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Debt Relief and Good Governance: New Evidence

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Debt Relief and Good Governance: New Evidence

Abstract

Since the introduction of the HIPC Initiative in the early 2000s, indebted LICs had to show a decent governance performance before their debts were forgiven. We discuss the hypothesis that during the follow-up, Multilateral Debt Relief Initiative (MDRI), the World Bank has refrained from this policy, and that debt relief decisions are rather politically driven. We test different political economy theories by applying panel models to a set of debtor and creditor countries, respectively. Our main finding shows, that improvements in governance quality led to higher levels of debt forgiveness in 2000-2004, but not in the subsequent periods.

JEL-Codes: O200.

Keywords: debt relief, World Bank, MDRI, HIPC, political economy, development aid.

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1. Introduction

After operating for almost 10 years, the World Bank's Multilateral Debt Relief Initiative (MDRI) ended in 2015. Under this initiative, indebted developing countries received debt reductions of up to 100 percent. The MDRI followed the successful HIPC Initiative(s). The economic literature is in agreement that one reason for the success of these programs was that debt relief was conditioned on the recipients' governance performance (e.g., Presbitero 2009, Akoto 2013, Asiedu 2003, Easterly 2002). This approach avoids moral hazard and has positive external effects on developing countries, even if growth does not immediately pick up following debt reduction. Until now, it has been unclear whether the MDRI applied the successful strategies of the HIPC Initiative.

In this context, our prior research question (1) is whether empirical evidence supports the claim of multilateral creditors that they base their debt relief decisions on the performance of the economic institutional indicators of developing countries. Inspired by the results of Freytag and Pehnelt (2009), we are also interested in finding out whether this approach has changed over time.

Meanwhile, new results from the Bilateral Aid literature have identified the characteristics of donor countries as driving forces behind aid allocation (e.g., Round and Odedukun 2004, Dreher and Langlotz 2015). Furthermore, the work of Michaelowa (2003) has revealed that within debt relief decision-making, politics do matter. These results lead us to our second research question (2): Are there political motives that explain whether—and, if so, how much—debt relief is granted?

We contribute to the literature by presenting a thorough analysis of the relationship between debt relief and various performance indicators of recipient countries. We update the results of Freytag and Pehnelt (2009) and Presbitero (2009) by focusing on the years between 2005 and 2013. We

test whether previous hypotheses still hold, and introduce new ones. Additionally, we empirically identify the factors that drive the debt relief decisions of creditors.

We combine data from various sources, such as the World Bank, the IMF, the OECD, and the UNCTAD. Ultimately, we include data based upon the work of Dreher et al. (2009) and end up with a panel data sample of up to 55 debt relief-receiving countries covering 1995-2013.

Our analysis of these data indicate that there has been no improvement in governance quality over time among the countries that have received debt relief. At the same time, the amount of debt relief allocated to developing countries has decreased significantly in recent years. This trend can be partly explained by the decline in levels of indebtedness between 2000 and 2013.

Applying panel data models with a Heckman sample correction (Heckman 1979), we find that most of the governance indicators play no significant role in explaining debt relief. The exceptions are the World Governance Indictors (WGI) Political Stability and Voice and Accountability (See Annex, Table 2 for definition). As these indicators evaluate the perceived absence of violence and restrictions of democratic rights, they are more reflective of stable political conditions than of conditions that are important for economic success.[1] This result is confirmed using an alternative measure of political stability.

Freytag and Pehnelt (2009) found that debt relief was politically motivated throughout the 1990s. But in 2000-2004, developing countries had to show improvements in institutional quality in order to receive debt relief. By splitting our sample into time periods, we find that some of the governance indicators under study were significant in 2000-2004, but not in the subsequent periods. On the contrary, during the MDRI era, debt relief decisions were mainly based on poor debt conditions in previous years ("path dependency"). This result holds even when country fixed effects are applied.

While economics cannot fully explain these shifts in debt relief decision-making, examining political factors might provide us with further insights into this issue. However, we find no empirical evidence for lobbying after testing the hypothesis that the membership of recipient

[1] Such as the Fraser Economic Freedom Index or the WGIs Government Effectiveness, Rule of Law, and Regulatory Quality.

countries in the UN Security Council affects debt relief decisions, as Dreher et al. (2009) proved for bilateral development aid.

Instead, by combining creditor-reported data from 21 Development Assistance Committee (DAC) donors (OECD 2014) with data on government features provided by Beck et al. (2001), we find that debt relief and government expenditures are positively correlated. In turn, we find that government expenditures are positively correlated with the fractionalization of a creditor government. These results suggest that the more political parties are involved in governing, the more debt relief that will be granted. This assumption is in line with the hypothesis in the political economic literature (e.g., Weingast 1979, Niou and Ordeshook 1984, Scartascini and Crain 2002, Dreher and Langlotz 2015) that due to logrolling, fractionalized governments spend more on welfare, and are thus more likely than other countries to accept debt relief initiatives. We are able to partly confirm this finding using panel model techniques. However, it does not survive the application of country fixed effects.

The remainder of this paper is structured as follows. In Chapter 2, we summarize the history of debt relief initiatives and discusses the relevant economic and political theories, together with the empirical results of the previous literature. We then offer several testable hypotheses based on this discussion. In Chapter 3, we show how we created our data samples, and we describe our model variables. In Chapter 4, we present descriptive evidence, while in Chapter 5 we present our ceteris paribus results. We conclude in Chapter 6.

2. Background, Theory, and Hypotheses

2.1. Historical Background

Debt relief programs have existed since the 1960s. Early examples of these programs include the Pearson Report, which was introduced in 1969; and the Retroactive Terms Adjustment (RTA) program, which was launched in 1978 (Freytag and Pehnelt 2009). Subsequently, the main tool that was used to deal with insolvent countries was to reschedule these countries' long-term official bilateral debt in accordance with the Paris Club (Boote and Thugge 1997). The rescheduling of debt was based on the assumption that the problem was a temporary liquidity

shortfall that would end when an indebted nation's economy recovered. However, the financial crisis in Latin America in the 1980s showed that these problems were not always temporary. The so-called Brady plan, which linked the promise of debt relief with a demand for economic reforms, was introduced in 1988. As the Brady plan was considered a success, the World Bank and the International Monetary Fund (IMF) jointly launched the HIPC Initiative in 1996. To be eligible to receive debt relief under the first HIPC Initiative (aka HIPC I), a country had to be poor and developing, and it had to show a six-year history of implementing promising macroeconomic policies. The Cologne terms, which were introduced in 1999 by the Paris Club nations,[2] allowed for debt relief of up to 90 percent. The terms, which were proposed at the G7[3] meeting in Cologne, also relaxed some of the eligibility conditions for debt relief, and introduced an ex-post evaluation. All of the countries applying for debt relief under the enhanced HIPC Initiative (HIPC II) were obliged to develop a Poverty Reduction Strategy Paper (PRSP). The MDRI was introduced by the G8 countries (a group that now also includes Russia) during their meeting in Gleneagles, Scotland, in 2005; and was launched in 2006. The creditors committed themselves to cancelling up to 100 percent of further debts that were owed by the most indebted countries in the world. The aim of this initiative was to enable poor countries to reach the MDGs. Debt relief under the MDRI has been granted to 35 HIPCs and to two non-HIPCs.[4] Only debt accumulated before the first of January 2005 was be considered for debt forgiveness under the MDRI (World Bank 2014, IMF 2014). In 2015, the MDRI ended and all of the remaining balances were transferred to the Catastrophe and Containment and Relief (CCR) Trust of the IMF, which was set up to support countries that run into debt problems because of natural disasters (IMF 2016).

[2]Permanent members: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, the Netherlands, Norway, the Russian Federation, Spain, Sweden, Switzerland, the United Kingdom, and the United States of America. (Paris Club 2014)

[3]G7 nations: Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. (CRF 2014)

[4]Countries receiving debt relief under the MDRI: HIPCs with incomes under $380: Afghanistan, Burkina Faso, Burundi, the Central African Republic, the Democratic Republic of Congo, Ethiopia, The Gambia, Ghana, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, São Tomé and Príncipe, Sierra Leone, Tanzania, Togo, and Uganda. The HIPCs with incomes over $380: Benin, Bolivia, Cameroon, Comoros, the Republic of Congo, Côte d'Ivoire, Guinea, Guyana, Haiti, Honduras, Mauritania, Nicaragua, Senegal, and Zambia. The non-HIPCs: Cambodia and Tajikistan (IMF 2014a)

2.2.Debt Overhang

The first and most commonly used justification for the various debt relief programs builds on the theory of debt overhang, which Myers (1977) introduced in the field of corporate finance. It was applied to development economics by Krugman (1988) and Sachs (1989) after the Latin American debt crisis in the 1980s. Krugman (1988) argued that when external debt exceeds the expected present value of the potential future payments to the creditors, the country no longer has any incentive to implement the financial and macroeconomic changes needed to improve productivity and to increase the chances that the creditors would be repaid.

Sachs (1989) used an inter-temporal utility model to illustrate the risk of a debt overhang. In this model, Krugman's idea of under-investment in productivity-enhancing activities is captured in the aggregated investment decision. In Sachs' model, a high debt service, which stems from an excessive external debt, acts like a tax on investments and lowers the aggregated investment activities. A tax on investments leads to less capital accumulation, lower economic growth, and a reduced ability to repay the creditors. Sachs also predicted that debt relief would create a win-win situation.

There have been many attempts to find evidence for and against the theory of debt overhang, and to determine at what levels external debt becomes a burden. Although the results of these analyses have been mixed, the empirical evidence is in favor of the existence of a debt overhang, which harms growth. While some levels of debt might stimulate the economy and can be necessary for growth, continued debt accumulation decreases the growth rate. These two effects of debt on growth are referred to as the Laffer curve, and the tipping point at which debt becomes harmful is defined as the threshold level of external debt. Estimates of this threshold level have varied widely in the literature: depending on the examined countries and the calculation, estimates range from 40 percent (Pattillo et al 2011), to 60 percent (Ouyang and Rajan 2014), to 64 percent (Caner et al 2010), and to 100 percent of GDP (Elbadawi et al 1997).

Ouyang and Rajan (2014) concluded that countries with flexible currencies, greater reserve holdings, solid credit histories, well-developed bond markets, and highly concentrated banking systems are more likely to be able to accumulate relatively large levels of external debt without experiencing negative effects on growth.

2.3.Debt Relief and Governance Improvement

Bearing in mind that economic growth is not the only variable of interest,[5] we turn to an argument that has been made in a different body of literature: as we noted above, high debt levels affect growth, especially through the crowding-out of investment (Cohen 1993). Therefore, we can expect that debt relief will lead to economic growth through the unleashing of investments that would be not otherwise be undertaken. Chauvin and Kraay (2005), Presbitero (2009), and Johansson (2010) have empirically examined the nexus between debt relief, investment, and growth. Chauvin and Kraay (2005) used data on estimated changes in the present value of the external debt for 62 low-income countries between the years 1989 and 2003 to empirically test how efficient debt relief has been in fulfilling its objectives. The authors found no evidence that debt relief leads to higher growth rates or improved investment rates. The authors suggested, however, that these negative results are due to a variety of data and statistical problems. Presbitero (2009) came to similar conclusions after studying 62 low-income and lower middle-income countries in the period 1988 to 2007. Her results indicated that there was no increase in growth rates, investment, or FDI as a result of debt relief after country-specific factors were accounted for. Johansson (2010) expanded the analysis to 118 low- and middle-income developing countries from 1989 to 2004, and also concluded that there was no direct link between debt relief and growth. However, on the bright side, debt relief has been shown to increase investment rates in non-HIPCs. For example, in an analysis of 16 middle-income countries that received debt relief through the Brady Plan in 1989-1995, Arslanalp and Henry (2005) found that debt relief was associated with increases in investment and in asset prices, and with accelerated growth.

The reasons for these mixed results appear to be related to the problem that in a receiving country that lacks good governance (e.g., if the country has a corrupt government), the resources that are freed up by debt relief are not used for investments in the economy, but instead end up in the hands of a few (Arslanalp and Henry 2006, Asiedu 2003, Bauer 1991, Easterly 2002). Indeed, Easterly (1999) has shown that low-quality institutions are the main reason why HIPCs became poor and highly indebted in the first place. In the economic literature, the quality of institutions is

[5] In fact, Schmid (2009) showed that throughout the HIPC Initiative infant mortality fell after the eligible countries reached the completion point. The same positive effect was achieved with respect to education; the drop-out rate in primary school fell significantly after the completion point (Bandiera et al 2009).

frequently cited as an explanation for the differences in development and growth levels across countries (e.g., North 1990, 1992). We can therefore assume that debt relief initiatives that provide incentives for fostering good governance should have positive external effects on developing countries. Thus, debt relief programs can be more easily justified if they can be shown to lead to measurable improvements in institutional quality.

Throughout the 1980s and the 1990s, aid and debt forgiveness grants were often conditioned on the implementation of certain predetermined reforms in the receiving countries. This approach was, however, found to be largely inefficient. Thus, with the introduction of the HIPC Initiative, both bilateral and multilateral donors seem to have directed their debt relief efforts toward countries that already have better institutions and policies in place (Nanda 2006, Presbitero 2009). Presbitero (2009) found that countries with a higher Country Policy and Institutional Assessments (CPIA) indicator, which she used as a proxy for good governance, were rewarded with debt relief grants after the enhanced HIPC Initiative was introduced. She concluded that her results suggest that governance conditionality creates incentives for indebted countries to improve the quality of their governance and the efficiency of their public sector, while also limiting the negative effects of aid dependency. However, these positive results have not been confirmed by other studies. Chauvin and Kraay (2007) also used the CPIA indicator as a proxy for institutional and governance quality in a study of 62 low-income countries that covered roughly the same period. They found that while the CPIA indicator had a positive effect, it was not sufficiently significant in a cross-sectional regression analysis. They also found that there was a negative relationship between high CPIA levels and debt relief before the enhanced HIPC Initiative was introduced. Freytag and Pehnelt (2009) generated mixed results for the relationship between governance indicators and debt relief. After examining a variety of governance indicators, they found that none of them had a significant effect on the amount of debt relief before the enhanced HIPC Initiative, but that three of them had positive and significant effects on debt relief in the period after the initiative was introduced. Akoto (2013) conducted a study that covered all of the 16 countries that applied for debt relief under the enhanced HIPC Initiative in 2000, as well as nine non-HIPCs that did not apply. He found that countries that applied for debt relief under the enhanced HIPC Initiative in 2000 were more likely to have improved their institutions in the years 1996 to 2000. He concluded that the introduction of the enhanced HIPC Initiative created a motivation for these countries to improve their institutions.

To sum up the discussion, debt seems to be detrimental for growth. While it is unclear whether debt relief leads to growth in developing countries, there is evidence that debt relief is associated with higher levels of institutional quality in developing countries. Hence, it has been argued that creditors should base their decisions about whether to grant debt relief on governance improvements. This claim has, to the best of our knowledge, not yet been tested using data of the MDRI after 2005. Hence, we intend to test the following hypothesis (H1):

The institutional quality of a recipient country determines its amount of debt relief.

By contrast, Freytag and Pehnelt (2009) found that throughout the 1990s debt relief decisions followed a path dependency, meaning that debt relief decisions were mainly based on poor debt performance in the previous period. This brings us to the next hypothesis (H2):

If a country is indebted in Period t and receives debt relief, it will certainly receive debt relief in Period t+1.

Since the authors found that this pattern changed in 2000-2004, we want to test whether the same path dependency returns in more recent periods.

Ultimately, Bandiera et al. (2009) showed that fragile countries have special needs in terms of debt relief. In those countries, governance quality can be understood in the context of political stability and the protection of democratic rights. The case of Myanmar is an interesting example of a fragile country. Prior to 2011, the military junta in Myanmar had accumulated a large debt burden to finance their military budget. After 2011, the Myanmar government made substantial improvements in the areas of political stability and democratic rights. In 2013, the World Bank "rewarded" that dynamic with a substantial amount of debt relief (Hulova 2013). It should be noted that this is the only case evidence that motivates our next hypothesis (H3).

The fragility of recipient countries determines the amount of debt relief granted.

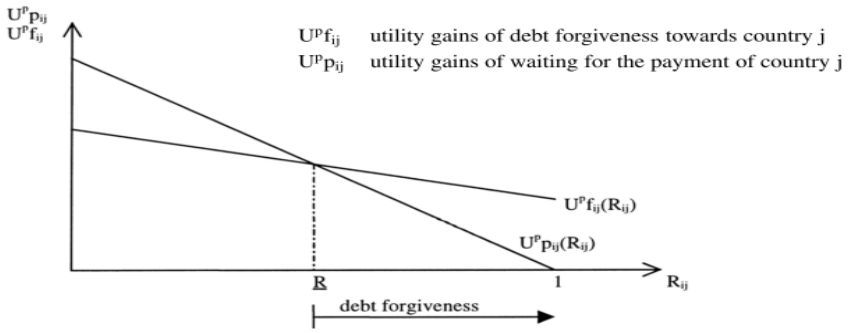
2.4. Political Motives

In many cases, encouraging the recipient countries to undertake welfare and institutional improvements is not the main objective of the donors. Debt relief may also be an instrument to gain political capital domestically. Michaelowa (2003) presented a theory of debt relief based on

rational political reasoning, especially under the enhanced HIPC Initiative. Following Vaubel (1991), she argued that the decisions made by the World Bank and the IMF depend heavily on national politics (through the Board of Governors, which represents the politicians of the member nations) and through the Board of Executive Directors (which consists of national delegates). Hence, national governments have both a direct path (through the Board of Governors) and an indirect path (through the Board of Executive Directors)[6] that they can use to influence the debt relief decisions of the World Bank or the IMF. However, the flow of information on which all decisions are based is controlled by international bureaucrats, and these bureaucrats can block the implementation of any policy decision. Thus, countries face enormous difficulties in controlling these vast numbers of international civil servants. NGOs, on the other hand, can lobby to influence the decisions of national governments und bureaucracies. International NGOs can also directly influence the decision-making of the IMF and the World Bank. While it is hard to find empirical evidence for these kinds of rent-seeking activities, Dreher et al. (2009) found that decisions regarding bilateral aid grants depend on whether the recipient country is a member of the UN Security Council. Their theory is that the World Bank uses grants to UN Security Council member countries as a means of gaining political capital. The possibility that this pattern could also apply to debt relief motivates our fourth testable hypothesis (H4).

Developing countries that are members of the UN Security Council receive more debt relief.

Figure 1: Decision-making of national politicians for debt forgiveness



Source: Michaelowa (2003, p 6)

[6]The Board of Governors meets only once a year and chooses their national representatives for the Board of Executive Directors.

Meanwhile, a national political actor's decisions regarding debt relief may be expected to depend on his or her utility function. According to public choice theory, a politician's utility function depends on the number of votes s/he expects to receive in the next election. Creditor countries have two options when considering loaning funds to poor developing countries: they can wait for the loan to be repaid by the recipients and use the repaid funds, plus interest, to implement policies to increase the expected number of votes; or they can forgive the debt and forgo the possibility of repayment. The second option has a positive effect on the expected number of votes because of the high moral appeal of an act of charity to the world's poorest. The utility of waiting to be repaid decreases with the increase in the risk of default, and the utility of debt forgiveness increases inversely (See Figure 1). While the first relationship is clear, the second might need some explanation. Michaelowa (2003) has argued that members of the public in the creditor country have knowledge of the default risk, and are less likely to see the debt relief as a charitable act as the risk of default rises. Figure 1 shows the national politician's decision point. The utility of waiting $U^p f_{ij}(R_{ij})$ and the utility of debt relief $U^p p_{ij}(R_{ij})$ react differently depending on the default risk R. At the intersection point $\underline{R}$ the politician favors neither of the two options for action. Ultimately, the national politician will vote for debt relief if the default risk exhibits the intersection point risk $\underline{R}$. The default risk depends on several debtor and creditor characteristics:

Table 1: Driving factors of debt default risks in debtor and creditor countries

Debtor	Creditor
• Cumulative external debt (-)	• Development aid (+)
• Cumulative defaults (-)	• Income (+)
• Dependency on aid and trade with creditor (+)	• Trade with debtor (+)
• Trade deficit, dependency on external finance (-)	
• Political stability (+)	
• Good governance (+)	

Note: (+) indicates that the default risk decreases; Source: Own modification of Michaelowa (2013, p. 16)

Hypothetically, the default risk decreases with higher creditor income and higher debtor dependency on aid and bilateral trade. The assumption in this case is that these variables enable the creditor to penalize defaulted repayments. Meanwhile, default risk increases with debtor ex-ante indebtedness, previous repayment defaults, and debtor trade deficits, which indicate that the debtor's economy depends on external financing (Michaelowa 2013, p.17). Intuitively, we can expect that unstable political conditions will have a detrimental influence on economic activities,

which will in turn lower the chances of debt repayment: i.e., fragile debtor countries are more likely to default on their debts. Furthermore, because good governance helps to ensure that a country will manage its financial resources well, stable political conditions are associated with a lower default risk in the future.

These considerations are valuable when designing a regression model for the debtors (Chapter 5.1). However, there are still unanswered questions regarding the willingness of creditors to grant debt relief. When the creditor government decides to grant relief, it has to either free up resources or depreciate planned revenues. In other words, debt forgiveness is likely to be associated with an increase in government spending. In the political economy literature, political decisions regarding expenses are explained not only in terms of the maximization of rational utility by the agents, but also in terms of the structure of the national political system. For instance, Roubini and Sachs (1989) showed that weak and divided governments are less effective in reducing budget deficits. Their explanation is that a weaker and more divided government is more likely to spend money on welfare because members of divided governments have different views on how expenditures improve the social welfare of a society. Similarly, Volkerink and de Haan (2001) found empirical evidence that fragmented governments tend to have higher deficits, because it becomes more difficult to identify the causal agent of an expensive policy when the number of decision-makers is large. The authors also tested whether the political orientation of a government affects government expenditures, but found no empirical support for such an effect.

Scartascini and Crain (2002) examined in some detail the effects of the size and the composition of governments on government spending. Specifically, they looked at whether electoral institutions influence competition between parties, and whether this dynamic affects fiscal decisions. They introduced "*the Law of 1/n",* which states that expenditures grow proportionally to the number of relevant bargaining agents; i.e., the legislators. The authors offered two main explanations for this relationship. First, since there are no legally binding contracts between legislators, minimum winning coalitions are unstable (Weingast 1979, Niou and Ordeshook 1984). Thus, within a multi-party system the fragility of coalitions rises as the number of parties increases (Scartascini and Crain 2002, p.11). For instance, the majority of three parties can be easily overturned by a new coalition. The typical reaction to this unstable condition is universalism, which is defined in political economy as "seeking unanimous passage of programs through the inclusion of a project for all the political parties who want one" (Scartascini and

Crain 2002, p.11 extend the definition of Weingast 1979, p.249).[7] Party leaders face the problem that they are potentially in the losing minority; hence, they prefer certain returns to uncertain benefits. Assuming the party budget is limited, the coalition party may be expected to spend money on projects that benefit their supporters. But without a legislative majority, the project will not pass the legislature unless the party finds additional votes from other parties, who may be expected to ask for votes for their own projects in return. Consequently, welfare projects such as aid or debt relief—and ultimately the overall budget—are likely to in number and in scale in more fractionalized coalitions. Round and Odedukun (2004) provided empirical evidence that political polarization and fractionalization enhance aid efforts. [8] Finally, Dreher and Langlotz (2015) used this finding and exploited fractionalization as an excludable instrument to infer a causal relationship between aid and growth. The similarities between the concepts of aid and debt relief (Cassimon and Essers 2012) motivate our last hypothesis (H5):

The fractionalization of creditor governments positively affects the amount of debt relief granted.

3. Data Sample and Variables

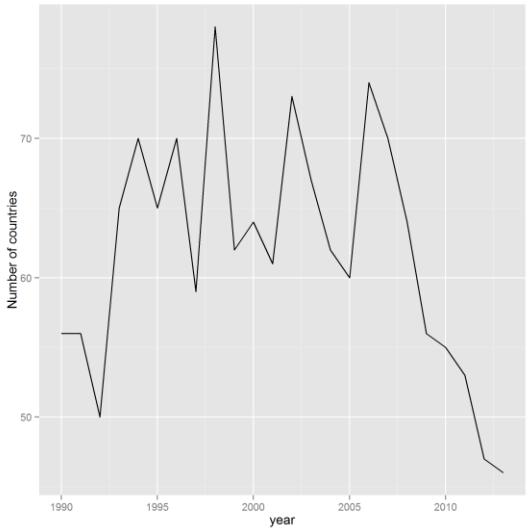
As we discussed in the previous sections, there are a range of motives for receiving debt relief, just as there are a range of motives for granting it. Therefore, we collected data both from countries that received debt relief and from countries that granted debt relief.

3.1. Recipient countries (Dataset D)

We created an unbalanced panel dataset of developing countries that received debt relief from DAC donors between 1990 and 2013. Indeed, the number of countries in our sample decreased from a maximum of 78 countries in 1998 to a minimum of 46 recipient countries in 2013 (see Figure 3). We are aware that by using this selection process the inference from the sample population to the general population is potentially biased. We observe only a part of the distribution. We correct for this problem with a suitable estimation technique (see Chapter 5.1).

[7] The argument was originally made for two-party systems. Scartascini and Crain (2002) further developed it to apply to multiparty systems, and introduced the term "modified universalism."

Figure 2: Debtor sample; number of countries receiving debt relief by OECD donors 1990-2013



Source: own illustration, Data: OECD (2014)

Given that important variables are seldom provided on an annual basis for the examined period (especially for poor and fragile developing countries), we introduce time periods (following, e.g., Presbitero 2009, and Bjerg et al 2011). Within those time periods we calculate the variable averages.[9] A further advantage of this approach is that we introduce a smoothing effect. This is important because debt relief grants tend to be occasional in nature, and because we wish to rule out business cycle fluctuations (Presbitero 2009). We initially examine the periods 2000-2004, 2005-2009, and 2009-2013 to make the results of analysis comparable to those of Freytag and Pehnelt (2009). However, we use alternative period lengths for our robustness checks.

Dependent variable

The data on the amount of debt relief per year for each of the countries came from the OECD's statistical database, and the data on the degree of debt forgiveness came from the Development Assistance Committee (DAC) [10] (OECD 2014). The DAC data are part of the Official Development Assistance (ODA) and debtor-reported data.[11] Since the variable exhibits a skewed

[9] In a between estimator fashion.

[10] The DAC members are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, the United States, and the Commission of the European Communities.

[11] The data aggregate individual projects announced under the Creditor Reporting System. The data are measured in million USD constant prices, using 2012 as the base year.

distribution, we use a logarithmic transformation to allow for estimation techniques that assume normal distribution. Additionally, debt relief is measured as the share of the countries' GDP.

The OECD (2014) measures debt relief at face value, which implies that it neglects to factor in the allocation of grants at below-market interest rates by the World Bank. Hence, the true value of the debt is overestimated (IMF 2002). The net present value (NPV) takes into account the future debt obligations and their interest rates (see Cruces and Trebesch 2013 for details). Since we are particularly interested in the question of *why* creditors grant *certain amounts of* actual debt relief to certain kinds of debtor countries, the face value is more relevant in this context. NPVs are important for quantifying the effects of debt relief on certain outcomes, such as growth, poverty, and health expenditures; i.e., when debt relief is used as an explanatory variable (see, e.g., Chauvin and Kraay 2005, Presbitero 2009).

Independent Variable

The total external debt stock and debt services (both as a percentage of GNI) and the governance indicators are taken from the World Bank database (World Bank 2014b). The Worldwide Governance Indicators (WGIs) consist of six indicators: namely, Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption (See Annex, Table 1 for their definitions). The indicators are available on a semiannual basis from 1996 to 2002 and on an annual basis from 2003 onward. Each indicator is standardized on the average of all available countries; i.e., zero denotes the average world governance performance. The larger the value of the indicator, the better the performance. For our robustness tests, we also use the Index of Economic Freedom by the Fraser Institute (2016) and the State Fragility Index (Marshall and Cole 2008). In addition, we use the binary variable of Dreher et al. (2009), which indicates whether a country is a member of the UN Security Council at a certain point of time.

Controls

GDP and GDP per capita are measured by the Purchasing-Power-Parity (PPP) valuation of a country's GDP, and are collected from the IMF database (IMF 2014d). This provides us with the GDP measurement we use to calculate the debt relief per GDP. For information about the trade balance of the recipient countries, we collected data from the United Nation Conference of Trade

and Development (UNCTAD 2015). We use the normalized trade balance, which is defined as the trade balance (total exports less total imports) divided by the total trade (exports plus imports). The data on the ODA and the government expenditures on education are provided by the World Bank database.

Table 2: Debtor sample; summary statistics

	N	Mean	St. Dev.	Min	Max
Debt relief (in % of GDP)	1,308	0.95	3.27	-0.002	71.70
External debt (in % of GNI)	1,128	80.00	84.83	4.12	960.38
Debt service (in % of GNI)	1,127	4.32	7.08	0.03	135.38
GDP per capita (in US Dollar)	1,295	3,425.79	4,550.79	267.21	43,050.93
Public spending on education (in % of GDP)	544	4.12	2.75	1.00	44.33
Official Development Aid (in % of GNI)	1,214	9.91	9.87	-0.20	115.40
Trade balance (X-M/X+M)	1,237	-0.18	0.20	-0.83	0.52
Political Stability	766	-0.61	0.87	-3.18	1.12
Voice and Accountability	766	-0.50	0.68	-2.22	1.41
Government Effectiveness	764	-0.68	0.54	-2.04	1.43
Regulatory Quality	765	-0.56	0.57	-2.34	1.44
Rule of Law	766	-0.69	0.57	-2.07	1.30
Control of Corruption	764	-0.63	0.54	-1.82	1.55
Fraser Economic Freedom	623	6.11	0.86	2.80	7.70
State Fragility Index	960	14.62	4.66	1	24

Source: own illustration, Data: *OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009),*

3.2.Creditor countries (Dataset C)

For the creditor dataset we have created an unbalanced sample of 21 countries that are members of the DAC and that were granted debt relief between 1995 and 2013. As these countries are *developed*, there is no serious lack of observations, and hence no need to create time periods for this dataset.

Dependent Variable

The data on the amount of debt relief granted per year by creditors are collected from the OECD as part of the aid (ODA) disbursement to countries and regions (OECD 2014). Again, the variable is measured as a share of GDP, and is log-transformed.

Independent Variables

We also use OECD (2014) data on general government spending, including data on spending by central, state, and local governments, as well as by social security funds. Spending is measured in terms of thousands of USD per capita and as a percentage of GDP.[12]

Following Dreher and Langlotz (2015), we collect data on government fractionalization from Beck et al. (2001). They defined government fractionalization as the probability that two randomly chosen members of the governing coalition are from the same political party.

Controls

Following Round and Odedukun (2004), we include data on population size from the OECD (2014) and data on GDP per capita from the IMF (2014). Again, we include the UN Security Index Dummies by Dreher et al. 2009.

Table 3: Creditor sample; summary statistics of 21 DAC creditors, 1995-2013

	N	Mean	St. Dev.	Min	Max
Debt relief in (Mio. US Dollar)	190	302.6	652.4	0.01	5,936.1
Government Expenditure in (% of GDP)	233	7.4	2.1	3.4	14.3
Fractionalization (in %)	218	38	28	0.00	83
GDP per capita in US Dollar	231	34,257	10,688	14,627	65,415
Population (in Mio)	227	21.80	28.49	3.60	128.06

Source: own illustration, Data: Beck et al. (2001) and OECD (2014)

4. Descriptive Evidence

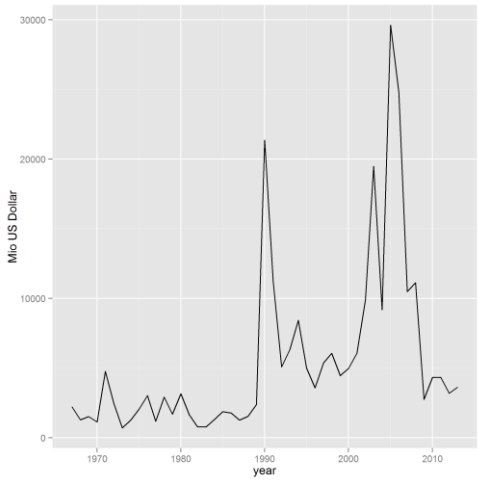
In the following, we provide some tentative, descriptive evidence that can be used to formulate preliminary insights for our hypotheses. In Figure 3, we show the relevance of debt relief over time as measured by the total volume of debt relief granted by all creditors that are members of the DAC.

The first visible peaks of debt relief can be spotted in 1990, when the Paris Club forgave large amounts of debt (Figure 3). The next peak was in 2005, when the HIPC Initiative led to a wave of debt forgiveness. After this period, the amount of debt relief granted decreased constantly. This is hardly surprising given that the number of countries that received debt relief declined sharply after 2006 (Figure 2). This development can be attributed in part to developing countries reaching

[12] The data are under the System of National Accounts 2008 (SNA 2008) for all of the countries except for Chile, Japan, and Turkey, for which the data are under SNA 1993 (OECD 2014).

the completion point through the HIPC Initiative, and in part to reductions in the MDRI debt of up to 100 percent (See Chapter 2.1).

Figure 3: Creditor sample: volume of debt relief by all DAC donors 1965-2013



Source: own illustration, Data: OECD (2014)

In Table 4, we show the average performance of debt-related variables across time periods; i.e., debt service, income, external debt, and the amount of debt relief. The data indicate that the average amount of debt relief received by developing countries decreased from the peak point of 1.2 percent of GDP in 2000-2004, which represents the heyday of the HIPC; to 0.8 percent in 2010-2013.

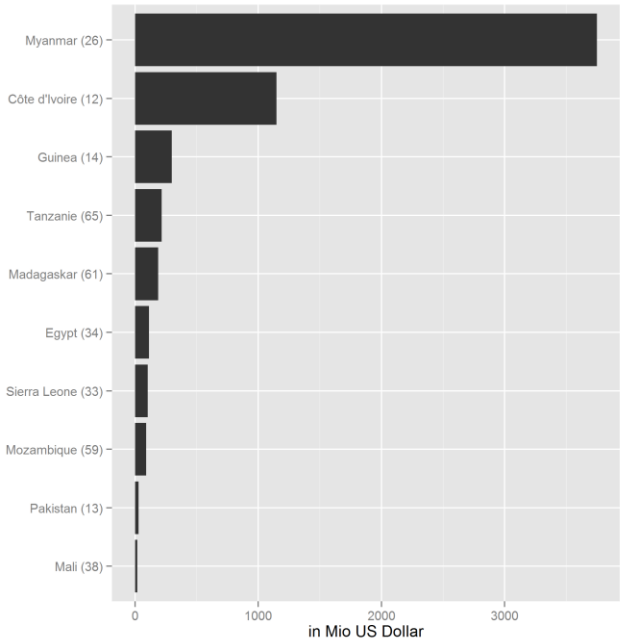
Table 4: Debtor sample; summary statistics

Statistic	N	Mean	St. Dev.	Min	Max
Debt relief (in % of GDP)	1,308	0.95	3.27	-0.002	71.70
External debt (in % of GNI)	1,128	80.00	84.83	4.12	960.38
Debt service (in % of GNI)	1,127	4.32	7.08	0.03	135.38
GDP per capita (in US Dollar)	1,295	3,425.79	4,550.79	267.21	43,050.93
Public spending on education (in % of GDP)	544	4.12	2.75	1.00	44.33
Official Development Aid (in % of GNI)	1,214	9.91	9.87	-0.20	115.40
Trade balance (X-M/X+M)	1,237	-0.18	0.20	-0.83	0.52
Political Stability	766	-0.61	0.87	-3.18	1.12
Voice and Accountability	766	-0.50	0.68	-2.22	1.41
Government Effectiveness	764	-0.68	0.54	-2.04	1.43
Regulatory Quality	765	-0.56	0.57	-2.34	1.44
Rule of Law	766	-0.69	0.57	-2.07	1.30
Control of Corruption	764	-0.63	0.54	-1.82	1.55
Fraser Economic Freedom	623	6.11	0.86	2.80	7.70
State Fragility Index	960	14.62	4.66	1	24

Source: own illustration, Data: OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009).

Similarly, the average debt service per year decreased over time, from 5.8 percent in 1990-1994 to 1.5 percent in 2010-2013. However, the average GDP per capita of the developing countries that received debt relief increased significantly over time. Ultimately, the average external debt of the developing countries—which can be seen an indicator of the success of debt relief initiatives—decreased from 117 percent to 32 percent of GNI in 2010-2013. It thus appears that, on average, the developing countries that received debt relief became less indebted over time.

Figure 1: Debtor sample; top 10 cases of debt forgiveness by DAC donors in 2013

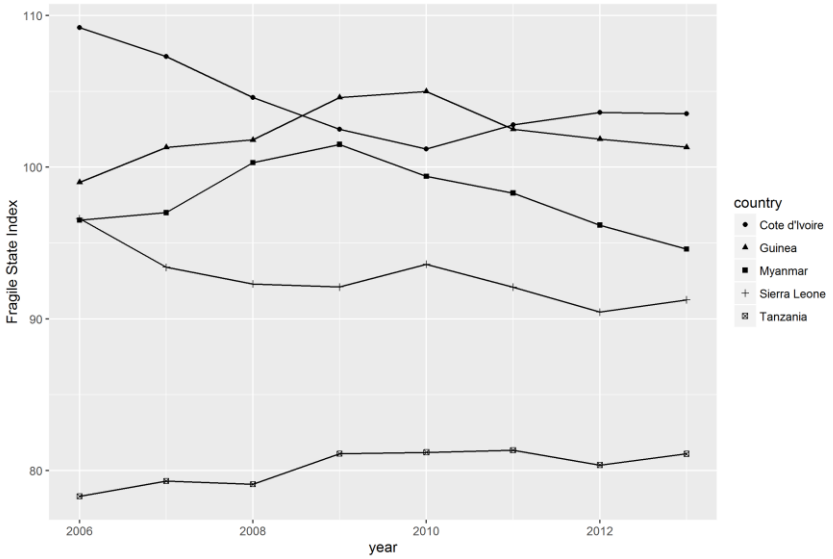


Note: In brackets we show the rank of the Fragile State Index, provided by Found for Peace Foundation (2015); Source: own illustration, Data: World Bank (2014).

In Figure 4, we identify the largest debt allocations in 2013 and add the rankings of the Fragile State Index (Fund for Peace 2016). The top three debt relief recipients in 2013 were Myanmar, the Côte d'Ivoire, and Guinea. As a reward for engaging in a process of democratization that began in 2011, Myanmar has been granted extensive debt relief. The military junta had accumulated a large debt burden over time, and the IMF, the World Bank, and the AfDB did not reduce this burden until after the government had implemented political reforms (Hulova 2013). Large amounts of debt relief were also granted to the Côte d'Ivoire after the peace accord of 2007 and the resolution of the post-election crisis in April 2011. Côte d'Ivoire also successfully implemented a Poverty Reduction Strategy Paper (PRSP), and improved its macroeconomic management (World Bank Group 2012). Similarly, multilateral donors rewarded Guinea for

taking steps toward democracy. Although Guinea underwent a military coup in 2008, the country held its first democratic elections in December 2010, and was consequently able to reach the completion point of the HIPC Initiative (IMF 2015).

Figure 2: Debtor sample; Fragile State Index performance of selected countries 2006-2013

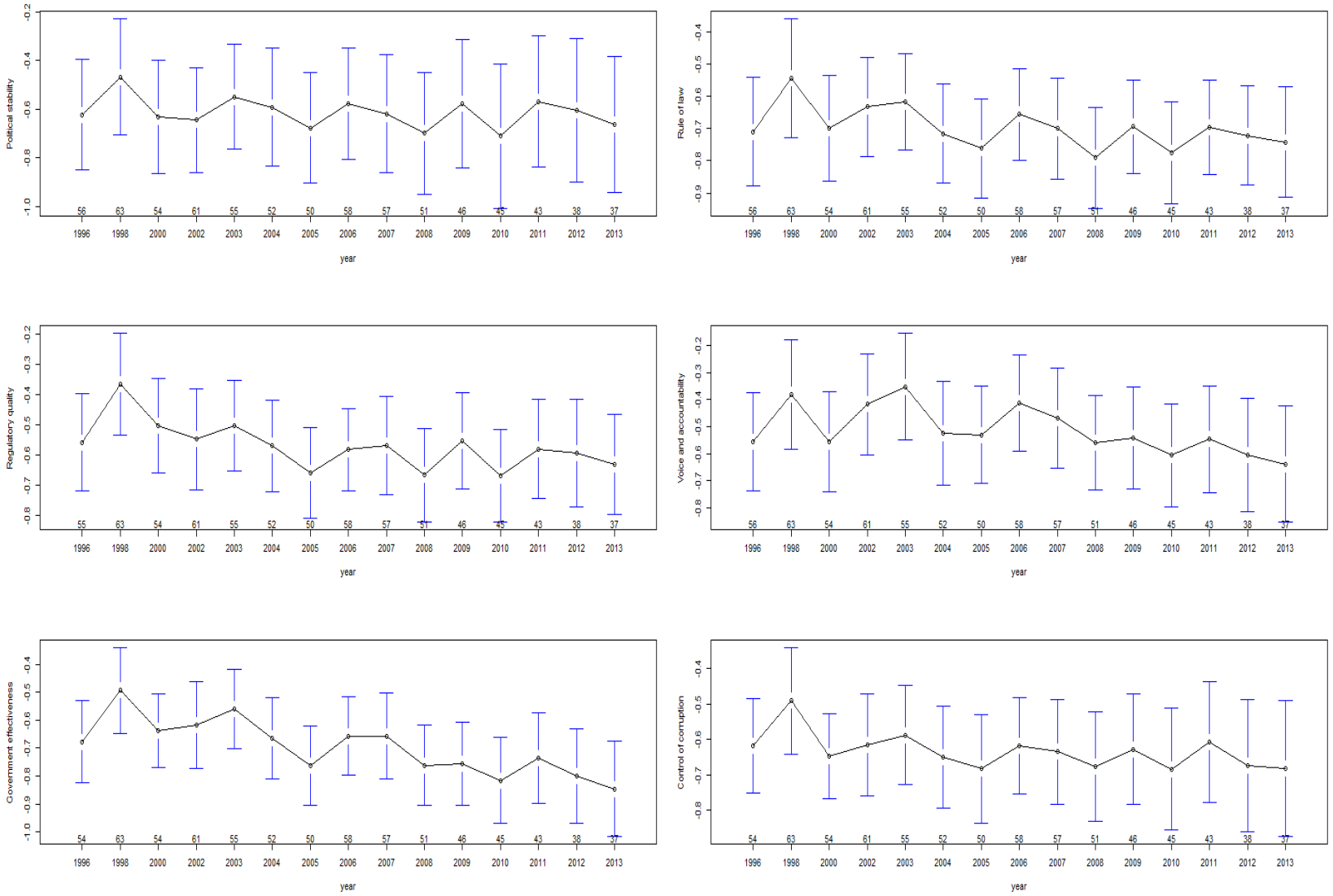


Source: Fund for Peace Foundation (2015), own illustration

These observations lead us to suspect that recent debt relief decisions were essentially rewards for countries becoming more peaceful and democratic. In fact, some of the top recipients of debt relief in 2013 first had to demonstrate that they had become less fragile (See Figure 2). The strongest example of this potential link is Sierra Leone, which improved its Fragile State Index (FSI) score by 5.5% between 2006 and 2013. However, there are counterexamples such as Tanzania, which received increased amounts of debt relief over the period despite having a higher FSI score due to its political turmoil.

Freytag and Pehnelt (2009) as well as Presbitero (2009) found that during the HIPC Initiative donors were more likely to grant debt relief to developing countries that could show visible improvements in institutional quality. As debt relief amounts have been decreasing over time (see Figure 3), we are interested learning more about how the quality of governance in developing countries has been evolving.

Figure 3: Debtor sample; performance of governance indicators in developing countries that receiced debt relief



Source: own illustration, Data: World Governanace Indicators by World Bank (2014)

We start by visually analyzing the World Governance Indicators of the countries that received debt relief between 1996 and 2013 (See Figure 6). From 1996 until 2005, we see a negative trend in which the quality of all types of institutions worsened in the countries that received debt relief. This pattern did not change much after 2005, with the exception that levels of political stability remained fairly constant. It is important to note, however, that this is a selective perspective, since the countries with high-quality institutions were less likely to be included in the sample.

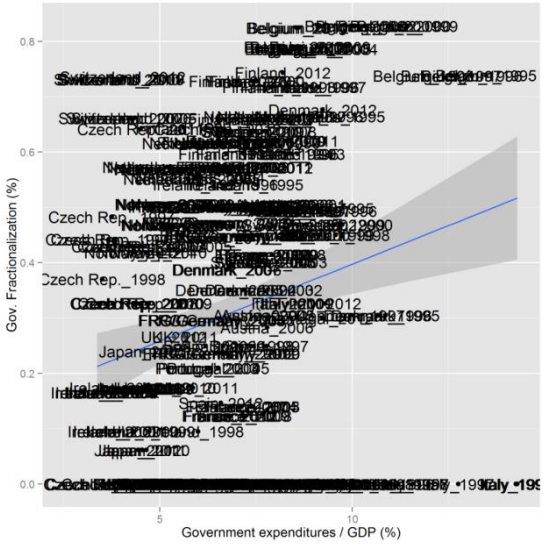
Nevertheless, we observe two contradicting dynamics: on the one hand, the amount of debt relief has been lower since 2010 (See Figure 3); while on the other, the quality of governance in developing countries has not improved, or has even worsened.

To complete the picture, the donor perspective has to be take into account. Roubini and Sachs (1989), Volkerink and de Haan (2001), Round and Odedukun (2004), and Dreher and Langlotz (2015) found empirical evidence that the fractionalization of a donor's government has a significant effect on the amount of government expenditures. With our creditor sample, we provide additional support for that theory; as we can see in Figure 7, there is an undeniable positive correlation.

Furthermore, we can see a clear positive correlation between government expenditures and the amount of debt relief provided by DAC donors between 1995 and 2013 (Figure 8).

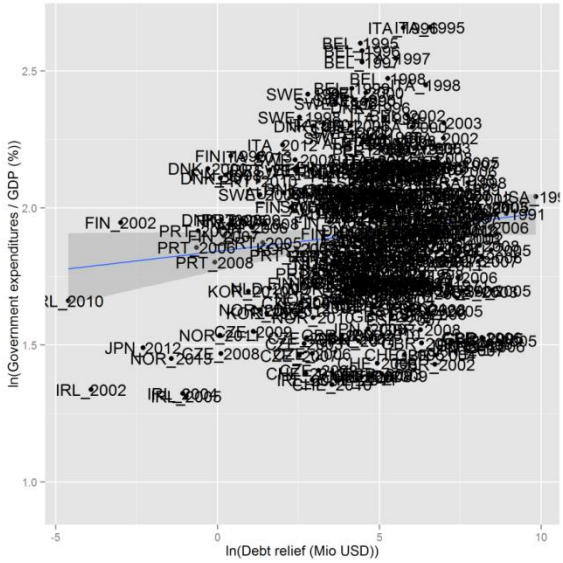
These results provide some preliminary evidence that government fractionalization determines government expenditures, and that government expenditures in turn determine debt relief decisions. However, the causality of this correlation is not yet clear, as it may simply stem from the fact that the government has to spend more in order to provide debt relief. In addition, non-observed variables might affect the two correlating variables at the same time.

Figure 4: Creditor sample, government expenditure vs. government fractionalization among DAC creditors



Source: own illustration, Data: OECD (2014)

Figure 5: Creditor sample; government expenditures vs. debt relief by DAC donors (1995-2013)



Source: own illustration, Data: Beck et al. (2001) and OECD (2014)

5. Multivariate Analysis

5.1. Identification

For our debtor sample, we specify a model that includes all of the variables that could affect the default risk, as we pointed out in Chapter 2.4 (See Table 1). Hence, in order to test Hypotheses H1-H4 we use the following specification:

1) $\ln(Debt\ relief)_{it} = f(Debt\ Relief_{i,t-1}, Debt\ Service_{i,t-1}, External\ Debt_{i,t-1}, Governance_{i,t-1}, UN\ Council\ Memebership_{i,t-1,}, Controls)$

where *i* denotes countries that received debt relief in the constructed period *t*. The strategy of the HIPC Initiative was that the creditor countries should condition their debt relief allocation on the debtors' ex-ante performance. Therefore, we examine the pre-period variables of our independent and control variables.

The World Governance Indicators and the other examined institutional indicators are highly correlated with each other (See Annex, Table 2). Furthermore, our intention is to identify the most salient aspects of governance. To this end, we let the governance indicators enter the model one by one.

We construct the sample by including countries that received debt relief at a certain point of time. By excluding developing countries that received no debt relief, we are considering only a part of the distribution, which is likely to lead to a selection bias in the sample. Since we want to make inferences about the total population of indebted countries, we correct for this bias using the Heckman selection[13] procedure. For the selection equation, we gather variables that could affect the probability that a country will receive debt relief (not the amount of the grant) in a particular period (as proposed by Presbitero 2009, p. 543).

2) $\Pr(Debt\ Relief_{it} > 0) = \emptyset\left(Debt\ variables_{i,t-1}, Governance_{k;i,t-1}, Trade\ balance_{i,t-1}, Aid_{i,t-1}\right)$

where $\emptyset$ is the normal distribution function. We use the information we obtain about the individual country and "save" that information in the inverse Mill ratio, which is added to the

[13] The analysis is implemented with R and the package "sampleSelection" by Arne Henningsen. R Code is available upon request.

outcome Equation (1) in the second stage. In Equation (2), we add the full amount of the Governance indicator to increase the fit.

Observing multiple periods allows us to apply panel estimation techniques. We introduce period effects and country fixed effects into our models. The latter effects ensure that the unobserved time invariant effects do not bias the results (e.g., Wooldridge 2010). However, as only a few periods of time are available, there is, per se, little variation within the observations. We rely heavily on the cross-sectional variation. Hence, the fixed effect models should be considered with caution.

For H5 and our creditor sample, we use the following specification:

$$3)\ Debt\ Relief_{i,t} = f(Debt\ relief_{i,t-1}, Fractionalization_{\ i,t,}, Gov.Expenditure, GDP_{i,t}, Population_{i,t})$$

where *i* denotes the donor country and *t* denotes the annual time period. When we examine a sample of developed countries, we see that there is no lack of data points, and hence no need for building time periods. Additionally, we include country and year fixed effects to control for unobserved country and year specifics.

5.2. Results

Debtor Sample

In Table 5, we show the regression results when the whole period is examined and Political Stability is taken as the governance indicator. Our first observation is that path dependency (H1) generally occurred in the last 20 years of debt relief: debt relief in period *t* depends significantly on i) the external level of indebtedness of the developing country and ii) the debt relief granted in the previous period *t-1*. On the bright side, the debt service the country paid in the previous period seems to play a minor role. In sum, however, H1 cannot be rejected.

Table 5: Debtor Sample; determining factors of debt relief with period averages with Political Stability as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.45***	0.47***	-0.31*	0.45***
	(0.10)	(0.10)	(0.16)	(0.10)
External debt $_{t-1}$	1.54***	1.48***	1.71**	1.47***
	(0.36)	(0.41)	(0.70)	(0.39)
Debt service $_{t-1}$	0.12	0.04	0.19	0.03
	(0.26)	(0.27)	(0.48)	(0.26)
GDP per capita $_{t-1}$	-1.11***	-1.00***	-2.80	-0.87**
	(0.31)	(0.33)	(2.01)	(0.38)
Political Stability $_{t-1}$	0.53***	0.46**	0.31	0.50**
	(0.20)	(0.20)	(0.44)	(0.20)
ODA $_{t-1}$	-0.39	-0.36	-0.40	-0.38
	(0.24)	(0.26)	(0.58)	(0.24)
Education expenditures $_{t-1}$	-0.05	-0.04	0.13	-0.04
	(0.07)	(0.07)	(0.24)	(0.07)
Trade balance $_{t-1}$	-0.12	-0.19	1.83	-0.47
	(1.11)	(1.11)	(1.96)	(1.15)
UN Security Council	-0.11	-0.17	-0.25	-0.16
	(0.37)	(0.37)	(0.44)	(0.35)
Period Dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Constant	3.77	3.42		2.52
	(3.23)	(3.23)		(3.39)
Observations	120	120	120	156
R^2	0.66	0.67	0.58	0.67
Adjusted R^2	0.61	0.60	0.27	0.64
rho				-0.34
Inverse Mills Ratio				-0.46 (0.72)

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014); Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004,1995-1999.*

Yet the analysis also shows that Political Stability (and the absence of violence and terrorism) is a relevant factor. The coefficients range between 0.31 and 0.53, depending on the model, and they are significant in every model but the fixed effects (3) model in which the standard errors are high. Hence, we find some support for the hypothesis that non-fragile countries received more debt relief in 1995-2013 (H3). Similarly, we find that the WGI Voice and Accountability

indicator, which reflects the ability of a country to enforce democratic rights, had a positive effect on debt relief sums (See Annex, Table 3). The coefficients are even a bit higher, ranging between 0.53 and 0.76. This finding is reasonable given that the World Bank is a "western-dominated" institution that commonly advertises these values.

Being a member of the UN Security Council did not determine the amount of debt relief (H4): we find that the coefficient is negative and is indistinguishable from zero. This is the case for all of the models and the examined governance indicators.

Table 6: Debtor sample; determining factors of debt relief with period averages with Rule of Law as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Rule of Law $_{t-1}$	0.34	0.18	0.49	0.18
	(0.32)	(0.34)	(0.88)	(0.32)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Constant	2.50	2.14		2.35
	(3.28)	(3.26)		(3.47)
Observations	120	120	120	156
R^2	0.64	0.66	0.58	0.66
Adjusted R^2	0.59	0.59	0.27	0.62
rho				0.07
Inverse Mills Ratio				0.09 (0.71)

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004, Control variables are included in the model but not illustrated.*

In Table 6, we use Rule of Law as a governance indicator. We can see that the coefficient for this indicator is small and insignificant in all of the models. The results are similar for Government Effectiveness, Control of Corruption, and Regulatory Quality (See Annex, Table 4-6). All of these indicators are intended to evaluate the quality and the ability of governments to efficiently provide public services.[14] Therefore, we conclude that institutional quality was not a determining factor over the whole 1995-2013 period, and reject H1.

[14] In contrast, political stability is sometimes affected by external factors, such as international conflicts or natural disasters.

As we can see in Figure 3, the world of debt relief is quite dynamic. We are especially interested in the question of whether the economic rationale of the HIPC Initiative was maintained in the period following the MDRI. To this end, we split our data sample and analyze each of the periods. Note that this turns the analysis into a cross-sectional analysis. Freytag and Pehnelt (2009) found that governance quality played no role from the 1990s up to 2004. Michaelowa (2013) found that during the MDRI the ex-ante conditionality was neglected. We confirm these findings in two ways (Table 7). i) First, we find that in 2000-2004, the external debt share of the recipient had no significant effect on the amount of debt relief. This pattern changed in 2005-2009, when the coefficient grew from 0.96 to a significant value of 1.57. By 2010-2013, the coefficient had reached 2.67.[15] Furthermore, this growing path dependency was reflected in the growth of the coefficient of the pre-period debt relief. However, we also find ii) that the governance indicator (here: Rule of Law) was significantly positive in 2000-2004 (meaning the better the quality, the more debt relief), but not in the subsequent periods. This is also the case for the Government Effectiveness, Regulatory Quality, and Political Stability indicators (not shown, available upon request). We therefore conclude that we cannot reject H1, especially for the MDRI era. H2 is rejected with some exceptions during the 2000-2004 period. Meanwhile, some evidence was found for H3, and H4 is rejected.

Creditor Sample

With the sample of debt-granting countries, we intend to test whether supply side factors also play a role. In particular, we are interested in the question of whether government spending and government fractionalization influences the amount of debt relief (H5).

As one can derive from Table 8, fractionalization has a positive, significant effect on debt relief in the simplest model, when government spending is not controlled for. Once this variable enters the model, the coefficient shrinks but remains significant on a 95-percent confidence level. Government spending itself turns insignificant when year dummies are included (3). However, as we can see in Model (4), the results do not survive a fixed effects methodology: the sign of government spending becomes negative and fractionalization is now indistinguishable from zero. As we have a fair number of years, a fixed effects approach can be applied to the data. We conclude that there is some tentative evidence in favor of H5, but that the evidence is too

[15] Note that this is a log-log model and that the coefficient cannot be directly interpreted as the change rate.

sensitive to the model modifications.

Table 7: Debtor sample; the effect of governance on debt relief across time periods

	Debt relief		
	2000-2004	2005-2009	2010-2013
Debt relief $_{t-1}$	0.51***	0.64***	0.66**
	(0.16)	(0.18)	(0.24)
External debt $_{t-1}$	0.96	1.57**	2.67**
	(0.68)	(0.67)	(1.10)
Debt service $_{t-1}$	-0.25	0.38	-0.78
	(0.49)	(0.42)	(0.71)
GDP per capita $_{t-1}$	0.03	-1.23**	-1.82*
	(0.45)	(0.58)	(0.98)
Rule of Law $_{t-1}$	0.87**	-0.10	-0.49
	(0.43)	(0.66)	(1.14)
ODA $_{t-1}$	0.36	-0.65	-1.23
	(0.40)	(0.42)	(0.74)
Education expenditures $_{t-1}$	-0.28**	0.01	0.32*
	(0.12)	(0.12)	(0.18)
Trade balance $_{t-1}$	-2.19	-0.90	3.03
	(1.87)	(1.68)	(2.71)
UN Security Council	0.34	-0.36	0.71
	(0.52)	(0.57)	(1.20)
Constant	-3.87	4.14	6.94
	(4.59)	(5.62)	(9.32)
Observations	44	40	36
R^2	0.73	0.69	0.62
Adjusted R^2	0.66	0.59	0.49
Residual Std. Error	1.24 (df = 34)	1.21 (df = 30)	1.85 (df = 26)

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Cross-sectional OLS estimator.*

Table 8: Creditor sample: determining factors of debt relief in 1995-2013

	log(Debt Relief/GDP)			
	(1)	(2)	(3)	(4)
log(Debt Relief/GDP) $_{t-1}$	16.40**	18.95**	11.63	15.56*
	(8.16)	(8.15)	(8.74)	(7.89)
Fractionalization	2.33***	1.79**	2.01***	1.59
	(0.69)	(0.72)	(0.72)	(1.29)
Gov. expenditures/GDP		0.19**	0.13	-0.45**
		(0.09)	(0.09)	(0.20)
log(Population)	1.14***	1.12***	1.45***	17.24**
	(0.22)	(0.22)	(0.24)	(8.47)
GDP per capita	-0.04**	-0.02	0.02	0.21**
	(0.02)	(0.02)	(0.02)	(0.10)
UN Security Council	0.08	0.02	-0.02	0.21
	(0.45)	(0.45)	(0.44)	(0.36)
Constant	-8.81***	-10.78***	-12.08***	
	(0.94)	(1.31)	(1.47)	
Year dummies	NO	NO	YES	YES
Country dummies	NO	NO	NO	YES
Observations	156	156	156	156
R^2	0.29	0.32	0.43	0.39
Adjusted R^2	0.28	0.30	0.37	0.31
F Statistic	12.55*** (df = 5; 150)	11.47*** (df = 6; 149)	4.56*** (df = 22; 133)	3.57*** (df = 22; 121)

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), IMF (2014), Beck et al. (2001),*

5.3.Robustness Checks

In this chapter, we discuss to what extent our results are sensitive to methodological changes. We start by presenting a different way to create period averages. It could be argued that five-year intervals are too wide, and result in calculations that are too rough and potentially inaccurate. Hence, we reduce the period length to three years. An advantage of using this approach is that it enables us to include a larger number of period dummies, which makes the model more flexible to trends. We find that, qualitatively, our results are confirmed. The coefficients of Political Stability and Voice and Accountability (H3) are slightly smaller, but remain significant (See Annex, Table 7). The rest of the WGIs (H2) are still insignificant (results not shown but are

available upon request). Furthermore, the coefficients that indicate path dependence change slightly, but their significance remains at the same level. Moreover, the fit of the model, represented by the adjusted R-squared, decreases with this approach. We therefore decided to apply five-year periods in our main approach (Chapter 5.2).

A further concern is whether the applied indicator of governance changes the results. Institutional quality can be operationalized in many different ways, and a large number of indicators have been discussed and applied in economic literature. So far, we have been using the indicators created by the World Bank. An advantage of this approach is that the decisions made by the creditors (regardless of where they take place; see Chapter 2.4) are likely to be based on those indicators. Hence, the probability of finding empirical evidence for ex-ante conditionality increases when the WGIs are used. However, we cannot rule out the possibility that there are moral disincentives if an institution is evaluating the conditions on which it bases its own decisions. Therefore, we repeat our identification strategy using an alternative measure of good governance from a neutral source. We use the Economic Freedom Index developed by the NGO the Fraser Institute to retest H1, and the State Fragility Index (Marshall and Cole 2008) to retest H3. The Fraser Institute measures institutional quality by the extent to which a government is able to enforce property rights for its economic entities (Gwartney et al 2016). To this end, the index consists of indicators that reflect the size of government, the legal structure, the access to money, the freedom to trade, and the degree of regulation. When we compare this index with the WGIs, we find that the correlation is highest with Regulatory Quality (0.74, See Annex, Table 2). When we combine this index with our debtor data sample, we find that economic freedom, as it is defined by the Fraser Institute, is a minor factor in debt relief decisions (See Annex, Table 8). However, unlike some of the WGIs, it also played no role in the 2000-2004 period (results not shown but are available upon request). Hence, H1 is not accepted even when an alternative, "external" measure of institutional quality is used.

We find some evidence in favor of H3. However, this might depend on the measure of fragility. The previously mentioned Fragile State Index is the most popular index at the moment. Unfortunately, it is available only since 2005, when the most intensive period of debt relief was already over (see Figure 3). Longer time series based on the methodology of Marshall and Cole (2008) are provided by the NPO Center for Systematic Peace, which has published the State Fragility Index each year since 1995. These time series are directly accessible on the

organizational website.

Table 9: Debtor sample; determining factors of debt relief with period averages with State Fragility Index as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.42***	0.45***	-0.36**	0.43***
	(0.11)	(0.11)	(0.16)	(0.11)
External debt $_{t-1}$	1.54***	1.40***	1.70**	1.38***
	(0.37)	(0.41)	(0.70)	(0.39)
Debt service $_{t-1}$	0.10	0.02	0.26	0.01
	(0.27)	(0.28)	(0.48)	(0.26)
GDP per capita $_{t-1}$	-1.28***	-1.14***	-2.66	-1.03**
	(0.35)	(0.35)	(2.07)	(0.40)
State Fragility Index $_{t-1}$	-0.13**	-0.11**	-0.16	-0.12**
	(0.05)	(0.05)	(0.14)	(0.05)
ODA $_{t-1}$	-0.14	-0.11	-0.48	-0.10
	(0.26)	(0.27)	(0.57)	(0.26)
Education expenditures $_{t-1}$	-0.08	-0.08	0.06	-0.07
	(0.08)	(0.08)	(0.23)	(0.08)
Trade balance $_{t-1}$	0.56	0.45	1.48	0.26
	(1.15)	(1.14)	(1.97)	(1.14)
UN Security Council	-0.04	-0.13	-0.11	-0.12
	(0.38)	(0.38)	(0.45)	(0.36)
Constant	5.92	5.47		4.85
	(3.62)	(3.62)		(3.63)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Observations	117	117	117	153
R^2	0.66	0.67	0.59	0.67
Adjusted R^2	0.60	0.60	0.28	0.63
rho				-0.29
Inverse Mills Ratio				-0.39 (0.73)

*Note: *p<0.1; **p<0.05; ***p<0.01.; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Center for Systematic Peace (2016). Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004.*

The index is an ordinal-scaled score, calculated for 167 countries. Its maximum value is 25 when all of the dimensions of stability are violated, and its minimum value is zero if a country is completely stable. We find that the coefficient of the index is significant in all of the models but

the fixed effects model (Table 9). The sign is negative, which means that fragile countries receive less debt relief. Hence, accepting H3 is robust to an alternative measure of fragility.

Finally, we recalculate the results of Table 6 by splitting the sample into three periods with a two-step Heckman correction. We find that our results concerning path dependency (H2) remain: the coefficients of debt relief and external debt were larger in more recent periods. However, the WGIs that were significant in 2000-2004 turn smaller and insignificant (results not shown but are available upon request).

6. Policy Implications and Concluding Remarks

In this paper, we tried to identify the main drivers of debt relief. Initially, we investigated debtor countries and found that political rationality was more salient than economic rationality. The successful strategy of conditioning debt relief on institutional quality improvements went out of fashion after the HIPC Initiative ended. This is surprising given the evidence that this approach helped developing country improve their governance. On the bright side, we find that debt relief is most often granted to politically stable countries. This approach rewards peace efforts and provides good incentives. However, we may want to question whether debt relief is the most efficient instrument for influencing fragile countries, especially if it is used as a substitute for other aid instruments.

The MDRI ended in 2015, and the countries that currently have the highest debt levels are in the developed world. However, given that by definition developing countries need large investments to grow, we can expect that these countries will again accumulate large amounts of debt if these investments do not bear fruit. Policy-makers considering debt relief programs in the future might be tempted to model new initiatives on the more recent MDRI. However, our advice is to stick to the strategy of the HIPC Initiative.

In our examination of the supply side of debt relief, or the creditors, we found some weak evidence that debt relief, along with development aid, is driven by government structure. This finding contributes to our understanding of how international welfare initiatives are influenced by national donor politics.

This study has some methodological weaknesses that are mainly due to data restrictions. First, for

the debtor sample we had to create period averages because important data, especially from poor countries, are not available on an annual basis. By using yearly fixed effects, we might have been able rule out time effects more precisely, but we would have been forced to systemically exclude important observations. Having a small number of periods leads us to the next weakness: many of the results are sensitive to the inclusion of country fixed effects. Finally, using a lagged explanatory variable might not entirely solve the endogeneity problems caused by reverse causality. In this context, countries' expectations that they would receive debt relief likely played a role, as Raddatz (2011) has shown.

Further research has to be carried out to investigate the relationship between debt, debt relief, investment, and growth. Future studies could, for example, pick up on the suggestion made by Dreher and Langlotz (2015) that creditors' fractionalization could be used as an excludable instrument. However, this approach would only work when applied to bilateral debt relief politics, which was not the focus of this study.

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ANNEX

Table 6:Definitions of Worldwide Governance Indicators (WGIs)

Voice and Accountability	The perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
Political Stability and Absence of Violence/Terrorism	The perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.
Government Effectiveness	The perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formation and implementation, and the credibility of the government's commitments to such policies.
Regulatory Quality	The perception of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
Rule of Law	The perception of the extent to which agents have confidence in and abide by the rules of the society, and in particular confidence in the quality of contract enforcement, property rights, the police, and the courts; as well as in the likelihood of crime and violence.
Control of Corruption	The perception of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Source: own illustration, definitions from Kaufmann, Kraay, and Mastruzzi (2005)

Table 2: Correlation matrix of Governance Indicators

	Political Stability	Gov Effectiveness	Rule of Law	Regulatory Quality	Corruption	Voice and Acc	CPIA	Fraser Economic Freedom	Fragile State Index	State Fragility Index
Political Stability	1	0.33	0.45	0.33	0.48	0.44	0.29	0.24	-0.69	-0.44
Gov Effectiveness	0.33	1	0.83	0.68	0.80	0.58	0.77	0.55	-0.55	-0.52
Rule of Law	0.45	0.83	1	0.71	0.83	0.68	0.73	0.49	-0.59	-0.45
Regulatory Quality	0.33	0.68	0.71	1	0.54	0.60	0.84	0.75	-0.57	-0.60
Corruption	0.48	0.80	0.83	0.54	1	0.53	0.61	0.41	-0.48	-0.40
Voice and Acc	0.44	0.58	0.68	0.60	0.53	1	0.57	0.44	-0.64	-0.54
CPIA	0.29	0.77	0.73	0.84	0.61	0.57	1	0.74	-0.54	-0.54
Fraser Economic Freedom	0.24	0.55	0.49	0.75	0.41	0.44	0.74	1	-0.44	-0.63
Fragile State Index	-0.69	-0.55	-0.59	-0.57	-0.48	-0.64	-0.54	-0.44	1	0.67
State Fragility Index	-0.44	-0.52	-0.45	-0.60	-0.40	-0.54	-0.54	-0.63	0.67	1

Table 3: Debtor sample; determining factors of debt relief with period averages and Voice and Accountability as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.45***	0.47***	-0.31*	0.47***
	(0.10)	(0.10)	(0.16)	(0.10)
External debt $_{t-1}$	1.58***	1.49***	1.70**	1.49***
	(0.37)	(0.41)	(0.69)	(0.39)
Debt service $_{t-1}$	0.04	-0.04	0.15	-0.05
	(0.26)	(0.27)	(0.47)	(0.26)
GDP per capita $_{t-1}$	-1.08***	-0.96***	-2.92	-0.94**
	(0.32)	(0.33)	(2.00)	(0.38)
Voice and Acc $_{t-1}$	0.60**	0.53**	0.76	0.53**
	(0.26)	(0.26)	(0.63)	(0.25)
ODA $_{t-1}$	-0.27	-0.25	-0.56	-0.25
	(0.24)	(0.25)	(0.58)	(0.24)
Education expenditures $_{t-1}$	-0.04	-0.03	0.05	-0.03
	(0.07)	(0.07)	(0.24)	(0.07)
Trade balance $_{t-1}$	0.51	0.33	1.61	0.29
	(1.10)	(1.10)	(1.96)	(1.11)
UN Security Council	-0.20	-0.26	-0.26	-0.26
	(0.37)	(0.37)	(0.44)	(0.35)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Constant	3.01	2.76		2.59
	(3.22)	(3.20)		(3.40)
Observations	120	120	120	156
R^2	0.66	0.67	0.59	0.67
Adjusted R^2	0.60	0.60	0.27	0.63
rho				-0.06
Inverse Mills Ratio				-0.08 (0.70)

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004*

Table 4: Debtor sample; Determining factors of debt relief with period averages with Control of Corruption as the governance indicator

	Debt relief			
	panel linear			*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.51***	0.53***	-0.30*	0.53***
	(0.10)	(0.10)	(0.16)	(0.10)
External debt $_{t-1}$	1.50***	1.38***	1.65**	1.38***
	(0.37)	(0.41)	(0.70)	(0.39)
Debt service $_{t-1}$	0.08	-0.01	0.13	-0.01
	(0.27)	(0.27)	(0.47)	(0.26)
GDP per capita $_{t-1}$	-1.00***	-0.86**	-2.91	-0.85**
	(0.32)	(0.33)	(2.04)	(0.39)
Corruption $_{t-1}$	0.39	0.22	-0.38	0.22
	(0.39)	(0.40)	(0.83)	(0.40)
ODA $_{t-1}$	-0.31	-0.28	-0.48	-0.28
	(0.25)	(0.26)	(0.58)	(0.24)
Education expenditures $_{t-1}$	-0.02	-0.01	0.10	-0.01
	(0.08)	(0.08)	(0.23)	(0.07)
Trade balance $_{t-1}$	0.55	0.31	1.91	0.31
	(1.12)	(1.12)	(1.96)	(1.13)
UN Security Council	-0.15	-0.22	-0.20	-0.22
	(0.38)	(0.38)	(0.45)	(0.36)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Constant	2.66	2.25		2.23
	(3.31)	(3.29)		(3.45)
Observations	120	120	120	156
R^2	0.64	0.66	0.58	0.66
Adjusted R^2	0.59	0.59	0.27	0.62
rho				-0.01
Inverse Mills Ratio				-0.01
				(0.74)
Note:		*p<0.1; **p<0.05; ***p<0.01		

*Note: *p<0.1; **p<0.05; ***p<0.0, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004*

Table 5: Debtor sample; determining factors of debt relief with period averages with Regulatory Quality as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.49***	0.51***	-0.30*	0.51***
	(0.10)	(0.10)	(0.16)	(0.10)
External debt $_{t-1}$	1.54***	1.48***	1.73**	1.48***
	(0.37)	(0.42)	(0.70)	(0.39)
Debt service $_{t-1}$	0.06	-0.02	0.20	-0.02
	(0.26)	(0.27)	(0.47)	(0.26)
GDP per capita $_{t-1}$	-1.18***	-1.04***	-3.40	-1.01**
	(0.33)	(0.35)	(2.08)	(0.39)
Regulatory Quality $_{t-1}$	0.72**	0.56	0.89	0.57
	(0.33)	(0.36)	(0.82)	(0.35)
ODA $_{t-1}$	-0.29	-0.28	-0.50	-0.29
	(0.24)	(0.26)	(0.58)	(0.24)
Education expenditures $_{t-1}$	-0.01	-0.01	0.12	-0.01
	(0.07)	(0.07)	(0.23)	(0.07)
Trade balance $_{t-1}$	0.65	0.47	2.82	0.41
	(1.11)	(1.12)	(2.12)	(1.12)
UN Security Council	-0.24	-0.27	-0.26	-0.27
	(0.38)	(0.38)	(0.44)	(0.36)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Constant	3.93	3.38		3.13
	(3.32)	(3.34)		(3.47)
Observations	120	120	120	156
R^2	0.66	0.66	0.58	0.66
Adjusted R^2	0.60	0.60	0.27	0.62
rho				-0.09
Inverse Mills Ratio				-0.13 (0.71)
Note:		*p<0.1; **p<0.05; ***p<0.01		

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004*

Table 6: Debtor sample; determining factors of debt relief with period averages with Government Effectiveness as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.52***	0.54***	-0.30*	0.54***
	(0.10)	(0.10)	(0.16)	(0.10)
External debt $_{t-1}$	1.50***	1.33***	1.68**	1.33***
	(0.38)	(0.44)	(0.70)	(0.41)
Debt service $_{t-1}$	0.07	-0.0004	0.13	0.005
	(0.27)	(0.28)	(0.47)	(0.27)
GDP per capita $_{t-1}$	-0.98***	-0.81**	-2.78	-0.85**
	(0.32)	(0.34)	(2.04)	(0.39)
Gov Effectiveness $_{t-1}$	0.20	-0.04	-0.03	-0.05
	(0.37)	(0.39)	(0.82)	(0.38)
ODA $_{t-1}$	-0.31	-0.27	-0.46	-0.27
	(0.25)	(0.26)	(0.59)	(0.25)
Education expenditures $_{t-1}$	-0.004	0.003	0.10	0.002
	(0.07)	(0.07)	(0.24)	(0.07)
Trade balance $_{t-1}$	0.51	0.25	1.91	0.31
	(1.13)	(1.13)	(1.99)	(1.13)
UN Security Council	-0.16	-0.20	-0.23	-0.20
	(0.39)	(0.38)	(0.44)	(0.36)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Constant	2.29	1.84		2.12
	(3.30)	(3.27)		(3.47)
Observations	120	120	120	156
R^2	0.64	0.65	0.58	0.66
Adjusted R^2	0.59	0.59	0.27	0.62
rho				0.09
Inverse Mills Ratio				0.13
				(0.71)
Note:		*p<0.1; **p<0.05; ***p<0.01		

*Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004*

Table 7: Debtor sample; determining factors of debt relief with three-year period averages with Political Stability as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.47***	0.50***	-0.16	0.50***
	(0.08)	(0.08)	(0.12)	(0.09)
External debt $_{t-1}$	1.19***	1.40***	1.74***	1.44***
	(0.30)	(0.35)	(0.55)	(0.34)
Debt service $_{t-1}$	0.12	0.09	0.10	0.07
	(0.23)	(0.24)	(0.38)	(0.23)
GDP per capita $_{t-1}$	-0.68**	-0.75**	-4.37**	-0.74*
	(0.28)	(0.30)	(1.83)	(0.38)
Political Stability $_{t-1}$	0.41**	0.43**	0.22	0.43**
	(0.18)	(0.19)	(0.39)	(0.18)
ODA $_{t-1}$	-0.09	-0.18	0.04	-0.20
	(0.20)	(0.22)	(0.44)	(0.21)
Education expenditures $_{t-1}$	-0.08	-0.06	0.004	-0.06
	(0.06)	(0.06)	(0.18)	(0.06)
Trade balance $_{t-1}$	-0.40	-0.29	1.33	-0.31
	(1.02)	(1.04)	(1.70)	(1.02)
UN Security Council	0.53	0.62	0.54	0.62
	(0.41)	(0.42)	(0.42)	(0.41)
Constant	0.95	0.81		0.73
	(2.83)	(2.90)		(3.44)
Period dummies	NO	YES	YES	YES
Country dummies	NO	NO	YES	NO
Observations	173	173	173	220
R^2	0.59	0.60	0.46	0.59
Adjusted R^2	0.55	0.55	0.29	0.56
rho				-0.02
Inverse Mills Ratio				-0.03 (0.89)

*,Note: *p<0.1; **p<0.05; ***p<0.01, standard errors in parentheses, Data: OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2011-2013, 2008-2010, 2005-2007,2004-2006, 2003-2005, 2000-2002, 1999-2001,1996-1998*

Table 8: Debtor sample; determining factors of debt relief with period averages with Fraser Economic Freedom as the governance indicator

	Debt relief			
		panel linear		*Heckman selection*
	(1)	(2)	(3)	(4)
Debt relief $_{t-1}$	0.44***	0.42***	-0.52***	0.39***
	(0.11)	(0.11)	(0.16)	(0.13)
External debt $_{t-1}$	1.62***	1.43***	2.26***	1.57***
	(0.38)	(0.41)	(0.66)	(0.45)
Debt service $_{t-1}$	-0.06	-0.27	-0.40	-0.10
	(0.30)	(0.32)	(0.49)	(0.35)
GDP per capita $_{t-1}$	-0.68**	-0.47	-1.70	-0.57
	(0.33)	(0.34)	(1.61)	(0.52)
Fraser Economic Freedom $_{t-1}$	-0.12	-0.06	0.14	-0.13
	(0.19)	(0.21)	(0.31)	(0.24)
ODA $_{t-1}$	-0.11	0.05	0.84	0.03
	(0.26)	(0.28)	(0.54)	(0.30)
Education expenditures $_{t-1}$	0.05	0.06	0.06	0.04
	(0.08)	(0.08)	(0.21)	(0.08)
Trade balance $_{t-1}$	1.28	1.37	2.28	0.95
	(1.20)	(1.18)	(1.86)	(1.38)
UN Security Council	0.08	-0.06	0.20	0.02
	(0.35)	(0.35)	(0.35)	(0.39)
Constant	-0.46	-1.88		-1.14
	(3.17)	(3.15)		(4.28)
Observations	116	116	116	132
R^2	0.65	0.68	0.61	0.67
Adjusted R^2	0.60	0.60	0.30	0.62
rho				0.07
Inverse Mills Ratio				0.09 (0.76)
Note:				*p<0.1; **p<0.05; ***p<0.01

*Note: *p<0.1; **p<0.05; ***p<0.01; own illustration with data from OECD (2014), UNCTAD (2014), IMF (2015), World Bank (2014), Dreher et al. (2009), Debt Relief, External Debt, and Debt Service are over GDP and log-transformed; Period dummies: 2010-2013, 2005-2009, 2000-2004*