and people with little time on their hands are more likely to participate. And while education and information seem to bear some relevance for meeting the costs of participation, education matters only for attending community meetings, the information effects are relatively modest, and the individual country estimations reveal considerable country heterogeneity in their estimates.

The main results are robust over a wide range of alternative specifications. They remain intact to regional controls included to account for contextual variation in the costs and benefits of political participation, and to individual controls included as proxies for omitted variables related to the person's resource base as well as to the decision to take part. Moreover, they withstand the use of alternative resource indicators, using an alternative measure for inter-electoral participation, and restricting the sample to only include respondents from countries with a small discrepancy between self-reported and official turnout, to respondents judged as honest, and to respondents from countries with relatively well-functioning democracies. Breaking down the pooled sample into the individual country sub-samples adds to the picture that the resource perspective has weak explanatory power in the emerging African democracies. The expected associations between political participation on the one hand and education and information on the other are far from uniform across countries, and while the money and time estimates also display significant country heterogeneity, there is still next to none support for these resources being relevant for meeting the costs of participating.

So what can we take from this? Is the surprisingly weak explanatory power of the resource perspective good news? In part, clearly yes; the result that poorer and less educated individuals vote no less than richer and more educated people suggests broad-based political participation, which should be a prerequisite for a well-functioning democracy. Finding the opposite – i.e. strong participatory inequalities originating in unequal resource endowments – would have suggested a scenario where higher participation among the resource rich might reinforce existing economic inequalities.

At the same time, however, finding higher (as opposed to equal) participation rates among the poor is arguably not desirable. Participatory inequalities – in any shape or form – should be problematic since they imply that those who participate politically are not representative of the public. Also, if the relatively resource poor participate to a greater extent than the comparatively resource rich, this naturally raises the question why. Focusing on the relevance of resources for meeting the costs of participating, the present paper explores factors enabling participation rather than the motivations behind the choice to participate. Finding comparatively high participation rates among the relatively resource poor – who should supposedly be particularly constrained in their decision of whether to take part – indicates that some other factor, not considered here, is at play. If high participation among resource poor citizens is a sign of the often suggested importance of personalised relationships and clientelist appeals in African politics, this would not come across as good news. Neither would a situation where the poor participate politically simply because their opportunity cost of doing so is very low, nor a scenario where the resource rich do not participate to the same extent because they are able to influence outcomes via alternative – corrupt – means. To be able to evaluate and tackle systematic participatory inequalities, such as those we observed across socio-demographic groups, we need to understand the basis of existing disparities. While the provision of information and education might stimulate political engagement, and presumably help citizens make more informed choices, the results of the present paper seems to suggest that the key to understanding variation in African political participation lies outside the resource perspective. We need further knowledge about the nature of, and the motivations behind, political participation in Africa.

References

African Elections Database (2010), available at: http://africanelections.tripod.com/.

Afrobarometer Network (2007) "Round 4 survey manual", Compiled by the Afrobarometer Network February 2007.

Bartels, L. M. (2005) "Economic inequality and political representation", mimeo, Princeton University.

Boulding, C. and B. Wampler (2010) "Voice, votes, and resources: Evaluating the effect of participatory democracy on well-being", *World Development*, 38(1), pp. 125-135.

Bratton, M. (1999) "Political participation in a new democracy: Institutional considerations from Zambia", *Comparative Political Studies*, 32(5), pp. 549-588.

Bratton, M. (2008) "Poor people and democratic citizenship in Africa", in Krishna, A. (ed.) *Poverty, participation and democracy: A global perspective*, New York: Cambridge University Press.

Bratton, M., Chu, Y. and M. Lagos (2010) "Who votes? Implications for new democracies", *Taiwan Journal of Democracy*, 6(1), pp. 1-30.

Bratton, M. and C. Logan (2006) "The political gender gap in Africa: Similar attitudes, different behaviours", Afrobarometer Working Paper no. 58.

Bratton, M., Mattes. R. and E. Gyimah-Boadi (2005) *Public opinion, democracy, and market reform in Africa*, Cambridge: Cambridge University Press. '

Bratton, M. and N. Van de Walle (1997) *Democratic experiments in Africa: Regime transitions in comparative perspective*, Cambridge: Cambridge University Press.

Brady, H. E., Verba, S. and K. Lehman Schlozman (1995) "Beyond Ses: A resource model of political participation", *The American Political Science Review*, 89(2), pp. 271-294.

Collier and Vicente (2009) "Votes and violence: Evidence from a field experiment in Nigeria", CSAE WPS / 2008-16.

Dahl, R. (1961) *Who governs?*, New Haven and London: Yale University press.

Fornos, C. A., Power, T. J. and J. C. Garand (2004) "Explaining voter turnout in Latin America, 1980-2000", *Comparative Political Studies*, 37 (8), pp. 909-940.

Freedom House (2010) 'Freedom in the World data 2005', available (09-07-2010) at: http://www.freedomhouse.org/template.cfm?page=351&ana_page=292&year=2005.

Gilens, M. (2005) "Inequality and democratic responsiveness", *Public Opinion Quarterly*, 69(5), pp. 778-796.

Griffin, J. D. and B. Newman (2005) "Are voters better represented?", *The Journal of Politics*, 67(4), pp. 1206-1227.

International Institute for Democracy and Electoral Assistance (2010), available (21-04-2010) at: http://www.idea.int/vt/.

Jackman, R. W (1987) "Political institutions and voter turnout in the industrialised democracies", *American Political Science Review*, 81(2), pp. 405-424.

Knack, S. and M. E. Kropf (1998) "For shame! The effect of community cooperative context on the probability of voting", *Political Psychology*, 19(3), pp. 585-599.

Kostadinova, T. (2003) "Voter turnout dynamics in post-communist Europe", *European Journal of Political Research*, 42(6), pp. 741-759.

Krishna, A. (2002) "Enhancing political participation in democracies: What is the role of social capital?", *Comparative Political Studies*, 35(4), pp. 437-460.

Kuenzi, M. And G. Lambright (2005) "Who votes in Africa? An examination of electoral turnout in 10 African countries", Afrobarometer Working Paper no. 51.

Kuenzi, M. and G. Lambright (2007) "Voter turnout in Africa's multiparty regimes", *Comparative Political Studies*, 40(6), pp. 665-690.

La Due Lake, R. and R. Huckfeldt (1998) "Social capital, social networks, and political participation", *Political Psychology*, 19(3), pp. 567-584.

Lijphart, A. (1997) "Unequal participation: Democracy's unresolved dilemma", *The American Political Science Review*, 91(1), pp. 1-14.

Lindberg, S. I. (2004) "The democratic qualities of competitive elections: participation, competition and legitimacy in Africa", *Commonwealth & Comparative Politics*, 42(1), pp. 61-105.

Lindberg, S. I. (2006) *Democracy and elections in Africa*, Baltimore: The Johns Hopkins University Press.

Lindberg, S. I. (2006b) "The surprising significance of African elections", *Journal of Democracy*, 17(1), pp. 139-151.

Lindberg, S. I. and M. K. C. Morrison (2008) "Are African voters really ethnic or clientelistic? Survey evidence from Ghana", *Political Science Quarterly*, 123(1), pp. 95-122.

Marshall, M. G. and K. Jaggers (2002) "Polity IV project: Political regime characteristics and transitions 1800-2002. Dataset Users' Manual", Integrated Network for Societal Conflict Research (INSCR) and Program Center for International Development and Conflict Management (CIDCM), University of Maryland.

Norris, P. (2002) *Democratic Phoenix: Reinventing Political Activism*, Cambridge, UK: Cambridge University Press.
Polity IV project (2010) "Polity IV project: Political regime characteristics and transitions 1800-2002", available (09-07-2010) at: http://www.systemicpeace.org/inscr/inscr.htm.
Posner, D. N. and D. J. Simon (2002) "Economic conditions and incumbent support in Africa's new democracies: Evidence from Zambia", *Comparative Political Studies*, 35(3), pp. 313-338.
Savoia, A., Easaw, J. and A. McKay (2010) "Inequality, democracy, and institutions: A critical review of recent research", *World Development*, 38(2), pp. 142-154.
Solt, F. (2008) "Economic inequality and democratic political engagement", *American Journal of Political Science*, 52(1), pp. 48-60.
Verba, S. and N. H. Nie (1972) *Participation in America*, New York: Harper & Row.
Verba, S., Nie, N. H. and J-O. Kim (1978) *Participation and political equality: A seven nation comparison*, Cambridge: Cambridge University Press.
Verba, S., Schlozman, K. L. and Brady (1995) *Voice and equality: Civic voluntarism in American politics*, Cambridge, MA: Harvard University Press.
Vicente, P. (2008) "Is vote buying effective? Evidence from a field experiment in West Africa".
Wantchekon, L. (2003) "Clientelism and voting behaviour: Evidence from a field experiment in Benin", *World Politics*, 55(3), pp. 399-422.
Wolfinger R. E. and S. J. Rosenstone (1980) *Who votes?* New Haven: Yale University Press.

Appendix

Table A1: Post-independence democratic development in sample countries

Country	Coloniser (main)	Post-independence democratic development[1]	First multi-party election[2]	Polity IV score[3]	Freedom house rating[4]
Benin	France	1960-91 Military rule, one party rule, and restricted democratic practices. 1991- Democracy	1991	7	Free (2)
Botswana	UK	1966- Democracy	1965	8	Free (2)
Burkina Faso	France	1960-78 Military rule, one party rule, and restricted democratic practices. 1978-80 Democracy. 1980-2002 Military regime / restricted democratic practice. 2002- Emerging democracy.	1978	2	Partly free (4.5)
Cape Verde	Portugal	1975-90 One party rule.1991-Democracy	1991	n.a.	Free (1)
Ghana	UK	1957-92 Periods of democracy, military rule, one party rule, and restricted democratic practices. 1992-Democracy / Emerging Democracy	1956	8	Free (2)
Kenya	UK	1963-2002 Emerging democracy, one party rule, restricted democratic practices. 2002- Democracy	1992	7	Partly free (3)
Lesotho	UK	1966-70 Democracy, 1970-93 Military rule and restricted democratic practices, 1993-2002 Democracy/Emerging democracy. 2002- democracy	1965	8	Free (2.5)
Liberia	US	1847-1984 Emerging democracy, one party, military rule. 1984-97 Restricted democratic practice / transitional governments. 1997-2001 Emerging democracy. 2001-06 Restricted democratic practice / transitional governments. 2006- Democracy.	2005	7	Partly free (4.5)
Madagascar	France	1960-89 Periods of military rule, one party rule, and restricted democratic practices. 1989-93 Multiparty transition, 1993-Democracy	1989	7	Partly free (3)
Malawi	UK	1964-93 One party rule, 1994- democracy	1994	6	Partly free (4)
Mali	France	1960-91 Military and one party rule. 1992- Democracy	1992	7	Free (2)
Mozambique	Portugal	1975-90 One party rule,1990-94 Multiparty transition, 1994- Democracy	1994	6	Partly free (3.5)
Namibia	S. Africa	1990- Democracy	1989	6	Partly free (2.5)
Nigeria	UK	1960-99 Democracy, military rule, restricted democratic practices. 1999- Dem./Emerging democracy-	1979	4	Partly free (4)
Senegal	France	1960-2000 Periods of emerging democracy, one party rule, and restricted democratic practices. 2000-Democracy.	1978	8	Free (2.5)
South Africa	UK	1910-94 Restricted Democratic Practice (white rule), 1990-94 Transition period; 1994- Democracy	1994	9	Free (1.5)
Tanzania	UK	1964-92 One Party rule, 1992-1995 Multiparty transition, 1995- Emerging Democracy	2000	2	Partly Free (3.5)
Uganda	UK	1962-66 Democracy, 1966-96 Periods of military rule, one party rule, and restricted democratic practices, 1996- Restricted democratic practice	1962	1	Partly Free (4.5)
Zambia	UK	1964-90 Emerging Democracy / one party rule, 1991-2006 Democ./ Emerging democ., 2006- Democ.	1991	5	Partly free (4)
Zimbabwe	UK	1980-87 Emerging Democracy, 1987- Restricted Democratic Practice	1979	1	Not free (6.5)

[1]From the African Elections Database (2010); [2]First post-independence multi-party parliamentary election judged as 'free' or 'partly free' by the International Institute for Democracy and Electoral Assistance (2010) (or first equivalent election held in a period in which the country is judged as a democracy by the African Elections Database); [3]Polity IV (Polity IV project, 2010) democracy score for 2005 (for 2006 in Liberia due to democratic transition in 2005), 0-10 with higher values meaning better democracy (see Marshall and Jaggers, 2002); [4]Freedom house combined political rights and civil liberties rating from 2005, 1-7 with 1-2.5 judged as 'free', 3-5 as 'partly free', and 5.5-7 as 'not free' (see Freedom House, 2010).

Table A2: Variable descriptions

Dependent variables

Voting: Dummy variable equal to one if the respondent reports to have voted in the 'most recent [20XX] national elections'; zero otherwise. 'Don't know'/'Can't remember' responses, as well as those who were too young to vote at the time of the election (including those turning 18 during the year of the election), are coded as missing values.

Meeting: Dummy variable equal to one if the respondent reports to have attended a community meeting during the past year; zero otherwise ('don't know'/'can't remember' responses coded as missing values).

Resource variables

Education (based on question of what is the respondent's highest level of education):

No-school: Dummy variable equal to one if the respondent has no formal schooling; zero otherwise (used as reference category in estimation). Education_Primary: Dummy variable equal to one if the respondent's highest level of education is at primary school level (including those with incomplete primary); zero otherwise. Education_Secondary: Dummy variable equal to one if the respondent's highest level of education is at secondary school level (including those with incomplete secondary); zero otherwise. Education_Post-secondary: Dummy variable equal to one if the respondent's highest level of education is at post-secondary school level (including those with incomplete post-secondary); zero otherwise.

Full-time: Dummy variable equal to one if the respondent has full-time paid employment; zero otherwise (if no employment or part-time employment).

Information: An index with mean zero and standard deviation one, higher values meaning that the person has greater access to information. Constructed as the first principal component of the responses to, 'How often do you get news from the following sources: (a) radio, (b) television and (c) newspapers?' with response categories ranging from 0 for 'never' to 4 for 'every day'.

Poverty: A poverty index with mean zero and standard deviation one, higher values meaning that you are poorer. Constructed as the first principal component of the answers to, 'Over the past year, how often, if ever, have you or anyone in your family gone without: (a) enough food to eat, (b) enough clean water for home use, (c) medicines or medical treatment, (d) enough fuel to cook your food?', with response categories ranging from 0 for 'never' to 4 for 'always' for each item.

Socio-demographic group affiliations

Female: Dummy variable equal to one if the respondent is female; zero otherwise.

Rural: Dummy variable equal to one if the respondent lives in a rural area; zero otherwise.

Age variables: Age in years and age squared.

Additional individual controls

Politically relevant social capital: Dummy variable equal to one if the respondent reports to occasionally or frequently discuss politics with friends/family; zero if reporting to never do so.

Political interest: Dummy variable equal to one if the respondent claims to be somewhat or very interested in public affairs; zero if not at all or not very interested.

Clientelism: Dummy variable equal to one if in the choice between statement (a) 'since leaders represent everyone, they should not favour their own family or group', and (b) 'once in office, leaders are obliged to help their home community', the respondents agrees/strongly agrees with statement (b). The dummy variable takes the value zero if instead the respondent agrees/strongly agrees with (a), agrees with neither statement or chooses the 'don't know' response category.

Distributional policy preferences: Three dummies based on the question 'how well or badly would you say the current government is handling narrowing gaps between rich and poor?'. Bad inc. gap: Dummy equal to one if the respondent thinks the government handles narrowing gap between rich and poor very badly or fairly badly. Good inc. gap: Dummy equal to one if the respondents think the government handles narrowing gap between rich and poor very well or fairly well. Undecided: Dummy equal to one if the respondent is undecided with respect to the above question (used as reference category in estimation).

Regional controls

Region dummies: 246 sub-national regions referring to the first-order administrative division in a country, in the survey manual denoted 'region/province'

Table A3: Summary statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Political participation					
Voting	24621	0.77	0.42	0	1
Meeting	27521	0.64	0.48	0	1
Resources					
Poverty	27417	0.00	1.00	-1.99	4.24
Full-time	27613	0.18	0.39	0	1
No-school	27669	0.16	0.36	0	1
Education_Primary	27669	0.37	0.48	0	1
Education_Secondary	27669	0.37	0.48	0	1
Education_Post-secondary	27669	0.11	0.31	0	1
Information	27562	0.00	1.00	-1.57	1.79
Socio-demographic group affiliations					
Rural	27713	0.62	0.49	0	1
Female	27713	0.50	0.50	0	1
Age	27379	36.33	14.50	18	100
Age squared	27379	1529.91	1282.53	324	10000
Additional individual controls					
Pol. relevant social capital	27492	0.69	0.46	0	1
Political interest	27446	0.63	0.48	0	1
Clientelism	27696	0.36	0.48	0	1
Bad inc. gap	27689	0.73	0.45	0	1
Good inc. gap	27689	0.21	0.41	0	1
Undecided inc. gap	27689	0.06	0.23	0	1

Table A4: Official turnout versus self-reported voting

Country	Official turnout (% of voting age population) in last national election prior to the survey[1]	% share of respondents reporting to have voted in last national election[2]
Benin	2007 Parliamentary: 62	92
Botswana	2004 Parliamentary: 44	67
Burkina Faso	2007 Parliamentary: 40	75
Cape Verde	2006 Presidential: 79; 2006 Parliamentary: 80	85
Ghana	2004 Presidential: 80; 2004 Parliamentary: 80	90
Kenya	2007 Presidential: 55; 2007 Parliamentary: 55	83
Lesotho	2007 Parliamentary: 39	65
Liberia	2005 Presidential: 59; 2005 Parliamentary: 71	82
Madagascar	2007 Parliamentary: n.a.	69
Malawi	2004 Presidential: 58; 2004 Parliamentary: 55	82
Mali	2007 Presidential: 48; 2007 Parliamentary: 39	79
Mozambique	2004 Presidential: 36; 2004 Parliamentary: 36	80
Namibia	2004 Presidential: 81; 2004 Parliamentary: 80	79
Nigeria	2007 Presidential: n.a.; 2007 Parliamentary: n.a.	65
Senegal	2007 Presidential: 55; 2007 Parliamentary: 28	80
South Africa	2004 Parliamentary: 57	74
Tanzania	2005 Presidential: 68; 2005 Parliamentary: 65	90
Uganda	2006 Presidential: 61; 2006 Parliamentary: 60	73
Zambia	2006 Presidential: 56; 2006 Parliamentary: 56	64
Zimbabwe	2008 Presidential: 47; 2008 Parliamentary: 45	65

[1]Source of official turnout figures: International Institute for Democracy and Electoral Assistance (2010); [2]Refers to those of voting age at the year of the election; The correlation between official and self-reported turnout (18 observations) is 0.57 and statistically significant (where presidential and parliamentary elections are held concurrently, the higher official turnout rate of the two is used).

Table A5: Using alternative poverty and information measures (probit marginal effects)

Dependent var. is:	(1) Vote	(2) Vote	(3) Vote	(4) Vote	(5) Meet	(6) Meet	(7) Meet	(8) Meet
Resources								
Education_Primary	0.014	0.013	0.012	0.014	0.029**	0.030**	0.030***	0.030***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Education_Secondary	0.014	0.011	0.015	0.017	0.049***	0.047***	0.059***	0.057***
	(0.014)	(0.014)	(0.013)	(0.013)	(0.016)	(0.016)	(0.016)	(0.016)
Education_Post-sec.	0.001	-0.005	0.006	0.009	0.067***	0.063***	0.083***	0.084***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.018)	(0.017)	(0.017)
Full-time	0.015*	0.012	0.014	0.016*	0.005	0.006	0.006	0.010
	(0.009)	(0.009)	(0.009)	(0.009)	(0.012)	(0.012)	(0.012)	(0.012)
Information	0.017***	0.014***			0.032***	0.031***		
	(0.005)	(0.005)			(0.007)	(0.007)		
Poverty			0.004	0.004			0.016***	0.017***
			(0.004)	(0.004)			(0.005)	(0.005)
Alternative poverty measures								
Somewhat poor	0.014*				0.028***			
	(0.008)				(0.009)			
Very poor	0.025**				0.024*			
	(0.011)				(0.013)			
Very bad		-0.015				0.019		
		(0.015)				(0.016)		
Fairly bad		-0.012				0.019*		
		(0.011)				(0.011)		
Fairly good		0.003				0.018		
		(0.011)				(0.011)		
Very good		-0.006				-0.009		
		(0.020)				(0.020)		
Alternative information measures								
Own radio			0.040***				0.063***	
			(0.008)				(0.010)	
Medium radio				0.008				0.064***
				(0.014)				(0.017)
Often radio				0.034***				0.090***
				(0.011)				(0.013)
Socio-demographic	yes	yes	yes	yes	yes	yes	yes	yes
Region dummies	yes	yes	yes	yes	yes	yes	yes	yes
Observations	23070	22974	23039	23070	25893	25772	25861	25893

Notes: Standard errors (clustered by the 246 regions) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights (see description in Table 1). With respect to the alternative poverty measures, in Regressions 1 and 5 'non-poor' is the reference category, and in Regressions 2 and 6 'neither good nor bad' is the reference category. With respect to the alternative information measures, in Regressions 4 and 8 'Seldom radio' is the reference category.

Table A6: Altering the sample and dependent variables

Columns 1-7 Probit marginal effects, Column 8 OLS regression coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent var. is:	Vote	Meet	Alt. vote	Vote	Vote	Vote	Vote	Alt. meet
Resources								
Poverty	0.004	0.016***	0.005	0.002	0.006	0.005	0.002	0.056***
	(0.004)	(0.005)	(0.004)	(0.006)	(0.004)	(0.005)	(0.004)	(0.010)
Full-time	0.014	-0.000	0.014	0.001	0.014	0.017	0.020**	0.043*
	(0.009)	(0.012)	(0.009)	(0.016)	(0.009)	(0.012)	(0.009)	(0.023)
Education_Primary	0.015	0.023**	0.015	0.024	0.013	0.015	0.010	0.095***
	(0.012)	(0.012)	(0.012)	(0.023)	(0.013)	(0.015)	(0.012)	(0.022)
Education_Secondary	0.014	0.050***	0.014	0.040	0.012	-0.008	0.002	0.174***
	(0.014)	(0.016)	(0.014)	(0.026)	(0.015)	(0.017)	(0.015)	(0.031)
Education_Post-sec.	0.001	0.065***	-0.000	-0.008	0.008	0.004	-0.002	0.292***
	(0.017)	(0.018)	(0.017)	(0.033)	(0.018)	(0.019)	(0.019)	(0.038)
Information	0.016***	0.033***	0.018***	0.027***	0.012**	0.020***	0.014***	0.119***
	(0.005)	(0.007)	(0.005)	(0.007)	(0.006)	(0.007)	(0.005)	(0.013)
Socio-demographic	yes	yes	yes	yes	yes	yes	yes	yes
Region dummies	yes	yes	yes	yes	yes	yes	yes	yes
Observations	22949	23019	23156	4921	18166	9272	16088	24964

Notes: Standard errors (clustered by region) in parentheses; *significant at 10%, **at 5%, ***at 1%; Observations are weighted using combined within×across country weights; **Regressions 1-2** restrict the sample to observations that have missing values on neither the voting nor the meeting indicator (the samples nevertheless differ slightly due to having to drop observations in regions where all respondents have the same value on the outcome variable); **Regression 3** uses an alternative voting dummy coding 'don't know' responses as zeros instead of missing values; **Regression 4** restricts the sample to include only respondents from the five countries with the smallest discrepancy between self-reported voting share and official turnout; **Regression 5** restricts the sample to only include observations where the interviewer judges the respondent as honest; **Regressions 6-7** restrict the sample to countries judged as 'free' by Freedom House and countries with Polity IV democracy scores higher than five, respectively; **Regression 8** uses an inter-electoral participation index as dependent variable.

Paper 4

Institution building with limited resources:

Establishing a supreme audit institution in Rwanda

Ann-Sofie Isaksson and Arne Bigsten*

Abstract: This study is about institution building with limited resources. Through a case study of the establishment of a supreme audit institution (SAI) in Rwanda, we examine the tensions between institutional first-best benchmarks and local operational constraints in a developing country institution-building process. More specifically, our aim is to investigate the potential tradeoffs between the programmatic ideal of SAI independence and operational constraints in terms of staff capacity in the development of a supreme audit oversight function in Rwanda. Drawing on data from document studies and key informant interviews, the empirical results suggest that capacity constraints – within the institution as well as among its major stakeholders – negatively affect important aspects of SAI functional independence, but also that there are arguments for compromising the programmatic ideal of SAI independence in order to effectively tackle operational constraints in terms of staff capacity.

JEL classification: D02, H83, O16, O55.
Keywords: Institution building, Capacity constraints, Supreme audit institution, Rwanda.

1 Introduction

Weak institutions are a severe development constraint that poor countries urgently need to address.[1] At the same time, these countries have limited resources available for institutional development. Does this call for alternative institutional solutions? While we know that 'institutions matter', we have little insight as to what can be done to build institutional capacity. In the present study, we try to understand the mechanisms of effective institution building in a developing country with great needs in terms of institution building but with limited resources available for this purpose. In particular, we are interested in the possible tensions between institutional first-best benchmarks, or 'programmatic ideals', and local operational constraints in the institution-building process.

* Department of Economics and GCGD, University of Gothenburg, Box 640, SE405 30 Gothenburg, Sweden. E-mail: ann-sofie.isaksson@economics.gu.se, arne.bigsten@economics.gu.se. We are thankful to our interview respondents (see appendix A.2) for taking the time to answer our questions, and to Maria Gustavson, Jo Thori Lind and seminar participants at the University of Gothenburg (November 2010) and at the DEU-QoG workshop (March 2010) for helpful suggestions. We gratefully acknowledge financial support from Sida-SAREC.

[1] See e.g. Acemoglu et al. (2001), Hall and Jones (1999), Kaufmann et al. (1999), and Knack and Keefer (1995).

Drawing on data from document studies and key informant interviews, our aim is to investigate the potential tradeoffs between the programmatic ideal of supreme audit institution (SAI) independence and operational constraints in terms of staff capacity in the development of a supreme audit oversight function in Rwanda. The empirical results suggest that capacity constraints – within the institution as well as among its major stakeholders – negatively impact important aspects of SAI functional independence, but also that there are arguments for compromising the programmatic ideal of SAI independence in order to effectively tackle operational constraints in terms of staff capacity. In more general terms, our findings highlight that institution building bounded by operational constraints requires careful sequencing of reform, an awareness of institutional interdependencies, and efforts in terms of translating the legal institutional framework into practice.

One can distinguish between the programmatic and operational elements of an institutional practice, the former relating to the ideas and concepts that shape the institutional mission and the latter to the tasks, routines and practicalities facing its practitioners (Power, 1997). An operational constraint could hinder the realisation of the programmatic ideal, or it may be necessary to compromise a programmatic ideal to address an operational constraint. The nature of binding constraints may vary across settings or change over time, meaning that different priorities may be required at different stages of the reform process. And focusing on non-contextual best-practice institutional solutions without consideration of local constraints may create distortions and lead reformers to overlook solutions that can achieve the desired ends at lower costs (Rodrik, 2008).

Tensions between programmatic ideals and operational constraints in the institution-building process are particularly pertinent in developing countries, where institutional needs are great but resources limited. Whether sought out by national governments or advocated by the donor community, the programmatic ideals will be manifest in advice on first-best institutional practices. At the same time, in the early stages of the institution-building process, developing countries are likely to face operational constraints in terms of funding, capacity, infrastructure etc., possibly calling for alternative priorities.

A number of recent studies emphasise the context specificity of institutions, and suggest that developing countries may require institutional arrangements that differ from those in rich countries. Djankov et al. (2003) argue that institutional design involves a trade-off between controlling ‘disorder’ (private infringements of property rights) and ‘dictatorship’ (state infringements of property rights), and stress that the appropriate balance between the two depends on country circumstances and thus that institutional reforms must be evaluated

relative to a country's 'own institutional opportunities, rather than some idealized benchmark' (Djankov et al., 2003, p. 615). Dixit (2004) suggests that given the large costs of setting up formal institutions, informal self-enforcing governance arrangements can be more efficient in the early stages of economic development.[2] Acemoglu et al. (2006) argue that countries at early stages of development, where the main economic challenge lies in stimulating investment rather than innovation, may benefit from institutions shielding incumbent firms from competition. Rodrik (2008), finally, proposes that dealing with institution building in developing economies requires a second-best mindset; focusing on first-best solutions is not necessarily ideal in a second-best environment. Still, however, we have little knowledge of the specific tradeoffs between first-best benchmarks and second-best solutions that face developing country institutions in their start-up phase.

The present case study of a developing country institution building process focuses on the establishment of an SAI in Rwanda.[3] An SAI is a national agency responsible for overseeing the management of public funds and the quality and credibility of governments' reported financial data (World Bank, 2002). Being a mechanism for monitoring the government, and for information transmission to voters, it has an important role in promoting government transparency and accountability (see e.g. Ferraz and Finan, 2008, on the effects of publicly released audits on electoral outcomes in Brazil).[4] Also, by acting as a deterrent to waste and abuse of public funds it promotes sound financial management, which in a developing country is an issue that ultimately has to do with whether public funds will reach the poor.

Being interested in the interplay between programmatic ideals and operational constraints in a developing country institution building process, it is interesting to study the development of an SAI, and to do so in the Rwandan context. A firmly established programmatic ideal of SAIs is that of independence (see Section 2.1), without which practitioners and theorists agree that it will not be able to perform its government oversight function effectively (Ahlbäck, 1999; Chowdhury and Innes, 1998; INTOSAI, 1998; World Bank, 2002). At the same time,

[2] For a study illustrating effective informal institutional arrangements, see Greif's (1993) paper on relational contracting among the 11th-century Maghribi traders.

[3] North (1990) distinguishes between institutions and organisations, defining institutions as the overarching framework of rules and constraints – formal as well as informal – and organisations as groups of individuals that operate within the framework of institutions and implement the rules and norms of the institutions. Others, however, do not make a distinction between the two. Greif (2000, p. 257) defines institutions as 'a system of social factors – such as rules, beliefs, norms, and organizations – that guide, enable and constrain the actions of individuals'. According to North's definition, an SAI would be an organisation upholding public financial regulations. In the present paper, however, we think of institution building in the latter and wider sense, i.e. incorporating both developing the rules of the game and establishing the players upholding the rules of the game.

[4] For studies demonstrating the importance of monitoring and information transmission mechanisms, see also Besley and Burgess (2002), Nagin et al. (2002), Adsèra et al. (2003), Di Tella and Schargrodsky (2003), and Olken (2007).

SAIs operating in developing countries face severe operational constraints, one of the most important being the lack of qualified staff (Dorotinsky and Floyd, 2004; Dye and Stapenhurst, 1998; Levy, 2007). In Rwanda, this is very much the case. After the genocide in 1994, which apart from being a human tragedy also led to vast destruction of economic and institutional infrastructure, Rwanda faced massive challenges in terms of institution building. Many government institutions, including their SAI, are now being developed simultaneously – basically from scratch – greatly straining human and financial resources. Do staff capacity constraints get in the way of achieving the programmatic ideal of SAI independence? Could compromising the independence ideal be necessary to handle operational constraints in terms of staff capacity? In short, is there a trade-off between the programmatic ideal of SAI independence and operational constraint in terms of staff capacity in the development of an effective SAI oversight function?

To our knowledge, this is the first study focusing explicitly on the interplay between a first-best institutional ideal and a local operational constraint for effective institution building in a developing country context. As such, it should add to our understanding of the tradeoffs facing developing country institutions in their start-up phase. Moreover, despite the important function of supreme audit institutions, the literature on the development of effective SAI oversight is very meagre, in particular for developing countries.

2 Programmatic ideals and operational constraints

In this section we discuss the role of SAIs and the concept of SAI independence, the implications of operational constraints in terms of capacity, and how these may relate to the independence ideal.

2.1 SAI government oversight and the programmatic ideal of independence

Supreme audit institutions have a central role in promoting government transparency and accountability. Accountability requires information to hold policy makers answerable as well as incentives to encourage compliance (Highton, 2008). A credible threat of losing office in the next period should compel policy makers to respond to voter interests. However, for the electorate to be able to discipline incumbents, there have to be effective institutions for information transmission to voters (Persson and Tabellini, 2000; Besley and Burgess, 2002;

Adsèra et al 2003). Here the SAI has an important function, especially considering the complexity of the main object under scrutiny – the government financial accounts. The role of the SAI is to scrutinise state finances and detect potential mismanagement, but also to communicate its findings – to the parliament, to the media, and ultimately to the voters. Against this background, an effective SAI is an institution that offers a true and fair view on government financial conduct and that communicates this to concerned stakeholders.

As noted, theorists and practitioners agree on the centrality of independence for effective SAI oversight. The basic idea is simple; to be able to carry out oversight of the government, the SAI cannot be aligned with the same. It must be able to do its job without threat of retaliation. SAI independence can be defined as not having a relationship that could interfere with the exercise of independent judgement (Goodwin and Yeow Yeo, 2001), or more narrowly as the absence of unjustified subordination to, and direction and interference from, government (INTOSAI, 2001). SAI independence is closely linked to objectivity or impartiality, in turn necessary for the institution to be able to express a 'true and fair view'.

A principal agent approach can help us understand the role of an SAI and considerations important for its independence. Principal agent theory depicts a relation between two actors where the authority is held by one part – the principal – and the informational advantage with the other – the agent (Hawkins et al., 2005).[5] In a democracy, the ultimate principal is the electorate delegating authority to their agent – the government. Unfortunately, the electorate principal has both a significant informational disadvantage and problems in terms of collective action, a fact that can be exploited by a government agent wishing to pursue its own agenda or appropriate rents. The more precise information citizens have about adopted policies and their implementation, the more powerful the threat to the government of being voted out of office, leaving less room to divert resources or to push for their own agenda (Adsèra et al., 2003). The need for the informationally disadvantaged electorate principal to monitor its government agent creates a demand for an SAI (Power, 1997).

However, principal-agent relations are not clear-cut in practice. In the public sector there are several other relationships that could also be referred to in principal-agent terms, e.g. that between the electorate and the executive, but also that between the legislature and the executive and that between the executive and the bureaucracy (Streim, 1994). Moreover, in a developing country that relies heavily on foreign aid, one could argue that the government is held accountable to donors rather than the electorate, and thus that the donor community acts

[5] For a discussion of principal-agent theory in the context of democratic governance, see e.g. Batley (2004), Hawkins et al. (2005) and Miller (2005).

as a second principal to the government agent. Acknowledging that there is a chain of sometimes overlapping agency relationships, when a principal hires an auditor to monitor its agent, one could of course claim that an additional agency relationship arises, where those wanting the audit service still constitute the principal and the *auditor* is the agent (Antle, 1984; Streim, 1994). A relevant question then becomes, what body constitutes the SAI's effective principal?

The electorate is not a well-defined group that can easily organise and act collectively as a principal. In reality, the SAI works closely with the parliament – i.e. the legislative branch of government, which depends on the audit reports for its government oversight. Government spending must be approved by parliament and through the audit reports the parliament can ensure that the executive has operated within the financial limits permitted by parliament (Funell, 1994). In practice, it may thus be more realistic to see the legislative branch of government as the principal demanding the monitoring service supplied by the SAI. The parliament is a political body, and as such it can exert a political influence on the audit process. However, in a democratic system a fully autonomous SAI without organisational ties to the elected bodies is arguably not feasible. Being tied to the legislative branch of government is then seen as the preferable alternative. With the electorate as the ultimate principal and the legislature as the acceptable effective principal, a clearly *unacceptable* principal to the SAI is the very object for audit, i.e. the executive branch of government.[6]

The executive may want to exert an illegitimate influence on the SAI for two reasons, one obvious and one somewhat more subtle. First, it may want to avoid possible misconduct coming to public attention – if a breach is discovered it might seek to create an incentive for the auditor not to report it. There are a variety of instruments (like making cuts in the SAI budget or firing 'uncooperative' auditors) that the executive, if in power to do so, could use to deter the SAI from revealing unpleasant information. The manipulations would have to be within certain confines, though, so as not to lose the appearance of having a well-functioning SAI. This brings us to the second point. The appearance of having a credible SAI is important for government organisational legitimacy. If the executive can induce the SAI not to be very confrontational, while still maintaining an image of it being a credible oversight institution,

[6] Again, one could argue that in a developing country like Rwanda, the donor community could function as an additional principal to the SAI. Although interesting, the nature of this potential agency relationship will not be investigated further in the present paper.

the SAI could function as a label for government credibility (Power, 1997).[7] To sum up, since the executive branch of government is the very focus of the audit process, it would be highly inappropriate for the SAI to be in an agent position of the same. This would imply a lack of independence from the audited entity – a capital offense in auditing.

In practice, SAI independence has to be judged in terms of degrees (Ahlbäck, 1999; Gendron and Cooper, 2001; Grasso and Sharkansky, 2001; Power, 1997). Since SAIs are part of the state apparatus, they can never be completely independent from government. Furthermore, a purely neutral audit process is difficult, if at all possible, to achieve considering that it is based on interaction and judgement and that the issues in focus are often politically sensitive. In line with this, INTOSAI (the International Organization of Supreme Audit Institutions) argues that SAIs shall have an *adequate degree* of independence from government and the functional and organisational independence *required to accomplish their tasks* (INTOSAI, 1995; INTOSAI, 1998).

Evaluating the degree of SAI independence empirically, it is useful to distinguish between organisational and functional independence (Grasso and Sharkansky, 2001; Power, 1997). Organisational independence has to do with the formal position of the SAI within the organisational framework and the institutional arrangements in place to insulate it from outside influence. As such, it deals with issues relating to the constitutional/statutory guarantees of independence in relation to the legislative and executive branches of government, funding arrangements, control over personnel, etc. Functional independence, on the other hand, relates to the audit process itself. Key issues include whether the SAI is allowed to access the required information and whether it can freely decide what to audit, what methods to use and what to base conclusions on. Evaluating an SAIs functional independence, one can in turn make a distinction between informational and epistemic independence (Power, 1997). Informational independence deals with the problem of information asymmetry between auditor and auditee. Auditors to some extent always have to trust internal sources of information about the auditee and can thus be said to be informationally dependent on the latter. Epistemic independence, next, deals with the extent to which there exist clear rules of auditee conduct and well-established techniques for determining compliance. Without clear standards and criteria for judging performance, there

[7] Similarly, with independence needed for SAI credibility and legitimacy, it has been suggested that SAIs often seek to defend and reinforce their image of independence (Pearson, 1987; Funell, 1994; Gendron and Cooper, 2001; Sikka and Willmott, 1995).

is likely to be negotiation with the auditee with respect to what should count as a violation, something that would be problematic in terms of epistemic independence.

The research on SAI independence is meagre, but there are a few interesting studies in the field. Ahlbäck (1999) evaluates the degree of independence of the Swedish SAI and finds important deficiencies in terms of organisational independence. Grasso and Sharkansky (2001) investigate the independence of the U.S. and Israeli SAIs and find that although both are well equipped in terms of organisational independence, their work is still highly politicised. Gendron and Cooper (2001) investigate the independence of a state auditor in Canada and find that an increase in power and mandate of the audit office has had a negative effect on its independence. Finally, INTOSAI (2001) evaluates the independence of their member SAIs and conclude that many SAIs are not independent enough to properly fulfil their mandates in accordance with INTOSAI recommendations.

2.2 Operational constraints in terms of capacity and implications for independence

Auditing is costly, in terms of staff, production technology and other inputs, and is thus necessarily bounded by economic constraints. This means that the audit process must involve prioritising – the SAI cannot audit everything. The natural question thus becomes how much and what to audit, and at what level of detail. There is inevitably a trade-off between scope and depth; fewer areas, as well as fewer transactions within each area, can be tested if the testing process is more detailed.

With respect to what areas to audit, the standard today is to rely on risk-based sampling. Focusing on high-risk areas, where the need to produce assurance is high, rather than aiming for a representative sample of transactions is a strategy to increase the cost effectiveness of auditing. However, how to identify high-risk areas is not obvious,[8] and the process involves a considerable degree of judgement on part of the auditor. Another issue is what type of audits to conduct – whether to stick to financial and compliance audits or move into performance/value-for-money (VFM) auditing. In financial auditing, the auditor verifies the accuracy of financial statements by comparing achieved results with planned results and by checking samples of transactions and balances. In compliance auditing, the auditor asks whether the government has collected or spent no more than the authorised amount of money

[8] One approach is to focus on government departments seen as risky; another is to do across-the-board evaluations of programmes (say, road construction, irrespective of the departments involved) that are seen as prone to abuse (Kellner, 2000).

and for the purposes intended by the government. Finally, performance auditing, which is the focus of many Western SAIs today, considers the implementation of government policy and evaluates whether taxpayers get value for their money (Dye and Stapenhurst, 1998).

The cost constraints, and the prioritisations they call for, are of course even more pertinent in a developing country where the needs in terms of institution building are great but the means available are limited. In the present paper we focus on operational constraints in terms of staff capacity, referring to the number, training and experience of staff. Auditing is demanding in terms of staff capacity; auditors need skills in accounting, statistics, and evaluation techniques, but also knowledge of specific fields or industries (Power, 1997). Dorotinsky and Floyd (2004) point to severe capacity constraints in African SAIs. In a 1998 survey covering 25 African SAIs, 11 had no qualified personnel and 9 were unsure about the qualifications of their staff.

What more is, given the importance of institutional interdependence – the SAI works in close connection with other institutions – it is not enough to consider capacity constraints only within the SAI (Dorotinsky and Floyd, 2004; Dye and Stapenhurst, 1998; Levy, 2007). The impact of the SAI depends on what happens after it has produced its annual report, i.e. on the reception it gets from stakeholders. The parliament is in a position to put pressure on the executive to act on SAI recommendations. Hence, capacity constraints within the parliament will have negative consequences for SAI follow-up. Moreover, capacity constraints within the executive will affect the material that the SAI has to work with. In many developing countries, the financial accounts produced by the ministries are often inaccurate and only available after long delays (Levy, 2007), making auditing difficult and time consuming.

How do operational constraints in terms of capacity relate to the programmatic ideal of SAI independence? Capacity constraints within the SAI mean that the audit process will have to involve tight prioritisation. A central dimension of functional independence is to what extent the SAI is open to influence in the choice of audit object. If open to such influence, the more selective the SAI has to be in choosing what to audit, the greater the threat to its functional independence. Another dimension relates to informational dependence. With capacity constraints within the SAI, the institution is likely to become more dependent on informational sources within the audited entity. Also, a lack of experience and training should make it more difficult for the auditor to critically evaluate the information obtained from the auditee, why it should pose a threat to informational independence. Moreover, if the auditor lacks the training and experience to be aware of, and interpret, existing performance criteria, he or she should face a greater risk of ending up in negotiation with the auditee with respect to

what should count as good conduct, which is problematic in terms of epistemic independence. With respect to the implications of capacity constraints in the institutions closely linked to the SAI, one concern is whether the quality of accounts obtained from the audited entities affects the choice of audit object. If the quality of record keeping in a unit is very poor, it could be seen as unauditable and thus potentially hide fraud. Another concern is that capacity constraints in the parliament and audited entities induce the SAI to take on an advisory role, and thereby lead to relationships that could jeopardise independent judgement. In the next section we will discuss how to evaluate these issues empirically.

3 Method and data

The mission of the SAI of Rwanda, the Office of the Auditor General (OAG), is to promote accountability, transparency and good governance, guided by values of integrity, objectivity and independence (Republic of Rwanda OAG, 2006b). As such, it has highly set ideals. At the same time, however, the institution is very young – it was established in 1998, became operative in 2000 and was formally appointed the SAI of Rwanda in 2003 – and operates within a public financial management (PFM) system that is also very much in its infancy. Following the events of 1994, the Government of Rwanda had to effectively re-build the PFM system from scratch, with very limited resources (Mapsec, 2006; Republic of Rwanda, 2007c). The aim of the present study is to investigate the potential tradeoffs between the programmatic ideal of SAI independence and operational constraints in terms of staff capacity in the development of a supreme audit oversight function in Rwanda.

To this end, we use a process tracing approach, which involves exploring relationships with reference to multiple features of individual cases and examining intervening processes that link the variables hypothesised to have a causal relationship (Bennett and George, 1997; Checkel, 2005; Tansey, 2007). This approach has two central features. First, it focuses on examining causal mechanisms – i.e. on questions of how and why – as opposed to causal effects. Second, it emphasises careful data triangulation – i.e. cross-checking multiple data sources against each other. In our case, the ultimate outcome variable is the quality of SAI oversight. Our focus variables, which are often suggested to individually affect the quality of SAI oversight, are the level of SAI independence and staff capacity constraints within the SAI and in institutions linked to the SAI. We want to investigate whether, on top of their individual influence, there are mechanisms through which these variables interact to affect our

outcome variable. For this purpose, we need to assess the degree of independence of the OAG, if there are binding operational constraints in terms of staff capacity, and the potential interface between the two in terms of influence on the quality of the OAG oversight function.

3.1 Data

We draw on data from document studies and key informant interviews. The former data source has the advantage that it is unobtrusive – the data has not been constructed for the purpose of the study – and that it provides official accounts of events (Tansey, 2007; Yin, 2003). The interview material, on the other hand, helps shed light on information not revealed in the formal reports and has the great advantage that it allows us to get direct accounts from important first-hand participants of the institution building process under investigation.

We consult the following documents: (1) legal documents establishing the mandate of the OAG, i.e. Rwanda's constitution and organic budget law (Republic of Rwanda, 2003 and 2006), (2) OAG strategic documents, namely its financial audit manual, strategic plan, and code of ethics (Republic of Rwanda OAG, 2004, 2006b and 2007), and finally (3) OAG audit output, i.e. its annual reports (Republic of Rwanda OAG, 2003, 2004b, 2005, 2006, 2008, 2009, 2009b). While the legal and strategic documents offer insight into the formal organisational structures and objectives of the OAG, the audit output provides information on the institutional practice. For the full list of documents analysed, see Appendix A1.

Interviews were conducted during a field trip to Rwanda in 2008. Interview subjects were chosen based on occupational position as known important actors in the concerned organisations and according to the extent to which they were deemed influential in the area by their peers. As with any data based on subjective reporting, lapses of memory, slanted accounts etc. may lead to misrepresentation of the case under study. In order to get a balanced account, and considering the interconnectedness between the OAG and its major stakeholders, we interviewed representatives from the OAG as well as from a wide range of related government and non-government organisations. At the OAG we interviewed the Auditor General, the Deputy Auditor General and representatives at the director level. In the executive branch of government, *on* which the OAG reports, we interviewed the Chief Internal Auditor, the Accountant General and representatives of the ministry of finance committee on public finance management. In the legislative branch of government, *to* which the OAG reports, we interviewed the Chair of the budget committee of the parliament. Moreover, we interviewed representatives from Sida and the Swedish national audit office (the latter conducted in

Sweden), who have provided direct assistance in the development of the OAG. We also interviewed representatives of governance and PFM sections of influential donors and financial institutions in Rwanda (the World Bank, the IMF, Dfid and the EC). Finally, to get a picture of the framework of oversight institutions in which the OAG operates, we interviewed representatives from other important oversight bodies in Rwanda (the Office of the Ombudsman, the National Tender Board and Transparency Rwanda). Appendix A2 shows the full list of interview subjects.[9]

Given the complexity of the subject matter and the different backgrounds of our interviewed key informants, we used a non-standardised interview framework allowing us to adapt the questions to the specific competences of each subject. Still, each interview focused on the same broad topics – the institutional role, development, audit scope and process, constraints, reception and impact of the OAG. The interview material, which was transcribed in immediate connection to the interviews, has helped us get a general understanding of the issue at hand as well as to answer the specific questions raised in the following section.

3.2 Coding framework

The interview transcripts and the listed documents are coded using directed content analysis.[10] How flexible we are in the coding process – i.e. the extent to which we classify the data into theoretically predetermined categories or try to build theory from recurrent ideas and themes in the data – varies depending on the data source and the existing knowledge of the question at hand.

Assessing the degree of OAG independence, we distinguish between organisational and functional independence. With respect to the former, i.e. the formal organisational structures insulating SAIs from outside influences, the literature provides good guidance on what criteria to consider, allowing us to rely on predefined coding categories (see Table 1). To address these questions we rely primarily on the legal documents establishing its mandate (the constitution and the organic budget law) and the strategic documents relevant for its development (the strategic plan, code of ethics and financial audit manual).

[9] We do not disclose the identity of respondents behind individual responses, i.e. who said what. However, for the reader to be able to follow the sequence of responses given by different respondents, each interview subject is given a pseudonym, here a number between 1 and 27.

[10] Coding is a way to organise qualitative data into categories – by explicit topic and by more abstract analytical themes (see e.g. Auberbach and Silverstein, 2003; Hsieh and Shannon, 2005; Richards, 2005).

Table 1: Coding frame to assess the organisational independence of the OAG

A. Constitutional position of the OAG:
a. Mandate: clarity, scope, established in the constitution?
b. Accountable to the legislature or the executive?
B. Financial independence:
a. Guaranteed funds to carry out its work effectively?
b. Budget established in the constitution, approved by legislature or executive?
C. Administrative independence:
a. In charge of internal structures such as job descriptions and recruitment and dismissal of personnel?

With respect to A, the constitutional position of the SAI, independence can be strengthened if the mandate of the SAI, which needs to be clear and sufficiently broad for it to be able to carry out its work effectively, is established in the constitution. In particular, the SAI should be devoid of accountability to, and pressures from, the main object for audit, i.e. the executive. With respect to B, the financial autonomy of the SAI, the SAI should be guaranteed funds to carry out its work effectively, and to avoid a problem of not daring to bite the hand that feeds it, its budget should not be controlled by the executive. Finally, with respect to C, dealing with administrative autonomy, the executive should not be in control of incentive structures within the SAI, and the SAI staff should not be affected by a concern to remain in office when deciding what to audit and what to present to the public.

Assessing the OAG's degree of functional independence, relating to the independence from influence during the actual audit process, we want to reveal influence of a more informal nature and thus need to go beyond the formal accounts and also consult the interview material and the audit output. Table 2 provides a guide to what issues to consider.

Table 2: Coding frame to assess the functional independence of the OAG

A. The choice of audit projects: Can it choose freely what to audit and what audit methods to use?
B. The distribution of results: Can it publish and disseminate findings without interference?
C. Informational dependence: Can it access information freely and does it have the internal competence necessary to interpret the information?
D. Epistemic independence: Are audit judgements based on clear performance criteria?

We have the least prior knowledge regarding the potential interaction between operational constraints in terms of staff capacity and the programmatic ideal of SAI independence. Hence, we cannot to the same extent rely on theoretically predetermined categories when coding the

data with respect to this issue. We have stressed the institutional interdependence of the SAI and its major stakeholders, in particular the legislative and executive branches of government. Hence, we want to understand the extent and nature of capacity constraints within the OAG as well as within these closely connected government institutions. What are the implications of these capacity constraints for the independence of the OAG? And does striving for independence affect the ability to handle operational constraints in terms of capacity? These rough guidelines are summarised in Table 3.

Table 3: Coding frame to assess the links between capacity constraints and independence

A.	Capacity constraints within the OAG + implications for OAG independence
B.	Capacity constraints among the OAG's major stakeholders (parliament + audited entities) + implications for OAG independence
C.	Consequences of the independence ideal for handling capacity constraints (a) within the OAG, (b) among the OAG's major stakeholders (parliament + audited entities)

4 Results

Drawing on data from document studies and key informant interviews, in this section we will first assess the organisational and functional independence of the OAG. We will then discuss how constraints in terms of staff capacity – within the OAG as well as among its major stakeholders – affect OAG independence, and potential tradeoffs between independence and capacity constraints affecting the OAG's ability to effectively carry out the supreme audit oversight function.

4.1 OAG independence

4.1.1 Organisational independence

Assessing the organisational independence of the OAG, i.e. the institutional arrangements in place to insulate it from outside influence, we take as a point of departure the coding frame in Table 1. With respect to the constitutional/statutory position of the OAG (point A in Table 1), we can note that since 2003, the OAG's mandate has been formally established in the constitution. According to Article 183 (as amended to date, see Republic of Rwanda OAG, 2003), the responsibilities of the OAG include auditing revenues and expenditures of the

state, local government agencies, public enterprises, parastatal organisations, and government projects, making sure that they are in accordance with the laws and regulations in force and in conformity with prescribed justifications. The OAG mandate is also established in the recently adopted Organic Budget Law (Republic of Rwanda, 2006), which in addition instructs the concerned public bodies to prepare accounts for submission to the Auditor General and to respect the instructions of the same. Furthermore, and as appropriate, the constitution (Article 184) makes clear that the OAG shall report to the legislative rather than the executive branch of government.

Based on Articles 183-184 in Rwanda's 2003 constitution, it seems fair to argue that the OAG has a sufficiently broad mandate to be able to carry out its work to promote accountability and transparency in government. In effect, the OAG argues that its mandate is *too* wide in view of the financial and human resource constraints facing the institution; it is far from being able to audit all the entities covered in its mandate as stated in the constitution (Republic of Rwanda OAG, 2006b).[11] The work of the OAG is thus seemingly not restricted by a too narrow mandate, but rather by a lack of resources to fulfil this mandate.

With respect to the financial and administrative autonomy of the OAG (points B and C in Table 1), again the constitutional guarantees are relatively well established. Article 183 in the constitution explicitly states that the OAG is an 'independent national institution' and that it shall have 'financial and administrative autonomy'. Moreover, it is established that the OAG shall be 'headed by the Auditor General assisted by a Deputy Auditor General and other necessary personnel', which seems to suggest that the OAG is free to hire the personnel required for its purposes, and that no one is 'permitted to interfere in the functioning of the Office or to give instructions to its personnel or to cause them to change their methods of work'. Furthermore, the constitution (Article 88) specifies that the parliament shall approve the appointment of the Auditor General. On the other hand, however, it does not contain any provisions for parliamentary involvement in a possible termination of the Auditor General's contract (see the discussion in Lienert, 2004). While the same person – Evelyn Kamagaju Rutagwenda – has had the position of Auditor General since 2004, organisational independence would be stronger if there were constitutional guarantees restricting the executive from unilaterally suspending her. Moreover, to avoid a problem of not daring to bite the hand that feeds you, the OAG budget should be approved by the legislative rather than the

[11] In fact, the mandate has recently been narrowed down in order to make full coverage more realistic; since 2005, audits of privatised state enterprises and joint enterprises in which the state is participating have been removed and are instead sub-contracted to private audit firms (Republic of Rwanda OAG, 2006).

executive branch of government. While the constitution is silent on this point, the OAG Financial Audit Manual states that the legislature should provide the institution 'with sufficient resources, for which the institution is accountable, as well as for the effective exercise of its mandate' (Republic of Rwanda OAG, 2004, p.35).

Turning from the legal framework to the institutional practice, however, the OAG argues that full coverage of its mandate cannot be achieved until the Office obtains adequate financial and human resource capacity (Republic of Rwanda OAG, 2008, 2009, 2009b), and similarly, that insufficient flexibility to handle human resource concerns independently, especially wage setting, contributes to high staff turnover (Republic of Rwanda OAG, 2006b, p. 4). When it comes to job descriptions, however, it is our impression that the OAG in fact has a strong sense of ownership. Developing its strategic documents – the Strategic Plan, Code of Ethics, and Audit Manual – the OAG has followed international (INTOSAI) auditing guidelines and received technical support from donors, yet there are no indications that the Government has been involved in this process. Moreover, and in line with the constitutional guidelines, the interview material contains no reports of government obstructions of OAG's work. Rather, several respondents (no. 1, 2, 5, 9, 11, 12, 17, 18, 19) – both within the OAG and in government and non-government institutions surveyed – suggest that the OAG is met with positive attitudes and that there is political will for reform and to work against corruption.

The fact that the constitutional guarantees of independence are relatively well established presumably has to do with that the OAG, just as Rwanda's constitution and budget law, was established very recently. As one interview respondent (no. 8) put it, building the legal framework basically from scratch, one could adopt international best-practice standards without having to worry about an 'institutional legacy'.[12] As seen above, however, it is not evident that legal provisions translate into practice, and several interview respondents (no. 3, 10, 12, 17, 20) suggest a disconnect between the two. In the next section we will explore independence as experienced in OAG's institutional practice.

[12] Rothstein (2010) argues that systemic corruption is best countered by 'big-bang' institutional change, allowing the economy to escape a collective action trap and reach a new equilibrium. In light of this argument, Rwanda is an extremely interesting case; emerging from civil war and genocide the country is now in the process of establishing a wide range of state institutions simultaneously, basically from scratch.

4.1.2 Functional independence

Turning to the OAG's functional independence, i.e. the effective independence from influence during the actual audit process, the OAG has highly set objectives. Its Code of Ethics establishes that the OAG stakeholders 'should be fully assured of the fairness and impartiality of all OAG's work', and describes independence from the audited entity and other outside interest groups as 'indispensible' (Republic of Rwanda OAG, 2007, Articles 9 and 14). Before every new assignment each auditor is required to sign an 'individual team member independence confirmation', with instructions to avoid threats to independence, such as taking part in audits of entities where the auditor has been employed or where personal or financial involvement might cause conflicts of interest, accepting payment or gifts, or having any type of relationships with managers and staff in the audited entity (Republic of Rwanda OAG, 2007, Articles 17-28). The Financial Audit Manual contains recommendations to the same effect: 'The audit institution should discharge its mandate freely and impartially, taking management views into consideration in forming audit opinions, conclusions and recommendations, but owing no responsibility to the management of the audited entity for the scope or nature of the audits undertaken' (Republic of Rwanda OAG 2004, p. 36).

It is important to note, however, that the OAG strategic documents formulate objectives – and highlight the institution's awareness of the programmatic ideal – rather than describe the realities of the institutional practice. Given the difficulty of balancing the expressed objectives, such as relying on information from the audited entity while not being influenced by the same, the audit process involves threats to independence that are difficult to get around by legislating. In line with this, the OAG Strategic Plan argues that the institution does not have sufficient 'real independence' (Republic of Rwanda OAG, 2006b). To explore this further, we need to complement the information in the OAG strategic documents with accounts of the actual audit process.

With respect to the choice of audit object (point A in Table 2), there are no reports – neither in the interview material nor in the documents consulted – of the government pressuring the OAG in its decision of what audit projects to take on or of what methods to use. According to an interview respondent with experience of working for the OAG (no. 11), the government can sometimes ask the OAG to look into certain projects, yet the OAG can always choose to neglect the invitation. On the other hand, the OAG choice of audit projects is seemingly affected by factors of a more subtle nature. First of all, a serious concern is that many audited entities fail to keep accounts, resulting in an incomplete audit trail for the OAG

to follow. With no accounts to audit, the OAG will have a hard time detecting fraud, and we cannot rule out the possibility that poor, or non-existent, recordkeeping is used to mask abuse of funds (we will get back to this issue in Section 4.2.2). Second, it seems likely that the extent to which there exist clear performance criteria in a field could affect the OAG choice of whether to conduct audits in the same (we will return to this below).

Turning to the distribution of results (point B in Table 2), again there are no reports of the government interfering with the publication and dissemination of OAG findings. Rather, the OAG claims that it has good support from its major stakeholders (Republic of Rwanda OAG, 2006b), and as noted, several interview respondents (no. 1, 2, 5, 9, 11, 12, 17, 18, 19) point to a political will for reform and for working against corruption. In fact, OAG's findings are widely distributed. When the yearly report is presented to the parliament, the media and donors are invited and tend to show up in great numbers (respondent no. 5, 11, 12, 15, 19, 20). Moreover, the audit reports are publicly available on the OAG website (see Republic of Rwanda OAG, 2010). What is pointed out as a problem is rather how weak capacity among stakeholders – the media and the parliament – hinders effective follow up of OAG findings (respondent no. 2, 3, 11, 12, 18, 19).

With respect to the informational independence of the OAG (point C in Table 2), there are two central questions to ask: 1) can the OAG access information freely, and 2) does the OAG have the internal competence required to interpret the information acquired? With respect to the first question, whereas there are no reports of the OAG having trouble accessing existing material available for audit, all audit reports (see Appendix A1.3) as well as several interview respondents (no. 1, 2, 5, 8, 11, 15, 16, 17) suggest that a serious problem lies in getting the audited institutions to actually keep accounts. Given the risk that poor, or non-existent, record keeping is used to mask abuse of funds, this could be seen as a serious threat to OAG's informational independence (see Section 4.2.2). Regarding the second question, the auditor faces a difficult balancing act – while depending on information from the audited entity, the auditor's judgement should not be affected by it. Consider Article 21 in the OAG Code of Ethics (Republic of Rwanda OAG, 2007, p. 6): 'Auditors should make use of information brought forward by the audited entity and other parties. This information is to be taken into account in the opinions expressed by the auditors in an impartial way. The auditor should also gather information about the views of the audited entity and other parties. However, the auditor's own conclusions should not be affected by such views.' An ability to critically judge the obtained information in an impartial manner is clearly demanding in terms

of staff capacity. As will be further discussed in Section 4.2.1, given the capacity constraints facing the OAG this is likely to be a problem.

Finally, judging the epistemic independence of the OAG (point D in Table 2), we are interested in the extent to which audit judgements are based on clear performance criteria. It is our impression that when clear performance criteria exist, the OAG applies them. The later audit reports in particular include many formulations such as 'law XX stipulates that […]. Contrary to law XX the audited entity […]'. Pointing to specific law breaches in this way is of course ideal in terms of epistemic independence, since it allows little room for negotiation with the auditee on what should count as good conduct. It does, however, require a well established legal framework. In this respect, the implementation of the Organic Budget Law (Republic of Rwanda, 2006) has been important; the later OAG reports frequently refer to direct violations of the sort 'Contrary to Article 46 of Organic law no. 37/2006 of 12 September 2006 which assigns responsibility for execution of the budget to the Chief Budget Manager, there were cases where contracts with suppliers were wrongfully signed by individuals who were not Chief Budget Managers' (Republic of Rwanda OAG, 2009b). Furthermore, the fact that the OAG follows international (INTOSAI) auditing standards (Republic of Rwanda OAG, 2005) should be helpful in terms of epistemic independence.

That said, clear performance criteria appear to be lacking in many areas, and in the audit reports the OAG repeatedly calls for improved guidelines. To mention a few examples, the OAG points to 'a need for the government to come up with clear policy on transport' with 'clear guidelines on cost limits' (Republic of Rwanda OAG, 2008), and similarly suggests that 'there is no clear guidance to budget agencies on end of year closing procedures' (Republic of Rwanda OAG, 2009). Unclear guidelines of this type are of course problematic in terms of epistemic independence.

With performance criteria varying across fields and projects, it seems plausible that this could affect the choice of audit object; presumably, it is easier to focus audits in areas with well-defined rules. Two areas that receive considerable attention in the audit reports are procurement – where the OAG often points to direct regulations and clear non-compliance e.g. awarding tenders without approval by the National Tender Board and to suppliers whose bids were more expensive (see e.g. Republic of Rwanda OAG, 2005, 2008) – and non-compliance with contractual terms, where the OAG notes cases where construction works have exceeded contract durations and/or have works have not been completed as per agreement (see e.g. Republic of Rwanda OAG, 2006). Both areas could be seen as high risk,

and thus in great need of audit, but they also have in common that the performance criteria are relatively clear.

The clarity of performance criteria also varies with type of audit. The OAG clearly enjoys stronger epistemic independence in the field of financial audits than with respect to performance (VFM) audits. For the former, the OAG has developed its own Financial Audit Manual (Republic of Rwanda OAG, 2004), with audit procedure guidelines in line with INTOSAI standards. For performance audits, on the other hand, it has yet to produce an audit manual. Moreover, whereas financial audits depend on compliance with financial regulations, performance audits should evaluate project implementation and thus depend on the clarity of objectives in the audited entities. According to the OAG, the majority of projects and development programmes lack specific and quantified objectives, thus making it difficult to conduct performance evaluation (Republic of Rwanda OAG, 2006b). Adding to the problem, the OAG auditors have limited skills in performance auditing, and the Office stresses the need for a performance audit manual as well as training and technical assistance in the field (Republic of Rwanda OAG, 2006b).

Summing up, we can note that whereas the organisational independence of the OAG – the institutional arrangements in place to insulate it from outside influence – is relatively well established, the institution is not functionally independent to the same extent. The interview material as well as the OAG audit reports and strategic documents suggest deficiencies with respect to informational and epistemic independence and in the choice of audit object. Are these threats to independence linked to capacity constraints within the OAG and among its major stakeholders? In the next section we will discuss the relation between the independence ideal and operational constraints in terms of staff capacity.

4.2 The independence ideal and operational constraint in terms of capacity

4.2.1 OAG capacity constraints and their implications for independence

The OAG clearly faces very high demands in terms of staff capacity; the task at hand is significant, both in terms of scope and skill requirements. On top of skills in terms of accounting and evaluation techniques, the OAG needs detailed knowledge about the specific fields or industries in which the audited entities operate. According to the Financial Audit Manual (Republic of Rwanda OAG 2004, p. 8): ’The audit team should obtain knowledge of the entity’s business/ operations sufficient to enable them to identify and understand the

events, transactions and practices that, in their judgment, may have a significant effect on the financial statements and on the audit report. The team should obtain a general knowledge of the environment (legal, political, economic and social) and the industry within which the entity operates. The audit team should obtain in particular knowledge of how the entity operates. In understanding the operations of an entity, the audit team should in addition consider goals, objectives, strategies and business processes put in place by management to attain the entity's goals and objectives.'

Against this background it is not surprising that the documents consulted, as well as nearly all interview respondents, point to capacity as a binding constraint facing the OAG. It is suggested that full coverage of the OAG's mandate, and timely reports, cannot be achieved until 'adequate financial and human resource capacity at the Office of the Auditor General' is achieved (Republic of Rwanda OAG, 2008, 2009, 2009b). There is an acute shortage of accountants, not only within the OAG but in the country as a whole, and with accountants being very sought after the OAG has problems retaining staff. High staff turnover is cited as a key constraint restricting the OAG in its work and draining the office of extensive experience (Republic of Rwanda OAG, 2006b, 2009, 2009b). Hence, the OAG stresses the need for training and technical assistance, but also the necessity of reducing staff turnover in order to ensure sustainability of capacity building efforts (Republic of Rwanda OAG, 2004b, 2006b, 2009b). While the OAG staff is relatively well-paid for being public sector employees (respondent no. 5, 17), donor funded institutions such as the World Bank still pay significantly more, why interview respondents from both within and outside the OAG (no. 4, 5, 13, 15) point to low wages as an explanation for the staff retention problem. Other reasons put forward are a heavy workload and a stressful working environment (respondent no. 4, 15, 20).

Turning to the implications of OAG capacity constraints for independence, a first concern lies in that with capacity restricting coverage (Republic of Rwanda OAG, 2008, 2009, 2009b), the audit process will have to involve tight prioritisation. If open to influence in the choice of audit object – and as already touched upon, factors like the quality of accounts and the clarity of rules in different fields might well affect this choice – the more selective the OAG has to be in choosing what to audit, the greater the threat to functional independence. Moreover, the fact that the OAG does not have enough resources to pay wages that keep their staff from leaving is not only problematic in terms of the staff capacity constraints it generates; by hindering the institution from effectively fulfilling its mandate, it is also problematic in terms of financial independence. Although we have no reason to assume that this is the case here,

restricting the funds of an SAI could be a conscious strategy adopted by government to limit its influence.

Yet another concern lies in the implications of OAG capacity constraints for its informational independence. With restricted capacity, the OAG is likely to become more dependent on informational sources within the audited entity and less able to critically evaluate the information obtained. In the Financial Audit Manual (Republic of Rwanda OAG, 2004), the OAG stresses the importance of capacity for safeguarding independence, pointing to the educational, training and experience requirements for entry into the OAG, and to compliance with professional standards and implementation of monitoring and disciplinary processes. Similarly, in its Code of Ethics, the OAG explicitly states that 'Auditors must not undertake work they are not competent to perform' (Republic of Rwanda OAG 2007, Articles 31). Hence, the OAG is clearly aware of the concern that capacity constraints could have a negative effect on independent judgement. At the same time, however, given the emphasis placed on the OAG being restricted by capacity constraints, and the calls for training and technical assistance, it is clear that the institutional practice has yet to meet these highly set standards.

A related issue concerns the implications of OAG capacity constraints for its epistemic independence. If the auditor lacks the training and experience to be fully aware of existing performance criteria, he or she faces a greater risk of ending up in negotiation with the auditee with respect to what should count as good conduct. In its Code of Ethics, the OAG states that auditors 'must possess a good understanding of the constitutional, legal and institutional principles and standards governing the operations of the audited entity' (Republic of Rwanda OAG 2007, Articles 32). This clearly requires significant competence on part of the auditor. Moreover, and as we have seen, the performance criteria are not very clear in some areas. In particular in performance auditing, lack of training and established performance criteria seem to pose a threat to OAG epistemic independence.

4.2.2 Capacity constraints among OAG stakeholders – implications for independence

Turning to the OAG major stakeholders, the parliament and the audited entities – to and on which the OAG reports –the interview material and the consulted documents again point to severe capacity constraints. The OAG reports to parliament, whose role is to scrutinise the material and ensure follow up of audit recommendations. However, several interview respondents (no. 11, 12, 17, 18, 19) point to weak capacity negatively impacting the

parliament's oversight function, and the OAG argues for strengthening of the parliament's oversight role to ensure better follow-up of audit recommendations (Republic of Rwanda OAG, 2009b). Most focus, however, is on the capacity constraints in the audited entities – on which the OAG reports. Many interview respondents (no. 1, 2, 3, 4, 5, 8, 9, 11, 15, 16, 17, 18) stress the lack of an accounting tradition and the acute shortage of professional accountants in Rwanda, and the OAG points to an undeveloped public financial management and auditing environment as a key constraint facing the office (Republic of Rwanda OAG, 2006b).

The earlier OAG reports suggest that most of the audited entities do not have internal audit functions, and where they are in place their work is described as 'neither effective nor reliable' (Republic of Rwanda OAG, 2005, 2006). Later reports point to some improvements, suggesting that most of the audited entities now have internal audit functions, but their work is still referred to as ineffective and unreliable (Republic of Rwanda OAG, 2008, 2009, 2009b). Hence, although there are signs of progress over the years covered in the OAG audit reports, the picture revealed in the reports is one of incomplete – in many cases non-existent – financial reporting. Many of the audited entities do no keep basic books of accounts, and not until the financial year 2006 (the audit of which was completed in 2008) was there a state-consolidated financial statement available for audit. In the most recent audit report considered here, the majority of auditees still did not submit financial statements to the OAG, and very few did so on time (Republic of Rwanda OAG, 2009b).

Turning to the implications of capacity constraints in these institutions for OAG independence, a first concern lies in that working with incomplete, delayed and poor quality financial records takes time, and thus negatively affects OAG coverage and contributes to delays in submission of OAG reports (Republic of Rwanda OAG, 2008, 2009, 2009b). The lack of proper documentation means that the OAG has to increase its extent of testing in order to produce assurance (Republic of Rwanda OAG, 2004b). Considering the trade-off between scope and depth in the audit process, this means that they can take on fewer audits. If open to influence in the choice of audit object, the more selective the OAG has to be in choosing what to audit, the greater the threat to its functional independence.

One pressing concern in this respect is that the quality of accounts obtained from the audited entities affects the choice of audit object. If the quality of record keeping in a unit is very poor, it could be seen as unauditable. And, of course, if no records are produced, there is no audit trail to follow. An incomplete audit trail – possibly hiding fraud – could have far-reaching consequences. As simply stated in the OAG Strategic Plan: 'In a poor economy like Rwanda, no entity should access public funds unless the use of such money can be audited.

But the money cannot be audited without an audit trail. If there is no accounting, there is no audit trail and possibly no money for the poor' (Republic of Rwanda OAG, 2006b, p. 7). When scrutinising the OAG reports, it is clear that an incomplete audit trail does affect the choice of audit object. As formulated in one of the reports: 'Most of the public entities audited did not maintain proper books of account or prepare financial statements for the year ended 2004. In the absence of books of account and financial statements, the audits covered only a review of bank statements and supporting documentation. To address this problem in the future, I propose that only public entities with financial statements will be audited' (Republic of Rwanda OAG, 2005). Similarly, the Auditor General declares that 'For [XX], I was unable to carry out a full scope audit because of the poor state of books of account and supporting records' (Republic of Rwanda OAG, 2009). Given the risk that poor record keeping is used to mask abuse of funds, this threat to OAG functional independence is a serious concern.

Another worry is whether by taking on an advisory role vis-à-vis the parliament and the audited entities, the OAG develops relationships that could jeopardise its independence. The parliament and the OAG are meant to work together; in effect, the parliament depends on the OAG to be able to carry out its government oversight effectively. Still, the parliament is a political body, why one might be concerned that if the two organisations become very closely involved with one another, the parliament could exert a political influence on the OAG. What is arguably more problematic from an independence perspective, however, is if the OAG becomes closely involved with the very object for audit – i.e. the spending units in the ministries. Nevertheless, faced with an incomplete audit trail possibly hiding fraud, and a parliament unable to enforce the recommendations put forward in the audit reports, the OAG might feel a need to lend a helping hand.

In line with this, several of the interview respondents (no. 5, 8, 11, 15, 19, 20) pointed to the educational role of the OAG, arguing that it works closely with parliament and the spending units in the ministries. In its Code of Ethics (Republic of Rwanda OAG, 2007, Article 22) the OAG stresses the importance of remaining impartial when providing advice to the audited entity: 'When auditors are permitted to provide advice or services other than audit to an audited entity, care should be taken that these services do not lead to a conflict of interest.' Similarly, the Financial Audit Manual establishes that: 'When advising the executive in such matters as accounting standards and policies and the form of financial statements, the institution must ensure that it avoids any explicit or implied commitment that would impair the independent exercise of its audit mandate' (Republic of Rwanda OAG, 2004, p. 35). In another passage of the manual, however, the message is that the OAG should

refrain from an advisory role with respect to the audited entity: 'Audit personnel should not become involved in instructing personnel of an audited entity as to their duties' (p. 36). Evidently, the extent to which the OAG can and should take on an advisory role is not a clear-cut matter. If functioning as a helping hand leads to close relationships that compromise OAG's role as a whistleblower, this could surely pose a threat to its functional independence.

A closely related matter is the possibility that capacity constraints in the audited entities affect the nature of OAG judgements. Given the in many cases incomplete audit trail, the OAG is often forced to comment on the incompleteness rather than the content of records. Arguably, reports of 'non preparation' of financial statements (see e.g. Republic of Rwanda OAG, 2005) are, although clear, not as confrontational as reports pinpointing specific units or individuals abusing funds. Similarly, the OAG often explains failures to meet standards by referring to capacity constraints in the audited entity. For example, commenting on a failure of embassies to follow public tendering procedures: 'due to lack of sufficient staff embassies were not able to meet this requirement' (Republic of Rwanda OAG, 2008). And similarly, identifying errors in accounts, it proposes that this 'could be an indicator that budget agencies may not have competent staff for the accounting function' (Republic of Rwanda OAG, 2009b). Likewise, the OAG sometimes stresses the need for training rather than reprimands when audited entities fail to implement audit recommendations: 'Continuous failure to implement audit recommendations should necessitate action by supervising authorities, such as training' (Republic of Rwanda OAG, 2008). Although in most cases probably fair – a number of interview respondents who do not themselves represent audited organisations (no. 1, 3, 4, 5) argue to the same effect – pointing to capacity constraints and honest mistakes rather than possible fraud is not very confrontational. Again, we cannot rule out abuse of funds masked behind poor record keeping. That said, when having access to the necessary documentation to back up its claims, the OAG seemingly does not shy away from identifying cases of outright fraud, pinpointing the specific institutions and individuals involved.[13]

Summing up, we can note that to the extent that the organisational independence of the OAG is legally established, capacity constraints – both within the OAG and among its major stakeholders – mainly affect its functional independence. Key issues involve the impact of capacity constraints on informational and epistemic independence, on choice of audit object, and on the relationship between the auditor and auditee.

[13] For example: 'In Nyaruguru District, some tax collectors deposited revenue collections in a fraudulent bank account opened by the former tax officer (Mr. [XX]) in the name of the District at Kivu Banque Populaire. A follow up of this issue by management after the audit identified that Frw 12,562,485 had been withdrawn from this account by Mr. [XX]' (Republic of Rwanda OAG, 2009).

4.2.3 Striving for independence while tackling capacity constraints – tradeoffs

We have seen that capacity constraints – within the OAG as well as among its major stakeholders – negatively affect its functional independence. Correspondingly, could striving for independence have implications for the ability to effectively handle capacity constraints? Aiming for the programmatic ideal of independence, while struggling with operational constraints in terms of capacity, important trade-offs concern to what extent the OAG should be self-reliant or bring in outside help, how to sequence the institution building process, and the degree to which the OAG should take on an advisory role in relation to its stakeholders.

To avoid a scenario where the OAG is informationally dependent on the auditee it might be justified to bring in outside help. The lack of accountants in Rwanda limits the possibility to outsource audits to private firms (Republic of Rwanda OAG, 2006b), yet the OAG has on several occasions brought in international consultants. The OAG Financial Audit Manual explicitly states that 'in cases where appropriate skills are lacking, use of outside experts should be considered' (Republic of Rwanda OAG, 2004, p. 7). Hence, rather than basing judgements on insufficient knowledge, the OAG should rely on external support. In a way, this could be seen as trading informational dependence on the auditee for informational dependence on an external expert. From an SAI independence perspective, the latter is clearly preferable to the former. Importantly, however, and as the OAG itself emphasises when commenting on the use of external consultants in the audited entities (Republic of Rwanda OAG, 2008, 2009, 2009b), bringing in external assistance without mechanisms for proper skill transfer is not sustainable. To build institutional capacity, and not remain informationally dependent on external support, one must ensure knowledge transfer from the external consultants to the OAG staff.

Another consideration, also relating to the capacity constraints within the OAG, concerns the sequencing of institutional reform. A key question in this respect is to what extent the OAG should move into performance auditing. Performance audits are the focus of many Western SAIs today, and can provide powerful tools for evaluating how effectively the government implements policy. At the same time, however, moving into performance auditing involves a risk of becoming increasingly politicised (Grasso and Sharkansky, 2001; Power, 1997). Financial and performance audits are based on different evaluation techniques; while the former is rooted in accounting procedures, the latter is based on social scientific enquiry (Power, 1997). Performance audits are supposed to comment on the implementation of government policies, not their content. The boundary between policy objectives and policy

implementation is not necessarily clear-cut, however. And reasonably, evaluating policy implementation without over-stepping this line should be particularly difficult for an auditor lacking experience and training.

At the time of writing, there is only one publicly available OAG performance audit report (see Republic of Rwanda OAG, 2007b).[14] More performance audits are underway, though, and while the goal at this stage is to undertake one per year, the longer-term ambition is to increasingly focus on this form of evaluation (respondent no. 5, 19). As we have seen, however, the OAG reports to have limited skills in performance auditing and stresses its need for training and technical assistance in the field (Republic of Rwanda OAG, 2006b). Moreover, the fact that the OAG has yet to produce a performance audit manual, coupled with reports of unclear project objectives in the audited entities, means that the OAG has limited access to established performance indicators in the field. Hence, it seems that at this stage, carrying out performance audits could be problematic in terms of informational and epistemic independence, with the auditor risking to become dependent on informational sources within the audited entity and to end up negotiating with the same about what should count as good conduct. At the least, it is clear that the OAG is in need of training in the field before further expanding its activity in the area.

With respect to capacity constraints among the OAG stakeholders, above we put forward the concern that by taking on an advisory role vis-à-vis the parliament and the audited entities, the OAG might develop relationships that jeopardise its independence. We also noted, however, that in spite of being potentially problematic from an independence perspective, to what extent the OAG should take on an advisory role is not a clear-cut matter. The role of the OAG (according to our definition of effective SAI oversight, see Section 2.1) is to offer a true and fair view on government financial conduct and communicate this to the concerned stakeholders – the parliament, the media, and ultimately the voters. Importantly, however, the OAG can live up to these criteria without exerting much influence on political outcomes; the *impact* of the OAG depends on how its stakeholders use the information obtained. Arguably, one should thus take a wider approach when evaluating the establishment of an effective oversight function – not only considering to what extent the OAG honours its part of the agreement, but also the reception it gets from stakeholders and to what extent it helps contribute to conditions enabling future oversight.

[14] With such little input, we are ill-suited to evaluate OAG's activity in the field. However, we can note that the report – which focuses on the effectiveness of maternal health care delivery – points to a lack of performance indicators in the area (Republic of Rwanda OAG, 2007b).

If, as suggested above, the parliament lacks the capacity to scrutinise the OAG reports, this will have a negative effect on the extent to which OAG recommendations are followed up, in turn presumably impacting negatively on the status of the OAG. Moreover, if failing to address the capacity constraints in the audited entities, there is a risk that the OAG will continue to face an incomplete audit trail possibly hiding fraud. Against this background, it seems that at this stage in the institution-building process the educational role of the OAG is important, and in a longer term perspective working in favour of effective government oversight. Still, a valid question is whether the OAG is the appropriate institution to help alleviate capacity constraints among its stakeholders; presumably, just as the OAG could bring in external consultants, so could the parliament and the audited entities. Again, however, a limiting factor is the acute shortage of accountants in Rwanda (Republic of Rwanda OAG, 2006b), coupled with reports of low quality of consultant services and limited knowledge transfers from the external consultants to the local staff (Republic of Rwanda OAG, 2008, 2009, 2009b). Given these concerns, OAG guidance could play an important part in helping to improve the audit trail as well as follow up of audit recommendations.

In fact, several interview respondents (no. 3, 4, 5, 9, 11, 14, 15, 16, 18, 19) – from the OAG and the audited entities, as well as from donors and other government oversight institutions – point to significant improvements in terms of financial reporting in the audited entities, and suggest that the OAG has contributed to this development. Comparing the yearly OAG reports over time points in the same direction – while there are clearly still serious deficiencies in terms of accounting procedures, it is now more common among the audited entities to actually keep books of accounts. Moreover, the number of OAG reports of outright fraud has increased over the years. While we cannot rule out the possibility that there has in fact been an increase in the number of fraudulent cases, it seems reasonable that part of this development could be due to a more effectively working OAG, and an improved audit trail increasing the chances of detecting abuse of funds. Perhaps what we are observing is a trend where the OAG goes from having to focus almost exclusively on the incompleteness of records to actually having records to audit and therefore being able to detect fraud. If so, this would suggest significant developments in Rwandan public financial management. Given the severe capacity constraints among OAG stakeholders, temporarily taking on an advisory role is, although potentially compromising independence, arguably necessary for the OAG to be able to exercise effective oversight in the future.

5 Conclusions

Developing countries tend to have great needs in terms of institution building but limited resources available for building institutional capacity. Does this call for alternative institutional solutions? Several recent studies in fact suggest that institution building in developing countries requires a 'second-best mind-set'. Yet, we have little knowledge of the specific tradeoffs between first-best benchmarks and second-best solutions facing developing country institutions in their start-up phase.

The present study considers the establishment of a supreme audit institution (SAI) in Rwanda. The government oversight role of an SAI is arguably particularly important in a developing country, where it ultimately helps to ensure that public funds reach the poor rather than end up in corrupt pockets. However, while operating with highly set ideals, developing country SAIs also tend to face severe operational constraints. We investigate the interplay between the programmatic ideal of SAI independence and operational constraints in terms of staff capacity in the development of a supreme audit oversight function in Rwanda. Doing so, we hope to shed light on institution building with limited resources, highlighting potential trade-offs between best-practice institutional benchmarks and local operational constraints in a developing country institution-building process.

Drawing on data from document studies and key informant interviews, the results of the empirical analysis suggest that while the organisational independence of the OAG (Rwanda's SAI) is relatively well established, the institution is not functionally independent to the same extent. Threats to OAG's functional independence originate in severe capacity constraints, within the OAG as well as among its major stakeholders. Capacity constraints within the OAG threatens informational and epistemic independence, making the auditor more dependent on informational sources within the audited entity, as well as more likely to end up negotiating with the same about what should count as good conduct. With respect to capacity constraints among OAG stakeholders, one concern is that by taking on an advisory role, the OAG may develop relationships that could jeopardise its independent judgment. An equally pressing concern is that the poor quality of accounts obtained from the audited entities renders some fields unauditable and thereby affects the choice of audit object – potentially masking fraud behind poor record keeping. While capacity constraints negatively impact the functional independence of the OAG, our results also imply that striving for independence could have corresponding implications for the ability to effectively handle capacity constraints. Important

trade-offs exist in to what extent the OAG should be self-reliant or bring in external assistance, how to sequence the institutional reform, and the degree to which the OAG should take on an advisory role in relation to its stakeholders. In order to effectively tackle operational constraints in terms of capacity, there are seemingly good arguments for temporarily compromising the programmatic ideal of SAI independence.

So what lessons can we draw from this? The present study considers the development of a specific institution in a specific country. Nevertheless, we believe that our findings shed light on circumstances and considerations relevant for many developing countries in need of significant institutional development but with very limited means available for institution building. In general terms, our findings highlight the importance of being aware of how operational constraints in the institutional practice affect the chances of achieving first-best institutional benchmarks, and the need for sometimes compromising the ideal in order to efficiently tackle operational constraints. In addition, however, our findings illustrate that institution building bounded by operational constraints requires careful sequencing of institutional reform – not taking on too much too fast. They also point to the importance of being aware of institutional interdependencies, i.e. ways in which different institutions interact and how they can reinforce each other. In particular, in areas where there are severe capacity constraints and staff retention problems (like in Rwandan public financial management), it is not enough to focus capacity building efforts to individual institutions (like the OAG); there is a need for nation-wide capacity building initiatives. Furthermore, and as illustrated by OAG's relatively well defined organisational independence but sometimes lacking functional independence, while having the appropriate legal framework in place might well be necessary, it is not sufficient to ensure a well functioning institutional practice. Our results indicate that effort needs to be put into translating the legal framework into practice – implementation needs further attention.

References

Acemoglu, D., S. Johnson and J. A. Robinson (2001) "The colonial origins of comparative development: an empirical investigation", *American Economic Review*, 91(5), pp. 1369-1401.

Acemoglu, D., Aghion P. and F. Zilibotti (2006) "Distance to Frontier, Selection, and Economic Growth." *Journal of the European Economic Association*, 4(1), pp. 37-74.

Adsèra, A., Boix, C. and M. Payne (2003) "Are you being served? Political accountability and quality of government", *The Journal of Law, Economics, & Organization*, 19(2), pp. 445-490.

Ahlbäck, S. (1999) *Att kontrollera staten: Den statliga revisionens roll i den parlamentariska demokratin*, PhD. thesis in political science, Uppsala University 1999, Uppsala: Acta Universitatis Upsaliensis.

Antle, R. (1984) "Auditor Independence", *Journal of Accounting Research*, 22(1), pp. 1-20.

Auberbach, C. F. and L. B. Silverstein (2003) *Qualitative data: An introduction to coding and analysis*, New York: New York University Press.

Batley, R. (2004) "The politics of service delivery reform", *Development and Change*, 35(1), pp. 31-56.

Bennett, A. and George, A. L. (1997) "Process tracing in case study research", MacArthur Foundation Workshop on Case Study Methods October 17-19, 1997.

Besley, T. and R. Burgess (2002) "The political economy of government responsiveness: Theory and evidence from India", *The Quarterly Journal of Economics*, November 2002, pp. 1415-1451.

Checkel, J. T. (2005) "It's the process stupid! Process tracing in the study of European and international politics", Working Paper no. 26 October 2005, Arena Centre for European Studies, University of Oslo.

Chowdhury, R. and J. Innes (1998) "A qualitative analysis of the audit expectations gap in the public sector of Bangladesh", *International Journal of Auditing*, vol. 2, pp. 247-261.

Di Tella, R. and E. Schargrodsky (2003) "The role of wages and auditing during a crackdown on corruption in the city of Buenos Aires", *The Journal of Law and Economics*, 46(1), pp. 269-292.

Dixit, A. K. (2004) *Lawlessness and Economics: Alternative Modes of Governance*, Princeton, NJ: Princeton University Press.

Djankov, S., Glaeser, E., La Porta, R., Lopez-de-Silanes, F. and A. Shleifer (2003) "The New Comparative Economics." *Journal of Comparative Economics*, 31(4), pp. 595-619.

Dorotinsky, B. and R. Floyd (2004) "Public expenditure accountability in Africa: progress, lessons, and challenges", in Levy, B. and S. Kpundeh (eds), *Building state capacity in Africa: New approaches, emerging lessons*, Washington DC: World Bank Institute.

Dye, K. M. and R. Stapenhurst (1998) "Pillars of integrity: the importance of supreme audit institutions in curbing corruption", The Economic Development Institute of the World Bank.

Ferraz, C. and F. Finan (2008) "Exposing corrupt politicians: The effects of Brazil's publicly released audits on electoral outcomes", *The Quarterly Journal of Economics*, May 2008.

Funell, W. (1994) "Independence of the state auditor in Britain: A constitutional keystone or a case of reified imagery", *ABACUS*, 30(2), pp. 175-195.

Gendron, Y. and D. J. Cooper (2001) "In the name of accountability: State auditing, independence and new public management", *Accounting, Auditing and Accountability Journal*, 14(3), pp. 278-310.

Goodwin, J. and T. Yeow Yeo (2001) "Two factors affecting internal audit independence and objectivity: Evidence from Singapore", *International Journal of Auditing*, vol. 5, pp. 107-125.

Grasso, P. G. and I. Sharkansky (2001) "The auditing of public policy and the politics of auditing: The US GAO and Israel's State Comptroller", *Governance: An International Journal of Policy and Administration*, 14(1), pp. 1-21.

Greif, A. (1993) "Contract enforceability and economic institutions in early trade: the Maghribi traders coalition", *American Economic Review*, 83(3), pp. 525-548.

Greif, A. (2000) "The fundamental problem of exchange: A research agenda in Historical Institutional Analysis", *European Review of Economic History*, 4(3), pp. 251-284.

Hall, R. E., and C. I. Jones (1999) "Why do some countries produce so much more output per worker than others?", *The Quarterly Journal of Economics*, 114(1), pp. 83-116.

Hawkins, D., Lake, D. A., Nielson, D. and M. J. Tierney (2005) "Delegation under anarchy: States, international organizations, and principal agent theory", in Hawkins, D., Lake, D. A., Nielson, D. and M. J. Tierney (eds), *Delegation and agency in international organizations*, Cambridge University Press.

Highton, N. (2008) "Mutual accountability at the country level: Rwanda country case study", London: Overseas Development Institute.

Hsieh, H-F. and S. E. Shannon (2005) "Three approaches to qualitative content analysis", *Qualitative Health Research*, 15(9), pp. 1277-1288.

International Organization of Supreme Audit Institutions (INTOSAI) (1995) "Auditing Standards", Issued by the Auditing Standards Committee at the XIV Congress of INTOSAI in Washington, D. C. 1992, amended by the XV Congress of INTOSAI in Cairo 1995.

International Organization of Supreme Audit Institutions (INTOSAI) (1998) "The Lima Declaration of Guidelines on Auditing Precepts", originally adopted at the IX INCOSAI congress in Lima 1977, republished by INTOSAI 1998.
International Organization of Supreme Audit Institutions (INTOSAI) (2001) "Independence of SAIs project: Final task force report", March 31 2001.
Kaufmann, D., Kraay, A. and P. Zoido-Lobatón (1999) "Governance matters", Working paper no. 2196, Washington DC: World Bank.
Kellner, W. (2000) "Supreme audit institutions and their role in fighting corruption", in Gabriel, L. M., Stapenhurst, R. and M. Thomas (eds.), *The role of bilateral donors in fighting corruption*, Maastricht: World Bank Institute and the Dutch Ministry of Foreign Affairs.
Knack, S. and P. Keefer (1995) "Institutions and economic performance: Cross-country tests using alternative institutional measures", *Economics and Politics*, 7(3), p. 207-227.
Levy, B. (2007) "State capacity, accountability and economic development in Africa", *Commonwealth & Comparative Politics*, 45(4), pp. 499-520.
Lienert, I. (2004) "Choosing a Budget Management System: The Case of Rwanda", IMF WP/04/132, pp. 1-27.
Mapsec (2006) "Evaluation of the NCA-SNAO support to the OAG of Rwanda", Stockholm/Kigali, July 2006.
Miller, G. J. (2005) "The political evolution of principal-agent models", Annual Review of Political Science, vol. 8, pp. 203-225.
Nagin, D. S., Rebitzer, J. B., Sanders, S. and L. J. Taylor (2002) "Monitoring, motivation, and management: The determinants of opportunistic behaviour in a field experiment", *The American Economic Review*, 92(4), pp. 850-873.
North, D. (1990) *Institutions, Institutional Change and Economic Performance*, Cambridge: Cambridge University Press.
Olken, B. A. (2007) "Monitoring corruption: Evidence from a field experiment in Indonesia", *Journal of Political Economy*, 115(21), pp. 200-249.
Pearson, M. A. (1987) "Auditor independence deficiencies and alleged audit failures", *Journal of Business Ethics*, vol. 6, pp. 281-287.
Persson, T. and G. Tabellini (2000) *Political Economics: Explaining Economic Policy*, Cambridge: MIT Press.
Power, M. (1997) *The Audit Society*, Oxford: Oxford University Press.
Republic of Rwanda (2003) "The constitution of the republic of Rwanda", Kigali, 2003.
Republic of Rwanda (2006) "Organic law on state finances and property", Official Gazette of the Republic of Rwanda, September 2006, Kigali.
Republic of Rwanda (2007c) "Public Expenditure and Financial Accountability Assessment", Final Report, October 2007, Kigali.
Republic of Rwanda OAG (2003) "Report of the Auditor General on the financial year ended 31 December 2002", Kigali.
Republic of Rwanda OAG (2004) "Financial Audit Manual", Kigali.
Republic of Rwanda OAG (2004b) "Report of the Auditor General of State Finances for the year ended 31 December 2003", Kigali.
Republic of Rwanda OAG (2005) "Report of the Auditor General of State Finances for the year ended 31 December 2004", Kigali.
Republic of Rwanda OAG (2006) "Report of the Auditor General of State Finances for the year ended 31 December 2005", Kigali.
Republic of Rwanda OAG (2006b) "Strategic Plan: 2006-2009", Kigali.
Republic of Rwanda OAG (2007) "Code of Ethics", Kigali.
Republic of Rwanda OAG (2007b) "Performance audit report of the health sector: The effectiveness of maternal health care delivery in Rwanda", Kigali.
Republic of Rwanda OAG (2008) "Report of the Auditor General of State Finances for the year ended 31 December 2006", Kigali.
Republic of Rwanda OAG (2009) "Report of the Auditor General of State Finances for the year ended 31 December 2007", Kigali.
Republic of Rwanda OAG (2009b) "Report of the Auditor General of State Finances for the year ended 31 December 2008", Kigali.
Republic of Rwanda OAG (2010) Office of the Auditor General of State Finances homepage, available at http://www.oag.gov.rw/.
Richards, L. (2005) *Handling qualitative data: A practical guide*, London: Sage Publications Ltd.
Rodrik, D. (2008) "Second best institutions", NBER Working Paper no. W14050, June 2008.
Rothstein, B. (2010) "Anti-Corruption: The Indirect "Big Bang" Approach", mimeo (Forthcoming in Review of International Political Economy), the Quality of Government Institute, University of Gothenburg.

Sikka, P. and H. Willmott (1995) "The power of 'independence': Defending and extending the jurisdiction of accounting in the United Kingdom", *Accounting, Organizations and Society*, 20(6), pp. 547-581.
Streim, H. (1994) "Agency problems in the legal political system and supreme auditing institutions", *European Journal of Law and Economics*, vol. 1, pp. 177-191.
Tansey, O. (2007) "Process tracing and elite interviewing: A case for non-probability sampling", *PS: Political Science and Politics*, 40(4), pp. 765-772.
World Bank (2002) "Features and functions of supreme audit institutions", Findings 208, June 2002.
Yin, Robert (2003) *Case study research: Design and methods*, Thousand Oaks: Sage Publications Inc.

Appendix: Data sources

A1. Documents

A1.1 Legal documents

Republic of Rwanda (2003) "The constitution of the republic of Rwanda", Kigali.
Republic of Rwanda (2006) "Organic law on state finances and property", Official Gazette of the Republic of Rwanda, September 2006, Kigali.

A1.2 OAG strategic documents

Republic of Rwanda Office of the Auditor General of State Finances (2004) "Financial Audit Manual", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2006b) "Strategic Plan: 2006-2009", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2007) "Code of Ethics", Kigali.

A1.3 OAG audit output

Republic of Rwanda Office of the Auditor General of State Finances (2003) "Report of the Auditor General on the financial year ended 31 December 2002", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2004b) "Report of the Auditor General of State Finances for the year ended 31 December 2003", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2005) "Report of the Auditor General of State Finances for the year ended 31 December 2004", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2006) "Report of the Auditor General of State Finances for the year ended 31 December 2005", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2008) "Report of the Auditor General of State Finances for the year ended 31 December 2006", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2009) "Report of the Auditor General of State Finances for the year ended 31 December 2007", Kigali.
Republic of Rwanda Office of the Auditor General of State Finances (2009b) "Report of the Auditor General of State Finances for the year ended 31 December 2008", Kigali.

A2. Interviews

Mr. Armon, J., Senior Governance Advisor, Department for International Development (Dfid), Kigali.
Ms. Berglund, I., International Advisor, The Swedish National Audit Office, Stockholm.
Mr. Biraro, O. Deputy Auditor General, Office of the Auditor General of State Finances (OAG), Kigali.
Mr. Billing, J., Team leader of ASI support of civil service reform, Ministry of Public Service and Labour (MIFOTRA), Civil Service Reform Programme, Kigali.
Mr. De Boer, V., Economic Advisor, Delegation of the European Commission in Rwanda, Kigali.
Mr. Emasu, S., PEFA Advisor, Ministry of Finance and Economic Planning (MINECOFIN), Kigali.
Mr. Engström, L., Resident Representative, International Monetary Fund (IMF), Kigali.
Ms. Ericsson, M., Second Secretary, Embassy of Sweden, Development Cooperation Section, Kigali.
Mr. Gatabazi, T., Accountant General, Ministry of Finance and Economic Planning (MINECOFIN), Kigali.
Ms. Gårdmark, J., Deputy Project Director, The Swedish National Audit Office, Stockholm.
Mr. Hjertstrand, A., Director International Development Cooperation, The Swedish National Audit Office, Stockholm.
Mr. Kabayiza Murara, L., Previously director in charge of public enterprises and director in charge of government projects at the Office of the Auditor General of State Finances (OAG), now Public Sector Management Specialist at the World Bank, Kigali
Ms. Kamagaju Rutagwenda, E., Auditor General, Office of the Auditor General of State Finances (OAG), Kigali.
Mr. Kamurase, A., Operations Officer, World Bank, Kigali.
Mr. Kananura, P. Director, Transparency Rwanda, Kigali.
Ms. Lourenco, M. Senior Programme Manager, The Swedish National Audit Office, Stockholm.
Mr. Marara-Shyaka, P., Director of Quality Assurance, Office of the Auditor General of State Finances (OAG), Kigali.
Mr. Masabo, O., Macroeconomist and Director of the Integrated Support Project, Ministry of Finance and Economic Planning (MINECOFIN), Kigali.
Mr. Mbombo, M. Office of the Ombudsman, Kigali.

Mr. Mujuni Nkunda, F., Government Chief Internal Auditor, Ministry of Finance and Economic Planning (MINECOFIN), Kigali.
Ms. Mukayuhi, C., Chair of Budget Committee, Rwanda Parliament, The Chamber of Deputies, Kigali.
Ms. Mukarurangwa, I., Deputy Ombudsman, Office of the Ombudsman, Kigali.
Mr. Muragije, R., Public Expenditure and Financial Accounting Specialist, Human Resources and Institutional Capacity Development Agency (HIDA), Kigali.
Mr. Niyigena, P., Public Sector Reform Specialist, Human Resources and Institutional Capacity Development Agency (HIDA), Kigali.
Mr. Nordstrand, L. Audit Director, The Swedish National Audit Office, Stockholm.
Mr. Rutsimba, E., Monitoring and Evaluations Specialist, Human Resources and Institutional Capacity Development Agency (HIDA), Kigali.
Mr. Ström, A., Head of Development Cooperation, Embassy of Sweden, Development Cooperation Section, Kigali.

Previous doctoral theses in the Department of Economics, Gothenburg

Avhandlingar publicerade innan serien Ekonomiska Studier startades
(Theses published before the series Ekonomiska Studier was started):

Östman, Hugo (1911), Norrlands ekonomiska utveckling
Moritz, Marcus (1911), Den svenska tobaksindustrien
Sundbom, I. (1933), Prisbildning och ändamålsenlighet
Gerhard, I. (1948), Problem rörande Sveriges utrikeshandel 1936/38
Hegeland, Hugo (1951), The Quantity Theory of Money
Mattsson, Bengt (1970), Cost-Benefit analys
Rosengren, Björn (1975), Valutareglering och nationell ekonomisk politik
Hjalmarsson, Lennart (1975), Studies in a Dynamic Theory of Production and its Applications
Örtendahl, Per-Anders (1975), Substitutionsaspekter på produktionsprocessen vid massaframställning
Anderson, Arne M. (1976), Produktion, kapacitet och kostnader vid ett helautomatiskt emballageglasbruk
Ohlsson, Olle (1976), Substitution och odelbarheter i produktionsprocessen vid massaframställning
Gunnarsson, Jan (1976), Produktionssystem och tätortshierarki – om sambandet mellan rumslig och ekonomisk struktur
Köstner, Evert (1976), Optimal allokering av tid mellan utbildning och arbete
Wigren, Rune (1976), Analys av regionala effektivitetsskillnader inom industribranscher
Wästlund, Jan (1976), Skattning och analys av regionala effektivitetsskillnader inom industribranscher
Flöjstad, Gunnar (1976), Studies in Distortions, Trade and Allocation Problems
Sandelin, Bo (1977), Prisutveckling och kapitalvinster på bostadsfastigheter
Dahlberg, Lars (1977), Empirical Studies in Public Planning
Lönnroth, Johan (1977), Marxism som matematisk ekonomi
Johansson, Börje (1978), Contributions to Sequential Analysis of Oligopolistic Competition

Ekonomiska Studier, utgivna av Nationalekonomiska institutionen vid Göteborgs Universitet. Nr 1 och 4 var inte doktorsavhandlingar. (The contributions to the department series 'Ekonomiska Studier' where no. 1 and 4 were no doctoral theses):

2. **Ambjörn, Erik** (1959), Svenskt importberoende 1926-1956: en ekonomisk-statistisk kartläggning med kommentarer
3. **Landgren, K-G.** (1960), Den "Nya ekonomien" i Sverige: J.M. Keynes, E. Wigfors och utecklingen 1927-39
5. **Bigsten, Arne** (1979), Regional Inequality and Development: A Case Study of Kenya
6. **Andersson, Lars** (1979), Statens styrning av de kommunala budgetarnas struktur (Central Government Influence on the Structure of the Municipal Budget)
7. **Gustafsson, Björn** (1979), Inkomst- och uppväxtförhållanden (Income and Family Background)

8. **Granholm, Arne** (1981), Interregional Planning Models for the Allocation of Private and Public Investments
9. **Lundborg, Per** (1982), Trade Policy and Development: Income Distributional Effects in the Less Developed Countries of the US and EEC Policies for Agricultural Commodities
10. **Juås, Birgitta** (1982), Värdering av risken för personskador. En jämförande studie av implicita och explicita värden. (Valuation of Personal Injuries. A comparison of Explicit and Implicit Values)
11. **Bergendahl, Per-Anders** (1982), Energi och ekonomi - tillämpningar av input-output analys (Energy and the Economy - Applications of Input-Output Analysis)
12. **Blomström, Magnus** (1983), Foreign Investment, Technical Efficiency and Structural Change - Evidence from the Mexican Manufacturing Industry
13. **Larsson, Lars-Göran** (1983), Comparative Statics on the Basis of Optimization Methods
14. **Persson, Håkan** (1983), Theory and Applications of Multisectoral Growth Models
15. **Sterner, Thomas** (1986), Energy Use in Mexican Industry.
16. **Flood, Lennart** (1986), On the Application of Time Use and Expenditure Allocation Models.
17. **Schuller, Bernd-Joachim** (1986), Ekonomi och kriminalitet - en empirisk undersökning av brottsligheten i Sverige (Economics of crime - an empirical analysis of crime in Sweden)
18. **Walfridson, Bo** (1987), Dynamic Models of Factor Demand. An Application to Swedish Industry.
19. **Stålhammar, Nils-Olov** (1987), Strukturomvandling, företagsbeteende och förväntningsbildning inom den svenska tillverkningsindustrin (Structural Change, Firm Behaviour and Expectation Formation in Swedish Manufactury)
20. **Anxo, Dominique** (1988), Sysselsättningseffekter av en allmän arbetstidsför-kortning (Employment effects of a general shortage of the working time)
21. **Mbelle, Ammon** (1988), Foreign Exchange and Industrial Development: A Study of Tanzania.
22. **Ongaro, Wilfred** (1988), Adoption of New Farming Technology: A Case Study of Maize Production in Western Kenya.
23. **Zejan, Mario** (1988), Studies in the Behavior of Swedish Multinationals.
24. **Görling, Anders** (1988), Ekonomisk tillväxt och miljö. Förorenings-struktur och ekonomiska effekter av olika miljövårdsprogram. (Economic Growth and Environment. Pollution Structure and Economic Effects of Some Environmental Programs).
25. **Aguilar, Renato** (1988), Efficiency in Production: Theory and an Application on Kenyan Smallholders.
26. **Kayizzi-Mugerwa, Steve** (1988), External Shocks and Adjustment in Zambia.

27. **Bornmalm-Jardelöw, Gunilla** (1988), Högre utbildning och arbetsmarknad (Higher Education and the Labour Market)
28. **Tansini, Ruben** (1989), Technology Transfer: Dairy Industries in Sweden and Uruguay.
29. **Andersson, Irene** (1989), Familjebeskattning, konsumtion och arbetsutbud - En ekonometrisk analys av löne- och inkomstelasticiteter samt policysimuleringar för svenska hushåll (Family Taxation, Consumption and Labour Supply - An Econometric Analysis of Wage and Income Elasticities and Policy Simulations for Swedish Households)
30. **Henrekson, Magnus** (1990), An Economic Analysis of Swedish Government Expenditure
31. **Sjöö, Boo** (1990), Monetary Policy in a Continuous Time Dynamic Model for Sweden
32. **Rosén, Åsa** (1991), Contributions to the Theory of Labour Contracts.
33. **Loureiro, Joao M. de Matos** (1992), Foreign Exchange Intervention, Sterilization and Credibility in the EMS: An Empirical Study
34. **Irandoust, Manuchehr** (1993), Essays on the Behavior and Performance of the Car Industry
35. **Tasiran, Ali Cevat** (1993), Wage and Income Effects on the Timing and Spacing of Births in Sweden and the United States
36. **Milopoulos, Christos** (1993), Investment Behaviour under Uncertainty: An Econometric Analysis of Swedish Panel Data
37. **Andersson, Per-Åke** (1993), Labour Market Structure in a Controlled Economy: The Case of Zambia
38. **Storrie, Donald W.** (1993), The Anatomy of a Large Swedish Plant Closure
39. **Semboja, Haji Hatibu Haji** (1993), Energy and Development in Kenya
40. **Makonnen, Negatu** (1993), Labor Supply and the Distribution of Economic Well-Being: A Case Study of Lesotho
41. **Julin, Eva** (1993), Structural Change in Rural Kenya
42. **Durevall, Dick** (1993), Essays on Chronic Inflation: The Brazilian Experience
43. **Veiderpass, Ann** (1993), Swedish Retail Electricity Distribution: A Non-Parametric Approach to Efficiency and Productivity Change
44. **Odeck, James** (1993), Measuring Productivity Growth and Efficiency with Data Envelopment Analysis: An Application on the Norwegian Road Sector
45. **Mwenda, Abraham** (1993), Credit Rationing and Investment Behaviour under Market Imperfections: Evidence from Commercial Agriculture in Zambia
46. **Mlambo, Kupukile** (1993), Total Factor Productivity Growth: An Empirical Analysis of Zimbabwe's Manufacturing Sector Based on Factor Demand Modelling
47. **Ndung'u, Njuguna** (1993), Dynamics of the Inflationary Process in Kenya
48. **Modén, Karl-Markus** (1993), Tax Incentives of Corporate Mergers and Foreign Direct Investments
49. **Franzén, Mikael** (1994), Gasoline Demand - A Comparison of Models
50. **Heshmati, Almas** (1994), Estimating Technical Efficiency, Productivity Growth And Selectivity Bias Using Rotating Panel Data: An Application to Swedish Agriculture

51. **Salas, Osvaldo** (1994), Efficiency and Productivity Change: A Micro Data Case Study of the Colombian Cement Industry
52. **Bjurek, Hans** (1994), Essays on Efficiency and Productivity Change with Applications to Public Service Production
53. **Cabezas Vega, Luis** (1994), Factor Substitution, Capacity Utilization and Total Factor Productivity Growth in the Peruvian Manufacturing Industry
54. **Katz, Katarina** (1994), Gender Differentiation and Discrimination. A Study of Soviet Wages
55. **Asal, Maher** (1995), Real Exchange Rate Determination and the Adjustment Process: An Empirical Study in the Cases of Sweden and Egypt
56. **Kjulin, Urban** (1995), Economic Perspectives on Child Care
57. **Andersson, Göran** (1995), Volatility Forecasting and Efficiency of the Swedish Call Options Market
58. **Forteza, Alvaro** (1996), Credibility, Inflation and Incentive Distortions in the Welfare State
59. **Locking, Håkan** (1996), Essays on Swedish Wage Formation
60. **Välilä, Timo** (1996), Essays on the Credibility of Central Bank Independence
61. **Yilma, Mulugeta** (1996), Measuring Smallholder Efficiency: Ugandan Coffee and Food-Crop Production
62. **Mabugu, Ramos E.** (1996), Tax Policy Analysis in Zimbabwe Applying General Equilibrium Models
63. **Johansson, Olof** (1996), Welfare, Externalities, and Taxation; Theory and Some Road Transport Applications.
64. **Chitiga, Margaret** (1996), Computable General Equilibrium Analysis of Income Distribution Policies in Zimbabwe
65. **Leander, Per** (1996), Foreign Exchange Market Behavior Expectations and Chaos
66. **Hansen, Jörgen** (1997), Essays on Earnings and Labor Supply
67. **Cotfas, Mihai** (1997), Essays on Productivity and Efficiency in the Romanian Cement Industry
68. **Horgby, Per-Johan** (1997), Essays on Sharing, Management and Evaluation of Health Risks
69. **Nafar, Nosratollah** (1997), Efficiency and Productivity in Iranian Manufacturing Industries
70. **Zheng, Jinghai** (1997), Essays on Industrial Structure, Technical Change, Employment Adjustment, and Technical Efficiency
71. **Isaksson, Anders** (1997), Essays on Financial Liberalisation in Developing Countries: Capital mobility, price stability, and savings
72. **Gerdin, Anders** (1997), On Productivity and Growth in Kenya, 1964-94
73. **Sharifi, Alimorad** (1998), The Electricity Supply Industry in Iran: Organization, performance and future development
74. **Zamanian, Max** (1997), Methods for Mutual Fund Portfolio Evaluation: An application to the Swedish market
75. **Manda, Damiano Kulundu** (1997), Labour Supply, Returns to Education, and the Effect of Firm Size on Wages: The case of Kenya
76. **Holmén, Martin** (1998), Essays on Corporate Acquisitions and Stock Market Introductions

77. **Pan, Kelvin** (1998), Essays on Enforcement in Money and Banking
78. **Rogat, Jorge** (1998), The Value of Improved Air Quality in Santiago de Chile
79. **Peterson, Stefan** (1998), Essays on Large Shareholders and Corporate Control
80. **Belhaj, Mohammed** (1998), Energy, Transportation and Urban Environment in Africa: The Case of Rabat-Salé, Morocco
81. **Mekonnen, Alemu** (1998), Rural Energy and Afforestation: Case Studies from Ethiopia
82. **Johansson, Anders** (1998), Empirical Essays on Financial and Real Investment Behavior
83. **Köhlin, Gunnar** (1998), The Value of Social Forestry in Orissa, India
84. **Levin, Jörgen** (1998), Structural Adjustment and Poverty: The Case of Kenya
85. **Ncube, Mkhululi** (1998), Analysis of Employment Behaviour in Zimbabwe
86. **Mwansa, Ladslous** (1998), Determinants of Inflation in Zambia
87. **Agnarsson, Sveinn** (1998), Of Men and Machines: Essays in Applied Labour and Production Economics
88. **Kadenge, Phineas** (1998), Essays on Macroeconomic Adjustment in Zimbabwe: Inflation, Money Demand, and the Real Exchange Rate
89. **Nyman, Håkan** (1998), An Economic Analysis of Lone Motherhood in Sweden
90. **Carlsson, Fredrik** (1999), Essays on Externalities and Transport
91. **Johansson, Mats** (1999), Empirical Studies of Income Distribution
92. **Alemu, Tekie** (1999), Land Tenure and Soil Conservation: Evidence from Ethiopia
93. **Lundvall, Karl** (1999), Essays on Manufacturing Production in a Developing Economy: Kenya 1992-94
94. **Zhang, Jianhua** (1999), Essays on Emerging Market Finance
95. **Mlima, Aziz Ponary** (1999), Four Essays on Efficiency and Productivity in Swedish Banking
96. **Davidsen, Björn-Ivar** (2000), Bidrag til den økonomisk-metodologiske tenkningen (Contributions to the Economic Methodological Thinking)
97. **Ericson, Peter** (2000), Essays on Labor Supply
98. **Söderbom, Måns** (2000), Investment in African Manufacturing: A Microeconomic Analysis
99. **Höglund, Lena** (2000), Essays on Environmental Regulation with Applications to Sweden
100. **Olsson, Ola** (2000), Perspectives on Knowledge and Growth
101. **Meuller, Lars** (2000), Essays on Money and Credit
102. **Österberg, Torun** (2000), Economic Perspectives on Immigrants and Intergenerational Transmissions
103. **Kalinda Mkenda, Beatrice** (2001), Essays on Purchasing Power Parity, RealExchange Rate, and Optimum Currency Areas
104. **Nerhagen, Lena** (2001), Travel Demand and Value of Time - Towards an Understanding of Individuals Choice Behavior

105. **Mkenda, Adolf** (2001), Fishery Resources and Welfare in Rural Zanzibar
106. **Eggert, Håkan** (2001), Essays on Fisheries Economics
107. **Andrén, Daniela** (2001), Work, Sickness, Earnings, and Early Exits from the Labor Market. An Empirical Analysis Using Swedish Longitudinal Data
108. **Nivorozhkin, Eugene** (2001), Essays on Capital Structure
109. **Hammar, Henrik** (2001), Essays on Policy Instruments: Applications to Smoking and the Environment
110. **Nannyonjo, Justine** (2002), Financial Sector Reforms in Uganda (1990-2000): Interest Rate Spreads, Market Structure, Bank Performance and Monetary Policy
111. **Wu, Hong** (2002), Essays on Insurance Economics
112. **Linde-Rahr, Martin** (2002), Household Economics of Agriculture and Forestry in Rural Vienam
113. **Maneschiöld, Per-Ola** (2002), Essays on Exchange Rates and Central Bank Credibility
114. **Andrén, Thomas** (2002), Essays on Training, Welfare and Labor Supply
115. **Granér, Mats** (2002), Essays on Trade and Productivity: Case Studies of Manufacturing in Chile and Kenya
116. **Jaldell, Henrik** (2002), Essays on the Performance of Fire and Rescue Services
117. **Alpizar, Francisco, R.** (2002), Essays on Environmental Policy-Making in Developing Countries: Applications to Costa Rica
118. **Wahlberg, Roger** (2002), Essays on Discrimination, Welfare and Labor Supply
119. **Piculescu, Violeta** (2002), Studies on the Post-Communist Transition
120. **Pylkkänen, Elina** (2003), Studies on Household Labor Supply and Home Production
121. **Löfgren, Åsa** (2003), Environmental Taxation – Empirical and Theoretical Applications
122. **Ivaschenko, Oleksiy** (2003), Essays on Poverty, Income Inequality and Health in Transition Economies
123. **Lundström, Susanna** (2003), On Institutions, Economic Growth and the Environment
124. **Wambugu, Anthony** (2003), Essays on Earnings and Human Capital in Kenya
125. **Adler, Johan** (2003), Aspects of Macroeconomic Saving
126. **Erlandsson, Mattias** (2003), On Monetary Integration and Macroeconomic Policy
127. **Brink, Anna** (2003), On the Political Economy of Municipality Break-Ups
128. **Ljungwall, Christer** (2003), Essays on China's Economic Performance During the Reform Period
129. **Chifamba, Ronald** (2003), Analysis of Mining Investments in Zimbabwe
130. **Muchapondwa, Edwin** (2003), The Economics of Community-Based Wildlife Conservation in Zimbabwe
131. **Hammes, Klaus** (2003), Essays on Capital Structure and Trade Financing
132. **Abou-Ali, Hala** (2003), Water and Health in Egypt: An Empirical Analysis
133. **Simatele, Munacinga** (2004), Financial Sector Reforms and Monetary Policy in Zambia
134. **Tezic, Kerem** (2004), Essays on Immigrants' Economic Integration
135. INSTÄLLD

136. **Gjirja, Matilda** (2004), Efficiency and Productivity in Swedish Banking
137. **Andersson, Jessica** (2004), Welfare Environment and Tourism in Developing Countries
138. **Chen, Yinghong** (2004), Essays on Voting Power, Corporate Governance and Capital Structure
139. **Yesuf, Mahmud** (2004), Risk, Time and Land Management under Market Imperfections: Applications to Ethiopia
140. **Kateregga, Eseza** (2005), Essays on the Infestation of Lake Victoria by the Water Hyacinth
141. **Edvardsen, Dag Fjeld** (2004), Four Essays on the Measurement of Productive Efficiency
142. **Lidén, Erik** (2005), Essays on Information and Conflicts of Interest in Stock Recommendations
143. **Dieden, Sten** (2005), Income Generation in the African and Coloured Population – Three Essays on the Origins of Household Incomes in South Africa
144. **Eliasson, Marcus** (2005), Individual and Family Consequences of Involuntary Job Loss
145. **Mahmud, Minhaj** (2005), Measuring Trust and the Value of Statistical Lives: Evidence from Bangladesh
146. **Lokina, Razack Bakari** (2005), Efficiency, Risk and Regulation Compliance: Applications to Lake Victoria Fisheries in Tanzania
147. **Jussila Hammes, Johanna** (2005), Essays on the Political Economy of Land Use Change
148. **Nyangena, Wilfred** (2006), Essays on Soil Conservation, Social Capital and Technology Adoption
149. **Nivorozhkin, Anton** (2006), Essays on Unemployment Duration and Programme Evaluation
150. **Sandén, Klas** (2006), Essays on the Skill Premium
151. **Deng, Daniel** (2006), Three Essays on Electricity Spot and Financial Derivative Prices at the Nordic Power Exchange
152. **Gebreeyesus, Mulu** (2006), Essays on Firm Turnover, Growth, and Investment Behavior in Ethiopian Manufacturing
153. **Islam, Nizamul Md.** (2006), Essays on Labor Supply and Poverty: A Microeconometric Application
154. **Kjaer, Mats** (2006), Pricing of Some Path-Dependent Options on Equities and Commodities
155. **Shimeles, Abebe** (2006), Essays on Poverty, Risk and Consumption Dynamics in Ethiopia
156. **Larsson, Jan** (2006), Four Essays on Technology, Productivity and Environment
157. **Congdon Fors, Heather** (2006), Essays in Institutional and Development Economics
158. **Akpalu, Wisdom** (2006), Essays on Economics of Natural Resource Management and Experiments
159. **Daruvala, Dinky** (2006), Experimental Studies on Risk, Inequality and Relative Standing
160. **García, Jorge** (2007), Essays on Asymmetric Information and Environmental Regulation through Disclosure

161. **Bezabih, Mintewab** (2007), Essays on Land Lease Markets, Productivity, Biodiversity, and Environmental Variability
162. **Visser, Martine** (2007), Fairness, Reciprocity and Inequality: Experimental Evidence from South Africa
163. **Holm, Louise** (2007), A Non-Stationary Perspective on the European and Swedish Business Cycle
164. **Herbertsson, Alexander** (2007), Pricing Portfolio Credit Derivatives
165. **Johansson, Anders C.** (2007), Essays in Empirical Finance: Volatility, Interdependencies, and Risk in Emerging Markets
166. **Ibáñez Díaz, Marcela** (2007), Social Dilemmas: The Role of Incentives, Norms and Institutions
167. **Ekbom, Anders** (2007), Economic Analysis of Soil Capital, Land Use and Agricultural Production in Kenya
168. **Sjöberg, Pål** (2007), Essays on Performance and Growth in Swedish Banking
169. **Palma Aguirre, Grisha Alexis** (2008), Explaining Earnings and Income Inequality in Chile
170. **Akay, Alpaslan** (2008), Essays on Microeconometrics and Immigrant Assimilation
171. **Carlsson, Evert** (2008), After Work – Investing for Retirement
172. **Munshi, Farzana** (2008), Essays on Globalization and Occupational Wages
173. **Tsakas, Elias** (2008), Essays on Epistemology and Evolutionary Game Theory
174. **Erlandzon, Karl** (2008), Retirement Planning: Portfolio Choice for Long-Term Investors
175. **Lampi, Elina** (2008), Individual Preferences, Choices, and Risk Perceptions – Survey Based Evidence
176. **Mitrut, Andreea** (2008), Four Essays on Interhousehold Transfers and Institutions in Post-Communist Romania
177. **Hansson, Gustav** (2008), Essays on Social Distance, Institutions, and Economic Growth
178. **Zikhali, Precious** (2008), Land Reform, Trust and Natural Resource Management in Africa
179. **Tengstam, Sven** (2008), Essays on Smallholder Diversification, Industry Location, Debt Relief, and Disability and Utility
180. **Boman, Anders** (2009), Geographic Labour Mobility – Causes and Consequences
181. **Qin, Ping** (2009), Risk, Relative Standing and Property Rights: Rural Household Decision-Making in China
182. **Wei, Jiegen** (2009), Essays in Climate Change and Forest Management
183. **Belu, Constantin** (2009), Essays on Efficiency Measurement and Corporate Social Responsibility
184. **Ahlerup, Pelle** (2009), Essays on Conflict, Institutions, and Ethnic Diversity
185. **Quiroga, Miguel** (2009), Microeconomic Policy for Development: Essays on Trade and Environment, Poverty and Education
186. **Zerfu, Daniel** (2010), Essays on Institutions and Economic Outcomes
187. **Wollbrant, Conny** (2010), Self-Control and Altruism
188. **Villegas Palacio, Clara** (2010), Formal and Informal Regulations: Enforcement and Compliance
189. **Maican, Florin** (2010), Essays in Industry Dynamics on Imperfectly Competitive

Markets

190. **Jakobsson, Niklas** (2010), Laws, Attitudes and Public Policy
191. **Manescu, Cristiana** (2010), Economic Implications of Corporate Social Responsibility and Responsible Investments
192. **He, Haoran** (2010), Environmental and Behavioral Economics – Applications to China
193. **Andersson, Fredrik W.** (2011), Essays on Social Comparison