A CURE FOR THE CURSE?

Effects of the

Extractive Industries Transparency Initiative

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Abstract

The Extractive Industries Transparency Initiative (EITI) was created in the early 2000s as a response to the growing concern of the natural resource curse. By using EITI's own documents and related theory, I propose a framework for analysis utilising Fixed Effects regression models to determine what effects are associated with EITI membership and implementation. These effects are divided into three groups; economic, institutional, and effects on investment and the investment climate. The analysis distinguishes between separate stages of EITI membership, and includes an alternative specification using indicators for EITI activities or implementation. The results show no significant effect of membership on economic performance, differing from previous findings of a *negative* correlation. Combined with evidence of reduced dependency on foreign aid, we may see a convergence of EITI countries towards the economic levels seen in other countries. Most institutional dimensions are not affected by EITI membership, but there is some evidence of greater public participation and accountability, and better regulatory quality of government policies. The paper *does* find that EITI implementation affects political stability, as EITI reports are associated with greater political tension and Multi-Stakeholder Groups (MSGs) work as a mitigating factor. This indicates that the EITI works as it should; reports present challenges and problems within the extractive sector, while MSGs work as a platform for debate. The most direct effects of EITI are within investments and the investment climate. EITI membership is associated with one investment grade increase in credit ratings of sovereign bonds. In addition, the paper finds strong evidence for increases in foreign direct investments as a share of GDP, and increases in domestic investments in EITI countries. These results are robust to a number of economic, political and development control variables. The findings illustrate that membership stages do matter; EITI compliant countries are associated with more significant results than EITI candidates. In addition, it seems that membership status is associated with stronger effects than specific EITI activities, except in terms of political stability.

Acknowledgements

The submission of this thesis marks the end of a special time of my life. The last few years have been the most rewarding academically, personally, and professionally, but also the most challenging. It feels great to finally close the book on this chapter.

Along the way, for this thesis and otherwise, there have been some people worthy of particular mentions. My father, Jens, whom I have always regarded as a mentor and dear friend. Thank you for your thoughts and ideas during our endless discussions regarding economics, development, life and academic questions.

To Anirban Mitra, my supervisor, thank you for your comments and insights that helped shape this paper into what it is, rather than what it was. This end result has definitely benefitted from your participation.

To my former colleagues at the EITI International Secretariat, thank you for insights and discussions on what the EITI truly is, and how it is interpreted.

Lastly, I wish to extend my gratitude to all my family and friends for listening and supporting me during this entire process.

Any inaccuracies or errors in this thesis is my responsibility.

Christoffer Borchgrevink Claussen
Oslo, January 2016

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List of Acronyms

EITI	Extractive Industries Transparency Initiative
FDI	Foreign Direct Investments
GDP	Gross Domestic Product
GDP p.c.	GDP per capita
GNI	Gross National Income
MSG	Multi-Stakeholder Group
NEITI	Nigeria Industries Transparency Initiative
SWF	Sovereign Wealth Fund

1 Introduction

1.1 BACKGROUND AND OBJECTIVES

The natural resource curse is a well-known topic of interest for emerging or developing economies. The theory says that countries with weak institutions will not necessarily benefit on discovering natural resources, in fact such discoveries may be detrimental to the economy. I defer a detailed treatment of the related literature to Chapter 2.

After working some months in Malawi, a country in its infancy with regards to resource exploration and exploitation, there were several discussions on possible solutions or processes that could improve the management of natural resource revenues. At the centre of the discussion was the Extractive Industries Transparency Initiative (EITI). Upon my return to Norway, I found myself working with the EITI, sparking an interest in the potential effects of the initiative. This paper is the result of that interest.

The EITI started out in the early to mid-2000s, as a tool to promote transparency within mining, oil and gas sectors. In its early years, the focus was on a reconciliation-process, in which governments and companies were obliged to disclose their receipts and payments of taxes from natural resource exploitation. Subsequently an independent body reconciles the numbers if any differences are discovered. This was the beginning of the EITI. Now, the EITI has evolved to something more; a global EITI Standard (EITI, 2013).

The initiative attempts, through publication of reports under the oversight of a Multi-Stakeholder Group (MSG), to trigger transparency along various parts of the natural resource sector's value-chain. Some of the topics cover fiscal regimes along with legislative information, licenses and sometimes even controversial ideas such as beneficial ownership and contract disclosure. The idea is that a public with access to such information, will not only be better suited to understand the extractive sector in their country, but it may also inform debates on possible policy-changes or directions.

The EITI Standard also defines different stages of implementation or membership: *candidate* and *compliant* (EITI, 2013). The former indicates that a country has completed initial steps to subscribe (and adhere) to requirements set out in the Standard, and the country will then have 18 months to complete an *EITI report*. A country will then be subject to a validation

process to assess its progress towards the requirements within 2.5 years. Once the EITI Board has found a country to fulfil all the requirements set out in the Standard, a country will be deemed as compliant.

In this thesis, I set out to answer the following questions:

1. *What are the macroeconomic and institutional effects of the EITI?*
2. *Does the initiative affect indicators of investments and the investment climate?*
3. *Do different stages of implementation matter for these effects?*

The nature of my analysis is empirical, using Fixed Effects (FE) regression models[1]. It is guided by the theories of the natural resource curse, in how transparency may influence economic and institutional factors. I also explore the issue of investments and the investment climate by utilising data on credit ratings of sovereign bonds, collected from Fitch Ratings and Moody's Investors Service.

The data collected for the analysis cover the years 1995-2014 for 215 countries or territories. 60 of these were excluded for various reasons (see Appendix 1: Excluded countries/territories list). The data was collected from the EITI (2015), World Bank's World Development Indicators (2015), Moody's (2015), Fitch (2015), Center for Systemic Peace (2015a; 2015b), and Worldwide Governance Indicators (WGI) (Kaufmann & Kraay, 2015). It covers information about EITI, economic variables and controls, the institutional indicators, political and development controls, and investment data[2].

1.2 MAIN FINDINGS

EITI members as per 2014, show several differences from non-members for the years preceding the EITI (see Table 5, page 37). Economic performance, or Log of Gross Domestic Product (GDP) per capita, is significantly lower in EITI-countries during the period 1995-2004, i.e. EITI countries were worse off to begin with. The regression analysis of the paper shows that there is no significant effect of EITI membership on economic performance, even though the initial difference exists. These results differ from the findings in other studies such as Corrigan (2014) and Demissie (2014), which found a negative relationship between EITI

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[1] The estimations were performed utilising Stata 14, a statistical software package.
[2] A list of the variables and their sources can be found in Appendix 4: Variable description and sources.

membership and economic performance. For other dimensions of effects, EITI can be associated with a decreased dependency on foreign aid by roughly 3 to 7 percentage points of a country's Gross National Income (GNI). This is mainly for countries that have fully implemented EITI, and are deemed as compliant. This indicates a convergence towards the economic performance-levels of countries not affiliated to EITI.

The analysis does not find that institutions are much affected by EITI membership, except for some weak evidence within the domains of greater public participation and accountability, and better regulatory quality of government policies. However, the paper does find that EITI implementation does affect political stability, by EITI reports being associated with greater conflict and by MSGs as a mitigating factor. This provides evidence that the EITI does indeed work as it should – the reports do find challenges and problems within the system, and the MSGs increases cooperation.

The most direct effects of EITI are within investments and the investment climate. Although the investment climate presents weaker evidence in in the models, it does predict a rough increase of one investment grade in long-term credit ratings (for example from BB to BB+). In addition, the paper finds strong evidence for 2.5 to 5 percentage point increases of Foreign Direct Investments (FDI) as a share of GDP, and 1.5 to 4.5 percentage point increases for domestic investments in EITI countries. These results are robust to a number of economic, political and development control variables.

The results do seem to show a difference between the stages of EITI implementation, as EITI candidacy are more often associated with lower or less significant results than EITI compliance. In addition, it seems that membership status (i.e. an assurance of quality of EITI activities) is associated with greater effects, except in terms of political stability and absence of violence.

1.3 Overview of the Extractive Industries Transparency Initiative

The Extractive Industries Transparency Initiative (EITI) was a response that grew out of the *natural resource curse*-theory and debates in the late 1990s and beginning of 2000s. Although many claim it was launched by the former Prime Minister of the UK Tony Blair in 2002, the speech was not actually delivered, only published (Rich & Moberg, 2015). Subsequently, the

EITI was officially formed in 2003 when the UK Department for International Development (DFID) brought different stakeholders of the extractives sector together and formed the 12 EITI Principles[3].

The principles were put to the test by four original countries; Azerbaijan, Ghana, Kyrgyz Republic and Nigeria, as they agreed to pilot how these Principles could work (Rich & Moberg, 2015, p. 22). The result of the pilot concluded there was a need for clear guidelines for implementation. Thus, in 2005 and onwards, the EITI became more associated with disclosure standards spearheaded by countries instead of companies. These rules were dubbed the EITI Criteria[4] and laid the foundations for the reconciliation process that is historically one of the main activities associated with the EITI. The reconciliation process involves that both governments and companies publish their respective revenues and fiscal-payments. These are then subject to comparison, in order to uncover discrepancies and resolving these potential discrepancies. The findings are then published in EITI Reports. The Criteria also ensured the mandatory participation of civil society.

By 2006 the EITI Validation Guide (EITI, 2006) was produced. This laid the basis for a formal sign/up procedure and membership. It also formed the two types of memberships of the EITI, *EITI candidate* and *EITI compliant* (Rich & Moberg, 2015, pp. 23-24).

Being a candidate country implies that the member has undertaken the four necessary sign-up steps, and their membership application has been approved by the Board of the EITI. The four steps the government must take are[5] to i) publicly commit to implementing the EITI; ii) commit to work with civil society and the companies; iii) appoint a senior individual to head the implementation; and iv) produce a work plan in cooperation with the three stakeholder groups, civil society, companies, and government (EITI, 2006, p. 3).

The status of being compliant means that a country has *"[…] fully implemented EITI. They have met all the indicators in the Validation Grid, including the publication and distribution of an EITI Report."* (ibid.).

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[3] The EITI Principles is included in discussing theoretical effects of the EITI, in chapter 2.3 EITI and a Theory of Change.
[4] The exact criteria may be accessed at https://eiti.org/eiti/criteria.
[5] The sign-up steps are slightly re-written compared to the Validation Guide.

2007 saw the formal establishment of EITI as an independent initiative, through the creation of the EITI Board and the International Secretariat. The classifications of memberships led to the formal memberships of the EITI commencing at the same time. Although some of the early implementing countries had already published reports, their formal memberships were not approved by the EITI Board until 2007.

The disclosure standard further evolved into the EITI Rules, first introduced in 2009 (Rich & Moberg, 2015). It effectively compiled all the previous Guides and Criteria into a single source, laying the basis for a comprehensive document of reference. This resulted in approximately 21 requirements and policy-notes. However, there were still issues left out of the Rules, that were finally incorporated into the present-day EITI Standard in 2013 (EITI, 2013).

The EITI Standard is the extension of the EITI Rules, becoming an overarching and guiding document for implementation. It adds to the previous rules by incorporating timeframes and deadlines for progress. The implementation itself, is still based on the publication of EITI Reports and a Multi-Stakeholder Group (MSG) overseeing the process. But the Standard includes specific requirements of what information is to be published, and minimum requirements for member-countries. In addition to the requirements, now condensed to seven[6], the Standard also encourages the inclusion of controversial subjects such as publishing information on *beneficial ownership* and *contract transparency*, i.e. what individuals are the beneficiaries of companies and what are the specifics of their agreements with the governments. The main topics covered by the Standard, can be seen in the figure below.

As mentioned previously, the formal structure of the EITI was established in 2007. DFID had led the EITI process with an internal team so far, but this was expanded to an EITI Board, and the International Secretariat. The Board is charged with overseeing the global initiative, making policy-decisions. The International Secretariat, is a non-profit organization based in Oslo, responsible for acting out the Board's decisions. In addition, the International Secretariat supports countries in their implementation of the EITI Standard.

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[6] The seven requirements are listed in section 2.3.3 Channels of Influence: EITI Requirements.

Figure 1: The EITI Standard
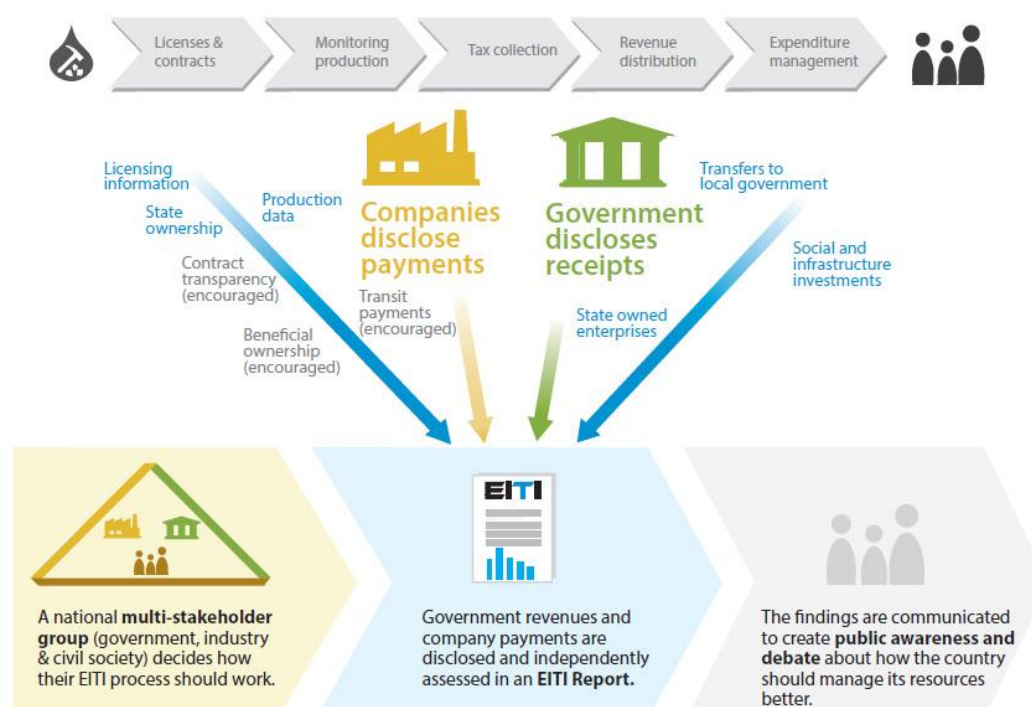
Source: The EITI Standard (EITI, 2013, p. 8)

Table 1 shows a list of the EITI countries, relevant to this paper. The newest member Malawi, approved as of October 2015, is not included in the table.

The EITI has, per November 2015, 49 members from all continents. There are 31 compliant countries, and 18 candidates, however, four of the compliant countries are temporarily suspended for not passing the *Validation process*[7], or from failure in upholding deadlines.

The table shows member countries, including their first year of *formal* membership, and the year of publication for their first EITI Report. It is interesting to notice that for some countries, Azerbaijan, Cameroon and Nigeria, their reports were published pre-membership, and this is taken into account in the later analysis by introducing EITI Reports and MSGs as explanatory variables.

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[7] The Validation Process was first set out in the Validation Guide, essentially an independent assessment of whether a country is compliant according to the requirements. If they fail, they are temporarily suspended, although formally this does not change their status from compliant. By continued failure to comply with the Standard, a country can be downgraded to a Candidate status. The suspended countries as of November 2015 are Central African Republic, Indonesia, Tanzania, and Yemen.

*Table 1: EITI Country List by Status**

Compliant	First year of membership	First EITI Report	Candidate	First year of membership	First EITI Report
Albania	2009	2011	Afghanistan	2010	2012
*Azerbaijan***	*2007*	*2005*	Colombia	2014	-
Burkina Faso	2009	2011	Ethiopia	2014	-
Cameroon	2007	2006	Honduras	2013	-
Central African Republic	2008	2009	Madagascar	2008	2011
Chad	2010	2012	Myanmar	2014	-
Congo, Dem. Rep.	2007	2009	Papua New Guinea	2014	-
Congo, Rep.	2007	2008	Philippines	2013	2014
Cote d'Ivoire	2008	2010	Sao Tome and Principe	2008	2014
*Ghana***	*2007*	*2007*	Senegal	2013	-
Guatemala	2011	2013	Seychelles	2014	-
Guinea	2007	2007	Solomon Islands	2012	2014
Indonesia	2010	2013	Tajikistan	2013	-
Iraq	2010	2011	Trinidad and Tobago	2011	2013
Kazakhstan	2007	2007	Ukraine	2013	-
*Kyrgyz Republic***	*2007*	*2009*	United Kingdom	2014	-
Liberia	2008	2009	United States	2014	-
Mali	2007	2009			
Mauritania	2007	2007			
Mongolia	2007	2007			
Mozambique	2009	2011			
Niger	2007	2009			
*Nigeria***	*2007*	*2006*			
Norway	2009	2009			
Peru	2007	2009			
Sierra Leone	2008	2010			
Tanzania	2009	2011			
Timor-Leste	2008	2009			
Togo	2010	2012			
Yemen, Rep.	2007	2010			
Zambia	2009	2011			

EITI Status as per 31 December 2014.
**Original pilot countries in italics.*

1.4   EXAMPLES OF THE EITI IN PRACTICE

As explained, EITI implementation requires publication of EITI Reports and ensuring a functioning MSG, adhering to the Standard and the Principles. However, while the EITI Principles guide the *common* goals of the EITI, countries are often very free to pursue specifics of their own ambitions.

Nigeria is one example, as one of the original four pilot-countries. Nigeria's experience with EITI implementation has involved uncovering problems in revenue collection. The national secretariat for EITI in Nigeria, the Nigerian Extractive Industries Transparency Initiative (NEITI) uncovered irregularities involving USD 22.8 billion oil revenue that was not remitted to the federal government by the state-owned enterprise Nigerian National Petroleum Corporation (NNPC) (Ochayi, 2014). NEITI have also uncovered inefficiencies in government expenditures and revenue collection by tracking oil revenues through the government system (EITI, 2015).

Nigeria is somewhat of a different example from several other members of the EITI, in that Nigeria has a dedicated legislation, dubbed the "NEITI Act 2007", governing the implementation of the EITI and embedding it in government systems. This has proved instrumental in their ambitions, as the major share of extractive activities involve the NNPC in one way or another.

Other countries may have greater focus towards acquiring an overview of the private sector. The Democratic Republic of the Congo (DRC) has been a member since late 2007 and published their first report in 2009. Although experiencing some challenges, being suspended in 2013-2014, the country has used EITI to improve on government systems. Previous to EITI, the country lacked crucial systems and capacity to ensure efficient tax collection from extractive industries (EITI, 2015). The EITI Report from 2010 also uncovered a discrepancy of USD 88 million between government- and company-reported figures (EITI-DRC, 2012).

Figure 2: DRC's online Mining Cadastre
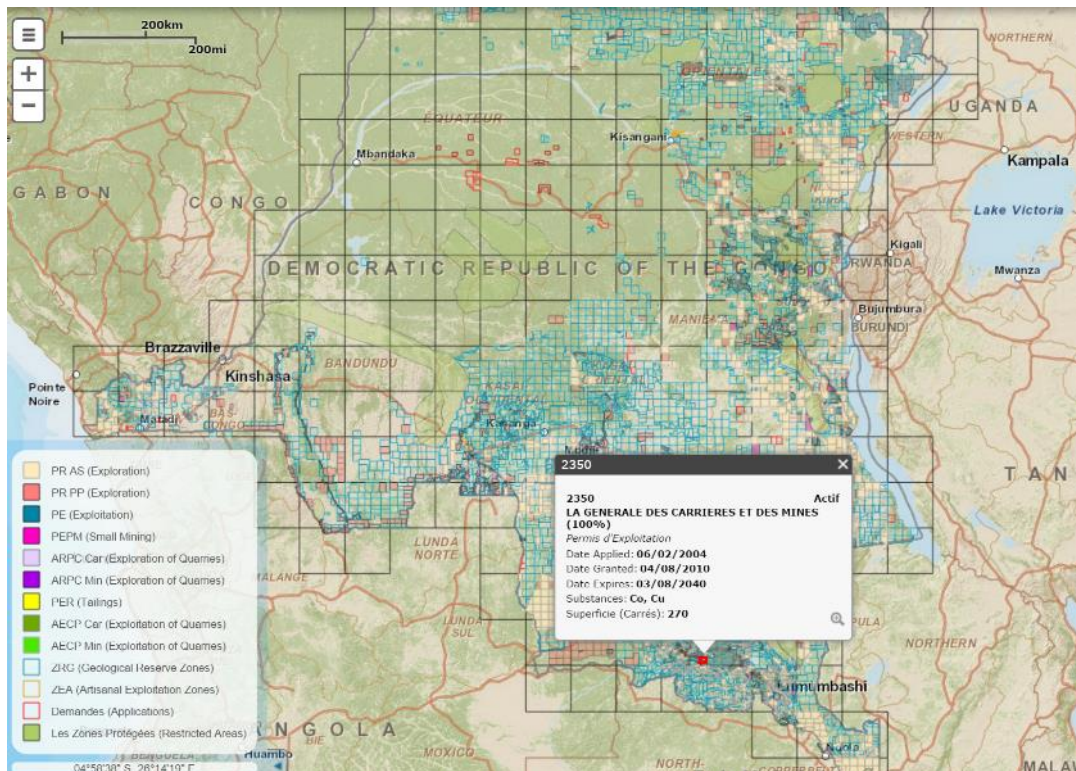
Information on various natural resource licenses.
Screenshot from: DRC Cadastre Minier (CAMI) 2 December 2015

An example of increased capacity of managing the natural resources, DRC has published an online cadastre, providing information on various natural resource licenses. Although perhaps not directly connected to EITI implementation, it is definite that EITI membership has assisted in its creation[8], as license-information is part of the requirements.

For several countries it may be that better management is the main goal, but that is not to say that there may be underlying reasons for becoming members.

Malawi is the newest member of EITI[9]. While the country is decidedly one of the poorest in the world, recent years have seen a surge in exploration activities in the country. These spawned expectations among both people and government of increased investments and growth. To my knowledge, the government in Malawi in cooperation with civil society, started exploring the possibility of EITI-membership as early as 2008 (Etter, 2015). However, the process was slow and died out. In late 2013, Malawi experienced a large corruption scandal, later dubbed "Cashgate", in which politicians were found literally driving cars filled with money out of government property. This launched an audit, that revealed USD 30 million going missing in approximately six months (Times Media Group, 2015).

The government in Malawi have since attempted to re-establish a perception of dealing with corruption in the country, and besides boosting existing anti-corruption bureaus, they also reinvigorated their commitment towards EITI membership. The hope is then that the transparency that will accompany Malawi's membership, will serve as an indicator of becoming more investor-friendly and accountable to its people.

However, how can the publication of EITI Reports lead to such effects? This is the topic for discussion in the next chapter.

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[8] The cadastre is produced and maintained by Spatial Dimension's FlexiCadastre, that have a special focus on EITI implementing countries (DRC Cadastre Minier (CAMI), 2015). They also have similar solutions for Botswana, Kenya, Namibia, Mozambique, Papua New Guinea, Rwanda, South Sudan, Tanzania, Uganda, and Zambia. Several of these are members of the EITI.
[9] Per November 2015

2   Linking the natural resource curse and EITI

In this chapter I describe the existing literature on the natural resource curse, transparency, and institutions. Once introduced, I use EITI's own documents to describe how different economic, institutional and investment-related effects may manifest themselves, before introducing the regression model and sample.

2.1   RELATED LITERATURE

A natural starting point for academic discussions of the *natural resource curse* is the literature spawned by, and including, Sachs and Warner (1995). By using natural resource exports, as a share of GDP, they argued that high dependency on natural resource was detrimental for economic growth. The negative relationship was attributed to i) Dutch disease effects; ii) corrupt behaviour, and; iii) instability of economies due to increased dependence on commodity prices. Other identified effects involve the risk of increased conflict and political instability; as various groups wish to exploit the wealth of natural resources. Lastly, another argument is that natural capital crowds out human capital as a priority investment.

Dutch disease refers to the experiences of the Dutch economy in the 1960s and the detrimental effects to their economy, following a surge in the extractive sector due to the discovery of natural gas deposits. The main theme is that an economy experiences a discovery of highly valuable economic activities, such as resource extraction, specifically linked to trade (mainly exports). Such activities then drive an inflow of foreign currency causing the national currency to appreciate, and subsequently an over-valuation. The relatively more expensive national currency makes goods and services in other economic sectors less competitive on the world market, causing the alternative sectors to shrink. In addition, the importation of relatively cheaper goods abroad lowers the domestic competitiveness of such goods, further exacerbating the effects.

In addition to the Dutch disease, the natural resource curse is associated with *rent-seeking behaviour*, or corruption; incentives to benefit from a previously non-existent source of wealth (Auty, 2001). This behaviour weakens the integrity of institutions and diverts natural resource revenues from their intended purposes. Finally, the theory predicts instability in

resource-dependent economies, as they are more dependent on shocks from the volatility of commodity prices.

A new argument of the resource curse theory, in regards to natural resource management and its role in economic development, was that these effects are particularly devastating for poorer and less economically developed countries. Although first shown empirically by Sachs and Warner (1995), it spurred a large amount of research on the topic, mostly backing up the argument of the existence of such a curse.

Barbier (2005) present evidence in support of real exchange rates appreciation, directly forcing other sectors to decline. This gives credibility to the idea of reduced competitiveness of an economy due to dependence on natural resources, in addition to the argument for this effect being larger for emerging economies. Gylfason (2001) links emphasis on primary resources being associated with "neglect" of other manufacturing sectors. By discovering high-value resources such as oil, gas and minerals, government focus shifts from the development of alternative sectors, creating a situation of greater dependence on natural resources. He also makes the case that natural resource abundance shifts the focus of governments away from human capital investments, most notably reducing education-levels.

Demissie (2014) performs a very similar study to the one undertaken in this paper, with the focus on Sub-Saharan Africa (SSA). By OLS-regression, she tests the effect of EITI implementation on Gross Domestic Product per Capita (GDP per capita or GDP p.c.). She also includes several similar indicators as is done in my own regressions. Her findings are that EITI is *negatively* related to GDP p.c., and this relationship is statistically significant. However, the significance no longer exist when introducing a log-log model. The study also notes that it focuses strictly on Sub-Saharan Africa, and does not explore the effects of different stages of EITI involvement. Demissie then goes on to state that "it might be helpful to expand this study for a longer period" and "[f]uture studies should also consider including all EITI countries in all regions to potentially expand the results from this study" (Demissie, 2014, p. 70).

Corrigan undertakes another relevant study, *Breaking the resource curse: Transparency in the natural resource sector and the extractive industries transparency initiative* (Corrigan, 2014). This paper, while using mostly the same indicators, widens the panel to encompass approximately 200 countries. While utilizing an impressive amount of countries in the study,

the analysis does not go beyond 2009; the year when the first countries became compliant to the EITI Standard. As this represents having fully implemented the EITI, it means that the results are only relevant for partial implementation of EITI.

The study reaches the conclusion that there is a *negative* relationship between Log GDP p.c. and EITI implementation. This result holds over several regressions, utilizing different strategies, in addition to controlling for time fixed effects.

Although the resource curse is a popular theory, it has not been without its critics. Corrigan (2014) documents the dissention of Alexeev and Conrad (2005), arguing that richer countries consume more resources domestically, creating a biased resource dependency measure. Adding to this argument, they explore effects of resources on GDP without measuring resources in terms of "share in GDP". They measure direct oil and mining output per capita, and finds:

> *"[…] when adjusting the empirical measurement and methods, specifically for the overuse of the growth rates as an indicator and measuring resources as shares of GDP, there does not appear to be any resource curse for oil."*

> (Corrigan, 2014, p. 18)

However, the discussion of the resource curse is widespread and, regardless of its critics, the shared characteristic of the natural resource curse (as compared to only the Dutch disease phenomenon) is its prominence in less economically developed countries (Auty, 2001; Barbier, 2005; Corrigan, 2014; Demissie, 2014; Gylfason, 2001; Sachs & Warner, 1995). Moreover, several articles attempt to show *why it is more persistent in developing countries.*

2.1.1   *Institutions and natural resource curse*

Before continuing the discussion, it is important to understand what institutions are:

> *"Institutions are the humanly devised constraints that structure human interaction. They are made up of formal constraints (e.g., rules, laws, constitutions), informal constraints (e.g., norms of behaviour, conventions, self-imposed codes of conduct), and their enforcement characteristics. Together they define the incentive structure of societies and specifically economies."*

> (North, 1994, p. 360)

One interpretation is that institutions make up the rules of an economy and its societal structure, both informal and formal. As rules must be enforced to ensure they actually guide behaviours, it means that institutions themselves are also dependent on a state's capacity. This capacity can be expanded by increasing levels of wealth and production within a country, and a government's capacity to tax said production. This will subsequently fund enforcement of the rules. A state's capacity is also related to previously existing institutions and economic performance, and combined these all create an endogeneity problem.

Therefore, when dealing with the interplay of institutions and economic development there is always a worry of reverse causality. Economic development influences institutions, at least partly, through governments' capacity to ensure institutional effectiveness; that they work according to their intended purposes. This creates a problem of distinguishing between whether institutions are determined by, or complementary to, economic performance. Several authors have used instrument variables, to capture only one direction of causality. An example is Acemoglu, Johnson, and Robinson's (2001) method of using historical data of settler mortality as a predictor of what types of institutions were created in previous colonies. They argue that this further influenced present-day institutions, and subsequently how these have affected economic performance. The paper presents evidence that institutions do indeed influence long-term economic development.

An influential paper exploring how institutions and the resource curse interacts is *Institutions and the resource curse* (Mehlum, Moene, & Torvik, 2006). The paper argues that resource abundance, and its effects on economic growth are highly dependent on institutions. The theory distinguishes between two types of institutions: producer-friendly and grabber-friendly. The latter of the two implies that the institutional environment or framework causes a competitive relationship between productive behaviour and non-productive behaviour (grabbing or rent-seeking). Producer-friendly institutions, do not create such situations but rather a complementary relationship. The distinction implies that grabber-friendly institutions lead to higher potential gains of rent-seeking behaviour in the event of discovering natural resources, effectively crowding out productive behaviour. Producer-friendly or "good" institutions do not crowd out productive behaviour. The argument is therefore that rent-seeking behaviour exists even in countries with producer-friendly

institutions, but that entrepreneurs will opt for rent-seeking and non-productive behaviour to a lesser degree, and this produces better economic outcomes.

By measuring institutions through five indices[10], they find that negative effects of natural resource dependency are only persistent in the event of *bad institutions.* This evidence indicates that "grabber-friendly institutions" and natural resource abundance creates a growth trap, and that Dutch disease mechanisms are insufficient in explaining this phenomenon alone (Mehlum, Moene, & Torvik, 2006, p. 16).

To tie together the arguments; if institutions are the rules and norms of society (and economic behaviour), then the papers introduced above imply that both institutions, and the economic performance, will be influenced by the discovery of natural resources. Mehlum et al.'s (2006) findings suggest that institutions are a more decisive factor behind the natural resource curse than previously thought, perhaps even being a driver behind some aspects of the natural resource curse, such as rent-seeking behaviour.

Another paper suggesting that institutions are a decisive factor is *Addressing the Natural Resource Curse: An Illustration from Nigeria* (Sala-i-Martin & Subramanian, 2003). The authors use the example of Nigeria's experience of natural resources, to show that dependency is only related to long-term economic growth, via institutions. They also argue that the relationship between natural resources and institutions are nonlinear; meaning that the degree of marginal negative effects is related to the degree of natural resource dependence. If so, it may be that EITI implementation may also have nonlinear relationship with economic and institutional indicators (if it indeed mitigates the negative effects of the natural resource curse). This has not been explored in this paper's analysis, but is important to keep in mind.

Before concluding the review of institutional effects, there are two channels of particular interest in the discussion of natural resource curse, namely corruption and conflict.

First, *corruption* is broadly defined as *"the abuse of trusted power for personal gain"* (Transparency International, 2015). Rent-seeking behaviour, as discussed briefly above, is a term describing a type of corrupt behaviour. Rent-seeking means that agents, either

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[10] The five indexes include: Rule of Law, Bureaucratic Quality, Corruption, Expropriation, and Government Repudiation of Contracts

government officials or private, purposefully involve themselves in processes in order to gain benefits not intended for them. Alternatively, rent-seeking is the act of seeking to gain wealth without creating wealth.

Rent-seeking behaviour is one argument of how natural resource dependency is detrimental to economies via institutions. Countries that lack institutional frameworks to mitigate such behaviours allow groups of individuals to push for over-extraction of resources, in order to reap the benefits of resource discovery. This may happen either pre- or post-extraction, as the anticipation of large increases in government revenues may also fuel such behaviour. This means that poor institutional frameworks may allow rent-seeking behaviour occurring in the first place, and it may lead to an exacerbation of Dutch disease through the emphasis put on immediate extraction (Robinson, Torvik, & Verider, 2006).

Lastly, the discovery of natural resources may also lead to *political conflicts and civil war* (Besley & Persson, 2010, 2011; Collier & Hoeffler, 2005; Humphreys, 2005). While papers seem to agree that natural resources increase the likelihood of conflict, there are nuances that separates the scholars as to the mechanisms. Collier & Hoeffler (2005) seem to focus on two mechanisms in particular:

1. The resource curse is associated with low-income growth and levels. This constitutes a low opportunity cost for initiating conflict. This entails that the alternative to conflict (i.e. no conflict), holds a low benefit, as general income levels are lower and not subject to change. Therefore, any perceived benefits of emerging victorious post-conflict, seem relatively more lucrative for people in lower-income countries. This increases the likelihood of rebellion and conflict.
2. The political conflict stems from the theory of weaker institutions. They argue that states with weaker institutions rely more on patronage[11], and less often relies on democratic procedures. This in turn leads to frustration and increased political conflict between those that benefit from such behaviour, and those that do not. Depending upon the degree of frustration, this may influence the likelihood of conflict.

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[11] Patronage refers to the use of political power to influence the appointment of recruits to the government, or to grant other political favours.

Besley & Persson (2010; 2011) use their model of *state capacity* to investigate how, amongst other variables, natural resources affect a country's state capacity, and conflict. First of all, they separate between two forms of state capacity, *legal* and *fiscal.* Legal capacity refers to the ability to regulate and support markets, while fiscal capacity is a government's ability to collect taxes. In their model they also include the necessity of investing in state capacity, in order to increase their abilities. Such investments may be thought of as investing in the skills and training of bureaucrats and lawyers, or the physical capital needed for keeping a fiscal database. The absence of a state's capacity is important for explaining persistence of weak institutions.

In their model, natural resources are treated as exogenous, and therefore subject to a country's "natural endowment". If a country makes a large resource-discovery, they argue that *"[…] high resource dependence may jointly trigger a high propensity toward conflict, low income, and low investments in legal and fiscal capacity."* (Besley & Persson, 2010, s. 2)*.* This may happen, by using the same rationale as Collier & Hoeffler's first mechanism. They further the discussion of natural resource dependency and conflict by implying that there is a negative feedback loop of high natural resource dependence, creating the three effects simultaneously.

To explore what evidence exists, they take a version of their model to the data (Besley & Persson, 2011). The findings show that main determinants of conflict are level of resource rents, levels of aid, wage-levels, revenue and the provision of public goods. Resource rents are also found to be the most deterministic in the expected gains of conflict, and in financing conflicts, although this is mitigated by redistributive policies or good institutions.

While not in direct disagreement, Humphreys (2005) identifies mechanisms by empirical exclusion, and finds more evidence for the Collier & Hoeffler's argument of weaker institutions. As the political conflict argument relies more heavily on the ability of political officials to practice patronage and other behaviours more linked to corruption, it does suggest that mitigation should focus on reducing the ability of corrupt behaviour happening in the first place. That is, in addition to economic management designed to prevent Dutch disease effects.

2.2 TRANSPARENCY AND ACCOUNTABILITY: IDENTIFYING THE MEDICINE

Are resource-rich countries truly less transparent than others are? This was the question posed by Williams (2011). *Transparency* is related to the degree of insight outsiders can have into government activities, in other words dissemination of information. Weak institutions in themselves may be part of the natural resource curse, and by extension corruption. However, the question posed above was not empirically explored until Williams' paper as far as I know of. Lack of transparency concerning government activities may also be related to weak institutions, but previous literature focused on corrupt behaviours such as rent-seeking or patronage, and subsequently transparency was assigned as a mitigating policy. This means that they assumed transparency was lacking in the first place.

The paper does provide supporting evidence that natural resource dependency and specifically point-source non-renewable resources are indeed associated with a lower degree of transparency. The findings also show that transparency plays a role in the effects of natural resource abundance on economic growth, and that transparency has a positive relationship with growth (Williams, 2011, p. 499). The suggestion is that transparency does so directly by correcting information asymmetry, and indirectly through institutions and mitigating corrupt behaviour.

There are several papers discussing the effects of increased transparency, or lack thereof, on corrupt behaviour. Kolstad and Wiig (2009) explore the mechanisms through which these effects manifest themselves, and highlight six problems that transparency addresses:

Primarily, transparency increases the risk for corrupt officials being caught, and subsequently makes such behaviour less attractive by increasing the potential *costs* of being corrupt. Another mechanism is greater incentives for politicians or bureaucrats to "act cleanly". Through transparency, the behaviour of a public servant is more easily monitored and subject to scrutiny, making false reporting difficult. These mitigate problems of moral hazard, as it ensures that corrupt officials are less protected from the risks involved in corrupt behaviour. In simpler terms, it makes reported actions and information more trustworthy for leaders or people higher up in a government system.

The third point refers to the use of patronage or the risk of adverse selection. On one hand, increased information on recruitment or contract negotiation can reduce government officials' ability to influence of the outcome of such processes, as they are now more accountable to the public. On the other hand, it also provides government with greater information on who their partners are, between honest and dishonest types[12]. As such, transparency may reduce existing government officials in abusing their status, and it reduces the risk of recruiting such officials or bureaucrats in the first place.

The next mechanism is bargaining power itself. Transparency, or increase in information, means higher costs for agents attempting to *hijack* or *capture* information, and reduces information asymmetry in negotiations. This does not only apply for commercial actors, but also for governments. The classic example is that in negotiations of contracts involving natural resources, the public may lose out of potential revenues from poorly executed or less informed negotiation of the government. Nevertheless, it may be as detrimental for companies to engage with governments that do not follow procedures or withhold certain information that increases the risk of commercial activities. Governments that capture information themselves are also directly discouraging public participation and this makes rent-seeking behaviour more likely. If capturing such information becomes too costly, it essentially levels the field, for both parties.

Lastly, and building upon the previous mechanism, is cooperation and trust. Transparency, an even distribution of information, increases the predictability of cooperative partners and generates general trust in cooperative relationships. A lack of transparency, it is argued, *"[…] may therefore exacerbate problems of reaching and sustaining cooperative social arrangements, intensifying the detrimental effect of natural resource rents."* (Kolstad & Wiig, 2009, p. 524).

Although there are several channels through which transparency may strengthen existing institutions, research has suggested that its efficiency is dependent on other factors and

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[12] As an example, if the public or civil society are more aware or involved in the processes of such negotiations, the non-governmental side of the negotiations are also subject to a higher degree of scrutiny. This would in turn assist the government's ability in avoiding inefficient partnerships.

subsequently cannot work as a stand-alone policy. The term generally used for describing this is *accountability*.

Accountability is, especially in a discussion of institutions, the ability of one party (the public) to hold another party (government) accountable or responsible for their actions and choices. It may seem obvious that transparency, or the availability of information, is then dependent on the public's ability to use said information in order to confront the government. Kolstad and Wiig (2009) highlight two specific determinants: education and freedom of press. Education is an important determinant for transparency to yield its desired effects as the public must have the ability to comprehend and process the information provided through transparency policies. The level of education in a society is also associated with less corruption on its own merit, but is an important factor for the public being able to use open information.

The second determinant is freedom of press (and, they argue, its extension democracy). If a government does not allow critical views expressed openly, the availability of information is of low use, as the ability to sanction corrupt behaviour is reduced. Using the first mechanism presented earlier, increasing the risk of being caught, a lack of freedom of press will lower the public's ability to punish corrupt behaviour, even if the corruption is well known. Thus, the expected cost of being a corrupt official decreases making corrupt behaviour a more lucrative option.

2.2.1 What is the medicine?

Drawing on the previous sections, transparency can indeed be an important aspect of mitigating negative effects of the natural resource curse. However, transparency is not the answer, unless the public are able to process and use the information, in addition to having channels of disseminating such information. The EITI does indeed realise this, and explicitly state that EITI must be part of a larger set of reforms or movements in order to be effective:

> *"Like with so many major global challenges, there are no quick fixes. It takes multiple efforts, better public financial management and improved enforcement both in rich consuming countries and poor producing ones. It takes greater openness and collaboration. EITI can help but is not an instant cure."*

> (Short, 2015)

The quote is taken from a blog of Clare Short, the Chair of the current EITI Board. It shows that the EITI is aware of the importance of complementary policies within public financial management and enforcement, as well as realising that transparency (or openness) may not be sufficient for institutional change. There is no inclusion of the underlying factors education and freedom of press in the EITI Standard, and subsequently it is interpreted that these are the assumptions EITI must take for granted, or cannot involve themselves in. EITI membership promises dissemination of information about the extractive sector, i.e. transparency. Membership also guarantees the creation of a Multi-Stakeholder Group (MSG), a platform in which civil society, companies and government must all have access to, creating a possibility for accountability.

Thus, the EITI cannot influence the underlying assumptions that may ensure the success of its mission, but it can guarantee transparency and the creation of a participatory platform. This fact shows that EITI cannot be a single intervention to mitigate the institutional effects of the natural resource curse, but must be part of a wider movement that can also ensure accountability.

2.3   EITI and a Theory of Change

The EITI Principles lay the foundation for the joint ambitions and aims of EITI member countries. As per Principle 2, from Box 1 on the next page, each country's national goals drive their own implementation of the EITI. This means the processes and outputs will manifest themselves differently. However, the EITI Principles still guide some of the *overall* goals of implementation, and combined with the EITI Requirements (EITI, 2013); we can determine some mechanisms of how these effects may be reached.

2.3.1   Using principles to determine effects of EITI

This section uses the EITI Principles included above, to link with possible economic, institutional and investment effects. A table summarising the links made can be found in Appendix 2: Possible effects of the EITI, based on EITI Principles.

1. We share a belief that the prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.
2. We affirm that management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments to be exercised in the interests of their national development.
3. We recognise that the benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
4. We recognise that a public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
5. We underline the importance of transparency by governments and companies in the extractive industries and the need to enhance public financial management and accountability.
6. We recognise that achievement of greater transparency must be set in the context of respect for contracts and laws.
7. We recognise the enhanced environment for domestic and foreign direct investment that financial transparency may bring.
8. We believe in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.
9. We are committed to encouraging high standards of transparency and accountability in public life, government operations and in business.
10. We believe that a broadly consistent and workable approach to the disclosure of payments and revenues is required, which is simple to undertake and to use.
11. We believe that payments' disclosure in a given country should involve all extractive industry companies operating in that country.
12. In seeking solutions, we believe that all stakeholders have important and relevant contributions to make – including governments and their agencies, extractive industry companies, service companies, multilateral organisations, financial organisations, investors and non-governmental organisations.

Source: The EITI Standard (EITI, 2013)

Economic Effects

According to Principle 1, natural resource management is a potential engine for sustainable economic growth, development and poverty reduction. In order to quantify such effects, the paper uses the following proxies:

Log GDP per capita – well-managed natural resource wealth should translate into better economic performance for the society as a whole, and;

Net Official Development Assistance (ODA) – if EITI relates to *sustainable* economic development, this should mean that governments are more capable of funding their own activities and thus lowering the need for development assistance.

EITI Principle 3 recognises that benefits of natural resources manifests as *revenue streams*. On its own, this principle does little to identify any desired effects of the EITI, but it does hint to a possible way of measuring an effect. Principle 5 recognises that there is a need for increased transparency, enhanced financial management and accountability within the extractive sector. Combining these principles may assist in investigating whether EITI implementation is associated with greater *fiscal capacity,* or natural resource benefits (revenues) relative to the size of the sector:

$$Fiscal\ capacity = \frac{Government\ revenues\ from\ extractives}{Size\ of\ sector}$$

Greater fiscal capacity would mean relatively more effective *collection* of revenue by the government, whether the taxes themselves are efficient or not. It could also mean that the government of the economy in question has gained bargaining power, resulting in companies accepting a higher rate of taxation. Although the paper originally intended to explore this dimension, data availability and quality did not allow for such an investigation.

Therefore, the proposed variables included for exploring economic effects, are Log GDP p.c. and Net Official Development Assistance as a share of Gross National Income (GNI).

Investments and Investment Climate Effects

Principle 7 iterates the most direct link to desired effects of EITI implementation (through fiscal/financial transparency). It states; *"We recognise the enhanced environment for domestic and foreign direct investment that financial transparency may bring"* (EITI, 2013, p. 9)*.*

Therefore, the following indicators are proposed:

Foreign direct investment, net inflows (% of GDP), covers the net flows of investments from foreign entities into an economy, and is used to explore the actual investment flows into the countries;

Gross capital formation (% of GDP), or previously Gross domestic investments, covers the investments *within* an economy, in order to determine potential investment effects internally in a country; and,

Credit rating scores. Fitch and Moody's available credit rating scores for sovereign bonds were collected for the time-periods in question and converted to a score from 0-10, with each 0.5 points corresponding to a credit rating upgrade (see Table *2*: Standardised credit rating scores and corresponding credit ratings on page 24). As these credit rating agencies are highly influential for investors' risk assessments of various markets, it is used as a proxy for investment climate.

Institutional Effects: Worldwide Governance Indicators

A World Bank report advised the use of their Country Policy and Institutional Assessment (CPIA) data to assess the institutional impacts of EITI (2008, p. 92). Although the variables are highly relevant, they cover only 2005 and after. Examining other data such as the Doing Business-index and underlying variables, they had the same problems of data availability for 1995-2014.

This paper uses the Worldwide Governance Indicators (WGI), as was done by Corrigan (2014) and Demissie (2014). This paper keeps the WGIs strictly as institutional effects, although several may be applicable to some of the areas such as investment climate. The WGI project uses six different indicators for governance in a country or area:

1. *Voice and Accountability.* Perceptions of a population's ability to participate in selecting government. It also encompasses perceptions of values such as freedom of speech as well as the press.

2. *Political Stability and Absence of Violence*. Perceptions of the likelihood of political violence or violent political transitions. One might say this indicator reflects the degree of control (for good or for worse) a government has over a country.

3. *Government Effectiveness.* This indicator encompasses the perceptions of the quality and effectiveness of public services and policies. It also relates to the trust in a government's expressed commitments to policies, and that the public services offered are free of political pressures.

Table 2: Standardised credit rating scores and corresponding credit ratings

Credit rating score	Definition	Moody's	Fitch
	Investment Grade		
10.0	Prime, maximum safety	Aaa	AAA
9.5	Very high grade/quality	Aa1	AA+
9.0	"	Aa2	AA
8.5	"	Aa1	AA-
8.0	Upper medium quality	A1	A+
7.5	"	A2	A
7.0	"	A3	A-
6.5	Lower medium grade	Baa1	BBB+
6.0	"	Baa2	BBB
5.5	"	Baa3	BBB-
	Speculative grade		
5.0	Speculative	Ba1	BB+
4.5	"	Ba2	BB
4.0	"	Ba3	BB-
3.5	Highly speculative	B1	B+
3.0	"	B2	B
2.5	"	B3	B-
2.0	Substantial risk	Caa1	CCC+
1.5	In poor standing	Caa2	CCC
1.0	"	Caa3	CCC-
0.5	Extremely speculative	Ca	CC
0.0	Maybe in or extremely close to default	C	C+,C,C-
0.0	Default		D

Source: Multiple-Markets (2015). Visited 26 August 2015. Changes have been made by the author.

4. *Regulatory Quality.* Regulatory quality is a measure of public perception of a government's policies towards private sector development. Such perceptions are compiled from business environment surveys similar to, and including, the Doing Business Enterprise Surveys. It encompasses *"[…] perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development"* (Kaufmann, Kraay, & Mastruzzi, The Worldwide Governance Indicators: Methodology and Analytical Issues, 2010, p. 4);

5. *Rule of Law.* This indicator covers perceptions towards the independence and trust of the public in a country's judicial system, with specific emphasis on property rights, contract enforcement, police and the courts.

6. *Control of Corruption.* Control of corruption represents the perceptions of whether or not government institutions or public servants are corrupt. Meaning the perceptions of the degree to which people believe public offices are misused for private gain or if it is perceived that private interests have hijacked such influence.

Source: Kaufmann, Kraay, & Mastruzzi (2010)

WGI indicators are quantified *perceptions* of institutions – as opposed to objective measures. Some reflections may reveal nuances of any potential results.

Firstly, perceptions may be volatile, and are subject to influences that do not necessarily reflect actual changes. For example, in terms of the Control of Corruption indicator, it is likely that corruption scandals and similar could receive ample media coverage, and such exposure create a perception of rampant corruption. Previous to any exposure, the environment would have been equally corrupt, but the *perception* of this environment would not have been the same. More attention toward any episode, may influence perceptions of more rampant corruption in the same economy. If so, then the opposite must also be true; implementation of anti-corruption measures, for whatever reason, would produce perceptions of a government preparing to strike down on corruption and better scores.

Secondly, and in parallel to the above, the introduction of anti-corruption measures would ideally increase the likelihood of discovering corrupt behaviours. It is also likely that the most important of such discoveries relate to corrupt behaviour that have occurred in the past. The initiation of anti-corruption measures could lead to higher perceptions of corruption by

exposing more of corrupt activities, as in the example of the previous paragraph. In addition, such effects are more likely to occur in the beginning of implementation of anti-corruption measures, although this would be dependent on corrupt agents not being able to foresee these measures. If these mechanisms are valid, it means the indicators may have shifting effects from different types of institutional shocks, depending on how they are perceived.

For other intents – most specifically investments – these are reliant on perceptions of *expected returns* from policy-changes. In these instances, perception-indicators may be more appropriate. A large driving force of investment, especially in high-risk economies are the expectations that investors have. If the prevailing perception is that a country is enhancing their investment climate (via EITI implementation, World Bank indicators or others), then investors will increase their interest in the economy.

2.3.2   EITI Requirements and potential mechanisms

The EITI has seven requirements that must be fulfilled in order to be recognised as a compliant country. These are listed in Box 2 below. According to these, EITI implementation are directly associated with two activities. All EITI members are required to publish EITI reports (requirement 2), and to have a functioning Multi-Stakeholder Group (MSG) (requirement 1). These two direct outputs are further linked to the proposed variables or effects.

Box 2: EITI Requirements

The EITI requires:

1. Effective oversight by the multi-stakeholder group.
2. Timely publication of EITI Reports.
3. EITI Reports that include contextual information about the extractive industries.
4. The production of comprehensive EITI Reports that include full government disclosure of extractive industry revenues and disclosure of all material payments to government by oil, gas and mining companies.
5. A credible assurance process applying international standards.
6. EITI Reports that are comprehensible, actively promoted, publicly accessible, and contribute to public debate.
7. The multi-stakeholder group to take steps to act on lessons learnt and review the outcomes and impact of EITI implementation.

Source: The EITI Standard (EITI, 2013)

For this paper, I argue that the EITI Report is a proxy for *transparency*, or the dissemination of information on the natural resource sector of economies. I also claim the Multi-Stakeholder Group is a proxy for an *accountability*-mechanism, through the guaranteed participation of government, private sector, and civil society, with a partial mandate of making sure the information provided by the reports are used.

EITI Reports: Transparency

Requirements 2-6 obligate EITI members to produce reports that cover the extractive industries sector in each country, and stipulates the information they must contain. EITI reports therefore create an information base to be used by any member of the public, i.e. transparency.

In the past, much of the focus of the reports have been financial transparency, or the *reconciliation of revenues* paid by companies and received by government. Although this still one of the main purposes, the reports now include much more information, such as contextual information of the sector; information covering companies and activities, and; information on the role of state-owned enterprises. Other topics include legislative information, license allocation and registries, while encouraging the inclusion of more controversial ideas such as beneficial ownership and contract disclosure.

EITI reports provide an increased information-base. For governments they can provide insights into complexities within the fiscal regime through the reporting on financial transparency. They can also uncover discrepancies between registered payments of companies and receipts by the government. Uncovering challenges of the fiscal regime should increase the efficiency of revenue collection, by correcting misunderstandings between revenue-collecting agencies and companies. This should show an effect of governments implementing EITI receiving more revenues from extractives, relative to the industry size. As EITI reports may provide more information on their extractive sector to potential companies and investors, it could increase the governments bargaining power relative to companies in contract negotiations. An enhanced bargaining power would enable the government to demand higher tax rates, and should show as an increase in fiscal capacity.

The information base would affect investments, as sector-wide information is less costly to produce, and the information gathered is more reliable through the compilation of a third party (an independent administrator). Financial transparency reduces the perceived risk of investing or starting up a business in a country. Contextual information on the sector would lower the cost of market analysis preceding economic involvement, and lowers the risks of unexpected shocks for investors. This means a better investment climate. For investment themselves, an increased information-base should reflect a lower level of risk associated with a country, thereby increasing both foreign direct investment, and the formation of capital within the country itself.

The potential effects on fiscal capacity and investments represent *increased state capacity*, improving economic performance measured by two variables: Log GDP p.c. and net ODA received. If investments increase, the investment climate is better, *and* there is more efficient revenue collection, then it is not absurd to conclude that an economy is doing better, and that GDP grows.

Similarly, the previous effects should increase a country's ability to rely solely on domestic value-creation, thus reducing dependency on foreign aid. Of course this is dependent on how governments *manage* these increased economic benefits, which is dependent on institutions and the work of MSGs.

EITI Multi-Stakeholder Group: Accountability

MSGs require the participation of representatives from three different stakeholder groups: companies, civil society, and government. The multi-stakeholder group is the body that oversees national EITI implementation, through the participation of three constituencies. The EITI Standard requires governments to make sure that civil society and companies are free to participate: *"[t]he government must ensure that there are no obstacles to civil society or company participation in the EITI process."* (EITI, 2013, p. 12). This means that the three constituencies that form the MSG are government, civil society, and the companies within the sector themselves.

The requirements imply that the MSG may work as an arena, through which both companies and civil society can engage and influence the government in terms of the EITI process, and

subsequently the institutions that govern the natural resource sector. In addition, EITI Requirement seven specifically states that the multi-stakeholder group must take steps to act on lessons learnt, and review outcomes and impact of EITI implementation. Through these requirements and the participation of civil society and companies, the MSGs may influence government and policy-making. Thus, by using its constituency framework, the MSGs can influence government choices and how different institutions involved in the extractive sector are functioning.

Figure 3: The three constituencies of the EITI Multi-Stakeholder Group.
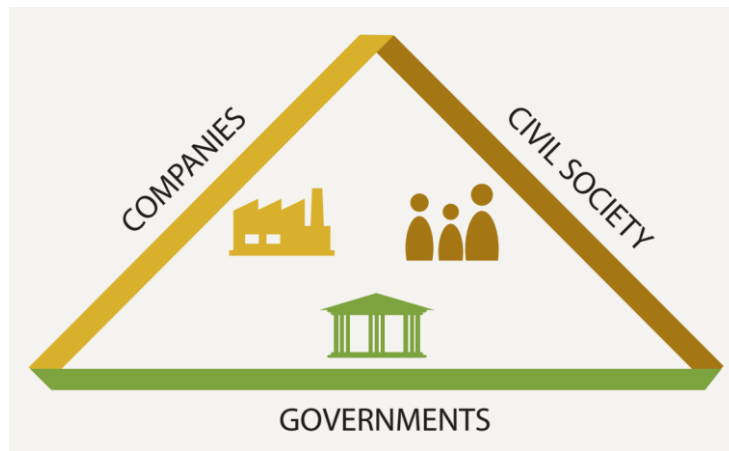
Source: EITI Factsheet (EITI, 2015)

Quoting the Head of the EITI Secretariat, Jonas Moberg, shows that the secretariat considers the assumption valid, although not necessarily through this particular mechanism:

> *"The EITI is built on the assumption that transparency can lead to accountability. For this to happen, something has to be done with the many recommendations for policy reform that emerge from the EITI reports."*

(Moberg, 2015)

The differences between MSGs and EITI reports is similar to the different stages of EITI membership status, candidates and compliant. As previously explained an MSG has to be formed prior to any application for membership in the EITI, and thus will precede actual candidacy of countries. This is also true for EITI reports and compliance status; EITI reports are the main result of EITI candidacy, but the validation process introduced earlier assures that the information disseminated is complete and according to the Standard. As such, memberships are indications of *quality* of the activities associated with EITI implementation.

As the membership and activities of EITI differ somewhat in timing, they are both used as alternative specifications in the models presented below, with membership status differentiating between candidates and compliant countries are used for the main analyses, while EITI reports and MSGs are a secondary specification.

2.4 DATA AND EMPIRICAL STRATEGY

2.4.1 *Empirical specification*

This paper uses Fixed-Effects regression models to explore what effects EITI membership has on different variables. The FE-regression models used in my analysis should be interpreted in the spirit of Difference-in-Difference analysis (DiD). DiD is the classical strategy to compare two groups of subjects, a treatment group (EITI), and a control group (non-EITI). In this analysis, EITI membership and activities are viewed as treatment for the natural resource curse, similar to randomised medical experiments. The main difference is that EITI membership, or the treatment, is not randomly assigned and is therefore endogenous. This means that there is cause for concern as the characteristics of one group is likely to differ from the other, influencing countries choice of whether or not to become part of EITI. To explore how EITI countries and non-EITI countries differ, a t-test of differences in means were used for all the variables. Using the t-tests to identify pre-treatment differences, and keeping these differences in mind, we can isolate what the regressions actually tell us regarding the effects of EITI.

FE-analysis are very effective in eliminating certain types of "noise" in the analyses, as the time- and country-fixed effects remove much of unobservable bias or omitted variable bias. Due to this elimination, FE-analyses infer stronger evidences for *causal relationships*. This is because the framework of FE-models compares *within* countries, rather than across countries, and manages to remove several of the differences between countries and time-periods that may influence the results. However, causal inference is still threatened as the "treatment" (EITI) is not randomly administered. When interpreting the results, the conclusions should be treated with caution, and viewed more as associations than causal links.

The model used for the regressions takes the following form:

$$Y_{it} = \boldsymbol{\beta_1} \times EITIcandidate_{it} + \boldsymbol{\beta_2} \times EITIcompliant_{it} + \boldsymbol{\delta} \times CONTROLS_{it} + \gamma_i + \sigma_t + u_{it}$$

Y_{it} represents the dependent variables in country *i* and time *t*. The approach used was to perform separate regressions for each potential dependent variable to gain an overview of how EITI affects i) economic performance; ii) investment climate; and, iii) institutions. Economic performance is represented by log of GDP per capita, and net ODA received as a share of GNI is a measure of dependence on foreign aid. Other effects cover investments and the investment climate. The dependent variables used here are net inflows of foreign direct investments, and gross domestic investments (or gross capital formation), both as a share of GDP. As a measure for the investment climate, the analysis uses average credit rating scores for sovereign bonds. The index created for ranking credit ratings, as presented in Table *2* in the previous chapter, uses a 0.5-point increase per credit rating upgrade. The total possible points achieved is 10, representing a triple-A rating, while a credit-default situation is represented by a zero score.

Institutional effects are represented by the Worldwide Governance Indicators. There are six different dimensions of institutional measures: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, control of corruption, and rule of law. Countries are scored for each of the dimensions with a range between -2.5 and 2.5 possible points, in which 2.5 is the best score. For a more detailed description of what these institutional measures cover, see section 2.3.1.

The main independent variables, $EITIcandidate_{it}$ and $EITIcompliant_{it}$, represent different degrees of a country's membership. This is to ensure that different levels of involvement in the EITI is controlled for – candidates may have published reports, but have not yet been able to use the increased information through their MSGs. This will, especially for institutional effects, influence the degree of impact that EITI has on several variables.

In the analysis, EITI membership are used as *treatment* for the resource curse. The treatment effects are therefore represented by the coefficients $\boldsymbol{\beta_1}$ and $\boldsymbol{\beta_2}$. Using a FE-model, $\boldsymbol{\beta_i}$ is interpreted to be the treatment effects of EITI membership or activities on the dependent variables. These effects are related to *within* country changes. Although countries differ

significantly, FE-regressions eliminate much of the differences between countries[13]. As standard errors are correlated for within-country changes, the model uses standard errors clustered by country to ensure the internal validity of the results.

As a secondary specification, publications of EITI reports and formation of MSGs are used as dummies to see whether the effects are still present[14]. The difference of using EITI membership status and these alternative dummies is the timing. As previously noted, the formation of MSGs is a precursor to actual membership in the EITI, and as such may cause slight variation in the results. The same also holds for EITI reports compared to *compliant* countries, as the reports must be published and verified through a validation process before the status of compliance is reached. Due to this slight difference, it possible to see differences in the effects between actual activities (creating MSGs and publishing reports), and formal endorsement of the activities (degrees of EITI membership).

$CONTROLS_{it}$ is a vector of control-variables introduced to the models, to check the robustness of any effects assigned to the EITI. Several controls are included, and placed in three different groups: economic controls, political controls, and development controls. The variables included in the groups are further described in section 0 below.

Finally, γ_i represents the country-fixed effects, and σ_t the time-fixed effects. u_{it} is the residual, or the changes in the dependent variables that are otherwise not explained within the models.

Table 3 below lists all variables used in this paper. The first five dependent variables are the economic and investment effects, while the latter six are institutional. The analysis uses panel-data, covering the years 2004-2014. The pre-EITI years were included to better see the performance of EITI countries, also before EITI existed.

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[13] FE-regressions only eliminate differences between countries that are constant over time, and specific changes within a time-period that affects all countries equally (e.g. countries' differences in ethnic fractionalisation, or legal origins, and global economic trends or commodity prices).

[14] The results of these regressions are included in 8 Appendix 3: Regression results, EITI

Table 3: Descriptive Statistics and Proposed Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent variables					
Log GDP per capita (PPP, constant 2011 USD)	2,969	8.812	1.251	4.956	11.804
Net Official Development Assistance (% of GNI)	2,147	7.011	10.575	-0.690	181.187
FDI net inflow (% of GDP)	2,865	4.315	7.692	-82.892	161.824
Gross capital formation (% of GDP)	2,879	23.425	11.478	-2.424	219.069
Credit Rating Score (average)	1,785	4.829	2.662	0.250	10.000
WGI Voice and Accountability	2,464	-0.242	0.958	-2.224	1.826
WGI Political Stability and Absence of Violence	2,450	-0.275	0.928	-3.185	1.668
WGI Government Effectiveness	2,451	-0.180	0.941	-2.325	2.357
WGI Regulatory Quality	2,450	-0.154	0.949	-2.675	2.077
WGI Control of Corruption	2,457	-0.210	0.948	-2.057	2.586
WGI Rule of Law	2,458	-0.259	0.945	-2.230	2.121
Independent variables					
EITI candidate	3,100	0.056	0.231	0	1
EITI compliant	3,100	0.030	0.171	0	1
EITI report	3,100	0.065	0.246	0	1
EITI MSG	3,100	0.097	0.296	0	1
Control variables					
Central Government Debt (% of GDP)	833	53.856	33.793	0.214	247.381
Adjusted Savings, gross (% of GNI)	2,376	21.125	12.601	-181.269	137.485
Consumer Price Index (2010 base year)	2,818	79.104	30.822	0.001	348.168
Exports of goods and services (% of GDP)	2,929	37.096	20.555	0.183	124.393
Imports of goods and services (% of GDP)	2,929	43.524	25.053	0.125	424.817
Final Central Government Expenditure (% of GDP)	2,857	16.071	8.813	2.047	156.532
Unemployment rate (ILO estimate)	2,868	8.972	6.351	0.200	39.300
Total natural resource rents (% of GDP)	2,852	11.715	15.512	0.001	89.220
Population*	3,100	40.1 mill	140 mill	130378	1,360 mill
Adjusted enrolment rates, primary education	1,715	88.063	15.213	21.979	100.000
Life expectancy at birth	2,941	66.463	10.264	31.239	82.476
Polity IV: Polity 2	2,984	3.187	6.491	-10.000	10.000
Conflict: Total Major Episodes of Political Violence	2,705	0.576	1.476	0.000	10.000

WGI - Worldwide Governance Indicators.   *Approximations

The countries in the sample are based on available data for all economic areas, as defined by the World Bank in their data repository[15]. All the countries that take part in the analysis have at least 0.1 % size of natural resource rents relative to GDP, and have a population higher than 500,000. In addition, five countries were excluded due to the lack data on resource rents[16]. In

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[15] http://databank.worldbank.org/

[16] Countries/Territories excluded due to lack of data: Puerto Rico, Singapore, Somalia, Taiwan, and West Bank and Gaza. The full list of excluded countries/territories can be found in Appendix 1.

total 155 countries or territories remains in the sample. Combined with the total number of years included, this means a maximum possibility of 3,100 observations for each of the variables.

Table 4: Correlation of EITI membership-dummies

	EITI membership	EITI candidate	EITI compliant
EITI membership	1.000		
EITI candidate	0.795	1.000	
EITI compliant	0.572	-0.043	1.000

Table 4 above shows the correlation between different dummies for EITI membership. While candidacy and compliant are correlated to EITI membership itself, both with a coefficient above 0.5, the correlation between candidates and compliant countries is very low and negative. This is due to the dummies changing to zero once a country is designated a differently. Once an EITI candidate country becomes compliant, the dummy variables for EITI compliance is one, while the EITI candidacy-dummy changes from one to zero.

2.4.2   Control Variables

The control variables are split into three groups that are introduced in various combination in the regression models. First we have the *economic controls*: central government debt, adjusted savings (both public and private sector), consumer price index, exports and imports of goods and services, government expenditure, the unemployment rate, and finally, the natural resource rents. These will control for factors such as differences in countries' wealth, inflation, size of trade, government size as a share of the economy, and the size of extractive industries. Central government debt is excluded for one of the four regressions that include controls due to low sample size. In some instances, including all control variables creates more clusters of countries than degrees of freedom, resulting is missing F-statistics for the models. While still included in the tables, these are not subject for interpretation.

Second, there is a demography/development group, or just *development controls*. This comprises of adjusted enrolment rates in primary education, population, and life expectancy at birth. The first and last of these are often associated as indicators of development, as they are part of the Human Development Index together with GDP per capita. These controls will

eliminate potential bias from differences in development, or show whether or not any effects of the EITI are stronger or weaker after controlling for such bias.

Lastly, the final group of controls is *political* comprising of two variables; the Polity2 variable from the Polity IV methodology, and a proxy for conflicts – the total number of major episodes of political violence. The polity2-measure is the one used as it is formatted for panel-data analyses. It is a two-dimensional measure for how autocratic or democratic a regime is, on a scale from -10 to 10. 10 represents a perfect democracy. The conflict-control will eliminate the negative effects that countries experience due to increased political instability.

3 Results

This section describes the findings of the different analyses used in this paper. It begins by describing how present-day EITI member countries differed from other countries previous to the creation of EITI. This is done as the country groups are not randomised and EITI cannot be viewed as an exogenous variable. This baseline description is then used to interpret the results from the regression analysis in the following sections.

3.1 BASELINE T-TESTS

Table 5 shows the results of the t-tests, as the country groups are not randomised. The tests were performed to investigate whether or not EITI countries differ significantly from non-EITI countries, prior to the existence of the initiative. In this instance, EITI countries refer to countries that were accepted members of the EITI per December 2014, and non-EITI countries refer to the remainder of the sample.

The table explores the differences in mean between EITI and non-EITI countries, in the time-periods before implementation of EITI, 1995-2004 (interpreted here as first year of publishing EITI reports). The table shows that for the great majority of the variables, there are highly significant differences between EITI and non-EITI countries.

EITI countries had significantly lower GDP p.c. than non-EITI countries in the late 90s and early 2000s. The numbers correspond to an average of USD 2,815.80 for EITI countries and USD 8,070.74 for non-EITI countries. This means that on average, a non-EITI country had USD 5,255 more GDP per capita than an EITI country. This difference is one of the strongest within the t-test, with a t-statistic of -16.1.

Dependency on foreign aid was significantly higher for EITI countries. This is perhaps not surprising as the EITI countries were significantly poorer, but the difference is substantial, 5.214 percentage points more in EITI countries. Since foreign aid is included as a share of GNI, it means that lower GDP could also be an explanatory factor.

Table 5: Two-Sample T-tests with equal variances
Pre-EITI (1995-2004)

Variable	EITI mean	Standard error	non-EITI mean	Standard error	Difference in mean (EITI vs. Non-EITI)	t-statistic	dF	p-value	Significance †
Dependent variables									
Log GDP per capita	7.943	0.054	8.996	0.036	-1.053	-16.097	1,460	0.000	***
Net Official Development Assistance (% of GNI)	10.878	0.516	5.664	0.317	5.214	9.073	1,115	0.000	***
FDI net inflow (% of GDP)	3.740	0.447	3.546	0.242	0.194	0.411	1,441	0.681	-
Gross capital formation (% of GDP)	19.726	0.396	23.622	0.467	-3.896	-5.091	1,458	0.000	***
Credit Rating Score (average, Moody's & Fitch)	4.601	0.288	4.855	0.102	-0.255	-0.966	730	0.334	-
WGI Voice and Accountability	-0.514	0.050	-0.115	0.039	-0.399	-5.888	918	0.000	***
WGI Political Stability and Absence of Violence	-0.695	0.056	-0.086	0.036	-0.609	-9.265	908	0.000	***
WGI Government Effectiveness	-0.622	0.050	0.028	0.037	-0.650	-9.950	906	0.000	***
WGI Regulatory Quality	-0.553	0.051	0.012	0.038	-0.565	-8.541	906	0.000	***
WGI Control of Corruption	-0.586	0.050	-0.006	0.039	-0.580	-8.646	910	0.000	***
WGI Rule of Law	-0.728	0.049	-0.062	0.037	-0.666	-10.260	912	0.000	***
Independent variables									
Central Government Debt (% of GDP)	66.597	4.524	55.879	1.700	10.717	2.730	438	0.006	***
Adjusted Savings, gross (% of GNI)	16.832	0.618	20.727	0.405	-3.895	-5.223	1,231	0.000	***
Consumer Price Index (2010 base year)	52.291	1.101	59.469	0.714	-7.178	-5.551	1,345	0.000	***
Exports of goods and services (% of GDP)	31.203	0.840	36.863	0.660	-5.661	-4.937	1,479	0.000	***
Imports of goods and services (% of GDP)	38.937	1.005	42.929	0.985	-3.992	-2.436	1,479	0.000	***
Final Government Consumption Expenditure (% of GDP)	14.498	0.655	16.739	0.214	-2.241	-4.178	1,442	0.000	***
Total natural resource rents (% of GDP)	14.119	0.718	8.639	0.412	5.480	6.948	1,474	0.000	***
Unemployment rate (ILO estimate)	8.047	0.255	9.880	0.212	-1.833	-5.062	1,508	0.000	***
Population, total	28.9 mill	2.3 mill	41.1 mill.	4.7 mill	-12.5 mill	-1.704	1,548	0.089	*
Adjusted enrolment rates, primary education	75.261	1.378	90.030	0.548	-14.769	-11.998	819	0.000	***
Life expectancy at birth	59.121	0.464	67.711	0.290	-8.590	-16.034	1,544	0.000	***
Polity IV: Polity2	1.908	0.265	2.961	0.219	-1.053	-2.802	1,476	0.005	***
Total Major Episodes of Political Violence	1.009	0.085	0.517	0.046	0.492	5.516	1,491	0.000	***

WGI - Worldwide Governance Indicators

dF - Degrees of Freedom

†Significance values: * p < 0.10, ** p < 0.05, *** p < 0.01

For investments, FDI is one of two variables that do not differ significantly between EITI and non-EITI countries previous to 2005. While the estimates themselves show a slightly higher share of investments in EITI countries, by 0.194 percentage points, the fluctuations of the data means that the difference is not significant at all with a corresponding p-value of 0.681. Gross capital formation, the added wealth of a country through domestic investments or acquisition of valuables, is significantly different between the groups. EITI countries show slightly lower averages of 19.73 percent of GDP being part of capital formation. Non-EITI countries are associated with 23.62 %. This means that on average, non-EITI countries had close to 3.9 percentage point greater capital formation (annually), relative to GDP-levels.

In terms of credit ratings of sovereign bonds, EITI and non-EITI countries do not differ significantly. EITI countries' sovereign bonds are rated slightly lower than non-EITI countries, by 0.102 points in the index. This means that on average, non-EITI countries are rated by one fifth of a rating higher than EITI (as 0.5 point is roughly equal to a marginal increase in credit rating). The corresponding credit ratings of EITI countries were associated with investment grades Ba2/BB (Moody's/Fitch Ratings), while non-EITI had averages closer to Ba1/BB+.

For institutions, it seems that EITI countries are generally performing worse than non-EITI countries. Non-EITI scores in WGI-indicators are close to zero, while EITI countries have scores that range from -0.728 to -0.514. All these differences are highly significant, indicating that EITI countries in general have had worse institutions than other countries. This provides evidence that the initiative has reached out to the target countries.

The controls generally portray the same picture. However, in this instance the all differences are significant. Debt-levels were higher and savings were lower for EITI countries relative to non-EITI. CPI, the Consumer Price Index, was lower for EITI than non-EITI countries. Export and imports of goods and services were both lower relative to the size of the economy, for EITI countries. Likewise, government expenditure shows that the government was a smaller actor in EITI countries than in the reference, while total natural resource rents were higher. Somewhat contrary to the general patterns seen in the other controls, it seems that unemployment rates of the total workforce were lower in EITI countries than in non-EITI.

Population levels are much higher on average in non-EITI countries, by as much as 12.5 million. However, due to fluctuations, the standard errors are so large that this variable has

the weakest evidence of difference, with a p-value of 0.089. This difference may be due to the inclusion of countries with large populations, such as China and India. Enrolment in primary education and life expectancy at birth are both lower in EITI countries, indicating that emerging economies are the main members of the EITI.

On the institutional side it seems that EITI countries are less democratic and more autocratic than non-EITI, and there are more instances of political violence in the baseline years for EITI countries. This indicates a political environment more prone to conflict and less inclusive political systems for EITI countries.

Differences of resource sector composition

The composition of the economies was also briefly explored, to get a sense of any systematic differences between EITI and non-EITI countries' extractives sector. The following table shows how EITI and non-EITI countries differ in the composition of the natural resource sector size. Contrary to the previous table, this one shows differences in mean for all time periods. For both Oil and Minerals, the production value minus production costs are higher for EITI countries, by 2.5 and 2.3 percentage points respectively. In terms of natural gas, there is no significant difference, although non-EITI countries are more invested in Natural gas exploitation.

Table 6: T-tests natural resource composition, all years

Variable	EITI mean	Standard error	non-EITI mean	Standard error	Difference in mean (EITI vs non-EITI)	t-statistic	dF	p-value	Significance †
Total natural resource rents (% of GDP)	16.457	0.562	9.698	0.328	6.759	10.863	2,850	0.000	***
Oil rents (% of GDP)	11.540	0.738	9.020	0.434	2.520	3.071	1,668	0.000	***
Natural gas rents (% of GDP)	2.460	0.292	2.828	0.198	-0.367	-0.990	1,551	0.323	-
Mineral rents (% of GDP)	3.309	0.260	1.031	0.070	2.278	10.731	1,904	0.000	***

dF - Degrees of Freedom

†Significance values: * p < 0.10, ** p < 0.05, *** p < 0.01

3.2 ECONOMIC EFFECTS

This section, along with the next two sections, describe the results of the regressions before being discussed and brought together as a conclusion in the next chapter. The results are divided into economic effects, investment effects, and institutional effects. In the tables, column 1 only shows the baseline regressions with no control variables. (2) and (3) include economic controls, where (3) also adds the central government debt, even though it has a

low sample size. (4) also includes political controls, while (5) incorporates all the groups, including the development controls.

Log GDP per capita has in previous studies been found to be negatively associated with EITI membership (Corrigan, 2014; Demissie, 2014). However, these studies relied on different datasets. Corrigan (2014) used panel data for 200 countries, from 1995 to 2009, including time-fixed effects. The results could not distinguish between different membership statuses, as 2009 was the first year of any country becoming EITI compliant, i.e. the first year that a country had actually fulfilled the requirements of the EITI Standard. The findings showed a consistent negative correlation between EITI and GDP growth, until introducing country-fixed effects.

The inclusion of country fixed effects was only done for one regression, as the paper argued that EITI was partly a country fixed effect in itself. The paper states that becoming a member and implementing EITI is such a long process and that EITI dummies' effects could be diminished introducing country fixed effects. However, by using different specifications for transparency – membership status *and* actual activities – we can see whether or not there are large differences between different stages of the process, and whether or not EITI dummies' effects are in fact diminished. I argue that the EITI is *not* a country fixed effect. However, Corrigan does introduce a relevant concern in regards to using FE-models. Once all time- and country-fixed effects are controlled for it removes much of the actual differences between, and changes within, economies themselves. Therefore, much of the context in which EITI has been operating is also removed. It is a concern that perhaps underlying some of these time- or country-fixed effects there are determinants that influence whether or not EITI is successful in producing its desired results.

Demissie (2014) also found a negative relationship between EITI and GDP per capita, however this was in terms of GDP levels, not growth. Initial analyses for my paper revealed similar results, but as EITI has been mainly implemented by emerging economies these results are not so surprising. Demissie used Sub-Saharan Africa as a sample, for the years between 2003-2012, and from my understanding her OLS regressions did not control for initial levels of GDP per capita.

Table 7: The effects of EITI membership on Log GDP per capita

	Log GDP per capita				
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	0.0108 (0.035)	0.0243 (0.034)	-0.0398 (0.041)	-0.0424 (0.041)	-0.0247 (0.032)
EITI Compliant	0.103 (0.068)	0.152** (0.073)	-0.0255 (0.055)	-0.0285 (0.056)	0.00389 (0.070)
Total natural resources rents (% of GDP)		-0.00187 (0.002)	0.00162 (0.002)	0.00184 (0.002)	0.00246 (0.003)
Adjusted savings: gross savings (% of GNI)		0.00245 (0.002)	0.00220 (0.002)	0.00223 (0.002)	0.00284 (0.002)
Consumer price index (2010 = 100)		0.00264*** (0.001)	0.00459*** (0.001)	0.00468*** (0.001)	0.00399*** (0.001)
Exports of goods and services (% of GDP)		0.00387** (0.002)	0.000675 (0.002)	0.000359 (0.002)	-0.00217 (0.002)
Imports of goods and services (% of GDP)		-0.00114 (0.002)	0.00181 (0.002)	0.00196 (0.002)	0.00405*** (0.002)
Government consumption expenditure (% of GDP)		-0.00151 (0.002)	0.00178 (0.005)	0.00186 (0.005)	-0.00274 (0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0155*** (0.003)	-0.0105*** (0.003)	-0.00983*** (0.003)	-0.00769** (0.003)
Central government debt - total (% of GDP)			-0.00108** (0.000)	-0.00112** (0.000)	-0.000759* (0.000)
Polity IV: Polity2				-0.00444 (0.003)	-0.00723 (0.005)
Total Major Episodes of Political Violence				0.00393 (0.006)	-0.000829 (0.006)
Population total					1.09e-09** (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.000394 (0.003)
Life expectancy at birth (total years)					-0.000721 (0.009)
Observations	2969	2212	782	780	539
Adjusted R-squared	0.4926	0.6914	0.8169	0.8187	0.8018

NOTES: The table shows the effects of EITI membership on Log GDP per capita, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Using data until 2014 with FE-models, the findings in Table 7 only show one regression with a statistically significant results for compliant countries. The significant coefficient's value 0.152 corresponding to a 16.42 % increase for EITI compliant countries compared to non-EITI countries. This is of substantial magnitude, and driven by the inclusion of economic controls, excluding debt.

None of the candidate-coefficients are significant, and the coefficients are in general ambiguous; shifting between being positive and negative. Therefore, it is difficult to argue that there is any strong evidence for differences between EITI and non-EITI countries. This is a result in itself, as the results of Corrigan (2014) and Demissie (2014) no longer holds. EITI countries do not seem to be associated with lower growth, rather higher, as the only statistical significant result is positive for EITI compliant countries. This may suggest that, contrary to the previous studies' findings, EITI compliant countries are converging towards the GDP per capita levels of non-EITI countries.

Using the alternative specification, including formation of the MSG and publications of reports, the analysis produces similar results (see Appendix 3: Regression results, EITI). The coefficient of EITI reports are significant for column 3, the same as for EITI compliant countries, increasing the reliability of such a result.

The coefficients of EITI dummies are positive, until central government debt is included. In other words, if the sample size is not the driving force behind this change, the interaction between debt and the EITI is a central piece of the contextual puzzle in finding the mechanisms of EITI. Nonetheless, the weak significance of the results may still suggest that there may be a convergence of EITI countries to non-EITI levels of economic growth, as compared to the previous studies. This convergence also seems to be stronger for countries that are further in their implementation of the EITI Standard.

If there is a pattern of convergence, then this should manifest itself in part as a lower dependence on foreign aid, or at least ODA having a lower share of Gross National Income (GNI). The next regression investigates this possibility.

Table 8: The effects of EITI membership on Official development assistance

	Net ODA received (% of GNI)				
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	-1.317	-1.597	-3.344**	-3.178**	-2.932**
	(1.315)	(1.372)	(1.486)	(1.416)	(1.196)
EITI Compliant	-2.436	-6.058***	-3.999*	-3.853**	-4.094**
	(1.867)	(2.109)	(2.028)	(1.914)	(1.887)
Total natural resources rents (% of GDP)		0.161*	-0.0807	-0.0911	-0.208*
		(0.088)	(0.075)	(0.075)	(0.107)
Adjusted savings: gross savings (% of GNI)		0.0674*	0.0606*	0.0624*	-0.00318
		(0.039)	(0.035)	(0.033)	(0.061)
Consumer price index (2010 = 100)		-0.00514	-0.0169	-0.0209	-0.0234**
		(0.010)	(0.012)	(0.013)	(0.009)
Exports of goods and services (% of GDP)		-0.146**	0.0133	0.0236	0.119*
		(0.068)	(0.033)	(0.035)	(0.063)
Imports of goods and services (% of GDP)		0.152*	0.0315	0.0296	-0.0328
		(0.077)	(0.032)	(0.032)	(0.029)
Government consumption expenditure (% of GDP)		0.0127	0.122**	0.120**	0.0802
		(0.087)	(0.056)	(0.055)	(0.068)
Unemployment (modelled ILO estimate: % of total labour force)		0.00240	-0.0258	-0.0796	0.0534
		(0.081)	(0.087)	(0.098)	(0.073)
Central government debt - total (% of GDP)			0.0240*	0.0240*	0.0250
			(0.013)	(0.013)	(0.021)
Polity IV: Polity2				0.123**	0.0689
				(0.058)	(0.076)
Total Major Episodes of Political Violence				-0.0948	-0.418
				(0.141)	(0.327)
Population total					2.42e-09
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.00339
					(0.054)
Life expectancy at birth (total years)					-0.280
					(0.176)
Observations	2147	1614	379	379	239
Adjusted R-squared	0.0397	0.0982	0.1330	0.1441	0.3474

NOTES: The table shows the effects of EITI membership on Net Official Development Assistance as a share of Gross National Income, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Net ODA in the baseline regression, Table 8 column 1, does have a negative correlation with EITI membership, however this result is not significant. The results do become significant when introducing economic controls, and consistently so when adding the political and development controls. Oddly enough, in this regression, traditional indicators of development – health and education – do not seem to correlate significantly in column 5, but this may be due to the lack of sample size[17].

The significance of EITI effects when introducing economic controls seem to come from the combination of several controls, mainly trade, but also via the size of the natural resource industry and savings. There are indications that natural resource rents and savings are actually associated with higher levels of aid. Increases in magnitude of the candidate-coefficient, driving the significance of the results, while the standard errors seem to be relatively stable. The significance is only relevant when including government debt, but also holds when including political controls in column (4). There is significant evidence of EITI candidates being associated with less dependence on foreign aid (mostly between 5-10 % significance). When the results are significant, it seems that EITI candidate membership is associated with roughly 3 percentage points less foreign aid as a share of GNI.

EITI compliant countries similar results, consistently having negative correlation with net ODA received. However, the magnitudes are greater for compliant countries. Column 2, introducing economic controls but excluding government debt, shows a highly significant result of compliant countries being associated with a 6 percentage point decrease in dependency on foreign aid. The significance for the results of the following regressions, column (3) and (4) is weaker, but still provides evidence for a drop consistently above 3.5 percentage points. In other words, EITI membership is associated with lower dependency on foreign aid, and more so for compliant countries. Although the significance of the results is only revealed when controlling for their levels of economic activity, political situation and development.

The results are replicated to a large extent when using MSGs and reports as independent variables. The results are of weaker significance, and the coefficients smaller, but at least for

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[17] The F-statistic is missing for this regression, as the clusters of countries exceed the degrees of freedom. Subsequently, this column is not used for further analysis of the effects on foreign aid dependency.

EITI reports as a comparison to EITI compliance, the results are still present showing a decrease in foreign aid dependency. MSGs, the alternative proxy for candidates, seem to have lower and more ambiguous effects and do are not significant unless when including all controls, a regression to be disregarded due to the low sample size.

The results provide evidence that EITI is indeed associated with lower dependency on foreign aid when compared to other countries, especially for candidate countries. However, this evidence is dependent on eliminating effects from other channels, mainly economic.

3.3 INVESTMENTS AND INVESTMENT CLIMATE EFFECTS

For investments and the investment climate I have only found one study having explored the effects of EITI (Schmaljohann, 2013). The main focus was on one variable; foreign direct investments. The results are compelling, as the paper finds a two percentage point increase for FDI relative to GDP in EITI countries. The paper used data spanning from 2004 to 2011, and incorporates 81 countries. For my own analysis, FDI has been included, as well as gross capital formation (formerly known as domestic investments). In addition, to add to the investment climate argument, credit ratings of long-term sovereign bonds are also examined.

Viewing Table 9 on page 46 it is clear that EITI has an effect on FDI inflows. The baseline already shows a strong and significant effect of EITI candidacy and compliance, predicting a 1.8 and 5.3 percentage point increases in FDI relative to GDP, respectively. This positive association continues for all the regressions. While introducing the economic controls lead to a higher candidate-coefficient, it seems this in mitigated somewhat when introducing government debt.

EITI compliant countries show a great increase in FDI compared to non-EITI countries, in column (2). Introducing the economic controls, causes the coefficient to claim evidence for more than seven percentage points increase in FDI relative to GDP. This magnitude is weakened in the following columns, as well as the significance with the exception of column (5). Here there is strong significant results that EITI compliance is associated with a 4.7 percentage point increase in FDI's share in the economy.

Table 9: The effects of EITI membership on Foreign direct investments

	FDI: net inflows (% of GDP)				
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	1.806**	2.376***	1.903*	1.920*	2.532**
	(0.907)	(0.757)	(1.063)	(1.068)	(1.015)
EITI Compliant	5.315**	7.418**	2.742*	2.844*	4.749***
	(2.573)	(2.904)	(1.482)	(1.518)	(1.447)
Total natural resources rents (% of GDP)		0.139**	-0.00516	-0.000521	0.0472
		(0.057)	(0.078)	(0.078)	(0.132)
Adjusted savings: gross savings (% of GNI)		-0.103**	-0.0393	-0.0465	-0.115
		(0.048)	(0.056)	(0.058)	(0.072)
Consumer price index (2010 = 100)		0.00562	0.000906	0.00139	0.00210
		(0.014)	(0.020)	(0.020)	(0.022)
Exports of goods and services (% of GDP)		-0.0986*	-0.00731	-0.00741	0.0967
		(0.053)	(0.081)	(0.083)	(0.173)
Imports of goods and services (% of GDP)		0.210***	0.127**	0.127**	0.104
		(0.059)	(0.054)	(0.054)	(0.115)
Government consumption expenditure (% of GDP)		-0.0127	-0.0508	-0.0472	-0.0351
		(0.066)	(0.140)	(0.139)	(0.260)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0299	0.0131	0.0231	-0.130
		(0.054)	(0.076)	(0.077)	(0.110)
Central government debt - total (% of GDP)			-0.00678	-0.00724	0.0161
			(0.018)	(0.018)	(0.023)
Polity IV: Polity2				-0.0856	-0.186**
				(0.060)	(0.073)
Total Major Episodes of Political Violence				-0.110	-0.234
				(0.161)	(0.312)
Population total					4.82e-09
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.0779
					(0.072)
Life expectancy at birth (total years)					0.142
					(0.383)
Observations	2865	2229	785	783	542
Adjusted R-squared	0.0315	0.1907	0.1075	0.1069	0.1068

NOTES: The table shows the effects of EITI membership on Gross Capital Formation, or domestic investments, as a share of Gross Domestic Product. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them.

The results from the secondary specification reveals a similar but less statistically significant results. The coefficients of both MSGs and EITI reports are consistently positive over all regressions, although of a lesser magnitude. EITI report-effects are also no longer significant after the introduction of government debt. MSGs are significant for all regressions, except when controlling for economic variables *excluding* government debt.

Considering that the magnitudes of the coefficients are so high and consistently significant, it is safe to conclude that the regressions do provide evidence for substantial increases in FDI. The magnitude of these increases are revealed as being close to 2 percentage points for candidate countries, while at least 2.5 percentage points for compliant ones.

It is interesting to see whether this increase in foreign capital in these markets are also associated with greater domestic capital formation. By viewing Table 10 on page 48, it is clear that this is also the case, at least for compliant countries. As with FDI, it seems that the inclusion of central government debt does indeed affect the magnitude of EITI membership-coefficients.

The coefficient ranges from 1.8 to 7.6 percentage points, and all regressions show significant results. This provides evidence that EITI implementation, is associated with domestic investments as well, although candidate countries do not differ significantly from non-EITI. This may show increased trust of investors in countries that reach full compliance with the EITI Standard.

Gross capital formation also shows a greater dependency on other economic variables such as trade, savings, government expenditure, and unemployment. In column 5, including all controls, capital formation is significantly correlated to all economic controls except natural resource sector size, and government debt. In addition, political violence and population sizes show weakly significant associations.

So far it seems that investments are the most direct effects of EITI membership. However, that is not to say that it is directly related to an assessment of the investment climate as a whole. The next results to be examined use credit ratings of sovereign bonds as a dependent variable and seeks to investigate whether or not the actual ratings change.

Table 10: The effects of EITI membership on Capital formation

	(1)	(2)	(3)	(4)	(5)
Gross capital formation (% of GDP)					
EITI Candidate	0.934	1.180	1.557	1.520	1.196
	(1.339)	(0.870)	(1.134)	(1.143)	(0.763)
EITI Compliant	6.935***	7.612**	2.877**	2.749**	1.830**
	(2.214)	(3.041)	(1.164)	(1.130)	(0.848)
Total natural resources rents (% of GDP)		0.0812*	-0.00309	-0.00664	0.0720
		(0.049)	(0.063)	(0.063)	(0.072)
Adjusted savings: gross savings (% of GNI)		0.362***	0.433***	0.441***	0.457***
		(0.135)	(0.064)	(0.064)	(0.084)
Consumer price index (2010 = 100)		0.0226	0.0294*	0.0298*	0.0274**
		(0.014)	(0.016)	(0.016)	(0.014)
Exports of goods and services (% of GDP)		-0.515***	-0.495***	-0.497***	-0.632***
		(0.087)	(0.094)	(0.098)	(0.045)
Imports of goods and services (% of GDP)		0.576***	0.548***	0.549***	0.613***
		(0.086)	(0.091)	(0.094)	(0.037)
Government consumption expenditure (% of GDP)		-0.157*	-0.282***	-0.286***	-0.432***
		(0.084)	(0.083)	(0.083)	(0.143)
Unemployment (modelled ILO estimate: % of total labour force)		-0.259***	-0.328***	-0.334***	-0.313***
		(0.074)	(0.084)	(0.086)	(0.065)
Central government debt - total (% of GDP)			-0.00658	-0.00594	-0.00419
			(0.008)	(0.008)	(0.010)
Polity IV: Polity2				0.0588	-0.0531
				(0.076)	(0.111)
Total Major Episodes of Political Violence				0.159	0.452*
				(0.246)	(0.256)
Population total					2.15e-08**
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00373
					(0.079)
Life expectancy at birth (total years)					0.417
					(0.254)
Observations	2879	2230	786	784	542
Adjusted R-squared	0.0336	0.6017	0.7032	0.7041	0.8148

NOTES: The table shows the effects of EITI membership on Gross Capital Formation, or domestic investments, as a share of Gross Domestic Product. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them.

The regression results from Table 11 show that while the baseline is not significant, the introduction of controls eliminates much of the effects of EITI. The baseline, (1), and regressions with limited economic controls show a coefficient of 0.372 and 0.887 for EITI candidates and compliant countries respectively. This corresponds to slightly less than one higher credit score for candidates and just short of two higher rankings for compliant countries on international credit ratings. The results are not robust to controls, although the controls do not influence the coefficients themselves to a substantial degree. It is rather a change in standard errors that seems to drive the non-significance of regressions (2) to (5).

The lack of significance means that we cannot determine this change as being uniform for all EITI countries, across different membership statuses. It does still provide limited evidence that EITI membership is associated with general improvements in ratings or investment climate, but that there are variations explained outside the models.

The secondary specification also shows positive results, but of low or no significance. EITI reports are only significantly associated with higher credit ratings for the baseline regression, and MSGs do not show any significant results.

Therefore, the results show limited evidence of EITI membership and implementation influencing credit ratings of sovereign bonds in a positive way. Combine this with the results from investments and there is little doubt that these are so far the most direct results.

	Credit rating score				
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	0.372*	0.388*	0.574	0.600	0.652
	(0.223)	(0.210)	(0.522)	(0.518)	(0.478)
EITI Compliant	0.887**	0.609	0.821	0.888	0.869
	(0.385)	(0.399)	(0.656)	(0.662)	(0.665)
Total natural resources rents (% of GDP)		0.0212	0.0253*	0.0266*	0.0593***
		(0.017)	(0.015)	(0.015)	(0.022)
Adjusted savings: gross savings (% of GNI)		0.0531***	0.0521**	0.0486**	0.0590**
		(0.015)	(0.021)	(0.021)	(0.023)
Consumer price index (2010 = 100)		0.00462	0.0111	0.0110	0.00633
		(0.005)	(0.009)	(0.010)	(0.010)
Exports of goods and services (% of GDP)		-0.0229*	-0.0276	-0.0262	-0.0363***
		(0.014)	(0.018)	(0.018)	(0.012)
Imports of goods and services (% of GDP)		0.0235*	0.0326*	0.0318*	0.0547***
		(0.014)	(0.017)	(0.017)	(0.018)
Government consumption expenditure (% of GDP)		-0.0528*	-0.0794*	-0.0758*	-0.0355
		(0.029)	(0.043)	(0.043)	(0.043)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0850***	-0.0913**	-0.0898**	-0.0784**
		(0.026)	(0.037)	(0.039)	(0.038)
Central government debt - total (% of GDP)			-0.00262	-0.00260	-0.00618
			(0.006)	(0.006)	(0.004)
Polity IV: Polity2				-0.0235	-0.0140
				(0.026)	(0.036)
Total Major Episodes of Political Violence				-0.0864	-0.0589
				(0.088)	(0.057)
Population total					-6.40e-09*
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.0502*
					(0.029)
Life expectancy at birth (total years)					0.0636
					(0.158)
Observations	1785	1478	669	667	492
Adjusted R-squared	0.2894	0.3963	0.3830	0.3842	0.4041

NOTES: The table shows the effects of EITI membership on credit ratings of sovereign bonds based on data from Fitch Ratings and Moody's, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them.

3.4 INSTITUTIONAL EFFECTS

This section covers the last group of potential effects – institutional. The institutional effects are all based on WGI-data, and scored from -2.5 to 2.5, in which higher scores reflect better performance. The sample for this data is somewhat smaller than for other variables, as WGIs were calculated only every other year in its beginning; 1996, 1998, 2000, and 2002-2014.

First off is Voice and Accountability. This measures the degree of which a people is free to elect their own government, and other dimensions such as freedom of press and assembly.

The regressions for *Voice and Accountability* show a majority of the coefficients being non-significant. The baseline shows a coefficient for EITI compliant countries of 0.116 that is weakly significant, while a 0.0515 for candidate countries. These coefficients correspond to a change of $\frac{0.0515}{5} = 1.03$ % increase of the total for candidates and a change of 2.32 % for compliant countries. This significance changes when introducing economic controls in column 2. The results are now strongly significant for candidates with a p-value less than 0.01, while the positive change associated with compliant countries are weakly significant. These values, 0.082 and 0.093 reflect a change of 1.64 % and 1.86 % relative to the total range.

From Table 23 in the Appendix 3, it is clear that publication of EITI reports have so far influenced this dimension of institutions to a very low degree, if any at all. Formation of MSGs *do* appear to be associated with Voice and Accountability estimates, although low in magnitude: 0.0797 for the baseline regression and 0.0947 in column (2). These are interpreted as 1.59 % and 1.89 % changes of the total range. The rest of the regressions, (3)-(5) show non-significant results with negative correlation between MSGs and Voice and Accountability.

Although there are ambiguous results, what results to emphasise depends on the controls included in the models. For several regressions, on both institutional effects and otherwise, present different results once government debt is included as a control. This may be due to a drastic decrease in sample size, in this case from 1,792 to 631 observations. In the results for Voice and Accountability there is also a concern that the Polity2 measure neutralizes impact of the independent variables on the results, as more democratic regimes are, by definition, more open to public participation in the election of government.

			Voice and Accountability		
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	0.0515 (0.038)	0.0817*** (0.031)	-0.0343 (0.037)	-0.00659 (0.029)	-0.0331 (0.036)
EITI Compliant	0.116* (0.063)	0.0927* (0.055)	0.0320 (0.065)	0.0572 (0.051)	0.0360 (0.071)
Total natural resources rents (% of GDP)		-0.00272 (0.002)	-0.000402 (0.003)	-0.00247 (0.002)	-0.00186 (0.003)
Adjusted savings: gross savings (% of GNI)		-0.000751 (0.001)	0.000331 (0.003)	0.0000895 (0.003)	0.00399* (0.002)
Consumer price index (2010 = 100)		0.000961 (0.001)	-0.0000210 (0.001)	-0.000771 (0.001)	0.000433 (0.001)
Exports of goods and services (% of GDP)		-0.00189 (0.002)	-0.00375 (0.003)	0.00149 (0.002)	-0.00471** (0.002)
Imports of goods and services (% of GDP)		0.00251* (0.001)	0.00519* (0.003)	0.00180 (0.002)	0.00385* (0.002)
Government consumption expenditure (% of GDP)		0.00122 (0.003)	0.00999 (0.006)	0.00931* (0.005)	0.0114* (0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00114 (0.003)	0.00251 (0.007)	-0.00603 (0.004)	0.0000393 (0.004)
Central government debt - total (% of GDP)			-0.000632 (0.001)	-0.000339 (0.001)	-0.000606 (0.001)
Polity IV: Polity2				0.0612*** (0.006)	0.0619*** (0.011)
Total Major Episodes of Political Violence				-0.00877 (0.014)	0.00863 (0.015)
Population total					3.88e-10 (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.000736 (0.004)
Life expectancy at birth (total years)					0.0179 (0.011)
Observations	2464	1792	631	629	453
Adjusted R-squared	0.0046	0.0241	0.0564	0.3839	0.3879

NOTES: The table shows the effects of EITI membership on Voice and Accountability, an institutional estimate measuring the ability of a public to elect their government, and freedom of speech and assembly. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Second of the institutional dimensions is *Political Stability and Absence of Violence*. This estimate represents the perceptions of likelihoods for political instability and/or politically motivated violence, including terrorism.

EITI membership does not seem to have any significant impact on Political Stability except when introducing all controls. Here there is evidence that compliance with the EITI Standard is associated with greater political stability by 0.115 points, or a 2.3 % change. The is still a concern that the sudden change in significance is mainly due to a smaller sample rather than an actual robust effect of EITI membership. Judging by the coefficients of the other regressions, (1) through (4), it does seem to be the sample size rather than actual associations. This is especially so when considering the standard errors are usually larger than the coefficients themselves.

The table shows that economic factors does not seem to change the coefficients of EITI membership, but political ones do. Most notably when controlling for major episodes of political violence, MPEV, we observe a stark increase in the coefficient for EITI compliant countries, meaning that when controlling for the initial political situation, there has been an improvement for EITI countries. However, this improvement is only visible for compliant countries.

When seeing the alternative specifications' results, there is a large contrast. Table 24 reveals some strongly, and several weakly, significant treatment effects for both EITI MSGs and publication of reports. If valid, these results suggest that EITI MSGs are an important factor for compromise and reducing political tension, while EITI reports are the cause of political tension. This argument does sound tempting, as a platform for discussion may increase trust between different groups of stakeholders and EITI reports *should*, if effective, cause some tension via discovery of weaknesses in management of extractive revenues and regulations.

Based on this description of these results, it is interesting to note that the regressions did not produce conclusive results to whether EITI membership causes a better or worse performance than for non-EITI countries. In addition, the results may show that publication of reports and the formation of MSGs may be more directly associated with perceptions of political instability, than membership itself.

Table 13: The effects of EITI membership on Political stability and absence of violence

Political Stability and Absence of Violence and Terrorism

	(1)	(2)	(3)	(4)	(5)
EITI Candidate	0.0455	0.0893	-0.0294	0.00177	0.0202
	(0.072)	(0.067)	(0.084)	(0.076)	(0.061)
EITI Compliant	-0.0376	0.0421	0.0268	0.0862	0.115**
	(0.140)	(0.112)	(0.093)	(0.081)	(0.055)
Total natural resources rents (% of GDP)		-0.00641	0.00856*	0.00826**	0.0102**
		(0.004)	(0.004)	(0.004)	(0.005)
Adjusted savings: gross savings (% of GNI)		0.00217	0.00339	0.000884	0.00851
		(0.004)	(0.005)	(0.006)	(0.005)
Consumer price index (2010 = 100)		0.00282*	0.00304	0.00237*	0.000624
		(0.001)	(0.002)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		0.00350	-0.00575	-0.00254	-0.0117***
		(0.003)	(0.005)	(0.005)	(0.004)
Imports of goods and services (% of GDP)		-0.00238	0.00866**	0.00709**	0.00699*
		(0.002)	(0.003)	(0.003)	(0.004)
Government consumption expenditure (% of GDP)		0.00162	0.0121	0.0120	0.00913
		(0.005)	(0.012)	(0.012)	(0.010)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0145**	-0.0145	-0.0174*	-0.0123
		(0.006)	(0.009)	(0.009)	(0.009)
Central government debt - total (% of GDP)			0.000578	0.000678	0.00154
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				0.0159	-0.0159
				(0.016)	(0.022)
Total Major Episodes of Political Violence				-0.0643**	0.000496
				(0.029)	(0.040)
Population total					8.44e-10
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00649
					(0.005)
Life expectancy at birth (total years)					-0.00482
					(0.019)
Observations	2450	1792	631	629	453
Adjusted R-squared	0	0.0391	0.1094	0.1370	0.2483

NOTES: The table shows the effects of EITI membership on political stability and the absence of violence, an institutional estimate measuring the likelihood of political instability and/or politically motivate violence, including terrorism. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them.

Government effectiveness is associated with the quality of public and civil service, and the quality and commitment to formulating and implementing policies.

The prediction is that EITI membership changes people's perception of government effectiveness, especially as EITI is in itself a policy that requires commitment. At the same time, it can express a realisation of governments that there are areas of improvement, and this may be driven by public perceptions of an ineffective government.

When examining the results, they do not seem to coincide with the prediction. The only statistically significant results presented are the association of EITI candidacy and government effectiveness showing a change of –0.1 points for columns (3)-(4)[18]. The controls do not seem to be important for the results, except that government debt seems to drive more negative effects of EITI candidacy towards perceptions of government effectiveness. These results are also replicated by the alternate specification models, except that in these instances there are no significant effects of EITI activities at all.

Compliance to the EITI Standard does not show any significant effects towards government effectiveness, as compared to non-EITI countries. The coefficients also change from negative to positive once government debt is introduced as a control variable. Again, this may either be due to an interaction between EITI membership and government debt, or a biased model due to the sample size. These concerns aside, the analysis cannot determine any significant relation between EITI and Government effectiveness.

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[18] Column 5 has a sample too small for creating a F-statistic, as there are more country clusters than degrees of freedom, and should therefore not be included in the analysis.

Table 14: The effects of EITI membership on Government effectiveness

	Government Effectiveness				
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	-0.0364	-0.0199	-0.117*	-0.111*	-0.0994*
	(0.036)	(0.036)	(0.064)	(0.064)	(0.056)
EITI Compliant	-0.0235	-0.0450	0.00212	0.0154	0.0215
	(0.055)	(0.048)	(0.062)	(0.064)	(0.076)
Total natural resources rents (% of GDP)		-0.00465**	0.00412	0.00419	0.00437
		(0.002)	(0.003)	(0.003)	(0.004)
Adjusted savings: gross savings (% of GNI)		0.00121	-0.00341	-0.00402	-0.000543
		(0.001)	(0.003)	(0.003)	(0.003)
Consumer price index (2010 = 100)		0.000494	0.00143	0.00132	0.00155*
		(0.001)	(0.001)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		0.00153	0.00290	0.00334	-0.000122
		(0.001)	(0.003)	(0.003)	(0.003)
Imports of goods and services (% of GDP)		0.0000782	0.000785	0.000632	0.00159
		(0.001)	(0.003)	(0.003)	(0.003)
Government consumption expenditure (% of GDP)		0.00267	0.0171	0.0172	-0.000891
		(0.003)	(0.014)	(0.014)	(0.008)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00764**	-0.00410	-0.00423	-0.00505
		(0.003)	(0.005)	(0.005)	(0.005)
Central government debt - total (% of GDP)			-0.00190	-0.00189	-0.00145
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				-0.000391	-0.00642
				(0.008)	(0.014)
Total Major Episodes of Political Violence				-0.0156	-0.00463
				(0.011)	(0.010)
Population total					3.70e-10
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00306
					(0.006)
Life expectancy at birth (total years)					0.00582
					(0.017)
Observations	2451	1792	631	629	453
Adjusted R-squared	0.0014	0.0173	0.0980	0.0984	0.1131

NOTES: The table shows the effects of EITI membership on government effectiveness, an institutional estimate measuring the quality of public and civil services, the quality of policies, and the ability of a government to commit to implementing policies. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Regulatory quality represents the perception of a government's ability to formulate and implement effective government policies, with a particular focus on private-sector promotion and regulations often associated with investment climate.

The baseline, column 1 in Table 15, shows a significant positive effect of EITI compliance on Regulatory quality. The coefficient is 0.113, meaning that compliance with the Standard is associated with a 2.26 % increase within the measure. The results do not show any significant relationship for EITI candidacy.

There is a consistent and positive correlation between EITI compliance and regulatory quality. The effects ranges from 0.113 to 0.172, depending on the control variables included, corresponding to 2.26 to 3.44 % increase of compliant countries relative to non-EITI. The significance of these effects are moderate or strong (p-values below 0.05 or 0.01). Although EITI candidate countries do not present any significant evidence of increases in the institutional measure, the coefficients are consistently positive.

The changes in significance for the coefficients is not due to much smaller standard errors, but rather the size of the coefficients. The regressions that include economic controls, shows that unemployment seems to be a main driver. When introducing the debt-variable, the standard errors do increase slightly, but the positive association is robust to all combinations of controls, that had large enough sample sizes.

Using EITI reports and MSGs as independent variables provides similar evidence but there are important differences (see Table 26). All the relevant regressions show that MSGs are not correlated to any significant changes in regulatory quality, while the publication of EITI reports generally do. The exception is the baseline regression, in which none of the EITI-related activities are related to regulatory quality. Overall, the results therefore show evidence of a positive effect of EITI on Regulatory quality, and there does not seem to be any difference between the two types of specifications, other than that compliance to the Standard may involve greater effect on such perceptions, than publication of EITI reports.

Table 15: The effects of EITI membership on Regulatory quality

		Regulatory Quality			
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	0.0506	0.0623*	0.0674	0.0485	0.0370
	(0.038)	(0.034)	(0.056)	(0.057)	(0.050)
EITI Compliant	0.113**	0.143***	0.175***	0.141**	0.126*
	(0.053)	(0.048)	(0.062)	(0.062)	(0.069)
Total natural resources rents (% of GDP)		-0.00312	-0.000286	0.0000348	0.000149
		(0.002)	(0.003)	(0.003)	(0.004)
Adjusted savings: gross savings (% of GNI)		0.00157	-0.00243	-0.00102	0.00201
		(0.002)	(0.003)	(0.003)	(0.003)
Consumer price index (2010 = 100)		0.000464	0.00145	0.00189	0.00181*
		(0.001)	(0.002)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		0.000947	0.00443*	0.00229	-0.000266
		(0.002)	(0.002)	(0.003)	(0.003)
Imports of goods and services (% of GDP)		0.000925	-0.000279	0.000833	0.00107
		(0.001)	(0.003)	(0.003)	(0.003)
Government consumption expenditure (% of GDP)		0.00172	0.0213	0.0214	0.0121
		(0.003)	(0.014)	(0.014)	(0.010)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00914**	-0.0135**	-0.0113*	-0.0151***
		(0.004)	(0.006)	(0.006)	(0.005)
Central government debt - total (% of GDP)			-0.00201	-0.00206*	-0.00152
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				-0.0135*	-0.0249***
				(0.007)	(0.008)
Total Major Episodes of Political Violence				0.0359**	0.0245
				(0.016)	(0.018)
Population total					-2.11e-09***
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00726
					(0.006)
Life expectancy at birth (total years)					-0.00521
					(0.020)
Observations	2450	1792	631	629	453
Adjusted R-squared	0.0094	0.0494	0.1311	0.1588	0.2095

NOTES: The table shows the effects of EITI membership on regulatory quality, an institutional estimate measuring a government's ability to implement effective government policies, with a particular focus on promoting the private sector and regulations often associated with the investment climate. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded as the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

The fifth institutional dimension covered by this paper, is *Control of Corruption*. The results from Table 16 shows that there is no significant relationship between EITI membership and perceptions of corruption in the data. Even the alternative specifications do not show any significant results from EITI implementation, and these regressions include results showing negative association between EITI reports, MSGs, and the corruption measure.

An interesting point is that the standard errors almost double for the regressions that include government debt, for all "treatments" in both the specifications. Based on these results, I cannot imply any effects, positive or negative, of EITI on perceptions of corruption.

The last dimension of institutions is *Rule of Law*. It measures a society's trust of a government's judicial system and the impartiality of judges and bureaucrats. It also relates to two factors associated with improved economic performance, upholding contracts and property rights.

Judging by the results presented in Table 17 below, it is not clear that either EITI increases institutional quality, or perceptions of it, within the rule of law dimension. None of the EITI coefficients are statistically significant nor particularly large, and are sometimes also negative. This also holds for the alternative specification utilising EITI MSGs and reports.

It is therefore safe to conclude that EITI implementation does not affect this institutional dimension in any meaningful way, at least as of yet.

Table 16: The effects of EITI membership on Control of corruption

			Control of Corruption		
	(1)	(2)	(3)	(4)	(5)
EITI Candidate	0.0172 (0.037)	0.0468 (0.035)	0.0439 (0.083)	0.0440 (0.084)	0.00551 (0.075)
EITI Compliant	0.0186 (0.060)	0.00958 (0.053)	0.0353 (0.113)	0.0344 (0.114)	0.0168 (0.137)
Total natural resources rents (% of GDP)		-0.00526** (0.002)	-0.000139 (0.004)	-0.000210 (0.004)	-0.00100 (0.006)
Adjusted savings: gross savings (% of GNI)		0.000884 (0.002)	-0.000356 (0.004)	-0.000289 (0.004)	0.00348 (0.004)
Consumer price index (2010 = 100)		0.00147** (0.001)	0.00226** (0.001)	0.00225** (0.001)	0.00173** (0.001)
Exports of goods and services (% of GDP)		0.000282 (0.002)	-0.00293 (0.004)	-0.00283 (0.004)	-0.00869** (0.004)
Imports of goods and services (% of GDP)		0.00105 (0.002)	0.00780** (0.003)	0.00772** (0.004)	0.0105*** (0.003)
Government consumption expenditure (% of GDP)		0.00420 (0.003)	0.0132 (0.010)	0.0132 (0.010)	-0.00210 (0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00668 (0.004)	0.00170 (0.006)	0.00146 (0.006)	0.000750 (0.007)
Central government debt - total (% of GDP)			-0.00211 (0.001)	-0.00210 (0.001)	-0.00118 (0.001)
Polity IV: Polity2				0.00189 (0.005)	-0.00310 (0.007)
Total Major Episodes of Political Violence				0.00163 (0.019)	0.0106 (0.026)
Population total					-1.23e-09 (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.0000686 (0.006)
Life expectancy at birth (total years)					0.0186 (0.024)
Observations	2457	1792	631	629	453
Adjusted R-squared	0.0027	0.0318	0.1244	0.1194	0.1151

NOTES: The table shows the effects of EITI membership on control of corruption, an institutional estimate measuring the extent to which a government is perceived to exercise public power for private gain, including petty and large-scale corruption, elite and private "capture" of public goods/wealth. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Table 17: The effects of EITI membership on Rule of law

	(1)	(2)	(3)	(4)	(5)
			Rule of Law		
EITI Candidate	0.00781	0.0470	-0.00291	0.000186	-0.0367
	(0.037)	(0.039)	(0.052)	(0.053)	(0.039)
EITI Compliant	0.0276	0.00567	-0.00466	-0.000367	-0.0376
	(0.060)	(0.044)	(0.060)	(0.059)	(0.063)
Total natural resources rents (% of GDP)		-0.00677***	-0.00538*	-0.00551*	-0.00476
		(0.002)	(0.003)	(0.003)	(0.003)
Adjusted savings: gross savings (% of GNI)		-0.00107	-0.00472	-0.00485	-0.000229
		(0.001)	(0.004)	(0.004)	(0.003)
Consumer price index (2010 = 100)		0.000797	0.000590	0.000518	0.00109*
		(0.001)	(0.001)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		0.00330**	0.00587*	0.00632*	0.000868
		(0.002)	(0.003)	(0.004)	(0.003)
Imports of goods and services (% of GDP)		-0.000817	0.00113	0.000863	0.00375
		(0.001)	(0.003)	(0.003)	(0.002)
Government consumption expenditure (% of GDP)		0.00144	0.0125	0.0125	0.00183
		(0.003)	(0.012)	(0.012)	(0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.000660	-0.00355	-0.00419	-0.00345
		(0.004)	(0.006)	(0.006)	(0.006)
Central government debt - total (% of GDP)			-0.00112	-0.00109	-0.000248
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				0.00429	-0.00827
				(0.006)	(0.010)
Total Major Episodes of Political Violence				-0.00340	0.0300
				(0.019)	(0.024)
Population total					-1.48e-09***
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.00357
					(0.005)
Life expectancy at birth (total years)					0.00364
					(0.018)
Observations	2458	1792	631	629	453
Adjusted R-squared	0.0080	0.0404	0.1129	0.1134	0.0804

NOTES: The table shows the effects of EITI membership on rule of law, an institutional estimate measuring the public's trust in a judicial system, and the impartiality of judges and bureaucrats. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI Candidate and Compliant are dummy variables, equal to 1 if the country's status corresponds to them. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

4 Conclusion

This paper has so far shown that there are some concrete results of EITI implementation. Although the EITI has only existed as a concept for slightly more than a decade, and as an organisation for eight years, we can conclude that there are some specific areas in which EITI countries are performing better than their counterparts. The analyses have shown that EITI implementation is to some extent associated with less dependence on foreign aid, for EITI candidates and compliant countries. It also seems that compliance is associated with even lower dependence on foreign aid more than candidacy is. Although there are no significant results for EITI's effect on Log GDP per capita, this in itself is a result, as it contradicts previous papers finding a negative correlation. Due to the differences between the *treated* countries and the *control* countries in the t-tests, and based on the regression results, I conclude that these economic effects show a converging pattern of EITI countries catching up to the levels of non-EITI countries.

Investments are increasing as a share of GDP for EITI countries, and are the most robust findings of this analysis. EITI candidacy is associated with 1.8 to 2.5 percentage points greater share of FDI in GDP, and compliance to the Standard is associated with 2.7 to 7.4 percentage point increases. Gross capital formation, or domestic investments show similar results although candidates do not significantly differ from non-EITI countries. EITI compliance presents fairly strong evidence towards an increase of 1.8 to 7.6 percentage point increases of capital formation relative to GDP. This means that domestic investments do improve in countries that are EITI members, but that the increases takes time to reach full potential.

When turning to the investment climate itself, the patterns are similar but less robust. According to the baseline regression EITI countries are associated with approximately one investment grade better than non-EITI countries in the ratings of long-term sovereign bonds. Candidate status is associated with slightly less than one investment grade, while EITI compliance shows a fairly stable increase of *at* least one investment grade increase.

Investments are much higher for EITI countries, and combined with the effects towards regulatory quality, there is evidence of an improved investment climate. Although it is not strong evidence, this may reflect that changes have already happened, although the *perceptions* have not changed. This can in turn be interpreted as EITI not affecting the

investment climate per se but perhaps through other mechanisms such as bargaining power of governments. However, this paper is not very fitted to discuss the precise mechanisms other than anecdotally.

Institutions in general are not affected by EITI implementation. Half of the institutional dimensions included in the analysis did not show any significant effects. Government effectiveness, perceptions of corruption, and rule of law, all show that EITI has not yet managed to influence the *perceptions* of these institutional dimensions. However, there are some evidence of a positive association between Voice and Accountability and EITI. Candidacy does seem to influence the dimension slightly, and EITI compliance presents some weak evidence of influence. The results are not very robust, but show roughly 0.5-1 % improvement (relative to the total score).

As explained, Regulatory quality also has weak but positive association with EITI membership, and this is also replicated for specific results of EITI implementation (MSGs and reports). Candidacy does not provide evidence for significant differences compared to non-EITI countries, but compliance show pattern of 0.100 to 0.175 point increases. The magnitude of these effects are low, but the evidence for this is strong. It backs up the argument of EITI membership being influential for investments and the investment climate.

EITI membership does not show any evidence of effects towards political stability. But activities associated with EITI do; there is strong evidence of the creation of Multi-Stakeholder Groups mitigating perceptions of political conflict, to a moderate degree. Meanwhile, there is simultaneous evidence for publication of reports being associated with higher political tensions. This evidence show that the two aspects of EITI implementation are working as they should; EITI reports include information uncovering flaws of a natural resource management system, and thus causing political tensions, while MSGs does indeed work as a platform for discussion and narrowing the gap between civil society, companies, and governments. This is an important finding for showing that the main mechanisms of the EITI Standard are working as proposed.

In answering the questions posed in the beginning of the paper – and the title – of whether EITI mitigates the detrimental effects associated with the natural resource curse, the results are mixed. The results do not show substantial detrimental effects consistent with the natural

resource curse. Then again, natural resource rents as a controlling variable is only significantly and negatively correlated to some institutional dimensions, in particular rule of law. This suggests that there is still a curse (or at least perceptions of it) similar to the model described by Mehlum et al. (2006), even in countries where EITI is implemented. However, it is also clear that EITI countries are countries with weaker institutions from the start, but so far the institutions do not seem to have improved relative to non-EITI countries. Whether or not this is due to EITI implementation mitigating potential negative effects is uncertain. To reiterate, the institutional measures used in the paper are based on perceptions rather than strictly quantitative measures. Therefore, as institutions improve, the perceptions of these improvements may take time to manifest, if they are representative of the changes within a country's structure of governance. Although it may not be surprising as the first report itself was published merely a decade ago, and formal memberships only commenced eight years ago. If institutional quality is persistent, as has been argued by many economists, then turning the tide will take more time than a decade.

When comparing different stages of EITI implementation, EITI compliance is often associated with greater effects, and the evidence is in general stronger. This also holds in comparison to the alternative specification, using specific EITI activities instead of membership status as explanatory variables. This shows an overall pattern of formal membership status having stronger associations with all three groups of effects, than specific activities of EITI implementation. The caveat is of course, that EITI reports and MSGs are highly dependent upon each other to function of produce substantial effects. The most obvious evidence for EITI implementation leading to change is within political stability, where transparency (EITI reports) causes conflict, perhaps due to including the correct type of information, while the platform for discussions and dialogue (MSGs) mitigate the disagreements.

The investment climate and investments are the most immediate effects of more information on economic sectors, and the results are highly in EITI countries' favour. The results imply a surge of investments in the countries in general, however these present-day investments will not translate into increased government revenues immediately. Extractive sector investments, although potentially highly profitable, are large in scale and therefore there are several phases with long periods of sunk-cost investments before high-value economic

activities are realised. This may be a partial explanation of why so far EITI have been associated with lower economic growth in earlier studies.

The jury is still out on the ability of EITI to rid countries of the natural resource curse, but comparing this paper's evidence to earlier studies, the models show better outcomes for economic effects, consistent high levels of investments both from abroad and domestically, although otherwise low or no substantial effect on institutions of EITI implementing countries. In other words, the most immediate effects of EITI are manifesting now, and will possibly translate into larger economic and institutional effects in the future.

4.1 LIMITATIONS AND FURTHER RESEARCH

There are several limitations of the analysis and I will cover some of them here. As pointed out earlier, the fixed effects regression models form a stronger causal inference than pooled Ordinary Least Squares-estimation. FE-models treat EITI as randomly assigned, however, this is not the case. Therefore, one should be cautious in assuming causal link, and rather interpret these results as associated with EITI implementation. Also, the precise mechanisms through which EITI influences different aspects of an economic territory are largely ignored in the formal analysis, although arguments for some mechanisms are presented in chapter 2 of the paper. In addition, the regressions cannot eliminate the possibility of reverse causality issues, nor that the effects stem from other reforms implemented in parallel to the EITI.

Although these concerns exist, Schmaljohann (2013) used different strategies to investigate the existence of such problems in relevance to FDI[19]. The paper uses a binary treatment effect model with instrument variables to predict EITI candidacy based on underlying variables, and finds that there are only small differences between the IV-results and regular FE-models. I assume that the low degree of reverse causality found in that paper holds for these analyses as well. This does call for further research, to find *purer causal links* between EITI implementation other effects than investments.

A secondary discovery of this paper is that government debt seems more influential on EITI results than expected. It seems that economic controls, especially central government debt often neutralizes EITI treatment effects or actually induces them. To verify that the issue is

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[19] The findings on EITI's effects toward investments is briefly mentioned in section 3.3.

not correlation between the EITI dummies and central government debt, a correlation test was performed, and revealed that government debt is correlated by –0.12, –0.11, –0.16 and –0.15 for EITI candidacy, compliance, reports and MSGs respectively. This shows that collinearity between the explanatory variables is not the problem, and that the subject needs to be investigated further.

The government debt-samples are relatively small when compared to the rest and may be a driving force behind the changes, but better data on government debt could reveal an interesting potential mechanism through which EITI influences an economy. Judging by the results of the regressions the results may reflect the interaction between EITI and Sovereign Wealth Funds (SWFs). Several countries have introduced SWFs, and as they are often part of EITI reports, the management of these may improve partly as a result of the transparency introduced by EITI. This may in turn not only be due to EITI implementation at all but perhaps in combination of other interventions, such as the Norwegian programme Oil for Development.

Lastly, this analysis was performed also to investigate whether or not revenues were more effectively collected by EITI countries as opposed to non-EITI. However, this was not possible due to time limitation and issues with the data. But as disaggregated and available data on revenue-streams is an ongoing project of the EITI International Secretariat, hopefully this data will be available in the near future.

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Appendix 1: Excluded countries/territories list

Excluded countries	Rents < 0.1% of GDP	Population < 500,000	Lack of Data Availability
American Samoa		x	
Andorra		x	
Antigua and Barbuda		x	
Aruba	x	x	
Bahamas, The	x	x	
Barbados		x	
Belgium	x		
Belize		x	
Bermuda		x	
Brunei Darussalam		x	
Cabo Verde		x	
Cayman Islands		x	
Channel Islands		x	
Curacao		x	
Cyprus	x		
Dominica	x	x	
Faeroe Islands		x	
French Polynesia	x	x	
Greenland		x	
Grenada		x	
Guam		x	
Hong Kong SAR, China	x		
Iceland	x	x	
Isle of Man		x	
Japan	x		
Kiribati	x	x	
Korea, Dem. Rep.	x		
Lebanon	x		
Liechtenstein	x	x	
Luxembourg	x	x	
Macao SAR, China	x	x	
Maldives	x	x	
Malta		x	
Marshall Islands		x	
Mauritius	x		
Micronesia, Fed. Sts.	x	x	
Monaco		x	
New Caledonia		x	
Northern Mariana Islands		x	
Palau		x	
Puerto Rico			x
Samoa		x	
San Marino		x	
Seychelles		x	
Singapore			x
Sint Maarten (Dutch part)		x	
Somalia			x
St. Kitts and Nevis		x	
St. Lucia	x	x	
St. Martin (French part)		x	
St. Vincent and the Grenadines	x	x	
Suriname		x	
Switzerland	x		
Taiwan, China			x
Tonga	x	x	
Turks and Caicos Islands		x	
Tuvalu		x	
Vanuatu		x	
Virgin Islands (U.S.)		x	
West Bank and Gaza			x

Sao Tome and Principe and Solomon Islands were not excluded as they are members of the EITI, although they both have average populations below 500,000 over the time periods.

Appendix 2: Possible effects of the EITI, based on EITI Principles

Principle	Type of effect	Indicator
Principle 1. We share a belief that the prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.	Economic Development	*Log GDP per capita* *Net ODA*
Principle 3. We recognise that the benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.	Economic Development	*Fiscal Capacity*
Principle 4. We recognise that a public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.	Institutional Effects	*WGI Voice and Accountability*
Principle 5. We underline the importance of transparency by governments and companies in the extractive industries and the need to enhance public financial management and accountability.	Economic Development	*Fiscal capacity*
	Institutional Effects	*WGI Regulatory Quality* *WGI Control of Corruption*
Principle 6. We recognise that achievement of greater transparency must be set in the context of respect for contracts and laws.	Institutional Effects	*WGI Rule of Law*
Principle 7. We recognise the enhanced environment for domestic and foreign direct investment that financial transparency may bring.	Investment Climate	*Credit rating scores* *Foreign Direct Investments* *Gross Capital Formation*
	Institutional Effects	*WGI Regulatory Quality* *WGI Rule of Law*
Principle 8. We believe in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.	Institutional Effects	*WGI Voice and Accountability* *WGI Political Stability and Absence of Violence* *WGI Control of Corruption*
Principle 9. We are committed to encouraging high standards of transparency and accountability in public life, government operations and in business.	Institutional Effects	*WGI Voice and Accountability* *WGI Control of Corruption*
Principle 12. In seeking solutions, we believe that all stakeholders have important and relevant contributions to make – including governments and their agencies, extractive industry companies, service companies, multilateral organisations, financial organisations, investors and non-governmental organisations.	Institutional Effects	*WGI Voice and Accountability*

Appendix 3: Regression results, EITI Activities

Table 18: The effects of EITI activities on Log GDP per capita

	Log GDP per capita				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.0203 (0.030)	0.0294 (0.029)	-0.0277 (0.043)	-0.0326 (0.046)	-0.0397 (0.035)
EITI Report	0.0246 (0.046)	0.0698* (0.039)	0.0195 (0.046)	0.0209 (0.046)	0.0322 (0.040)
Total natural resources rents (% of GDP)		-0.00207 (0.002)	0.00178 (0.002)	0.00203 (0.002)	0.00268 (0.003)
Adjusted savings: gross savings (% of GNI)		0.00224 (0.002)	0.00207 (0.002)	0.00206 (0.002)	0.00267 (0.002)
Consumer price index (2010 = 100)		0.00263*** (0.001)	0.00459*** (0.001)	0.00467*** (0.001)	0.00395*** (0.001)
Exports of goods and services (% of GDP)		0.00388** (0.002)	0.000711 (0.002)	0.000409 (0.002)	-0.00204 (0.002)
Imports of goods and services (% of GDP)		-0.00122 (0.002)	0.00174 (0.002)	0.00188 (0.002)	0.00382** (0.002)
Government consumption expenditure (% of GDP)		-0.00186 (0.002)	0.00157 (0.005)	0.00166 (0.005)	-0.00289 (0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0156*** (0.003)	-0.0105*** (0.003)	-0.00988*** (0.003)	-0.00787** (0.003)
Central government debt - total (% of GDP)			-0.00104** (0.000)	-0.00108** (0.000)	-0.000721 (0.000)
Polity IV: Polity2				-0.00443 (0.003)	-0.00722 (0.005)
Total Major Episodes of Political Violence				0.00325 (0.006)	-0.00161 (0.006)
Population total					1.08e-09** (0.000)
Adjusted net enrolment rate - primary (% of primary age children)					-0.000216 (0.003)
Life expectancy at birth (total years)					-0.000997 (0.010)
Observations	2969	2212	782	780	539
Adjusted R-squared	0.4895	0.6895	0.8164	0.8181	0.8022

NOTES: The table shows the effects of EITI membership on Log GDP per capita, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Table 19: The effects of EITI activities on Official development assistance

	Net ODA received (% of GNI)				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.917 (2.654)	0.639 (2.433)	-3.186 (2.641)	-3.012 (2.603)	-4.200** (1.945)
EITI Report	-2.722 (1.847)	-4.747* (2.767)	-1.754* (0.896)	-1.729* (0.886)	-1.667* (0.828)
Total natural resources rents (% of GDP)		0.169* (0.090)	-0.0508 (0.045)	-0.0626 (0.044)	-0.124 (0.076)
Adjusted savings: gross savings (% of GNI)		0.0729* (0.037)	0.0658* (0.034)	0.0669** (0.032)	0.0166 (0.062)
Consumer price index (2010 = 100)		-0.00355 (0.010)	-0.0162 (0.012)	-0.0203 (0.013)	-0.0234*** (0.009)
Exports of goods and services (% of GDP)		-0.143** (0.068)	0.00849 (0.030)	0.0196 (0.032)	0.102* (0.053)
Imports of goods and services (% of GDP)		0.152* (0.078)	0.0302 (0.032)	0.0283 (0.032)	-0.0268 (0.022)
Government consumption expenditure (% of GDP)		0.0267 (0.088)	0.119** (0.054)	0.117** (0.054)	0.0608 (0.060)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00513 (0.081)	-0.0150 (0.071)	-0.0690 (0.082)	0.0386 (0.060)
Central government debt - total (% of GDP)			0.0222 (0.014)	0.0222 (0.014)	0.0228 (0.021)
Polity IV: Polity2				0.122** (0.056)	0.0726 (0.069)
Total Major Episodes of Political Violence				-0.111 (0.166)	-0.392 (0.309)
Population total					-2.64e-09 (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.0276 (0.056)
Life expectancy at birth (total years)					-0.167 (0.128)
Observations	2147	1614	379	379	239
Adjusted R-squared	0.0409	0.0995	0.1383	0.1498	0.3816

NOTES: The table shows the effects of EITI membership on Net Official Development Assistance as a share of Gross National Income, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Table 20: The effects of EITI activities on Foreign direct investments

	FDI: net inflows (% of GDP)				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	1.356** (0.663)	1.206 (0.793)	2.252** (1.055)	2.421** (1.133)	2.637* (1.426)
EITI Report	2.753** (1.276)	3.980*** (1.440)	1.194 (1.545)	1.133 (1.597)	1.914 (1.831)
Total natural resources rents (% of GDP)		0.131** (0.057)	-0.0223 (0.071)	-0.0194 (0.071)	0.00260 (0.122)
Adjusted savings: gross savings (% of GNI)		-0.111** (0.053)	-0.0444 (0.056)	-0.0506 (0.058)	-0.127* (0.076)
Consumer price index (2010 = 100)		0.00532 (0.015)	0.00142 (0.020)	0.00209 (0.020)	0.00339 (0.022)
Exports of goods and services (% of GDP)		-0.0993* (0.054)	-0.00589 (0.081)	-0.00593 (0.083)	0.0993 (0.173)
Imports of goods and services (% of GDP)		0.208*** (0.059)	0.127** (0.054)	0.128** (0.054)	0.103 (0.114)
Government consumption expenditure (% of GDP)		-0.0249 (0.068)	-0.0508 (0.140)	-0.0480 (0.139)	-0.0315 (0.261)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0304 (0.054)	0.0121 (0.076)	0.0214 (0.077)	-0.124 (0.110)
Central government debt - total (% of GDP)			-0.00694 (0.018)	-0.00719 (0.018)	0.0151 (0.023)
Polity IV: Polity2				-0.0833 (0.059)	-0.187** (0.074)
Total Major Episodes of Political Violence				-0.0910 (0.167)	-0.209 (0.308)
Population total					7.31e-09 (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.0909 (0.075)
Life expectancy at birth (total years)					0.100 (0.379)
Observations	2865	2229	785	783	542
Adjusted R-squared	0.0327	0.1866	0.1094	0.1089	0.1086

NOTES: The table shows the effects of EITI membership on net inflows of Foreign Direct Investments as a share of Gross Domestic Product, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report.

Table 21: The effects of EITI activities on Capital formation

	Gross capital formation (% of GDP)				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	2.009* (1.127)	0.524 (1.006)	0.495 (1.088)	0.807 (1.119)	0.954 (0.823)
EITI Report	2.908* (1.585)	4.054** (1.678)	1.470 (0.895)	1.225 (0.913)	1.006 (0.878)
Total natural resources rents (% of GDP)		0.0742 (0.049)	-0.0155 (0.060)	-0.0202 (0.059)	0.0577 (0.066)
Adjusted savings: gross savings (% of GNI)		0.353** (0.144)	0.432*** (0.064)	0.442*** (0.064)	0.451*** (0.086)
Consumer price index (2010 = 100)		0.0226 (0.015)	0.0298* (0.015)	0.0304* (0.016)	0.0283** (0.013)
Exports of goods and services (% of GDP)		-0.516*** (0.090)	-0.494*** (0.095)	-0.497*** (0.098)	-0.632*** (0.045)
Imports of goods and services (% of GDP)		0.573*** (0.089)	0.547*** (0.091)	0.548*** (0.094)	0.613*** (0.037)
Government consumption expenditure (% of GDP)		-0.173** (0.084)	-0.281*** (0.083)	-0.285*** (0.083)	-0.430*** (0.143)
Unemployment (modelled ILO estimate: % of total labour force)		-0.261*** (0.075)	-0.328*** (0.084)	-0.335*** (0.086)	-0.311*** (0.064)
Central government debt - total (% of GDP)			-0.00701 (0.008)	-0.00637 (0.008)	-0.00427 (0.009)
Polity IV: Polity2				0.0595 (0.077)	-0.0548 (0.110)
Total Major Episodes of Political Violence				0.179 (0.259)	0.464* (0.259)
Population total					2.25e-08** (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.00113 (0.078)
Life expectancy at birth (total years)					0.403 (0.254)
Observations	2879	2230	786	784	542
Adjusted R-squared	0.0323	0.5929	0.7019	0.7032	0.8158

NOTES: The table shows the effects of EITI membership on Gross Capital Formation, or domestic investments, as a share of Gross Domestic Product. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report.

Table 22: The effects of EITI activities on Credit rating of sovereign bonds

	Credit rating score				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.167 (0.179)	0.0967 (0.168)	0.0850 (0.362)	0.0900 (0.403)	0.119 (0.421)
EITI Report	0.458* (0.272)	0.177 (0.194)	0.0312 (0.356)	0.0450 (0.364)	0.128 (0.371)
Total natural resources rents (% of GDP)		0.0194 (0.017)	0.0195 (0.014)	0.0204 (0.014)	0.0515** (0.022)
Adjusted savings: gross savings (% of GNI)		0.0542*** (0.016)	0.0529** (0.021)	0.0502** (0.021)	0.0591** (0.024)
Consumer price index (2010 = 100)		0.00493 (0.005)	0.0111 (0.010)	0.0112 (0.010)	0.00662 (0.010)
Exports of goods and services (% of GDP)		-0.0228 (0.014)	-0.0287 (0.018)	-0.0280 (0.018)	-0.0400*** (0.014)
Imports of goods and services (% of GDP)		0.0222 (0.015)	0.0333* (0.017)	0.0327* (0.017)	0.0571*** (0.019)
Government consumption expenditure (% of GDP)		-0.0497* (0.029)	-0.0781* (0.045)	-0.0751* (0.044)	-0.0363 (0.044)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0863*** (0.026)	-0.0909** (0.037)	-0.0889** (0.039)	-0.0767* (0.039)
Central government debt - total (% of GDP)			-0.00296 (0.006)	-0.00296 (0.006)	-0.00661 (0.004)
Polity IV: Polity2				-0.0256 (0.027)	-0.0153 (0.037)
Total Major Episodes of Political Violence				-0.0663 (0.089)	-0.0425 (0.063)
Population total					-6.44e-09* (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.0491* (0.028)
Life expectancy at birth (total years)					0.0742 (0.162)
Observations	1785	1478	669	667	492
Adjusted R-squared	0.2860	0.3933	0.3789	0.3796	0.3966

NOTES: The table shows the effects of EITI membership on credit ratings of sovereign bonds based on data from Fitch Ratings and Moody's, with robust standard errors in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report.

Table 23: The effects of EITI activities on Voice and accountability

	Voice and Accountability				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.0797**	0.0947***	-0.0466	-0.0315	-0.0494
	(0.036)	(0.036)	(0.042)	(0.037)	(0.049)
EITI Report	0.0106	0.000425	0.0329	0.0395	0.0344
	(0.033)	(0.030)	(0.040)	(0.034)	(0.041)
Total natural resources rents (% of GDP)		-0.00291*	-0.000639	-0.00284	-0.00189
		(0.002)	(0.003)	(0.002)	(0.003)
Adjusted savings: gross savings (% of GNI)		-0.000915	0.000343	0.000126	0.00386
		(0.001)	(0.003)	(0.003)	(0.002)
Consumer price index (2010 = 100)		0.000957	-0.0000452	-0.000785	0.000337
		(0.001)	(0.001)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		-0.00175	-0.00367	0.00153	-0.00458*
		(0.002)	(0.003)	(0.002)	(0.002)
Imports of goods and services (% of GDP)		0.00243*	0.00497*	0.00162	0.00351
		(0.001)	(0.003)	(0.002)	(0.002)
Government consumption expenditure (% of GDP)		0.00129	0.00970	0.00914*	0.0110*
		(0.003)	(0.006)	(0.005)	(0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00124	0.00244	-0.00605	-0.000196
		(0.003)	(0.007)	(0.004)	(0.004)
Central government debt - total (% of GDP)			-0.000633	-0.000356	-0.000590
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				0.0612***	0.0621***
				(0.006)	(0.011)
Total Major Episodes of Political Violence				-0.00849	0.00763
				(0.014)	(0.015)
Population total					3.73e-10
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00104
					(0.004)
Life expectancy at birth (total years)					0.0176
					(0.011)
Observations	2464	1792	631	629	453
Adjusted R-squared	0.0057	0.0269	0.0557	0.3833	0.3871

NOTES: The table shows the effects of EITI membership on Voice and Accountability, an institutional estimate measuring the ability of a public to elect their government, and freedom of speech and assembly. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Table 24: The effects of EITI activities on Political stability and absence of violence

	(1)	(2)	(3)	(4)	(5)
Political Stability and Absence of Violence and Terrorism					
EITI MSG	0.0958	0.130**	0.208***	0.193***	0.197***
	(0.060)	(0.058)	(0.061)	(0.056)	(0.074)
EITI Report	-0.102	-0.0944	-0.209**	-0.175**	-0.148**
	(0.083)	(0.072)	(0.085)	(0.085)	(0.070)
Total natural resources rents (% of GDP)		-0.00631	0.00620	0.00565*	0.00698*
		(0.004)	(0.004)	(0.003)	(0.004)
Adjusted savings: gross savings (% of GNI)		0.00203	0.00389	0.00160	0.00921*
		(0.004)	(0.005)	(0.005)	(0.005)
Consumer price index (2010 = 100)		0.00288**	0.00295	0.00232*	0.000602
		(0.001)	(0.002)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		0.00374	-0.00571	-0.00256	-0.0119***
		(0.003)	(0.005)	(0.005)	(0.004)
Imports of goods and services (% of GDP)		-0.00250	0.00909***	0.00746**	0.00776**
		(0.003)	(0.003)	(0.003)	(0.004)
Government consumption expenditure (% of GDP)		0.00217	0.0122	0.0121	0.00962
		(0.005)	(0.012)	(0.012)	(0.009)
Unemployment (modelled ILO estimate: % of total labour force)		-0.0149**	-0.0142	-0.0172*	-0.0116
		(0.006)	(0.009)	(0.009)	(0.009)
Central government debt - total (% of GDP)			0.000354	0.000461	0.00126
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				0.0161	-0.0154
				(0.016)	(0.022)
Total Major Episodes of Political Violence				-0.0608**	0.00287
				(0.030)	(0.040)
Population total					8.75e-10
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00554
					(0.005)
Life expectancy at birth (total years)					-0.00600
					(0.019)
Observations	2450	1792	631	629	453
Adjusted R-squared	-0.0021	0.0415	0.1183	0.1430	0.2571

NOTES: The table shows the effects of EITI membership on political stability and the absence of violence, an institutional estimate measuring the likelihood of political instability and/or politically motivate violence, including terrorism. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report.

Table 25: The effects of EITI activities on Government effectiveness

	Government Effectiveness				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.0146 (0.031)	0.0223 (0.034)	-0.0434 (0.070)	-0.0536 (0.074)	-0.0713 (0.071)
EITI Report	-0.0505 (0.035)	-0.0326 (0.031)	-0.00897 (0.110)	0.00256 (0.111)	0.00568 (0.102)
Total natural resources rents (% of GDP)		-0.00476** (0.002)	0.00347 (0.003)	0.00352 (0.003)	0.00404 (0.004)
Adjusted savings: gross savings (% of GNI)		0.00122 (0.001)	-0.00338 (0.003)	-0.00400 (0.003)	-0.000579 (0.003)
Consumer price index (2010 = 100)		0.000471 (0.001)	0.00136 (0.001)	0.00123 (0.001)	0.00135 (0.001)
Exports of goods and services (% of GDP)		0.00161 (0.001)	0.00308 (0.003)	0.00354 (0.003)	0.000200 (0.003)
Imports of goods and services (% of GDP)		0.0000654 (0.001)	0.000482 (0.003)	0.000279 (0.003)	0.00103 (0.003)
Government consumption expenditure (% of GDP)		0.00264 (0.003)	0.0165 (0.014)	0.0165 (0.014)	-0.00157 (0.008)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00753** (0.003)	-0.00421 (0.005)	-0.00436 (0.005)	-0.00546 (0.005)
Central government debt - total (% of GDP)			-0.00192 (0.001)	-0.00192 (0.001)	-0.00145 (0.001)
Polity IV: Polity2				-0.000207 (0.008)	-0.00593 (0.014)
Total Major Episodes of Political Violence				-0.0162 (0.011)	-0.00691 (0.010)
Population total					3.30e-10 (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00361 (0.006)
Life expectancy at birth (total years)					0.00465 (0.017)
Observations	2451	1792	631	629	453
Adjusted R-squared	0.0018	0.0168	0.0902	0.0909	0.1060

NOTES: The table shows the effects of EITI membership on government effectiveness, an institutional estimate measuring the quality of public and civil services, the quality of policies, and the ability of a government to commit to implementing policies. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

	Regulatory Quality				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.0550 (0.034)	0.0354 (0.037)	-0.0740 (0.046)	-0.0494 (0.039)	-0.108** (0.045)
EITI Report	0.0164 (0.039)	0.0810** (0.036)	0.169*** (0.058)	0.139** (0.053)	0.136** (0.054)
Total natural resources rents (% of GDP)		-0.00338 (0.002)	-0.000718 (0.003)	-0.000369 (0.003)	0.000691 (0.004)
Adjusted savings: gross savings (% of GNI)		0.00140 (0.002)	-0.00260 (0.003)	-0.00123 (0.003)	0.00171 (0.003)
Consumer price index (2010 = 100)		0.000437 (0.001)	0.00148 (0.002)	0.00192 (0.001)	0.00174* (0.001)
Exports of goods and services (% of GDP)		0.000954 (0.002)	0.00448* (0.002)	0.00231 (0.003)	-0.000434 (0.003)
Imports of goods and services (% of GDP)		0.000870 (0.001)	-0.000652 (0.003)	0.000557 (0.003)	0.000617 (0.003)
Government consumption expenditure (% of GDP)		0.00144 (0.003)	0.0211 (0.014)	0.0212 (0.014)	0.0116 (0.010)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00913** (0.004)	-0.0135** (0.006)	-0.0113* (0.006)	-0.0153*** (0.005)
Central government debt - total (% of GDP)			-0.00197 (0.001)	-0.00203 (0.001)	-0.00147 (0.001)
Polity IV: Polity2				-0.0136* (0.008)	-0.0252*** (0.008)
Total Major Episodes of Political Violence				0.0365** (0.016)	0.0246 (0.018)
Population total					-2.14e-09*** (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.00777 (0.006)
Life expectancy at birth (total years)					-0.00380 (0.020)
Observations	2450	1792	631	629	453
Adjusted R-squared	0.0071	0.0498	0.1337	0.1612	0.2161

NOTES: The table shows the effects of EITI membership on regulatory quality, an institutional estimate measuring a government's ability to implement effective government policies, with a particular focus on promoting the private sector and regulations often associated with the investment climate. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Table 27: The effects of EITI activities on Control of corruption

	Control of Corruption				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.0290 (0.034)	0.0356 (0.032)	-0.00169 (0.051)	-0.00154 (0.055)	-0.0692 (0.073)
EITI Report	-0.0250 (0.033)	0.00904 (0.033)	0.0102 (0.079)	0.00957 (0.077)	0.00550 (0.085)
Total natural resources rents (% of GDP)		-0.00539** (0.002)	-0.000203 (0.004)	-0.000260 (0.004)	-0.000521 (0.005)
Adjusted savings: gross savings (% of GNI)		0.000882 (0.002)	-0.000220 (0.004)	-0.000125 (0.004)	0.00395 (0.004)
Consumer price index (2010 = 100)		0.00144** (0.001)	0.00227** (0.001)	0.00227** (0.001)	0.00168** (0.001)
Exports of goods and services (% of GDP)		0.000323 (0.002)	-0.00297 (0.004)	-0.00290 (0.004)	-0.00906** (0.004)
Imports of goods and services (% of GDP)		0.00109 (0.002)	0.00781** (0.003)	0.00775** (0.004)	0.0105*** (0.003)
Government consumption expenditure (% of GDP)		0.00427 (0.003)	0.0134 (0.010)	0.0134 (0.010)	-0.00230 (0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.00656 (0.004)	0.00174 (0.006)	0.00153 (0.006)	0.000776 (0.007)
Central government debt - total (% of GDP)			-0.00214 (0.001)	-0.00213 (0.001)	-0.00124 (0.001)
Polity IV: Polity2				0.00178 (0.005)	-0.00317 (0.007)
Total Major Episodes of Political Violence				0.00240 (0.019)	0.0114 (0.026)
Population total					-1.32e-09* (0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					0.000394 (0.005)
Life expectancy at birth (total years)					0.0210 (0.024)
Observations	2457	1792	631	629	453
Adjusted R-squared	0.0029	0.0316	0.1235	0.1185	0.1180

NOTES: The table shows the effects of EITI membership on control of corruption, an institutional estimate measuring the extent to which a government is perceived to exercise public power for private gain, including petty and large-scale corruption, elite and private "capture" of public goods/wealth. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * p<0.10, ** p<0.05, *** p<0.01. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Table 28: The effects of EITI activities on Rule of law

	Rule of Law				
	(1)	(2)	(3)	(4)	(5)
EITI MSG	0.0183	0.0382	-0.0323	-0.0321	-0.0877
	(0.033)	(0.032)	(0.042)	(0.045)	(0.061)
EITI Report	-0.0000144	0.0213	0.0719	0.0743	0.0649
	(0.034)	(0.030)	(0.065)	(0.065)	(0.068)
Total natural resources rents (% of GDP)		-0.00702***	-0.00486*	-0.00501*	-0.00366
		(0.002)	(0.003)	(0.003)	(0.003)
Adjusted savings: gross savings (% of GNI)		-0.00106	-0.00510	-0.00526	-0.000639
		(0.001)	(0.004)	(0.004)	(0.003)
Consumer price index (2010 = 100)		0.000743	0.000622	0.000541	0.00105
		(0.001)	(0.001)	(0.001)	(0.001)
Exports of goods and services (% of GDP)		0.00334**	0.00588*	0.00636*	0.00111
		(0.002)	(0.003)	(0.004)	(0.003)
Imports of goods and services (% of GDP)		-0.000769	0.00104	0.000755	0.00326
		(0.002)	(0.003)	(0.003)	(0.002)
Government consumption expenditure (% of GDP)		0.00141	0.0123	0.0122	0.00146
		(0.003)	(0.012)	(0.012)	(0.006)
Unemployment (modelled ILO estimate: % of total labour force)		-0.000425	-0.00364	-0.00429	-0.00388
		(0.004)	(0.006)	(0.006)	(0.006)
Central government debt - total (% of GDP)			-0.00102	-0.001000	-0.000120
			(0.001)	(0.001)	(0.001)
Polity IV: Polity2				0.00432	-0.00833
				(0.006)	(0.010)
Total Major Episodes of Political Violence				-0.00447	0.0282
				(0.020)	(0.024)
Population total					-1.48e-09***
					(0.000)
Adjusted net enrolment rate - primary (% of primary school age children)					-0.00312
					(0.005)
Life expectancy at birth (total years)					0.00327
					(0.017)
Observations	2458	1792	631	629	453
Adjusted R-squared	0.0080	0.0417	0.1154	0.1161	0.0857

NOTES: The table shows the effects of EITI membership on rule of law, an institutional estimate measuring the public's trust in a judicial system, and the impartiality of judges and bureaucrats. Robust standard errors are included in parentheses (clustered by country). The significance levels are represented by * $p<0.10$, ** $p<0.05$, *** $p<0.01$. All regressions were performed with country- and time-fixed effects. EITI MSG and Report are dummy variables, equal to 1 if the country has formed a MSG, and if a country has published an EITI Report. Column 5 in this table should be disregarded the F-statistic is missing. The reason for this is that the sample size is sufficiently low for the number of country-clusters to be larger than the degrees of freedom.

Appendix 4: Variable description and sources

Variable	Description	Source
Log GDP per capita	Author's own calculations, based on the GDP per capita data from World Development Indicators.	Author's own calculations based on data collected from the World Development Indicators (World Bank, 2015)
Average credit rating scores	Credit rating score, unweighted average over Moody & Fitch's scores	Authors own calculation based on data collected from Fitch Ratings (2015) and Moody's (2015)
Polity IV: Polity2	Revised Combined Polity Score: This variable is a modified version of the POLITY variable added in order to facilitate the use of the POLITY regime measure in time-series analyses.	Center for Systemic Peace (2015a; 2015b), http://www.systemicpeace.org/inscrdata.html/.
Major Episodes of Political Violence (MEPV), 1946-2014 (War List)	Total major episodes of political violence: summed magnitudes of all (societal and interstate)	
EITI Membership	If the country is EITI Compliant or Candidate status a specific year, then this indicator is equal to 1.	EITI Country Pages (2015), http://www.eiti.org/.
EITI Compliant	If the country has EITI Compliant status a specific year, then this indicator is equal to 1.	
EITI Candidate	If the country has EITI Candidate status a specific year, then this indicator is equal to 1.	
EITI MSG	If the country has a temporary or permanent EITI Multi-Stakeholder Group at the end of the specific year, then the dummy is equal to one.	
EITI Report	If the country has at any previous or existing year published an EITI Report, then this dummy is equal to 1.	
EITI Year	If the country has been EITI Candidate or Compliant, this indicator shows the year of first becoming an EITI-implementing country	
Voice and Accountability	Reflects 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.	Worldwide Governance Indicators (Kaufmann & Kraay, 2015), http://www.govindicator.org/
Political Stability and Absence of Violence and Terrorism	Reflects 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	Reflects 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 formulation and implementation, and the credibility of the government's commitment to such policies.	
Regulatory Quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	
Control of Corruption	Reflects perceptions 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.	
Rule of Law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	

GDP per capita, PPP (constant 2011 international $)	GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates.	
Net ODA received (% of GNI)	Net official development assistance (ODA) consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries.	
FDI, net inflows (% of GDP)	Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor.	
Gross capital formation (% of GDP)	Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. According to the 1993 SNA, net acquisitions of valuables are also considered capital formation.	
Adjusted net enrolment rate, primary (% of primary school age children)	Adjusted net enrolment is the number of pupils of the school-age group for primary education, enrolled either in primary or secondary education, expressed as a percentage of the total population in that age group.	
Adjusted savings: gross savings (% of GNI)	Gross savings are the difference between gross national income and public and private consumption, plus net current transfers.	
Central government debt, total (% of GDP)	Debt is the entire stock of direct government fixed-term contractual obligations to others outstanding on a particular date. It includes domestic and foreign liabilities such as currency and money deposits, securities other than shares, and loans.	
Consumer price index (2010 = 100)	Consumer price index reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used. Data are period averages.	World Development Indicators (World Bank, 2015)
Exports of goods and services (% of GDP)	Exports of goods and services represent the value of all goods and other market services *provided* to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services.	
Government consumption expenditure (% of GDP)	General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees).	
Imports of goods and services (% of GDP)	Imports of goods and services represent the value of all goods and other market services *received* from the rest of the world. See exports for specifics.	
Life expectancy at birth, total (years)	Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.	
Mineral rents (% of GDP)	Mineral rents are the difference between the value of production for a stock of minerals at world prices and their total costs of production. Minerals included in the calculation are tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate.	
Natural gas rents (% of GDP)	Natural gas rents are the difference between the value of natural gas production at world prices and total costs of production.	
Oil rents (% of GDP)	Oil rents are the difference between the value of crude oil production at world prices and total costs of production.	
Population, total	Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum. The values are midyear estimates.	
Total natural resources rents (% of GDP)	Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.	