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The Economic Effects of Human Rights

von

Lorenz Blume  
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Nr. 66/04

**Volkswirtschaftliche Diskussionsbeiträge**

# The Economic Effects of Human Rights<sup>#</sup>

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## *Abstract:*

*Economists are often skeptical concerning the economic effects of various forms of human rights: it has been argued that basic human rights can make the legal system less efficient but also that extensive social rights are incompatible with market economies. It is argued here that basic human rights are a precondition for other kinds of rights such as property and civil rights and that they are thus efficiency-enhancing. Four different groups of rights are identified. It is asked what effects they have on welfare and growth. The transmission channels through which the different rights affect welfare and growth are identified by estimating their effects on investment in both physical and human capital and overall productivity. Basic human rights have indeed a positive effect on investment, but do not seem to contribute to productivity. Social or emancipatory rights, in turn, are not conducive to investment in physical capital but do contribute to productivity improvements. None of the four groups of rights ever has a significant negative effect on any of the economic variables here included.*

*JEL classification: H41, H73, K10, O11, O57, P14, P51.*

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## **The Economic Effects of Human Rights**

### **1 Introduction**

Economists have been rather reluctant to deal with human rights. Jeremy Bentham, as a leading proponent of utilitarianism also a godfather of welfare economics, famously called them “nonsense on stilts”. With the rise of the New Institutional Economics, attention of economists has moved towards the economic effects of institutions. Thus, the economic effects of human rights have moved on the agenda of economists. Yet, when rights are explicitly analyzed, many economists hasten to add that their primary interest is in economic freedom rights – not in political or civil rights and neither basic human rights. Quite to the contrary, they continue to argue, granting too many political or civil rights to individuals could even make the economy worse off.

To the best of our knowledge, the economic effects of the violation of basic human rights like imprisonment without trial, torture, political killings and the like have never been systematically analyzed. In this paper, a first such analysis is offered. The basic argument is very simple: in order for factors of production to become productive, a minimum amount of certainty is key. Violations of basic human rights often take place in a non-systematic, hazardous manner and can thus be interpreted as an indicator for the absence of some basic form of certainty. We thus expect that violations of human rights lead to lower investment which will, in turn, lead to lower rates of economic growth and thus to lower per capita income. The second contribution of this paper lies in distinguishing various groups of human rights in a broader sense (property rights, civil rights, social rights) and in asking what their individual contribution to various economic variables such as investment and productivity is and whether they re-enforce each other.

Political scientists have, of course, dealt with the issue of basic human rights before. The first studies treated human rights as the independent variable and asked for their effects on foreign aid programs of donor countries (Cingranelli and Pasquarello 1985, Stohl and Carleton 1985) as well as on immigration policy (Gibney and Stohl 1988, Gibney, Dalton, and Vockell 1992). But human rights as the dependent variable seem to have received more emphasis over the last decade: there are quite a number of studies trying to identify the variables that explain variation in the level to which human rights are violated by various governments (Poe, Tate and Keith 1999 is such a study and contains many references to earlier studies). Poe, Tate and Keith (1999) conclude that military regimes are connected with higher levels of human rights abuses whereas former British colonies are

connected with lower levels. Involvement in war (both international and civil) is connected with higher degrees of human rights abuse whereas a high level of democracy as well as of economic development is connected with a lower level of abuse. Of late, legal scholars have joined the debate and asked whether ratification of international human rights treaties has a discernible effect on the abuse behavior of governments. Both Keith (1999) and Hathaway (2002) have found that, surprisingly, ratification is often connected with more, rather than less, abuses.<sup>1</sup>

Recently, various structural characteristics of constitutions have been analyzed with regard to their economic effects: the relevance of electoral systems (proportional vs. majority) and the form of government (presidential vs. parliamentary) has been subject to analysis just as judicial independence (see Persson and Tabellini 2003 for the first two topics and Feld and Voigt 2003 for the last). If human rights are interpreted as an important element of constitutions, our analysis thus complements this recent research on the economic effects of constitutions.

Our results show that high degrees of human rights are conducive to economic growth and welfare in a significant manner. Not all four groups of rights identified in this paper contribute, however, equally to explaining the variation of the various economic variables used here. Basic human rights and property rights are conducive to investment. Social or emancipatory rights do not have a discernible impact on investment. On the other hand, basic human rights do not have a discernible impact on productivity development. Here, property rights, civil rights and social rights have a clearly discernible impact. Nevertheless, none of the four groups of rights used in this paper ever has a significant negative impact on the economic variables used.

The rest of the paper is organized as follows. In the next section, the possible relationship between respect for basic human rights by governments and income and growth is spelled out in a little more detail. Section three contains a discussion of the data used as well as some descriptive statistics on the correlation between the measures of human rights abuses drawn upon here and other, related, measures. The estimation approach as well as the results are presented in section four. Section five concludes.

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<sup>1</sup> As was to be expected, this result has been met with heavy criticism by fellow international lawyers (Goodman and Jinks 2003). Neumayer (2005) re-estimates some of the regressions and shows that ratification can marginally improve the human rights record of a country.

## 2 Some Theory

The Encyclopedia Britannica defines human rights as “rights that belong to an individual as a consequence of being human”. The human rights scholar Louis Henkin (1990, 2f.) emphasizes the importance of four aspects with regard to human rights: (1) “Human rights are rights of individuals in society”; (2) Human rights are universal; they belong to every human being in every human society”; (3) “Human rights are *rights*” and (4) “Human rights are claims upon society.” Often, a distinction between negative and positive rights is made. Negative rights can further be delineated into rights establishing freedom from state or third party interference (such as torture, imprisonment without trial etc.) and freedom to do something (assemble with others, criticize the government in public etc.). Positive rights can include rights to food, housing, paid jobs etc.. We here propose to distinguish four groups of human rights, namely (1) basic human rights which include the absence of torture, the absence of political killings, the absence of people who disappear; they thus reflect freedom from state interference. (2) Economic rights, which include primarily private property rights broadly defined. (3) Civil and political rights which include the unrestricted possibility to participate in political life, to travel, not to be censored by the government etc.. (4) Social or emancipatory rights which endow the individual with positive rights vis-à-vis the state.<sup>2</sup> As with most classification systems, distinctions between the four groups might not always be razor-sharp.

Negative rights can be interpreted as creating protected domains that not even the state is allowed to trespass. For democratically organized states, this implies that negative rights limit the possible scope of majority decision-making: if rights are really basic, even large majorities are bound by them and cannot simply ignore them. Negative rights can thus also be interpreted as a device to protect minorities against current majorities or as “veto rights”, as they give their holders the right to behave in a certain way, even if a huge majority would like their holders not to act in that way.

From an economic point of view, negative rights can also be interpreted as limiting the scope of possible contracts that are legally enforceable via state institutions. To give an example: a slavery contract, even if voluntarily entered into by both parties, would be perceived as a violation of basic human rights in most legal systems. If parties entered into such a contract nevertheless, it would

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<sup>2</sup> Often, these rights are also called “economic, social and cultural rights” as in the International Covenant. We prefer to refer to them as social or emancipatory rights here as economic rights will be used in a different context indicating primarily the security of private property rights.

not be enforceable drawing on state courts and additionally, it would frequently be subject to a criminal trial. This means that basic human rights cannot only prevent the state from doing certain things, it can also restrict non-state actors in their behavior. Interpreted like this, basic human rights establish limits to the possible extent of private property rights that actors cannot even voluntarily renounce from.

Hayek (e.g. 1976) takes up this traditional distinction between negative rights that create domains protected against trespassing and positive rights that endow their holders with a claim against the entire collectivity. One could, e.g., have a right to an interesting employment, to adequate housing etc. Hayek only quarrels with the second kind of rights because they can either be statements of desirability – in which case they should not be called rights as they are not legally enforceable – or the state can indeed try to enforce them, which would presuppose that the state be structured like an organization, i.e. with fixed goals and a hierarchy, which endows the superiors to tell the others what to do and what not to do. In short, Hayek believes that positive rights are incompatible with a free society, in which individuals determine their own position according to their own goals and means, but negative rights like basic human rights and property rights are welfare enhancing.

The interpretation of basic human rights as limits to the possible extent of private property rights annoys many economists because it seems to create areas that are exempt from efficiency calculations. If social welfare (however defined) can be increased by gently torturing criminal suspects, then a prohibition to do so due to basic human rights prevents the realization of efficiency gains. Prima facie, basic human rights thus seem to restrict the area to which the economic approach can be applied. Judge Richard Posner has been quite outspoken concerning the legal consequences of this theoretical insight: he has, e.g., argued that criminal suspects should not be granted extensive protection (1995, 76f.) and has advised less developed countries not to spend many resources on creating legal systems that comply with state-of-the-art standards (1998). The costs of basic human rights that judge Posner seems to have in mind are the higher costs of running legal systems (e.g. due to higher levels concerning the burden of proof) but also the higher probability that suspects who have indeed committed a crime are set free and thus constitute a danger to all potential future victims.

At considerable risk of oversimplification, Posner's position might be summarized as follows: the enforcement of basic human rights can prevent the realization of efficiencies which means that they can prevent a society from realizing points on

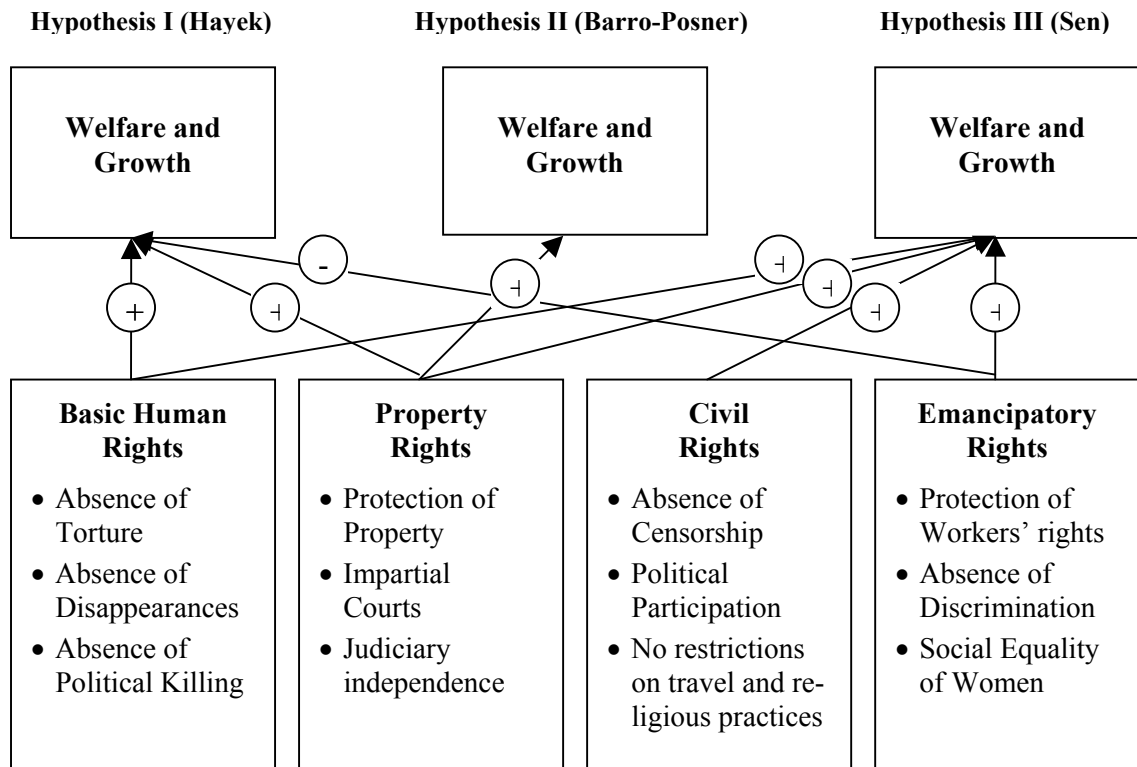
the edge of the production possibility frontier. Attributing primordial importance to efficiency considerations can also lead one to point out that well-functioning market economies need not necessarily be democratic. The prerequisites for a well-functioning market economy were secure property rights. Democracies, however, enable majorities to vote in favor of redistribution, which can, at least passed some threshold, be interpreted as an attenuation of property rights. Representatives of this position thus distinguish between economic rights from civil and political rights. They are convinced that it is economic rights that are crucial for economic development. Their support of civil and political rights is often rather lukewarm. Barro (2000, 47) has, e.g., argued that „U.S. advice to poor countries should focus more on the rule of law, property rights, and free markets, and less on the romance of democracy.”

In a nutshell, three basic hypotheses with regard to the economic effects of the various kinds of rights can be distinguished: The Hayek hypothesis according to which basic human rights and property rights (negative rights) have a positive impact on welfare and growth, whereas a high degree of social rights (positive rights) would be counterproductive. The Barro-Posner hypothesis argues that there is an important sequence to be observed: first, only property rights are important, they would lead to improvements in income which would later allow societies higher levels in the other kinds of rights. Thirdly, the Sen (1999) hypothesis purports that freedom, fairness and reciprocity are important and that social capital (which is assumed to encompass elements of all four groups of rights distinguished here) has a positive effect on welfare and growth, which is, however, not necessarily measured in terms of monetary income only. Figure 1 depicts these competing hypotheses graphically.

It is argued here (somewhat following the Sen line of argument) that talk of various kinds of human rights makes little sense in the absence of basic human rights. To talk, e.g., of secure economic rights makes little sense if anybody can be imprisoned without a fair trial, can be tortured in order to induce him to plead guilty, can disappear, or can even be killed out of political considerations. The absence of these abuses is a crucial precondition that must be satisfied before talk of economic rights becomes meaningful. This does not only hold for economic rights but also for political and civil rights. The absence of the repression of basic human rights has also been called a “virtue of omission”. With regard to the position shortly sketched here, one could talk of a “sin of omission” in the sense that its proponents must assume the very basic human rights to be enforced before talk of other, less basic human rights becomes meaningful.



**Figure 1: Hypotheses on Human Rights and Welfare**



+ = positive influence, - = negative influence, missing arrow = no or marginal influence

In demarcation from the positions shortly sketched here, we would like to develop two points, one conceptual and the other oriented towards empirical consequences: The conceptual hypothesis is that with an alternative – and broader view – of economics, the creation and enforcement of basic human rights can very well be integrated into a discussion within the frame of economics. The empirically testable hypothesis is that the enforcement of basic human rights has a positive impact on income and growth; it is thus at least partially conflicting with the Posner hypothesis.

#### *Basic Human Rights as Part of the Economic Rationale*

Representatives of Constitutional Political Economy do not take the basic rule set of a society for granted anymore but try to legitimize or explain it, depending on whether they belong to the normative or the positive branch (Voigt 2003 is a collection of important contributions to this new field). One argument for justifying basic human rights could be that individuals who choose a basic legal framework from behind a veil of ignorance are uncertain about their own individual position in the future: they might belong to a minority and might not be

willing to succumb to the will of the majority. If enough individuals consider this probability to be sufficiently large, they have an incentive to create basic human rights. Viewed like this, human rights can be interpreted as an insurance against adverse effects on one's own utility given that one finds oneself to be with the minority. This is, of course, only one of many possible justifications for basic human rights. But it is based on economic reasoning: being forced not to behave according to one's preferences is utility-reducing and costly. Agreement to basic human rights can thus be the result of a calculus based on scarcity and opportunity costs.

A slightly different tack on the issue could stress that people might have a preference for being treated with respect and decency even if that has economic costs. Assuming rational individuals on the constitutional stage, their choice of basic human rights would indicate that they value the protection of basic human rights sufficiently highly to forego some monetary benefits.<sup>3</sup> Dworkin's (1977) talk of "rights as trumps" is often interpreted as an abdication of economic calculus in favor of a principles-based approach. We have argued here that this is only true if one adopts a rather narrow view of economic reasoning which tries to maximize efficiency on the level of results. If economic reasoning is extended to the level of rules, rights as trumps can be integrated into the economic approach.

#### *Basic Human Rights as Income Increasing*

We now move on to the second hypothesis, which is that the respect of basic human rights cannot only increase (non-monetary) welfare (the argument just made) but also income and growth. This is an empirically testable proposition and we now set out to develop it in a little more detail. The basic argument is that the absence of abuses of basic human rights is a necessary condition for income and growth. If the state does not refrain from physically harming its citizens, their property rights to their own body are seriously infringed. Basic human rights are thus an indispensable precondition for secure property rights. The right to one's own body is a crucial precondition for making productive use of one's other resources. Uncertainty regarding the respect of basic human rights makes the return on investments – no matter whether with regard to human or to other capital – more uncertain. Lower investment rates and lower growth would be the logical consequence.

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<sup>3</sup> Sen (1999) but also Hayek (1960) have argued that there might be good reasons for guaranteeing basic human rights even if they were costly.

At the same time, it is important to stress that the respect for basic human rights is a necessary but almost certainly not a sufficient condition of economic growth and development. A state whose government strictly respects basic human rights but which does not secure for the protection of other property rights by adequate laws, efficient court procedures and the like will almost certainly not achieve high income levels. Yet, it is hypothesized that a state whose government protects property rights narrowly conceived and ensures efficient court procedure but does not respect basic human rights will also have difficulties in achieving economic growth. In terms of a production function, we thus hypothesize that this relationship could be expressed drawing on a Leontief production function in which respect for basic human rights cannot be substituted by anything else.

It has been argued (Farber 2002) that government respect for basic human rights can also be interpreted as a signal concerning the seriousness of government promises concerning other rights, such as property rights as conventionally conceived. If government does not refrain from physical harm vis-à-vis its citizens, why should it respect private property rights of foreign investors? If government respect for basic human rights functions like a signal concerning the credibility of its promises in general, the abuse of basic human rights should have consequences on (i) the creditworthiness of a country as well as on (ii) the amount of foreign direct investment attracted. Additionally, (iii) the general propensity to invest should also be lower than in countries in which governments respect basic human rights. These arguments can, however, be criticized on various grounds: in theory, it is, of course, possible that a regime completely respects the property rights of foreign investors while simultaneously using violence against its own citizens. China is a case that comes to mind. It could further be argued that potential FDI might be attracted especially into those countries with a poor record on labor, as this could be interpreted as a signal for weak protection of labor and, hence, cheap labor. On the other hand, the absence of basic protection could also increase the probability of violent protest and thus lead to instability, which is supposed to lead to less investment. It can even be suspected that the increased awareness with regard to human rights abuses in the traditional source countries of FDI can have an additional effect: If investment in human rights-abusing countries makes the investing company subject to public scrutiny – and possibly also lower sales – at home, incentives to invest might be further decreased. The theoretical considerations are thus partially contradictory and we will try to sort them out in the empirical part.

Arbitrary imprisonment and politically motivated killings will supposedly lead to a general climate of anxiety and fear. In order to be innovative, freedom from fear

and anxiety seem to be important. It can thus be hypothesized that, *c.p.*, the abuse of basic human rights should lead to lower levels of innovation. Again, a number of possible counter-arguments can be made: autocratic regimes have proven that they are not only able to allocate substantial resources into research and development, but that their scientists can also deliver results, witness the space program of the former Soviet Union. It can further be argued that research which involves disrespect of the dignity of man, can be carried out under the protection of autocratic rather than rule-of-law regimes.

The hypotheses presented so far have been concerned with the effects of the non-respect of basic human rights for income and growth. Above, it was shown that there are a number of economists who are critical with regard to the broadening of the concept of rights to social rights, i.e. the move from negative to positive rights. It can be argued that endowing citizens with such rights can have negative effects. Two transmission mechanisms appear possible: (1) an extensive endowment of citizens with positive rights means that those rights only exist on paper but are not factually enforced which would induce negative consequences or (2) the state does enforce these rights, at least to some degree, but this requires that the size of the individual domains into which not even the state may enter needs to be reduced which would also have negative consequences. These hypotheses are, at least in principle, testable which is why we set out to describe them in a little more detail.

If the first mechanism were to prevail, this would mean that there was a gap between formally granted rights and their factual implementation or a divergence between *de jure* and *de facto* rights.<sup>4</sup> It can, of course, be argued that constitutions are only solemn declarations of aspirations and not enforceable documents but if one holds the position that constitutional provisions should be legally enforceable, then their factual non-enforceability can be conjectured to have negative effects. Their non-enforceability can be interpreted as the non-fulfillment of promises made by representatives of the state. As a consequence, it can be hypothesized that a divergence between *de jure* and *de facto* rights will lead, *c.p.*, to lower

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<sup>4</sup> This distinction is important for ascertaining whether human rights are institutions or rather policies. Institutions are supposed to be rather stable commonly known rules endowed with a sanctioning mechanism whereas policies are the consequences of policy choices that are supposed to take place within a given institutional frame. Policies can therefore change a lot faster than institutions. If human rights are entrenched within constitutions, they are meant to be institutions. If one observes that human practices oscillate heavily in short periods of time, this indicates that policies can change rapidly and that the constraints laid down in the constitution are often renegeged upon. This means that *de jure* and *de facto* are not congruent.

levels of legitimacy of the state and its representatives. Unfortunately, there is no fully fledged economic theory of legitimacy, but it can reasonably be assumed that the transaction costs of governing are higher in states with low legitimacy levels. There are many instances, in which representatives of the state and private citizens need to cooperate: in following the rules of the road, in paying taxes, in supporting the police to fight crimes etc. With the state enjoying a low level of legitimacy, the average propensity to cooperate with the state is expected to be lower. This means that in order to provide the same level of collective goods, more resources are necessary in societies where the state only enjoys little legitimacy.

If the second mechanism were to prevail, i.e. if positive rights do not only exist on paper but are factually delivered, the problems just discussed will supposedly not arise. Yet, another set of problems, which might have even worse effects, could arise. Hayek (1976) has emphasized that the creation of rights simultaneously means the creation of obligations. If people are given the right to work, to a paid holiday, to adequate housing etc., this means that those who are now obliged to enforce the rights must be given the means to do so. Society must be – in Hayek’s words – transformed into an organization with overarching collective goals that trump individual goals. This means that in order to enforce social rights, the classical liberal rights have to be at least attenuated. It also means that extensive *de facto* positive rights are incompatible with a market economy. The Hayek-hypothesis thus reads: The more extensive the degree of factually implemented social rights, the worse are, *c.p.*, the growth prospects of a society. Hayek argues that negative rights and positive rights are competing with each other.<sup>5</sup>

After this outline of some possible causal relationships between the abuse of basic human rights and their economic consequences, we are now ready to move towards the empirical test. Before doing so, we need, however, an indicator for our independent variable, namely for respect/abuse of basic human rights.

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<sup>5</sup> He writes (Hayek 1976, 103): „From this it follows that the old civil rights and the new social and economic rights cannot be achieved at the same time but are in fact incompatible; the new rights could not be enforced by law without at the same time destroying that liberal order at which the old civil rights aim.“

### 3 Description of the Human Rights Data

Measuring government respect and abuse of basic human rights is no mean feat. Political scientists have developed and used a number of approaches. The one that seems to be most frequently used is based on two annual reports, one published by Amnesty International and the other one by the U.S. State Department. As both reports describe the human rights practices in a non-quantified way, the information contained in both reports needs to be coded. A standard proposed by Gastil (1980) is applied for coding information concerning the occurrence of political imprisonment, execution, disappearances, and torture. The coding categories and the relevant criteria are the following (Stohl and Carleton 1985):

- 1 „Countries ... under a secure rule of law, people are not imprisoned for their views, and torture is rare or exceptional ... political murders are extremely rare.”
- 2 “There is a limited amount of imprisonment for non-violent political activity. However, few persons are affected, torture and beating are exceptional ... political murder is rare.”
- 3 “There is extensive political imprisonment, or a recent history of such imprisonment. Execution or other political murders and brutality may be common. Unlimited detention, with or without trial, for political views is accepted.”
- 4 “The practices of (level 3) are expanded to larger numbers. Murders, disappearances are a common part of life ... In spite of its generality, on this level terror affects primarily those who interest themselves in politics or ideas.”
- 5 „The terrors of (level 4) have been expanded to the whole population ... The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals.”

Using this approach, Poe, Tate and Keith (1999) have produced a data set covering the period from 1976 to 1993 and covering 105 countries. It thus allows for the use of pooled cross-sectional analysis. Gibney (2004) continually updates his databank “Political Terror Scale”, which is based on the same coding. Data are now available from 1980 through 2003 for 179 countries.<sup>6</sup>

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<sup>6</sup> McCormick and Mitchell (1997) have criticized this approach as putting qualitatively different things in a single bag and have thus proposed a two-dimensional measure, which separates (i) the degree of arbitrary imprisonment from (ii) the systematic use of killings and torture of prisoners on the grounds that the second is far worse than the first. McCormick and Mitchell view the U.S. State Department as a politically motivated actor and hence rely exclusively on the Amnesty International

Cingranelli and Richards (2004) have recently proposed an indicator that primarily draws on U.S. State Department data but takes the annual reports of Amnesty International into account as an additional source. The indicator is much more fine-grained than the other two indicators, including no less than 16 different categories, namely (1) occurrence of a coup, (2) state of emergency or martial law, (3) political or extrajudicial killing, (4) disappearances, (5) torture, (6) people imprisoned due to political, religious or other beliefs, (7) judiciary independent, (8) government censorship of the media, (9) official state religion, (10) restrictions on religious practices, (11) domestic and foreign travel, (12) political participation, (13) union activities, (14) women's political rights, (15) women's economic rights, and (16) social equality of women. It thus covers not only basic human rights, but also some political and civil rights.

Most recently, Hathaway (2002) has used five different criteria to evaluate whether countries conform to international human rights treaties or not. These include: (1) geno/politicide, (2) torture, (3) fair trial, (4) civil liberty, and (5) women's political equality. In order to generate these indicators, Hathaway has drawn on various sources: for the genocide variable, she used data from the Center for International Development and Conflict Management at the University of Maryland at College Park, for torture and fair trial, she relied on the U.S. State Department reports, for civil liberty on Freedom House, and for women's political equality on data published by the Inter-Parliamentary Union.

All of these indicators have specific advantages and disadvantages. They all share some common problems though: reported human rights abuses are, of course, not identical with human rights abuses that factually occurred. It seems quite likely that a government with an outrageous human rights record will try to conceal its record as far as possible. Other countries that factually have less abuses but that also have a free press might be reported to fare worse than the country concealing its abuses.<sup>7</sup> Many datasets rely on U.S. State Department reports. These reports are also a political instrument and it cannot be excluded that states who are perceived as allies or who receive aid are viewed in a more favorable light than other states. Concerning the annual reports of Amnesty International, it has been noted that they have traditionally focused on those countries with the worst abuses, which would thus imply sample bias. It has, however, also been pointed

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Report. Unfortunately, they calculated their measure for one year only, namely for 1984 – which makes time series analysis impossible. McCormick and Mitchell also use a five-point ordinal scale defined from 0 (“no violations”) to 4 (“very frequent violations”).

<sup>7</sup> It might be possible to control for this bias by controlling for press freedom.

out that the recorded human rights violations of the two series have converged over time (Poe et al. 1999, 302).<sup>8</sup> In order to deal with the various weaknesses of the data, we have decided to draw on a large variety of sources producing a very large dataset which is then compressed by factor analysis.

The 24 variables used as indicators of human rights abuses are described in table 1.<sup>9</sup> Until now, the last six variables listed in table 1 have not been mentioned. Freedom House is a New York City based NGO that has been coding political rights as well as civil liberties on a scale from 1 to 7 since 1972. The Heritage Foundation is a Washington based Think Tank that has been producing an Index of Economic Freedom since 1995. It consists of ten policy factors two of which are used here, namely “property rights” and “regulation”. Lastly, the Fraser Institute has been publishing the Economic Freedom Index since 1996. It contains 38 different variables, about half of them based on survey results (Gwartney and Lawson 2004). The variables used here are for the security of legal/property rights and regulation.

All (exogenous) rights variables have been chosen in such a way as to cover the period from 1990 to 1997<sup>10</sup> in order to be able to use lagged endogenous variables that cover the period from 1993 until 2000 (concerning investment and growth) or just the year 2000 (for productivity and human capital). This is important because it allows us to make inferences concerning (the direction of) causality.

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<sup>8</sup> An additional problem is that the variables are coded ordinally and that they do therefore not allow for the application of multivariate statistical methods as factor analysis or OLS-regression. In order to use those methods, we have to assume that there is equidistance between the various categories, i.e. we interpret the variables as scaled metrically. In the past years, quite a few researchers have used ordinal data for similar analyses.

<sup>9</sup> A few missing values were imputed by hand to complete the data set for 137 countries, especially in the Fraser Institute data (modified Heritage data was used as a proxy for missing values in this case). Numbers of imputed data: Data Source A=0, B=4, C=2, D=0, E=2, F=24.

<sup>10</sup> In each case the arithmetic mean for the available years was used as a proxy for the period 1990-1997.



**Table 1: Variables Used to Explain Human Rights**

<i>Variables</i>	<i>Operationalization</i>	<i>Source</i>
State of emergency or martial law	0=unrestricted, 1=limited, 2=no	A
Political killings	0=frequently, 1=occasionally, 2=not occurred	A
Disappearances	0=frequently, 1=occasionally, 2=not occurred	A
Torture I	0=frequently, 1=occasionally, 2=not occurred	A
Independent judiciary	0=no, 1=partially, 2=generally independent	A
Prisoners because of ethnicity, race, beliefs	0=many, 1=few, 2=none	A
Government censorship	0=complete, 1=some, 2=none	A
Restrictions on some religious practices	0=yes, 1=no	A
Domestic and foreign travel	0= restricted, 1=generally unrestricted	A
Political participation	0=limited, 1=moderately, 2=very free and open	A
Workers' rights	0=not protected, 1=somewhat p., 2=protected	A
Women's political rights	0-4, 0=no equality, 4=equality by law/practice	A
Women's economic rights	0-3, 0=no equality, 4=equality by law/practice	A
Social equality of women	0-3, 0=no equality, 4=equality by law/practice	A
Fair trial	1-4, 1=fair, 4=not fair	B
Torture II	1-4, 1=little or no torture, 4=rampant torture	B
Index Amnesty International	1-5, 1=no/little abuses, 5=strong abuses	C
Index US State Department	1-5, 1=no/little abuses, 5=strong abuses	C
Freedom House Index political rights	1-7, 1=maximum rights, 7=least rights	D
Freedom House Index civil liberties	1-7, 1=maximum liberties, 7=least liberties	D
Heritage Foundation Index property rights	1-5, 1=maximum rights, 5=least rights	E
Heritage Foundation Index regulation	1-5, 1=least regulation, 5=maximum regulation	E
Fraser Institute Index legal/property rights	1-10, 1=least rights, 10=maximum rights	F
Fraser Institute Index regulation	1-10, 1=strong regulation, 10=weak regulation	F

A=Data from Cingranelli and Richards 2004 for 162 countries and the years 1990-1997; B=Data from Hathaway 2002 for 138 countries and the years 1991, 1994 and 1997; C=Data from Gibney 2004 for 179 countries and the years 1990-1997; D=Data from Freedom House 2004 for 170 countries and the years 1990-1997; E=Data from Heritage Foundation 2004 for 137 countries and the years 1995-1997; F=Data from Gwartney and Lawson 2004, Fraser Institute, for 123 countries and the years 1990 and 1995.

Testing up to 24 variables seems to make little sense, especially since some of them are highly correlated. This is why we first conducted a factor analysis the results of which are reported in table 2. A right angle rotation was carried out which has the advantage that no correlation among the extracted factors remains. Additionally, interpretation of the results is easier than without rotation. We report only factor loadings that are larger than 0.3 (loadings larger than 0.5 are in bold figures). It is quite noteworthy that the four resulting factors are exactly in line with our theoretical conjectures, we will call them (1) basic human rights, (2) civil and political rights, (3) property rights, and (4) social or emancipatory rights. It is these four factors, which will be used as exogenous variables in the estimations to be described in the next section.<sup>11</sup>

Factor analysis allows us to clearly keep the four theoretical concepts apart. Within the four factors, it is not one single variable which drives the results but a mix of variables. Between the four groups, factor analysis has the advantage of zero correlation between the factors. This is why the regressions are based on these four factors and no alternative method is used (like the creation of an index, or the selection of the variables with the highest loadings). The correlations between the four factors and a host of other country characteristics are very plausible and the factors lend themselves to straightforward interpretation.

Table 3 is a correlation matrix, which contains partial correlation coefficients of our four explanatory human rights factors with economic variables, other country characteristics, and country group dummies. The variables in the middle section named here as other country characteristics are variables to be explained as well as potential control variables. Of course, simple correlation analysis cannot substitute for regression analysis, which will be carried out in the next section of the paper. Yet, some correlations with economic as well as with institutional variables might be interesting in their own right.

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<sup>11</sup> There is a visible gap between the fourth and the fifth factor (the fourth factor has an Eigenvalue of 1,143 in the beginning and the fifth factor of 0,929).

**Table 2: Main Component Analysis (Communalities and Factor Loadings>0.3) of Variables Used to Explain Human Rights**

	<i>Comm.</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>
State of emergency/martial law	0.442		<b>0.620</b>		
Political killings	0.764		<b>0.774</b>		0.304
Disappearances	0.653		<b>0.784</b>		
Torture I	0.670		<b>0.549</b>	0.405	0.354
Torture II	0.690		<b>-0.640</b>	-0.440	
Index Amnesty International	0.883		<b>-0.803</b>	-0.357	
Index US State Department	0.909		<b>-0.772</b>	-0.352	-0.398
Independent Judiciary	0.701	<b>0.566</b>			<b>0.502</b>
Prisoners	0.772	<b>0.607</b>	<b>0.582</b>		
Government censorship	0.727	<b>0.714</b>			0.347
Restrictions on religion	0.559	<b>0.684</b>			
Domestic and foreign travel	0.597	<b>0.726</b>			
Political participation	0.827	<b>0.840</b>			
Workers' rights	0.554	<b>0.502</b>		<b>0.507</b>	
Women's political rights	0.651	0.328		<b>0.705</b>	
Women's economic rights	0.687			<b>0.770</b>	
Social equality of women	0.825			<b>0.825</b>	
Fair trial	0.590		-0.396	-0.496	-0.368
FH Index political rights	0.825	<b>-0.701</b>	-0.325		-0.373
FH Index civil liberties	0.867	<b>-0.624</b>	-0.372	-0.330	-0.479
Heritage Index property rights	0.872	-0.362		-0.312	<b>-0.772</b>
Heritage Index regulation	0.794				<b>-0.820</b>
Fraser Index property rights	0.818		0.361	0.412	<b>0.694</b>
Fraser Index regulation	0.572	0.326		0.409	<b>0.502</b>
Explained Variance after rotation:		20.067	20.039	16.205	15.562

Main Component Analysis with Varimax and Kaiser-Normalization for 137 countries. The rotation converged after 6 iterations. Factors with Eigenvalue < 1 are neglected. The four extracted factors explain 72 % of the variance of the original data set. Factor Loadings > 0.5 are marked bold.

**Table 3: Correlation Matrix Main Components Human Rights and other Variables**

<i>Other Variables<sup>1</sup></i>	<i>N</i>	<i>Factor 2 Basic Human Rights</i>	<i>Factor 4 Property Rights</i>	<i>Factor 1 Civil Rights</i>	<i>Factor 3 Emancipatory Rights</i>
<b>Economic Variables</b>					
GDP per Capita 2000 (log) <sup>2</sup>	136	0.266**	0.600**	0.213*	0.400**
GDP Growth per Capita 1993-2000 % <sup>2</sup>	136	0.127	0.175*	0.095	-0.043
Investment in % of GDP 1993-2000 <sup>2</sup>	136	0.255**	0.566**	0.146	0.189*
Foreign Direct Investment 1993-2000 <sup>3</sup>	107	0.273**	0.338**	-0.076	0.124
Average Inflation 1993-2000 % <sup>2</sup>	136	0.179*	0.121	0.032	-0.084
Country Risk Rating 2002 <sup>4</sup>	111	0.268**	0.656**	0.186	0.510**
Patents per million people 2000 <sup>5</sup>	87	0.143	0.312**	0.099	0.170
Average Years of Schooling 2000 (log) <sup>5</sup>	128	0.306**	0.465**	0.123	0.427**
Human Development Index 2000 <sup>5</sup>	137	0.250**	0.539**	0.185*	0.389**
<b>Other Country Characteristics</b>					
Population 2000 (log) <sup>2</sup>	136	-0.408**	0.070	-0.114	-0.149
Openness of the Economy 1990-1997 <sup>2</sup>	136	0.304**	0.291*	-0.110	0.067
Press Freedom 1990-1997 (0-100) <sup>6</sup>	97	0.293**	0.354**	0.542**	0.561**
Democracy 1990-1997 (-10-10) <sup>7</sup>	135	0.195*	0.363**	0.674**	0.286**
Federalism (Dummy) <sup>8</sup>	80	-0.158	0.157	0.006	0.092
Protestant Population in % <sup>9</sup>	98	0.160	0.218*	0.064	0.589**
Voter Turnout 1994-1998 in % <sup>10</sup>	87	0.059	0.076	0.290**	0.344**
Ethnic Fractionalization <sup>11</sup>	137	-0.158	-0.309**	-0.123	-0.245**
Index Size of Government (1-10) <sup>12</sup>	114	0.232*	0.013	-0.248**	0.297**
British Influence (Dummy) <sup>13</sup>	137	-0.088	0.237**	0.026	-0.075
Military Control (Dummy) <sup>13</sup>	119	-0.161	-0.372**	-0.184*	-0.151
Left Regime (Dummy) <sup>13</sup>	119	-0.027	-0.224*	-0.370**	-0.009
Civil War (Dummy) <sup>13</sup>	117	-0.533**	-0.150	0.081	0.078
Majority Rule (Dummy) <sup>14</sup>	81	0.100	0.070	-0.303**	-0.220*
Presidential System (Dummy) <sup>14</sup>	81	-0.329**	-0.347**	0.071	-0.310**
<b>Country Groups</b>					
Transition Country (Dummy)	137	0.223**	-0.182*	-0.226**	-0.017
OECD (Dummy)	137	0.220*	0.397**	0.150	0.630**
Latin America (Dummy)	137	-0.081	-0.071	0.438**	-0.118
Middle East (Dummy)	137	-0.204*	-0.267**	-0.370**	-0.190*
Sub Saharan Africa (Dummy)	137	-0.059	-0.367**	-0.115	-0.149
Asia (Dummy)	137	-0.110	0.175*	-0.058	-0.113

(1) All variables are coded the same way, so that low values mean low press freedom, democracy, size of government etc. (2) PWT 6.1 by Heston et al. 2002 (3) World Investment Report 2003 (4) www.euromoney.com (5) Human Development Reports (hdr.undp.org) (6) Press Freedom Survey (www.freedomhouse.org) (7) Polity IV Dataset, Difference Democracy-Autocracy (www.cidcm.umd.edu) (8) Treisman 2000 (9) La Porta et al. 1999 (10) International Institute for Democracy and Electoral Assistance (www.idea.int) (11) Alesina et al. 2003 (12) Gwartney and Lawson 2004 (www.fraserinstitute.ca) (13) Poe et al. 1999 (14) Persson and Tabellini 2003 \*\* , \* show that the Bravais-Pearson Correlation Coefficient is significant on the 1 or 5 percent level, respectively.

Some correlations are particularly noteworthy:

- Both GDP per capita and the Human Development Index are highly correlated with all four factors of human rights;
- Press freedom is also highly correlated with all four factors;
- The percentage of protestants among a population is highly correlated with both social and property rights, but not with basic human and civil rights;
- British influence seems to be an explanation for strong property rights; if one draws – alternatively – on the legal origin variable, common law leads to an identical result;
- The civil war dummy is highly negatively correlated only with our second factor, namely basic human rights; the correlations with the other three factors are insignificant;
- Majority rule (as opposed to proportional representation) is highly negatively correlated with civil rights as well as emancipatory rights but not with basic human rights and property rights;
- Presidential systems (as opposed to parliamentary systems) are highly negatively correlated with basic human rights, property rights and emancipatory rights, but not with civil rights.

But using factors also has some limitations: The factors do not contain any information regarding the empirically relevant combinations of the four human rights factors. If we simply distinguish between a weak and a strong performance (based on a cluster center analysis) regarding the four factors, sixteen combinations ( $2^4$ ) become possible. But may be, not all of the theoretically possible combinations are empirically relevant. According to table 4, six combinations are empirically particularly relevant. These are called Type A through F in table 4. A type A country has weak property as well as weak emancipatory rights. It may have strong basic rights or strong civil rights (but not the two simultaneously). 20 out of the 136 countries within the sample can be grouped within type A. These countries typically have a low degree of press freedom, low democracy scores and were not influenced by the British. Armenia, the Congo, but also Brazil, Mexico and Guatemala belong to this group (there is a table in the appendix which contains the individual factor scores of all countries as well as their attachment to one of the six types).

**Table 4: Correlation Matrix Country Cluster (Type A-F) and other Variables**

<i>Variables Used for Clustering</i>	<i>N</i>	<i>Type A</i>	<i>Type B</i>	<i>Type C</i>	<i>Type D</i>	<i>Type E</i>	<i>Type F</i>
Factor 2 Basic Human Rights	137			Strong	Weak	Strong	Strong
Factor 4 Property Rights	137	Weak	Weak	Weak	Strong	Strong	Strong
Factor 1 Civil Rights	137			Strong			Strong
Factor 3 Emancipatory Rights	137	Weak	Strong			Weak	Strong
Number of Countries coded 1 in the Type	137	20	13	37	15	26	26
<b><i>Other Variables<sup>1</sup></i></b>							
<b>Economic Variables</b>							
GDP per Capita 2000 (log) <sup>2</sup>	136	-0.225**	-0.279**	-0.258**	-0.060	0.165*	0.582**
GDP Growth per Capita 1993-2000 % <sup>2</sup>	136	-0.153(*)	-0.188*	0.020	0.015	0.194*	0.047
Investment in % of GDP 1993-2000 <sup>2</sup>	136	-0.190*	-0.279**	-0.201*	-0.068	0.209*	0.450**
Happiness 1990-2000. Avarage <sup>3</sup>	76	-0.100	-0.274*	-0.220	0.017	-0.087	0.439**
Country Risk Rating 2002 <sup>4</sup>	111	-0.208*	-0.303**	-0.393**	-0.105	0.079	0.744**
Average Years of Schooling 2000 (log) <sup>5</sup>	128	-0.112	-0.205*	-0.224*	-0.149(*)	0.059	0.543**
<b>Other Country Characteristics</b>							
Openness of the Economy 1990-1997 <sup>2</sup>	136	-0.147(*)	0.030	0.022	-0.193*	0.199*	0.037
Press Freedom 1990-1997 (0-100) <sup>6</sup>	97	-0.313**	-0.214*	-0.130	-0.228*	0.000	0.608**
Democracy 1990-1997 (-10-10) <sup>7</sup>	135	-0.177*	-0.371**	-0.020	-0.111	0.041	0.503**
Index Size of Government (1-10) <sup>8</sup>	114	-0.095	0.069	-0.022	-0.040	-0.210*	0.298**
British Influence (Dummy) <sup>9</sup>	137	-0.214*	0.010	0.004	0.133	0.138	-0.068
Military Control (Dummy) <sup>9</sup>	119	0.042	0.257**	0.149	0.106	-0.148	-0.312**
Left Regime (Dummy) <sup>9</sup>	119	0.090	0.182*	0.046	0.034	-0.136	-0.143
<b>Country Groups</b>							
Transition Country (Dummy)	137	0.126	0.105	0.096	-0.105	-0.084	-0.132
OECD (Dummy)	137	-0.183*	-0.141(*)	-0.263**	-0.160(*)	-0.170*	0.852**
Latin America (Dummy)	137	0.022	-0.153(*)	0.157(*)	-0.051	0.052	-0.094
Middle East (Dummy)	137	-0.117	-0.091	-0.169*	0.439**	0.146(*)	-0.142(*)
Sub Saharan Africa (Dummy)	137	0.080	0.272**	0.172*	-0.117	-0.097	-0.267**
Asia (Dummy)	137	0.016	-0.055	-0.143(*)	0.125	0.177*	-0.095

The 137 countries were grouped according to their factor values on the four factors Basic Human Rights, Property Rights, Civil Rights, Emancipatory Rights. Six dummy variables type A-F were generated, indicating with 1 that a country has a certain combination of strong/weak rights (as shown in the table). The attributes strong/weak are the results of a cluster analysis identifying one upper and one lower cluster for each of the four factors Basic Human Rights, Property Rights, Civil Rights and Emancipatory Rights (see appendix). (1) All variables are coded the same way, so that low values mean low press freedom, democracy, size of government etc. (2) PWT 6.1 by Heston et al. 2002 (3) World Database of Happiness, data collection by Veenhoven 2004, University of Rotterdam (4) www.euromoney.com (5) Human Development Reports (hdr.undp.org) (6) Press Freedom Survey (www.freedomhouse.org) (7) Polity IV Dataset, Difference Democracy-Autocracy (www.cidcm.umd.edu) (8) Gwartney and Lawson 2004 (www.fraserinstitute.ca) (9) Poe et al. 1999. \*\*, \* and (\*) show that the Bravais-Pearson Correlation Coefficient is significant on the 1,5 or 10 percent level, respectively.

A second group of countries (type B) has weak property rights but strong emancipatory rights. Again, a country in that group is likely to have a low degree of press freedom and democracy. In addition, it is likely to be under military control or have a leftist regime. Geographically, it could be in Sub Saharan Africa. Countries that belong to that group are, e.g., Cuba, the Gambia, or Guinea. The third type of rights combinations (type C) is characterized by both strong basic human rights as well as strong civil rights, but weak property rights. Countries belonging to this group are likely to be located in Sub Saharan Africa or Latin America. Specific countries belonging to that group are Madagascar, Zimbabwe, Bolivia, Nicaragua but also Bulgaria. Another group of countries (type D) are weak in basic human rights but strong in property rights. Countries of this type are likely to have a low degree of press freedom. Many of these countries are located in the Middle East and North Africa, inter alia Algeria and Egypt, but also Turkey and Israel.

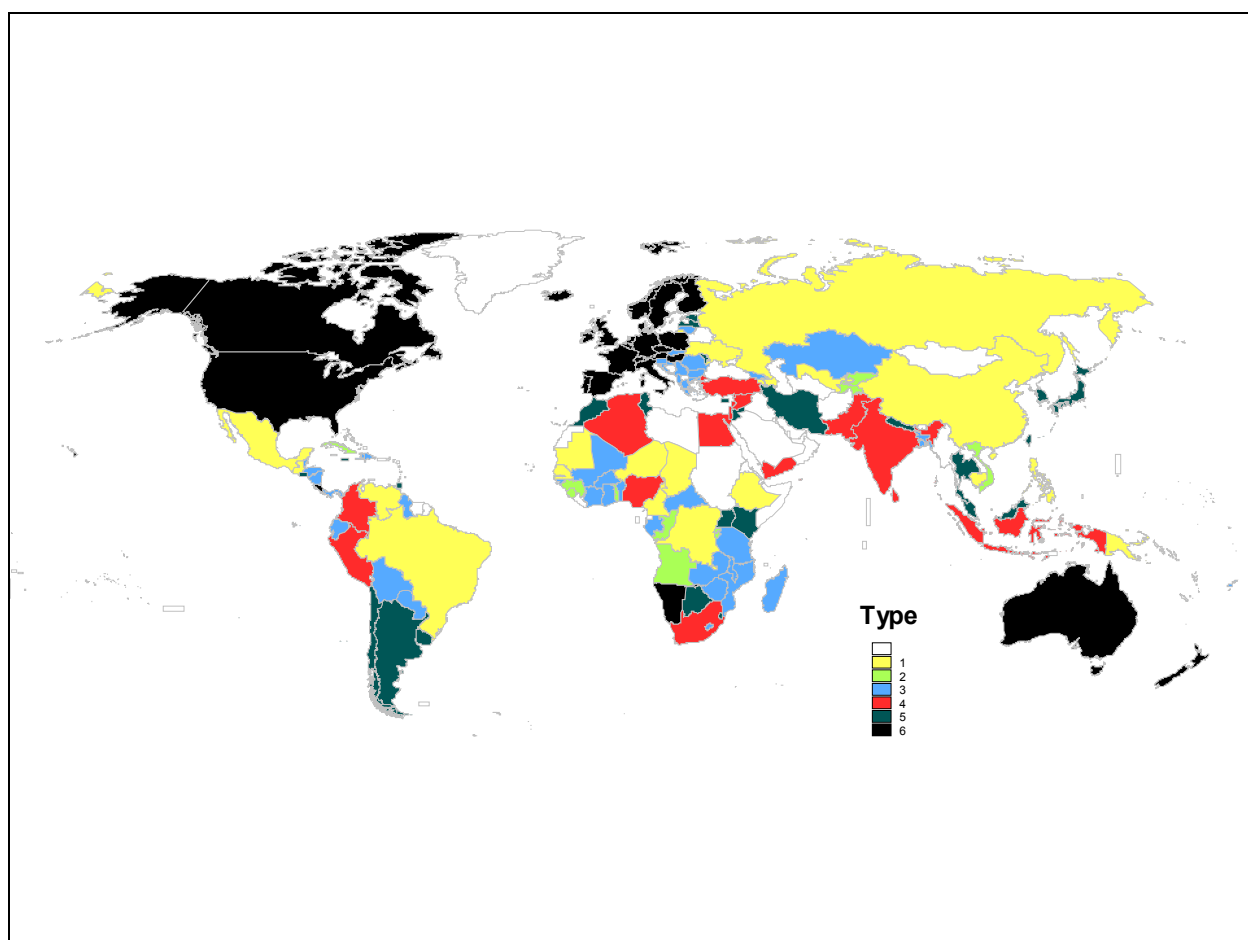
The fifth group of countries (type E) has strong basic human rights as well as strong property rights, but weak emancipatory rights. These countries often have below average state expenditures and one is likely to find them in the Middle East and in Asia. In the last group of countries (type F), all four rights factors are strong. This group is largely identical with the OECD member countries. OECD members that did not make it into this group are Korea, Japan, Greece, Mexico, Slovakia and Turkey. Costa Rica and Namibia are the only non-OECD members that were grouped here. Figure 2 gives an impression of the geographical distribution of the six country groups.

The correlations with economic variables like GDP per capita, the average investment in percent of GDP as well as growth suggest that a country needs to have a certain combination of human rights to enhance economic welfare. Countries with strong basic and civil rights but no property rights have lower GDP per capita and lower investment. Countries with strong property rights and weak basic human rights have lower human capital and no significant advantages in growth or output per worker. This hints at the possibility that Hayek's argument claiming that negative rights (basic and property rights) are a necessary condition for economic performance might be right.

With regard to the role of emancipatory rights, it is interesting to compare the performance of the countries in group E (weak emancipatory rights) with those in group F (strong emancipatory rights). Simply glancing at the correlation coefficients, one could claim that emancipatory rights do not seem to be a necessary condition for economic growth. Yet, GDP per capita, investment and

human capital seem to be higher in group F. Additionally, happiness surveys (collected by Veenhoven 2004) indicate that people in Type F countries are significantly more happy than in type E countries. The average of happiness studies conducted in the 1990s in countries of type F reaches a value of 7.0 on a transformed 10-0-scale and in that of type E countries of 6.2. The difference between the two groups is statistically significant on the one percent level. One could start to wonder whether a high degree of emancipatory rights will only be supported by an economy past a certain threshold. This question can, however, not be answered by drawing on correlation matrices. We will therefore take it up in the next section drawing on regression analysis.

**Figure 2: Main Components Human Rights (Country Cluster Type A-F)**





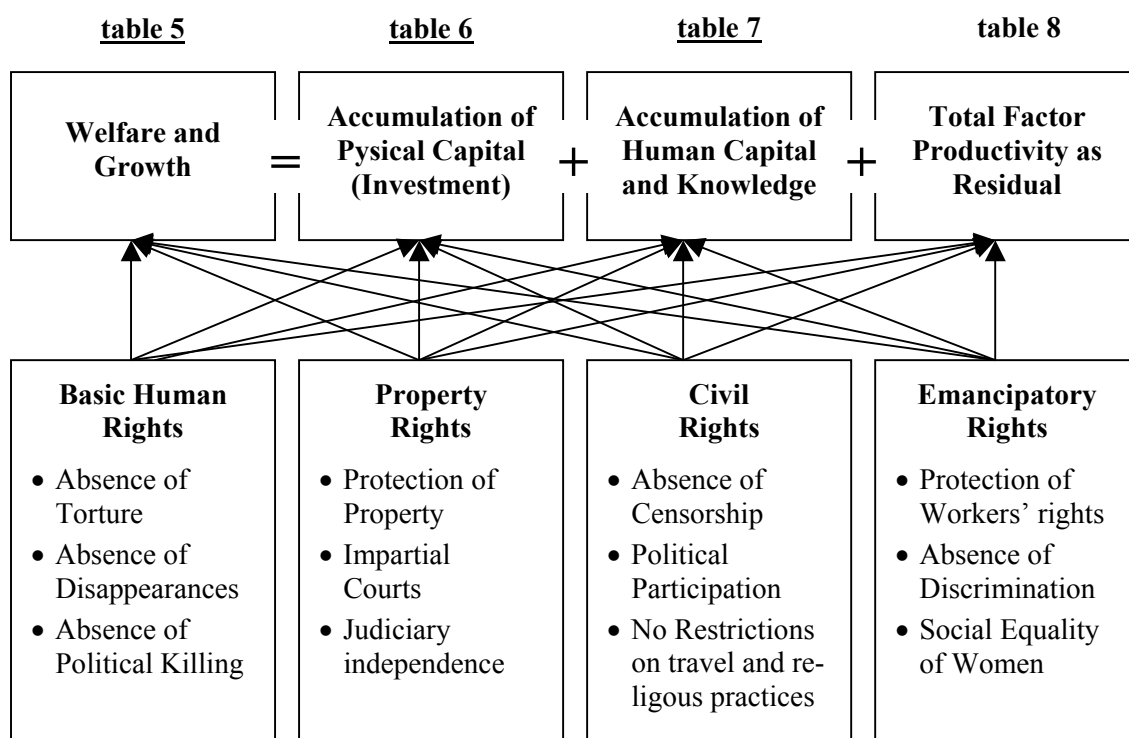
#### 4 Estimation Approach and Results

This section serves to test whether government respect for basic human rights as well as the other three groups of rights used here has any significant impact on economically relevant variables. It further serves to identify possible transmission channels through which the four groups of rights could have an impact on welfare and growth. Figure 3 serves to illustrate our procedure: we start by estimating the direct influence of the four human rights factors on welfare and growth. We actually constrain ourselves to estimating the effects on growth. Alternatively, the effects on the values of the human development indicator or output per worker could be estimated but growth has the advantage of only taking the change of income during a specific period into account – and not to include developments that have occurred over a number of previous periods. The results of this regression are displayed in table 5. The next step is to inquire into possible transmission channels based on the determinants of growth as pointed out by modern growth theory. We estimate the effects of human rights on investment (as a proxy for capital), the return on average schooling (as a proxy for human capital and knowledge) and overall productivity (as a residual). The results are reported in tables 6, 7 and 8. This approach is in line with Hall and Jones (1999). The output of a Cobb-Douglas production function is disaggregated into the components capital, labor and productivity residual and all possible channels through which the institutional variables could influence them are estimated.

Traditionally, the first variable of interest to economists has been economic growth. Remember that Poe et al. (1994, 1999) found the wealth of a country to be an important determinant for the degree to which governments respected human rights. It has been hypothesized in section two that causality might be reversed: respecting human rights might lead to higher wealth. In order to exclude the possibility that we simply replicate the findings of Poe et al. (and be trapped by the possibility of reversed causality), we use human rights data for the period from 1990 through 1997 as independent variable and the growth rate from 1993 to 2000 as dependent variable and thus allow for a lag of three years.<sup>12</sup>

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<sup>12</sup> Haiti and Hungary were consistent outliers. We took them off the sample as there might have been some data problems with regard to these two countries.

**Figure 3: Possible Channels of Influence of Human Rights on Welfare and Growth**

The estimation approach itself is straightforward and follows the method used in modern empirical growth studies. It is basically a variant of the Extreme Bound Analysis first used in growth theory by Levine and Renelt (1992). Here, we do not report the extreme bounds but different estimation results providing for the extreme bounds. According to this approach, the following equation is estimated:

$$\Delta Y_i = \alpha M_i + \beta HR_i + \chi Z_i + \varepsilon_i. \quad (1)$$

where  $\Delta Y_i$  is the real GDP per capita growth of country  $i$  between the years 1993 and 2000,  $M_i$  is a vector of standard explanatory variables of country  $i$ . It consists of three variables, which have been shown to be robustly linked with economic growth according to previous studies (see, e.g., de Haan and Sturm 2000). They are the level of initial real GDP per capita (in our sample, “initial” is 1990), private and public investment in percent of GDP averaged over the period 1992 to 1999, and the average years of schooling measured in 1985.  $HR_i$  is a vector of the factor values of our four factors representing basic human rights, property rights, civil rights and emancipatory rights in country  $i$ .  $Z_i$  is a vector of additional explanatory variables in country  $i$  that are introduced to check the robustness of the baseline model and  $\varepsilon_i$  is an error term.

$Z_i$  contains all the variables named in table 3 under the heading “Other Country Characteristics“ (Aron 2000 is an overview of the political, economic and social variables generally controlled for in modern empirical growth studies). “British influence” simultaneously controls for the common law legal origin (which is why it is not explicitly shown in table 3). In addition to the controls in table 3, we have included two other variables named by Poe et al. (1999) as determinants for the level of human rights abuses, namely whether an international war occurred and population growth. We further control for the inflation rate as it could be another variable determining growth (see, e.g., Grier 1997), the degree of heterogeneity of the population measured by linguistic and religious fractionalization as provided for by Alesina et al. (2003), and the so-called contract intensive money-variable as provided for by Claque et al. (1999) as a proxy for highly developed (and trusted) monetary institutions here. All in all, we control for 21 variables in addition to the baseline model (see appendix). Of these, only a small part are documented in the tables in order to keep them readable.

All models that lead to changes in the significance level of the human rights variables are, of course, documented here. The vector HR regularly remains significant even after controlling for the 21 variables contained in vector  $Z$ , and the results are thus generally robust. For the tables documented here, specifications were selected which (i) contained variables chosen by Poe et al. (1999) in order to show that it is not these general conditions, which drive the results but that the four human rights factors have an independent influence of their own.<sup>13</sup> The respective variables are Left Regime, Military Regime and British influence. The last variable also allows for an implicit control of the legal origin dummy. (ii) Ethnic fractionalization because it is often significant but also because it can be interpreted as a proxy for unfavorable general conditions in poorer countries and (iii) contract-intensive money as this is a good proxy for highly developed financial markets which can primarily be found in highly developed economies.

Countries that protected property rights better during the first half of the 1990s grew faster during the period 1993-2000 (table 5). This result remains significant after the variables that Poe et al. (1994, 1999) found to be significant to determine the level of human rights respect are controlled for, namely democracy, population size, leftist government, military control, British cultural influence, international wars and civil wars. Columns 4 and 5 display only four of these

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<sup>13</sup> A two-stage least-squares estimate using the various ascertained by Poe et al. (1999) as determining the human rights record of a country as instruments leads to similar results.

variables, the results for the other variables are not significant either. The result is also robust to the inclusion of other variables like press freedom, corruption, openness, size of government, inflation and so on (column 3 offers ethnic fractionalization as an example). But the results are driven by the upper two thirds of the sample, in the lower third, institutions seem to play a rather minor role.<sup>14</sup> That property rights have a strong positive impact on growth has been shown in a number of previous studies (e.g. Knack and Keefer 1995, Roll and Talbott 2001, Claessens and Laeven 2003) and will thus not be discussed in any more detail here. The basic human rights factor displays a positive t-value but does not reach a conventional level of significance. This might be due to the substantial business cycle variations that occurred in the 1990s. We assume that business cycles are also the main reason for the low  $R^2$  and the problem of omitted variables in columns 1, 2 and 3, where the Kolmogorov-Smirnov test reveals that the residuals are not normally distributed. Introduction of additional control variables takes care of the problem of omitted variables, but the  $R^2$  is still unsatisfactorily low.

The problem of business cycle variation when using growth rates as an indicator for economic welfare is addressed by Hall and Jones (1999). They propose to use GDP per capita or GDP per worker instead and also point out how the transmission channels can be revealed when decomposing GDP per worker in three factors representing capital stock, human capital and productivity. With regard to the transmission channels we follow their approach here.<sup>15</sup>

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<sup>14</sup> Glaeser et al. (2004) have argued that the hypothesis according to which good institutions cause growth rests on rather shaky conceptual foundations as well as unconvincing evidence. They argue that human capital is a more basic source of growth than are institutions. Poor countries would get out of poverty by good policies – even pursued by dictators – rather than by good institutions. Their argument will, however, not be discussed further here.

<sup>15</sup> Different from Hall and Jones (1999), we estimate a different baseline model for every transmission channel, using those exogenous variables that have been shown to be significant for the specific endogenous variable under consideration and adding a host of control variables thus checking for robustness. Hall and Jones use total factor productivity as the dependent variable and a single index of social infrastructure (formed as the average of an index of government antidiversion policies and an openness measure) as the right hand side variable. In an IV approach, the social infrastructure index is then based on exogenous instruments. This approach is based on the bold assumption that social infrastructure (i.e. the quality of institutions) primary influences output per worker through an increase in total factor productivity which we prefer not to work with here.

**Table 5: OLS-Regression GDP Growth per Capita 1993-2000<sup>1</sup> as Endogenous Variable**

<i>Variables</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
GDP per Capita 1990 <sup>1</sup> (in log form)	-0.096 (1.021)	-0.186(*) (1.710)	-0.215(*) (1.877)	-0.116 (0.992)	-0.122 (1.002)
Investment 1992-1999 <sup>1</sup> (Average in % of GDP)	0.014** (3.830)	0.011** (2.807)	0.009** (2.539)	0.009** (2.564)	0.010** (2.718)
Average Years of Schooling 1985 (in log form) <sup>2</sup>	0.199(*) (1.911)	0.201(*) (1.624)	0.160 (1.379)	0.237 (1.213)	0.160 (1.104)
Basic Human Rights (Factor 2)		0.013 (0.645)	0.014 (0.698)	0.025 (1.032)	0.025 (1.230)
Property Rights (Factor 4)		0.080* (2.319)	0.083** (2.424)	0.065(*) (1.612)	0.074(*) (1.630)
Civil Rights (Factor 1)		0.035 (1.057)	0.032 (0.987)	0.019 (0.446)	0.032 (0.866)
Emancipatory Rights (Factor 3)		-0.001 (0.050)	-0.001 (0.039)	-0.026 (0.860)	-0.015 (0.484)
Ethnic Fractionalization <sup>3</sup> (% of Population)			-0.185(*) (1.744)		
British Influence <sup>4</sup> (Dummy)				-0.008 (0.156)	
Civil War <sup>4</sup> (Dummy)				0.040 (0.477)	
Left Regime <sup>4</sup> (Dummy)					0.263 (1.398)
Military Regime <sup>4</sup> (Dummy)					-0.062 (0.911)
Constant	0.448	1.079	1.407	0.626	0.709
$\bar{R}^2$	0.177	0.208	0.217	0.223	0.267
SER	0.238	0.236	0.232	0.236	0.229
K.-S. Test on Normality	0.001**	0.022*	0.084(*)	0.101	0.138
Size of the Sample	126	125	124	109	109

(1) PWT 6.1 by Heston et al. 2002 (2) Data from Barro and Lee 1993 (3) Data from Poe et al. 1999 covering the years 1976-1993 (4) Alesina et al. 2003. The table shows the  $\beta$ -coefficients of the regression, the numbers in parentheses are the absolute values of the estimated t-statistics, based on the White heteroscedasticity-consistent standard errors. ‘\*\*\*’, ‘\*’ or ‘(\*)’ show that the estimated parameter is significantly different from zero on the 1, 5, or 10 percent level, respectively. SER is the standard error of the regression, and K.-S. the 2-tailed P of the Kolmogorov-Smirnov-test on normality of the residuals.

There are a number of potentially relevant transmission channels through which the respect for human rights could influence the overall level of wealth in a country. It could influence the formation of physical capital as well as the formation of human capital. But it could also influence their respective productivities as well as the overall productivity of the production function. We now set out to analyze some of these transmission channels empirically and begin by investment (in physical capital). More specifically, we ask whether government respect for the various rights factors is a significant variable for explaining (logged) average investment in percent of GDP between 1993 and 2000 (table 6).

Here, the vector  $M$  is made up of three variables, namely (1) the physical capital stock in 1988<sup>16</sup>, (2) the openness of the economy that is to reflect the possibility that investment might be caused by participating in the international division of labor, and (3) the size of the population as investment could be caused by the size of the market or the potential thereof. Column 1 shows that these three variables explain some 48% of the variation in average investment. Adding the four rights factors increases the fit to 57.4% (column 2). It is noteworthy that basic human rights, property rights, and civil rights are all significant on the 1 percent level, whereas emancipatory rights are insignificant, i.e. neither are they conducive to investment nor do they seem to hinder it. We tested for the robustness of these influences by adding the 21 control variables mentioned above; again, only some of them are reported in columns 3, 4 and 5 of the table. Note that incorporation of some controls further increases the explanatory fit of the model.<sup>17</sup> Basic human rights and property rights always remain significant whereas emancipatory rights remain insignificant. Significance of civil rights decreases below conventional levels when the quality of financial institutions is controlled for. Again, the result is primarily driven by the upper two thirds of the sample, in the lower third, other regularities might apply.

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<sup>16</sup> Which was estimated by Hall and Jones (1999) using the perpetual inventory method in countries with investment data going back at least to 1970. They assume a depreciation rate of 6 percent. Missing data for countries like Croatia, Ukraine, Slovakia were imputed by taking the data of the "mother countries" USSR, Yugoslavia and CSSR. The use of per-capita GDP (as e.g. proposed by Chakrabati 2001 with regard to foreign direct investment) instead of physical capital stock does not change the outcomes in a relevant manner.

<sup>17</sup> There is, however, a small problem of multicollinearity. The correlation between the size of the population and openness is  $-0.622$ . The exact strength of the influence of the exogenous variables could therefore be biased.

**Table 6: OLS-Regression logged Average Investment in % of GDP 1993-2000<sup>1</sup> as Endogenous Variable**

<i>Variables</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
Physical Capital Stock 1988 <sup>2</sup> (in log form)	0.109** (9.654)	0.071** (4.421)	0.058** (3.606)	0.104** (5.312)	0.094** (5.450)
Openness in % of GDP <sup>1</sup> (in log form)	0.293* (2.397)	0.321** (2.968)	0.335** (3.098)	0.278** (2.740)	0.192* (2.313)
Population 2000 <sup>1</sup> (in log form)	0.094** (2.601)	0.126** (3.328)	0.117** (3.315)	0.098** (2.637)	0.084* (2.428)
Basic Human Rights (Factor 2)		0.048** (3.053)	0.039** (2.665)	0.041** (2.491)	0.030* (2.039)
Property Rights (Factor 4)		0.076** (3.864)	0.066** (3.416)	0.047(*) (1.855)	0.051** (2.583)
Civil Rights (Factor 1)		0.057** (2.979)	0.050** (2.793)	0.042(*) (1.908)	0.024 (1.280)
Emancipatory Rights (Factor 3)		0.010 (0.654)	0.000 (0.021)	-0.001 (0.675)	-0.003 (0.209)
Ethnic Fractionalization <sup>3</sup> (% of Population)			-0.227** (3.377)		
Left Regime <sup>4</sup> (Dummy)				-0.038 (0.412)	
Military Regime <sup>4</sup> (Dummy)				0.042 (0.698)	
British Influence <sup>4</sup> (Dummy)				-0.001 (0.022)	
Contract-Intensive Money <sup>5</sup> (Ratio M <sub>2</sub> -C/M <sub>2</sub> )					0.202 (1.388)
Constant	-1.118	-1.043	-0.780	-1.058	-0.871
$\bar{R}^2$	0.478	0.574	0.606	0.615	0.701
SER	0.193	0.175	0.168	0.169	0.146
K.-S. Test on Normality	0.006**	0.200<	0.200<	0.200<	0.200<
Size of the Sample	135	134	133	117	97

(1) PWT 6.1 by Heston et al. 2002 (2) Hall and Jones 1999 (3) Alesina et al. 2003 (4) Data from Poe et al. 1999 covering the years 1976-1993 (5) Clague et al. 1999. The table shows the  $\beta$ -coefficients of the regression, the numbers in parentheses are the absolute values of the estimated t-statistics, based on the White heteroscedasticity-consistent standard errors. ‘\*\*\*’, ‘\*’ or ‘(\*)’ show that the estimated parameter is significantly different from zero on the 1, 5, or 10 percent level, respectively. SER is the standard error of the regression, and K.-S. the 2-tailed P of the Kolmogorov-Smirnov-test on normality of the residuals.

After having dealt with investment (in physical capital) as endogenous variable, we now turn to human capital. The human capital variable is based on the average number of years that citizens above the age of 15 of the respective country spent in schools. It is assumed that school attendance is subject to decreasing returns. Accordingly, the first years spent in school are supposed to lead to higher returns than the last years spent there. Like Hall and Jones (1999), we assume a rate of return of 13.4 percent for the first four years of education, of 10.1 percent for the next four years and of 6.8 percent for education beyond the eighth year. The student teacher ratio proves to be of extraordinary explanatory power concerning human capital formation. It alone explains more than 60% of the variation in human capital. Adding our four rights factors does not significantly improve the explanatory fit of the model although basic human rights is the only factor that is significant at the 5 percent level. As soon as the dummies for British influence, military regimes and leftist regimes are introduced (column 4) or country-intensive money is controlled for (column 5), its significance decreases below conventional levels. Instead, civil, emancipatory and property rights become significant.

This result does not lend itself to a straightforward interpretation. As before, the results are driven by the two thirds of the countries with the highest income. In the poor third of the countries, neither basic human rights in columns 1 to 3 nor property rights, civil rights or emancipatory rights in columns 4 and 5 are significant. Different from tables 5 and 6, the equations are not robust here when M and HR are controlled for by the Z-vector. The basic human rights factor in columns 2 and 3 might be less an indicator of basic human rights than of the quality of financial institutions in the wealthy countries (column 5).

Amongst the high-income countries, the differences in property rights, civil rights and emancipatory rights seem to be an independent factor influencing the level of human capital. This is, however, only the case if the quality of economic institutions is controlled for. If one runs a model with the 71 richest countries of the entire sample (i.e. those with a log GDP per capita that was larger than 6 in 1990) which contains the student teacher ratio and the quality of financial institutions (CIM) as the baseline model and one adds the HR vector in a second step, one observes that the  $R^2$  increases from 0.63 to 0.72 which is a considerable increase.



**Table 7: OLS-Regression logged Human Capital 2000<sup>l</sup> as Endogenous Variable**

<i>Variables</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
Pupils per Teacher 2000 <sup>2</sup> (Ratio)	-0.017** (12.570)	-0.014** (7.928)	-0.014** (7.354)	-0.008** (4.268)	-0.006** (3.308)
Basic Human Rights (Factor 2)		0.039* (2.186)	0.037* (2.111)	0.022 (1.362)	0.017 (0.951)
Property Rights (Factor 4)		0.031 (1.243)	0.027 (1.147)	0.115** (4.082)	0.108** (4.902)
Civil Rights (Factor 1)		0.001 (0.063)	-0.001 (0.064)	0.044** (2.649)	0.036(*) (1.804)
Emancipatory Rights (Factor 3)		0.022 (1.459)	0.018 (1.254)	0.050** (3.770)	0.057** (4.240)
Ethnic Fractionalization <sup>3</sup> (% of Population)			-0.083 (0.997)		
Left Regime <sup>4</sup> (Dummy)				0.029 (0.393)	
Military Regime <sup>4</sup> (Dummy)				-0.034 (0.632)	
British Influence <sup>4</sup> (Dummy)				-0.058 (1.578)	
Contract-Intensive Money <sup>5</sup> (Ratio M <sub>2</sub> -C/M <sub>2</sub> )					0.326(*) (1.688)
Constant	1.257	1.191	1.212	0.989	0.624
$\bar{R}^2$	0.615	0.621	0.621	0.686	0.688
SER	0.190	0.189	0.189	0.162	0.151
K.-S. Test on Normality	0.200<	0.200<	0.200<	0.200<	0.200<
Size of the Sample	109	108	108	92	81

(1) Modified Hall and Jones 1999 (2) World Development Report (3) Alesina et al. 2003 (4) Data from Poe et al. 1999 covering the years 1976-1993 (5) Clague et al. 1999. The table shows the  $\beta$ -coefficients of the regression, the numbers in parentheses are the absolute values of the estimated t-statistics, based on the White heteroscedasticity-consistent standard errors. ‘\*\*\*’, ‘\*’ or ‘(\*)’ show that the estimated parameter is significantly different from zero on the 1, 5, or 10 percent level, respectively. SER is the standard error of the regression, and K.-S. the 2-tailed P of the Kolmogorov-Smirnov-test on normality of the residuals.

It might, however, be the case that property rights, civil rights and emancipatory rights are really measuring something else like the quality of institutions or policies of the richer countries. This cannot be excluded because as soon as GDP per capita in 1990 is controlled for, the HR variables lose their significance. It might thus be the case that the teacher student ratio variable approximates differences in the infrastructure of the education system only insufficiently and by using other proxies, the significance of property rights, civil rights and emancipatory rights in explaining differences in the stock of human capital among the rich nations might vanish altogether. This possibility gets some support if an alternative proxy for human capital and knowledge is used, namely the number of patents per million. If one estimates a model in which patents serve as the endogenous variable and the number of people employed in R&D as the exogenous variable, the explanatory fit does not markedly increase if the human rights variables are added on the right hand side.<sup>18</sup>

We have ascertained the impact of the four rights factors on investment in both physical and human capital. In order to better understand possible transmission channels, we now turn to possible influences of our rights factors on productivity. Following Hall and Jones (1999), we calculate productivity as the residual of a Cobb-Douglas production function.<sup>19</sup> Hall and Jones provide data for 1988, we recalculated them for the year 2000. Instead of the output per worker for 1988 the output per worker for our 137 countries in 2000 was taken from the Penn World Tables 6.1 by Heston et al. (2002) for the left hand side of the equation used by Hall and Jones. The physical capital stock was calculated as an arithmetic mean of the capital stock calculated by Hall and Jones for 1988 and the aggregate investment in the period 1990-2000 again taken from Heston et al. (2002). After all, an assumed depreciation rate of 6 percent for the capital stock means that the

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<sup>18</sup> If, alternatively, the number of internet users per million inhabitants is used as a proxy for the education level of a country, all four human rights variables have a significantly positive influence, even after including all the control variables of the Z-vector and the student teacher ratio, the number of employees in R&D and GDP per capita. Caution seems, however, warranted when drawing on the number of internet users as this seems to be some diffuse measure for the general development of a country rather than a variable specifically suited to measure the degree of human capital or knowledge available in a country.

<sup>19</sup> Hall and Jones (1999) assume a production function  $Y_i = K_i^\alpha (A_i H_i)^{1-\alpha}$  with  $Y_i$ =Output per worker in country  $i$  (taken from the Penn World Tables),  $K_i$ =stock of physical capital in country  $i$  (its calculation is described in footnote 17),  $H_i$ =amount of human capital-augmented labor used in production in country  $i$  (the assumed rates of return are described above, p. 30) and  $A_i$ =labor-augmenting measure of productivity in country  $i$ . After rearranging the equation,  $A_i$  as the residual is calculated assuming  $\alpha$  to be  $1/3$ .

value of the 1988 capital stock has nearly lost half its value by the year 2000. Missing data for the 1988 capital stock in countries like Croatia, Ukraine, Slovakia were imputed by taking the data of the "mother countries" USSR, Yugoslavia and CSSR. The human capital per worker for the year 2000 was calculated in analogy to Hall and Jones with different rates of return as explained above. The data for the years of schooling were taken from [www.worldbank.org/data](http://www.worldbank.org/data). Missing data were imputed by augmenting the data in Hall and Jones for 1985 (originally provided by Barro and Lee 1993) with the average growth rate in schooling between 1985 and 2000. The table in the appendix contains more information concerning the data as well as the calculation procedure.

In estimating the influence of the HR-vector on the productivity residual, we refrain from estimating a baseline model as the influence of the physical capital stock as well as human capital on the variation in output per worker should already be captured by decomposing output per worker into its basic determinants. It is thus plausible to assume that differences in institutions are the primary and fundamental determinant of differences in productivity.<sup>20</sup> In this approach it is, of course, crucial to control for the possible influence of other institutional arrangements via the Z-vector.

Following this approach, property rights, civil rights and emancipatory rights all have a strong significant positive impact on productivity (table 8). Basic human rights never reach conventional significance levels. Significance levels remain virtually unchanged after controlling for the 21 variables of the Z-vector. Property, civil, and emancipatory rights remain significant on the one percent level in each specification while basic human rights remain insignificant (at least at the 5 percent level).

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<sup>20</sup> This is in analogy to the Hall and Jones hypothesis according to which social infrastructure is the primary and fundamental determinant of total factor productivity.

**Table 8: OLS-Regression logged Productivity 2000<sup>1</sup> as Endogenous Variable**

<i>Variables</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
Basic Human Rights (Factor 2)	0.031 (1.441)	0.027 (1.191)	0.031 (1.386)	0.032 (1.293)	0.040(*) (1.917)
Property Rights (Factor 4)	0.158** (8.106)	0.143** (6.629)	0.149** (6.435)	0.139** (4.941)	0.153** (7.531)
Civil Rights (Factor 1)	0.089** (3.841)	0.088** (3.779)	0.070** (2.513)	0.092** (2.494)	0.091** (4.194)
Emancipatory Rights (Factor 3)	0.098** (5.087)	0.090** (4.492)	0.092** (4.950)	0.074** (3.499)	0.100** (5.548)
Ethnic Fractionalization <sup>2</sup> (% of Population)		-0.169(*) (1.795)			
Left Regime <sup>3</sup> (Dummy)			0.002 (0.015)		
Military Regime <sup>3</sup> (Dummy)			-0.092 (1.324)		
British Influence <sup>3</sup> (Dummy)			-0.105* (2.016)		
Majority Rule <sup>4</sup> (Dummy)				-0.090(*) (1.548)	
Presidential System <sup>4</sup> (Dummy)				-0.069 (1.246)	
Religious Fractionalization <sup>2</sup> (% of Population)					-0.292** (3.305)
Constant	7.333	7.405	7.419	7.420	7.463
$\bar{R}^2$	0.389	0.412	0.415	0.422	0.429
SER	0.255	0.250	0.240	0.210	0.246
K.-S. Test on Normality	0.200<	0.200<	0.200<	0.200<	0,200<
Size of the Sample	135	134	117	80	135
<p>(1) Modified Hall and Jones 1999 (2) Alesina et al. 2003 (3) Data from Poe et al. 1999 covering the years 1976-1993 (4) Persson and Tabellini 2003. The table shows the <math>\beta</math>-coefficients of the regression, the numbers in parentheses are the absolute values of the estimated t-statistics, based on the White heteroscedasticity-consistent standard errors. ‘***’, ‘*’ or ‘(*)’ show that the estimated parameter is significantly different from zero on the 1, 5, or 10 percent level, respectively. SER is the standard error of the regression, and K.-S. the 2-tailed P of the Kolmogorov-Smirnov-test on normality of the residuals.</p>					

Comparing the results of table 5 with those of tables 6 through 8 reveals striking differences in the relevance of the human rights factors. This is astonishing, as they should basically say the same thing; after all, table 5 can be interpreted as the left hand side of the equation depicted in figure 3, and tables 6 through 8 as the right hand side. The observed differences thus warrant some discussion. Having an isolated look at the results contained in table 5, one could have the impression that the Posner-Barro hypothesis was the most convincing one. It has, however, already been mentioned that there are some problems with table 5 as the  $R^2$  is rather low and the results might be flawed by the influence of business cycles. The other tables seem to show that the other human rights factors also have some influence on important determinants of growth, thus confirming the Sen-hypothesis. If one runs some regressions with the various country types introduced above, this impression is re-enforced. Type E countries have an above-average GDP per capita growth rate but not countries of type D. This seems to indicate that the combination of basic human rights and property rights is important which, in turn, is in line with the Hayek-hypothesis.

With regard to investment, type D countries (i.e. countries with a weak record on basic human rights) also fare worse than countries of types C, E and F that all have strong basic human rights. The third column also re-enforces earlier results: none of the country types is particularly conducive to human capital formation. Concerning productivity levels, three country types are highly significant with country type F displaying an overwhelming influence on productivity.

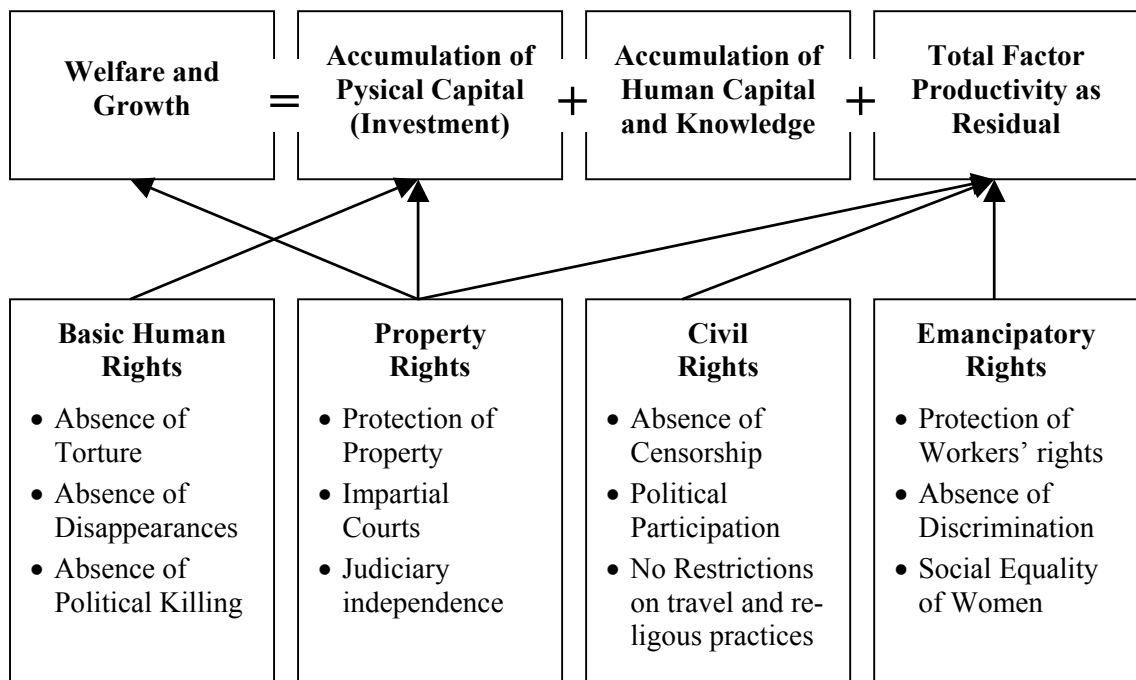
**Table 9: OLS-Regression Main Components Human Rights (Country Type B-F)**

<i>Model</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>
Endogenous Variable	<i>GDP Growth per Capita 1993-2000<sup>1</sup></i>	<i>Logged Investment in % of GDP 1993-2000<sup>1</sup></i>	<i>Logged Human Capital 2000<sup>2</sup></i>	<i>Logged Productivity 2000<sup>2</sup></i>
Basic Model	<i>GDP per Capita 1990<sup>1</sup> (in log form)</i> <i>Investment 1992-1999<sup>1</sup> (% of GDP)</i> <i>Years of Schooling 1985 (log)<sup>3</sup></i>	<i>Capital in % of GDP 1988<sup>2</sup> (log)</i> <i>Openness in % of GDP<sup>1</sup> (in log form)</i> <i>Population 2000<sup>1</sup> (in log form)</i>	<i>Pupils per Teacher 2000<sup>4</sup> (Ratio)</i>	
Country Type B (xwxs)	-0.117 (1.238)	-0.048 (0.631)	-0.024 (0.219)	-0.088 (0.888)
Country Type C (swsx)	0.041 (0.472)	0.097(*) (1.846)	0.002 (0.022)	0.093 (1.062)
Country Type D (wsxx)	0.103 (1.131)	0.069 (1.118)	-0.079 (0.995)	0.258** (2.669)
Country Type E (ssxw)	0.195* (2.039)	0.168** (3.270)	-0.006 (0.080)	0.254** (2.780)
Country Type F (ssss)	0.124 (1.273)	0.193** (4.102)	0.011 (0.149)	0.530** (6.519)
Constant	0.874	-1.081	1.255	7.141
$\bar{R}^2$	0.231	0.529	0.602	0.336
SER	0.231	0.184	0.193	0.265
K.-S. Test	0.189	0.194	0.200<	0.200<
Size of the Sample	125	134	109	135

(1) PWT 6.1 by Heston et al. 2002 (2) Modified Hall and Jones 1999 (3) Data from Barro and Lee 1993 (4) World Development Report. The table shows the  $\beta$ -coefficients of the regression, the numbers in parentheses are the absolute values of the estimated t-statistics, based on the White heteroscedasticity-consistent standard errors. ‘\*\*’, ‘\*’ or ‘(\*)’ show that the estimated parameter is significantly different from zero on the 1, 5, or 10 percent level, respectively. SER is the standard error of the regression, and K.-S. the 2-tailed P of the Kolmogorov-Smirnov-test on normality of the residuals. The countries were grouped according to their factor values on the four factors Basic Human Rights, Property Rights, Civil Rights, Emancipatory Rights. Six dummy variables type A-F were generated, indicating that a country has a certain combination of strong/weak rights (s=strong, w=weak, x=not determined). The country group A is used as reference category here. The attributes strong/weak are the results of a cluster analysis identifying one upper and one lower cluster for each of the four factors Basic Human Rights, Property Rights, Civil Rights and Emancipatory Rights (see appendix)

Figure 4 sums up our results: basic human rights have a strong positive influence on the accumulation of physical capital and should thus have a positive influence on economic welfare and growth (which we could not prove here with regard to the growth rates of the 1990s). Property rights have strong impacts on growth as well as on the accumulation of physical capital and total factor productivity, but not on the accumulation of human capital. Civil and emancipatory rights, in turn, positively influence total factor productivity and should thus have a positive influence if not on growth than at least on welfare in a broader sense (which we could not prove here either).

**Figure 4: Channels of Influence of Human Rights on Welfare and Growth in the 1990s**



With regard to the competing hypotheses sketched as figure 1 above, these results mean that none of the hypotheses is fully confirmed by the data: the significant negative impact that Hayek expected from strong emancipatory rights with regard to growth did not show up in our regressions. Contrary to what was termed the Barro-Posner hypothesis above, basic human rights do display a positive impact on investment. The Sen-hypothesis is not fully confirmed because neither basic human rights nor civil and emancipatory rights have a significant positive impact on welfare at least in the form of gdp growth.

For future studies, two approaches seem to recommend themselves in order to shed further light on our basic question: on the one hand, one could try to remain within the cross-country frame but rely on indicators for welfare other than growth. These could, e.g., include real per capita income, output per worker, the human development indicator or happiness coefficients. Drawing on the correlations presented in table 3 above, we suspect that the results with regard to the Sen-hypothesis might improve. Within such an approach, the business cycle problem would be mitigated, yet other problems like that of structural constancy would pop up. On the other hand, time-series analysis might make sense in which business cycle influences could be controlled for by drawing on year fixed effects.

## **5 Conclusions**

Our regressions seem to confirm that none of the four human rights factors derived from a factor analysis has any significant negative impact on welfare and growth. Would this result convince those who have expressed their skepticism with regard to granting a full bouquet of entrenched rights to citizens? Supposedly not as they could point to the fact that our results are primarily driven by the upper two thirds of our sample. In order to understand the relationship between rights and growth in poor countries better, it might therefore make sense to focus on the analysis of the bottom third of our country sample.

On the other hand, would our results make those who have argued in favor of basic human rights as well as civil rights begin to be skeptical concerning their theoretical priors? Supposedly not either as numerous authors (among them Hayek as well as Sen) have argued in favor of basic human rights irrespective of the directly measurable economic consequences. We have tried to show above that this need not necessarily be outside the realm of economics but can be incorporated if people attach value to be treated decently.



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