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## Foreign Direct Investment and Repression: An Analysis Across Industry Sectors

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### Abstract

The impact of foreign direct investment (FDI) on repression in developing nations is still disputed. Some argue that FDI improves economic development and exports human rights values. Others criticise the exploitation of cheap labour and resources, which may lead to tensions and government oppression. Previous studies have employed aggregate FDI data, with conflicting results. Alternatively, I propose that the effects depend on what kind of FDI enters a country. I build a sectoral framework to discuss how skills and technology levels, as well as the motivation for FDI, can mediate the impact. I then examine the link in a panel data analysis (1983-2010) in 121 countries, integrating sectoral FDI in several resource, manufacturing and service industries. The results show that investment in high-skilled and -tech sectors has positive effects. The results are robust across several measures for repression, and when accounting for sector size, regional and time effects.

In recent decades, investment made by multinational corporations (MNCs) in the developing world has risen enormously.<sup>1</sup> In 2013, foreign direct investment (FDI) flows to developing countries reached a new high and accounted for 54 per cent of global inflows (UNCTAD 2014:xiii). The poorest of these nations depend mainly on FDI for capital formation (UNCTAD 2011), and many host countries aim to attract even more FDI to improve their economy and the well-being of their citizens. The effects of such investment, however, have been subject to controversy.

On the one hand, the ‘Washington Consensus’ (Williamson 1990; 2000) states that the liberalisation of trade and FDI can stimulate economic development by bringing new skills and know-how to host countries, and thereby lead to a decrease in repression and improved rights protection (Landman and Carvalho 2010). However, critics argue that rising FDI penetration did not bring the expected economic stimuli to developing countries (Stiglitz 2002; Rodrik 2006; Chang 2010). Instead, many foreign investors are repeatedly accused of exploiting resources and cheap labour, fuelling tensions, and supporting repressive regimes (Klein 2000; Christian Aid 2004). After three decades of statistical analyses on effects of FDI on governments’ human rights violations,

cross-national studies still produce conflicting results. Some find that overall FDI has a positive effect on rights protection (Cingranelli and Richards 1999; Apodaca 2001; Hafner-Burton 2005), while others conclude that there is no significant effect whatsoever (Mitchell and McCormick 1988; Minkler and Sweeney 2011; Sorens and Ruger 2012; Cao et al. 2013), and that negative effects seem difficult to establish (Smith et al. 1999). A common feature of

all these studies is that they enter aggregate FDI data into their statistical analyses. However, treating FDI as a lump sum means that changes in the composition of FDI over time and its significant variation across countries are ignored. Far too little attention has been paid to the industries in which FDI is located, even though the international business literature has repeatedly pointed out that FDI is highly sector-specific (e.g. Gilpin 1987:233), and a disaggregation of investment data provides “a better depiction of reality” (Cohen 2007:183).

This article provides a new theoretical framework that demonstrates how industry characteristics can mediate FDI effects. Drawing from international business theories (Dunning and Lundan 2008; Gilpin 1987; Cohen 2007), it discusses how the motivation for investment, skills levels and the use of technology differ across industries, and how this can influence rights protection. I test the sectoral framework in a panel data analysis including up to 121 developing countries over three decades (1983 to 2010). Ten types of FDI are employed: extractive (petroleum, mining), manufacturing (food, fabricated metals, chemical, electrical, machinery and transport equipment), and service (wholesale trade, depository institutions) investment. I find that FDI effects vary according to industry sectors. FDI is positively connected to rights outcomes when medium- or high-skilled workers and technology are present. Sectors with low skills and technology levels tend to have negative effects. In addition, while the motivation for investment such as resource extraction or the exploitation of cheap labour may have some influence on rights outcomes, skills and technology levels remain the driving force behind FDI effects.

The remainder of the article is organised as follows. The next section starts by defining repression and then assess the previous literature. In the central section, I discuss how industry-specific effects can shape the impact of FDI on repression before testing this link empirically in a cross-country panel-data analysis. The conclusion outlines the implications of these findings for future research.

## Previous Literature

Government repression is the deployment of physical sanctions by a state against an individual or group within its territorial jurisdiction to deter activities challenging the government (Davenport 2007; Davenport and Inman 2012). Human rights scholars have argued that levels of such repression are directly reflected in the violations of personal integrity rights (Richards et al. 2001; Sorens and Ruger 2012; Young 2009). Personal integrity rights are defined as the protection from torture, extrajudicial killing, disappearance, and political imprisonment. In the literature on the effects of FDI on repression and human rights, much attention has been paid to the violation of these particular rights, since they are essential to the security and dignity of the person, and qualify as fundamental human rights (Apodaca 2001). Reflecting the importance of these rights, scholars have devoted considerable efforts (see Landman and Carvalho 2010) to developing coding schemes that quantify annual country reports published by Amnesty International or the U.S. State Department to measure repression and personal integrity rights protection, e.g. the Cingranelli and Richards Indices, the Political Terror Scale, and a

relatively new measurement which is based on such indices, the Latent Human Rights Protection Scores by Fariss (2014).<sup>2</sup>

Using these indices, a range of studies have provided important insights into domestic and international factors that influence rights violations and repression. There is common agreement that conflict and population size negatively affect rights protection, while democracy levels, trade and economic development have positive effects (Landman 2006). However, when it comes to FDI, the literature has produced “inconsistent, erratic, or negligible results” (Minkler and Sweeney 2011:387). In fact, such is the degree of disagreement among scholars that many studies describe two opposing schools of thought (e.g. Meyer 1998; Cingranelli and Richards 1999; Richards et al. 2001; Apodaca 2001; Kim and Trumbore 2010). Following such narratives, the *anti-FDI* perspective assumes that globalisation and the liberalisation of markets, including rising FDI flows, have maintained and aggravated the structural dependence and exploitation of the developing world (see Hymer 1979; Smith et al. 1999; Wimberley 1990; Moran 1978).

Firm activities might create wealth for some small groups, but others remain impoverished, thereby creating ‘islands of development’ and inequality, which can lead to tensions among citizens (Apodaca 2001).

To provide for a stable investment environment, governments may resort to repressive acts, sanctions and coercive behaviour to suppress such unrest and control the ‘masses’ (Hymer 1979; Smith et al. 1999). In some cases, firms have also become directly complicit in such repressive acts by governments (Wettstein 2010; Ruggie 2011). For example, the oil

multinationals Shell and Chevron have been accused of relying on state security forces to manage disputes with local populations in the 1990s, thereby becoming complicit in torture, killing and imprisonment of protesters.<sup>3</sup> The anti-FDI school of thought therefore concludes that by fuelling tensions and by providing capital to repressive host governments, multinational corporations ‘invest’ in repression (Meyer 1998). Many studies advance this negative perspective on FDI and rights, but there is little statistical evidence for a systematic pattern.<sup>4</sup>

In contrast, the *pro-FDI* school of thought makes the basic assumption that foreign investors improve economic development and export human rights values to developing countries, both of which, in turn, improve human rights protection. Economic development is boosted by the introduction and transfer of new technologies, skills and know-how to the host economy. MNCs create jobs and lead to more effective economic activity (Howard-Hassmann 2010:43). Being “the engine of economic development” (Apodaca 2001:590), MNCs therefore foster modernisation, long-term growth and GDP. Improved economic development, in turn, has positive effects on rights protection, as countless studies have shown (see Landman 2006). With less economic scarcity and better living standards, political stability can improve, which reduces the need for governments to use repressive behaviour (Davenport 2007; Hafner-Burton 2005; Mitchell and McCormick 1988). In addition, economic development can lead to the creation of a strong middle class, which will expect better government protection of rights (Lipset 1959). Finally, foreign firms may directly contribute to the diffusion of human rights values to host countries through their

day-to-day interactions with employees, customers, business partners and local communities. The often cited ‘human rights export’ argument (Spar 1998) states that multinational corporations export human rights values out of self-interest, e.g. to prevent negative press. By initiating the country-wide spread of rights protection standards to host countries and their governments, MNCs act as a “powerful instrument in the pursuit of human rights” (Spar 1998:12).<sup>5</sup> Supporting these proposed effects of economic development and human rights diffusion, a range of cross-country analyses find a positive effect of FDI on rights protection (Cingranelli and Richards 1999; Apodaca 2001; Hafner-Burton 2005; Kim and Trumbore 2010).

However, other studies conclude that, in fact, there is no significant effect of FDI on state repression and rights violations (Mitchell and McCormick 1988; Smith et al. 1999; Minkler and Sweeney 2011; Sorens and Ruger 2012; Cao et al. 2013). To sum up, the review of the literature shows that there are convincing theoretical arguments for both the positive and negative view of FDI, but there remains a mixed bag of statistical evidence.

In order to move the debate forward, this study builds a new framework which examines different types of FDI and their impact. For example, positive transfers from foreign investors to host countries which lead to economic development are more likely in high-skilled forms of FDI. Human rights export is more likely to occur in types of investment where foreign affiliates are well integrated into the host society and build lasting relationships on the ground. Similarly, not all types of investment create islands of development with the potential to create tensions and subsequent repressive acts by



governments. These points are made implicitly in many studies, but no study actually tests the effects of different types of FDI on rights, relying instead on lump sum measures which produce conflicting results. Many human rights scholars have therefore called for an analysis across industry sectors. For example, Kim and Trumbore (2010:732) stated that “human rights behaviour of multinationals may vary depending on sectoral differences”, and Apodaca (2002:902) suspected that “the sector invested in, determines whether foreign investment is beneficial for host countries.” The next section will incorporate information about FDI in different industry sectors.

## **Bringing in a Sectoral View**

In each of the traditional explanations for effects of FDI on repression---economic development, human rights export, and, from a negative perspective, tensions arising from FDI-- certain underlying conditions must be met for these mechanisms to work. This study draws from international business studies (e.g. Dunning and Lundan 2008; Cohen 2007), arguing that two important features of industries are crucial: (1) skills and technology levels and (2) the motivation for FDI. Each industry, such as finance FDI or petrol FDI, has a different set-up of these characteristics, which can impact the FDI-repression link.

## **Skills and Technology Levels**

Many of the positive or negative effects of FDI can be shaped by skills and technology levels, in particular the economic development mechanism. The positive impact of FDI is often explained by transfer effects of worker skills, technology, know-how and managerial

practices (Keller 2002; Brown et al. 2003; Dunning and Lundan 2008; De Mello 1999), which foster economic productivity, efficiency, and economic development (UNCTAD 1999; 2001; OECD 2002). Wealthier countries tend to protect human rights better (Landman 2006), which could be due to the fact that they may have more resources to provide for rights protection. There may also be less unrest when living standards rise, and in particular worker protests and tensions in local communities may be alleviated because employees in high-skilled sectors receive higher wages (Moran 2006; Estevez-Abe et al. 2001) and enjoy better working conditions (Moran 2006:10, 41). In addition, economic development can create political stability and higher living standards, thereby fostering the creation of a middle class, which is generally believed to be more educated and aware of its interests and can demand better protection of rights (Howard-Hassmann 2010; Richards et al. 2001; Meyer 1996; Hafner-Burton 2005). In similar ways, the diffusion of human rights values is more plausible for sectors with a higher skilled and educated work force. Value diffusion can take place in the form of labour migration from the foreign affiliate to domestic firms, across the general workforce, and in lively exchanges and long-term relationships with suppliers, competitors, local communities and the wider society (OECD 2002).

In contrast, in low-skilled, low-tech or labour intensive industries, such as the production of textiles or in the natural-resource sectors, exploitative investment strategies include extremely low wages, long work hours and mandatory overtime, unreasonable fines and punishments, inadequate health or social security benefits and unhealthy workplace conditions (ILO 2008; Amengual and Milberg 2008; Moran 2002; 2006; Romero 1995). Similarly, in low-tech industries we might not expect large positive spillover effects on the

economy. Similarly, in industries exploiting low-skilled workers a diffusion of human rights would surely not take place. Worse still, exploitation of low-skilled, abundant labour can generate tensions in the host country, which means that governments may have to resort to repressive acts.

## **Investment Motivation**

International business research commonly distinguishes between three main motivations of FDI: (1) natural resource-seeking, (2) market-seeking, and (3) efficiency-seeking (Dunning and Lundan 2008; Cohen 2007; UNCTAD 2005).

*Natural resource-seeking* FDI is concerned with extracting resources such as oil or minerals. Decisions to invest are mainly determined by geology and climate, infrastructure and accessibility of materials in the host country (Cohen 2007; Sachs and Sauvant 2009). Such investment often takes place in the African continent and is aimed at exporting the output to industrialised countries. MacDonald and McLaughlin (2003) highlight that company-host community relations in the resource-seeking industries are often characterised by a lack of societal integration of MNCs. Firms subscribe to a ‘silo mentality’ with an inward focus, exploitative strategies, and few attempts at integration. Exploitative strategies mixed with a lack of societal integration can lead to escalations of misunderstandings with local communities, which can create tensions and unrest, such as in the Niger Delta, where government security forces violated personal integrity rights of anti-MNC activists and local protesters (Idemudia 2009; MacDonald and McLaughlin 2003). In fact, negative discussions

about FDI as a whole have often been based on “alleged callous disregard for the peoples of host countries” in resource concentrated areas (Cohen 2007:66).

In contrast, *market-seeking* FDI, such as banking and other service sectors, aims to access a foreign market to sell products or services (UNCTAD 2005). While many landlocked least developed countries with small market sizes such as Azerbaijan, Chad and Nepal still struggle to attract market-seeking FDI (UNCTAD 2010:66), India and China’s growing domestic markets have led to significant investments in recent years (UNCTAD 2007:42). Market-seeking FDI adapts products to suit existing cultures and language (UNCTAD 2005) and responds to local demands (Dunning and Lundan 2008:71). Market-seeking MNCs often integrate well into the host society and closely interact with local subsidiaries, clients, consumers and local businesses to secure a ‘social license’ to operate (Blanton and Blanton 2009). Such interactions can alleviate potential tensions and skepticism of local communities against foreign investors. These interactions can also facilitate human rights export and the diffusion of human rights values (Spar 1998). FDI in market-seeking sectors can “provide more benefits to host countries than any other form of incoming direct investment” (Cohen 2007:68).

*Efficiency-seeking* FDI is based on the motivation to reduce production costs. MNCs often transfer some of their investment from industrialised countries to areas where factor endowments such as labour are relatively lower (Dunning and Lundan 2008:72). Labour-intensive production includes, for example, footwear and apparel, or the assembly of standardised goods such as radios. Some export processing zones (EPZs) with an emphasis

on low labour costs and lax labour regulations fit into this category (Blanton and Blanton 2009; ILO 2008; Amengual and Milberg 2008). Much efficiency-seeking FDI can be found in Japanese MNCs in Asia, U.S. MNCs in Mexico, Asia and Central America, and European MNCs in Central and Western Europe (Cohen 2007:69). When wages rise, FDI typically moves to other countries with even lower wages (UNCTAD 2005) such as ‘latecomers’ Cambodia and Vietnam (UNCTAD 2010:41). When MNCs invest abroad because of an ample and cheap labour supply, host countries might benefit from job creation and salaries above local levels in the short term, but they cannot necessarily expect modernisation and economic development effects, or diffusion of human rights values, to the wider economy (Cohen 2007:69-70).

In addition, when focusing on low-cost labour and exploitation of an abundant labour force, then local unrest may occur, which can in turn trigger government violation of human rights to maintain a stable business environment. It should be noted that some efficiency-seeking FDI is not oriented towards low wages, but it can also be motivated by economies of scale and high labour productivity such as in automobiles, electronics and personal computers (UNCTAD 2005) or information technology or pharmaceuticals (Cohen 2007:80). The effects of efficiency-seeking FDI using a higher skilled workforce may therefore not be as negative as in the above cases.

## **Application to Sectoral FDI**

Table 1 shows for each industry sector included in this study how skills, technology levels, and FDI motivation are classified in the literature, and how that can affect rights

protection. In each industry, different features are present; these features can sometimes reinforce each other (e.g. high-skilled work and market-seeking motivation), while at other times they can be conflicting, so that an overall expected net effect is not always straightforward (e.g. low-skilled work and market-seeking features).

An example where reinforcing characteristics exist is investment in petrol and mining industries. The motivation for investment is resource-seeking and exploitative, and skills and technology levels are low. Therefore, the characteristics underlying the FDI-repression link can reinforce each other, leading to tensions and overall negative effects on host country rights protection. In a positive reinforcing case, such as FDI in depository institutions, or the manufacture of chemical products, we find a market-seeking motivation, high skilled and technology levels, which can foster economic development and the export of human rights.

However, there are cases where industry sectors have conflicting features, so that the expected outcome on human rights is not immediately apparent. First, a sector can be characterised as market-seeking but use low- or medium-skills and technology, e.g. the manufacture of food and metals products, as well as wholesale trade FDI. The host country integration typical for market-seeking sectors may still facilitate the diffusion of human rights values, but effects on economic development via skills and technology transfers cannot be guaranteed. Worse still, in low-paid jobs with an abundant labour force, tensions may arise. In such cases, it would be necessary to weigh the strength of human rights export mechanisms versus the potentially negative effects of cheap, unskilled labour. Since there is

not a lot of evidence about the strength and nature of human rights export in the literature (Letnes 2002), the expected impact is marked ‘indeterminate’ in the table.

The second conflicting case involves sectors where efficiency-seeking FDI meets medium/high skills and technology. This set-up is the case for the manufacture of machinery, electrical and transport equipment. In fact, the argument about an exploitative motivation of efficiency-seeking FDI rests upon the assumption that cheap, low-skilled labour is employed. But in many cases, efficiency-seeking FDI can also be motivated by economies of scale and higher labour productivity, which can require higher skills, as seen in the sectors included in this analysis. Even though companies may not interact with local businesses and the population as much as market-seeking MNCs, efficiency-seeking FDI may still provide transfers of higher skills than the host country (Cohen 2007; Nunnenkamp and Spatz 2004). In those cases, I expect an overall positive effect on rights protection.<sup>6</sup>

To sum up, the categorisation presented in Table 1 reflects the theoretical arguments of the study and applies the framework to ten industry sectors. Each of these sectors brings with it a set of characteristics and an expected rights impact. Under certain circumstances, and in some industry sectors, firms might invest in repression by supporting regimes that may answer unrest with political imprisonment or torture, while the firms become complicit in human-rights abuses by states. In other industry sectors, FDI could improve skills and knowledge transfer, enhance economic development, and reduce the need of states to repress its citizens; FDI could even diffuse human rights values. Disaggregating FDI into

industry sectors is a first step towards a more refined picture of effects of FDI on repression and personal integrity rights.

The framework presented in [Table 1](#) can be summarised as two main hypotheses:

- Hypothesis 1: FDI in resource-seeking sectors with low skills/technology levels is connected to *worse* personal integrity rights protection.
- Hypothesis 2: FDI in market-seeking and efficiency-seeking sectors with high skills/technology levels is connected to *improved* personal integrity rights protection.

The empirical models in the next section correspond to this framework. I will employ ten separate variables for different types of FDI in the sectoral models.

## Data and Methods

### Dependent Variables

For the dependent variables, I employ two commonly used indices (CIRI Physical Integrity Rights, Political Terror Scale) and a new measurement of personal integrity rights, the Latent Human Rights Protection Scores ([Fariss 2014](#)). The *CIRI Physical Integrity Rights* index<sup>7</sup> captures protection from torture, extrajudicial killings by government officials without due process of law, disappearance where state agents are likely to be responsible, and political imprisonments. The index is a generally accepted and widely used measurement of personal integrity rights and repression levels. It ranges from 0 (no government respect for rights) to 8 (full respect). The scores are derived from coding rights



violations reported in the Amnesty International Annual Report and the U.S. State Department Country Reports on Human Rights Practices. One concern with this measure could be that codings from U.S. government sources might be biased towards reporting more positively about partner countries in which U.S. MNCs invest (Mosley and Uno 2007; Poe et al. 2001). To account for this potential bias, the CIRI coding manual recommends recording violations according to (potentially ‘harsher’) reports of Amnesty in case of disagreement, so that the overall score is unbiased.

The *Political Terror Scale* (PTS)<sup>8</sup> measures the integrity of the person including the protection from execution, torture, forced disappearance, unlawful imprisonment and discrimination based on political and religious beliefs. The PTS captures similar features as the CIRI Physical Integrity Rights variable and is also a frequently employed measurement in the human rights literature (Walker and Poe 2002). To compose this index, country reports by Amnesty International and the U.S. State Department were coded. Scales from both codings are available separately. For the main models, the codings based on the Amnesty reports were used to prevent potential bias as mentioned above, and in the robustness section I employ alternative versions of the PTS scale. The PTS Amnesty index will be reversed here to match with the CIRI scale; this means that in this study the PTS scores range from 1 (terror has expanded to the whole population) to 5 (rights are well protected).

The *Latent Human Rights Protection Scores* by Fariss (2014)<sup>9</sup> measure political repression and personal integrity rights. This is the newest available measurement and this study will be one of the first in the human rights literature to employ this variable. Fariss

(2014) developed this measurement because he observed a fundamental problem with standard human rights measurements: according to many existing indices, human rights practices do not seem to improve over time, despite changes in human rights norms and laws, better monitoring, and the spread of democratic values and systems.

Fariss believes that the lack of a strong upward trend in the available indices is in fact due to stricter monitoring and interpretations of rights violations in e.g. Amnesty International and the U.S. State Department reports. In such reports, Fariss suggests, coders find more violations because there is much better monitoring and information about state repression in many more countries than in the past. Coders therefore classify more acts as rights abuse than they did years ago. To account for this problem, the Latent Human Rights Protection Scores combine and adjust existing measurements of repression, including the CIRI and PTS measurements, so that a comprehensive, less biased estimate of repression is provided.

## **Independent Variables**

The key independent variable of interest is *FDI stock relative to GDP*. FDI stock reflects the long-term accumulation of foreign investment over time, and with that, potential long-term impact of such investment on the host country. Changes in government policies and human rights outcomes are likely to build up over time, rather than changing swiftly with often volatile FDI flows each year, as recent studies have emphasised (Neumayer and de Soysa 2006; Mosley and Uno 2007; Sorens and Ruger 2012). A shortcoming of some earlier work (e.g. Hafner-Burton 2005; Mitchell and McCormick 1988) is the use of FDI

flow data, assuming that recent inflows of FDI have an immediate effect on human rights protection. Criticising this practice, Nunnenkamp and Spatz (2004) point out that growth enhancing spillover effects of FDI most probably emerge from long-term accumulated investment. Similarly, pathways through human rights export are unlikely to be immediate, which is why FDI stock data are the preferred measure.<sup>10</sup> The main data for FDI stock used in this study stem from the United States.<sup>11</sup> The U.S. Bureau of Economic Analysis (BEA) provides data on U.S. outbound FDI stock into the developing world. This is the only source for FDI data disaggregated into sectors that covers a large time series and many countries (Blanton and Blanton 2015). Even though it would be ideal to examine effects of global sectoral FDI in developing nations, neither the United Nations Conference on Trade and Development (UNCTAD), the World Bank or the Organisation for Economic Co-operation and Development (OECD) provide such data.<sup>12</sup> While data scarcity poses a limitation, the United States accounts, by far, for the largest FDI outward stock of any single country in the world. In recent years, the outward stock of FDI from the U.S. was higher than that of the two runner-ups combined (UNCTAD 2010; 2014).<sup>13</sup> Using FDI only from one country also has the advantage that it holds the ‘country of origin’ factor constant. This is important because the impact of MNCs and their investment arguably depends on the corporate culture and other factors in their home country (Tuman 2006; Tuman and Montero 2009).<sup>14</sup> I compiled data for FDI divided into the following sectors: extractive (petroleum, mining), manufacturing (food, fabricated metals, chemical, electrical, industrial machinery, transportation equipment), services (depository institutions and wholesale trade).

In addition to sectoral data, I also use total FDI from the U.S. and, as an alternative, global FDI from UNCTAD. I employ these total FDI measures because this is the most common way in the literature to include investment data. FDI from the U.S. may show slightly different effects on human rights than global FDI from UNCTAD, because the latter contains investment from a variety of Western and non-Western countries.

Following other studies in the field (Neumayer and de Soysa 2006; Sorens and Ruger 2012; Mosley and Uno 2007), all FDI stock is divided by GDP. This accounts for the size of the host country economy and models the relative importance of each investment sector in a country. This makes it possible to capture a country's reliance on foreign capital, and to account for the potential power of foreign investors over domestic markets and government policies. The variable was logged to account for skewness.<sup>15</sup>

As control variables, I include *trade openness, level of democracy, economic development, conflict* and *population size*, which are traditional determinants of state repression and personal integrity rights (Landman 2006; Davenport 2007; Davenport and Armstrong 2004; Hill and Jones 2014:103). The main goal here is not to include all possible explanations of repression that have been proposed in the literature<sup>16</sup>. Rather, I will focus on effects of ten different types of FDI, while controlling for potential confounding variables that have been shown to be correlated to both rights and FDI (Achen 2005; Ray 2005). While there is a potentially unlimited list of variables that could influence repression, including them in addition to ten industry sectors and various controls may reduce efficiency of the estimators (Sieberer 2007) and introduces other problems for causal inference (Achen

2005). Young (2009) and Hill and Jones (2014), who also examine repression, make a similar decision.

*Trade* is measured by the sum of a country's total trade (import+export) as a percentage of GDP. Trade openness is, together with FDI, often used as a proxy for economic globalisation (Apodaca 2001; Sorens and Ruger 2012). It captures effects on rights protection through reduction of tariffs and non-tariff trade barriers. The trade variable is taken from the World Bank's World Development Indicator database and logged to account for skewness.

The *democracy level* indicates if a country has established democratic institutions, the rule of law and a good governance structure. It has been shown that democratic countries protect rights better (e.g. Apodaca 2001; Richards et al. 2001). The democracy variable was taken from the Polity IV measure of democracy, and it ranges from -10 (most autocratic regime) to 10 (most democratic).

*Economic development* is measured by GDP per capita. The wealth of a country, represented by this variable, has been shown to have significant effects on rights protection, indicating that wealthier countries are more likely to protect rights than poor countries (e.g. Sorens and Ruger 2012). The economic development variable is taken from the World Bank and logged.

*Conflict* measures if a country was involved in a domestic or international conflict in a given year. Conflict has been shown to be connected to more human rights abuses (e.g. Apodaca 2001; Richards et al. 2001). The conflict variable is a binary variable (1 indicates

occurrence of domestic or international conflict; 0 indicates no conflict). The variable stems from the UCDP/PRIO Armed Conflict Dataset.

*Population size* is the number of people living in a country. A large population size could cause repressive tendencies in governments due to resource scarcity. Also, rights measurements are often based on counting violations; in larger populations more violations might occur (Richards et al. 2001; Sorens and Ruger 2012). The population variable is taken from the World Bank and logged.

For the sectoral FDI models, I add the variables *Employment in Services* and *Employment in Industry*, which are the share of the labor force employed in the industrial sector and in services (as percentage of total employment). These control for the size of these sectors in a host country.<sup>17</sup> The data for sectoral employment are taken from the World Bank.

## Models

For the ordered categorical outcome variables, CIRI and PTS, I estimate an ordered logit model with robust standard errors clustered on country to correct for heteroscedasticity. For the continuous outcome variable, the Latent Human Rights Scores by Fariss, I employ OLS with panel corrected standard errors (PCSE).<sup>18</sup> In both models I include a lagged dependent variable (“Past”) since countries that repressed their citizens in the past are more likely to use repressive acts in the future (Gurr 1988). A lagged dependent variable also corrects the serial correlation (Beck and Katz 1995; 2009).

I include a one-year lag between the outcome and predictors to allow the effect of FDI stock to spread in the country. This means that the accumulated FDI in a country in a given year is expected to correlate with rights protection in the following year, which establishes a time order and suggests a direction of causality from  $FDI(t-1)$  to rights protection( $t$ ).

The data set ranges from 1983 to 2010 and includes up to 121 non-OECD countries.

The selection of these cases is limited to countries with available data on personal integrity rights and FDI measures (see a list of all countries in the online appendix). Two main sets of models are estimated: the first set of models includes total FDI to compare my results with previous work, while the second set of models replaces total FDI with investment in ten industry sectors.

## Results

### Total FDI

In order to follow previous work on the topic, I entered total U.S. and global FDI in the models, before I move on to the sectoral disaggregation. U.S. FDI stock per GDP is not significantly associated with any of the three personal integrity rights measures ([Table 3](#)). This is a similar result to previous studies, which often found no significant connections between FDI and rights. U.S. total FDI was then replaced by global total FDI stock per GDP from UNCTAD. Global FDI is negatively connected to rights protection measured by the CIRI index and the PTS scale, but insignificant for the Latent Human Rights Scores. It is not entirely unexpected that FDI from the U.S. may show different effects than global FDI from

UNCTAD, because the latter contains investment from a range of Western and non-Western countries. Maybe FDI from non-Western countries (reflected in the global FDI data) drives an overall negative effect on rights in developing nations, while FDI from the West (specifically from the U.S.) has a null effect -- and hides the various sectoral components that matter more for human rights than the sum total of FDI.<sup>19</sup> The ambivalent results for total FDI with insignificant or negative coefficients reflect the mixed results in the literature. A sectoral disaggregation, which follows next, may prove more insightful.

The control variables behave mostly as expected. Trade, GDP per capita and democracy<sup>20</sup> are positively connected to personal integrity rights protection, while population size and conflict<sup>21</sup> are negatively associated with rights protection. The past has a strong influence on the current protection of rights.

## **Sectoral FDI**

In the next step, total FDI was replaced by disaggregate U.S. FDI. Now, I employ variables for the manufacture of (1) food, (2) chemical, (3) metals, (4) machinery, (5) electrical and (6) transport goods; as well as investment in the service sectors (7) wholesale trade and (8) depository institutions in the models. The resource sectors petrol and mining FDI will be examined separately in subsets of the data due to missing values (see robustness section). In [Table 4](#), I present a baseline model in the first three columns, and a model including controls for the size of the service and industry sector in column four to six.<sup>22</sup> All



results are presented for the three measures of rights protection, the CIRI physical integrity index, the Political Terror Scale, and the Latent scores.

The findings illustrate that investment is a highly heterogeneous phenomenon. Investment in food, chemical, metal and wholesale trade sectors has negative coefficients, indicating an overall negative effect on human rights protection in the host country. Transport, electrical and depository FDI have positive coefficients and are connected to better rights protection. The coefficient for the manufacture of machinery FDI remains insignificant. Overall, the coefficients are rather small, which has been observed in previous work as well (Sorens and Ruger 2012). This could be due to the fact that FDI is divided by GDP to account for the market size of a host country, or because now several different types of FDI ‘share’ the effects of overall FDI. The coefficients with different signs for different industry sectors in Table 4 support the argument that FDI effects are sector-specific, and that previous studies may have come to mixed results because they employed aggregate FDI measures.

A surprising result was investment in the manufacture of chemical products, such as chemicals and synthetics, drugs or cleaners. This is a market-seeking sector with high skills and technology levels, leading us to expect a positive impact due to both features. Instead, the coefficient is negative. An explanation for a missing positive link could lie in host country characteristics. For example, positive skills and technology transfers to host countries may only take place under favourable domestic conditions, such as an adequate development of institutions, or a reasonably small gap in skills between the investor and host country (Nunnenkamp and Spatz 2004). I follow this argument in the robustness

section. Indeed, when adding country dummies to the model, which account for such country-specific factors, the negative effect of chemical FDI vanishes. Future research in the form of case study research will have to establish which particular unfavourable country characteristics may be influential here, and how this may apply to the chemical manufacturing industry in particular.

The controls for 'employment in services' and 'employment in industry' remain mostly insignificant. In one case, the employment in industry sectors is negatively connected to rights outcomes (Latent scores), indicating that high employment in industrial sectors overall in a country may have negative effects. An explanation could be that more modernised, advanced countries with a large formal sector, for which employment in industry could be a proxy, may also have better monitoring mechanisms to report rights violations (Neumayer and de Soysa 2006). A limitation of the models including sector size is that the sample size is much smaller than in the models without these additional controls, and I will discuss this further in the robustness section.

The results also give indications on why some sectors may have positive effects on rights protection, while others seem to hinder improvements. Are skills and technology levels, or rather FDI motivation, better explanations? Are any of the features stronger than others? Two points can be made here. First, when medium-high skills and technology levels are combined with a market-seeking, integrative approach to investment (electrical, transport and depository FDI), the coefficients are positive, supporting hypothesis 2. Higher skills and technology in these factors may lead to positive spillover effects, growth, and economic

development in host countries, which can enhance rights protection. Reinforcing this effect, MNCs in these sectors are also motivated by access to local markets, where affiliates integrate with society, build good relationships, and may export human rights values to the country. Here, skills levels and motivation for FDI seemed to work in the same direction and may enforce each other. We do not, however, know if one of the two characteristics, skills or motivation, drive the overall positive effect. More illuminating could be sectors where features conflict and could work against each other, because the overall net effect might indicate which characteristic dominates.

Some sectors in the study had indeed features where skills and technology levels, and motivation of FDI, did not work in the same direction. These are food, metals and wholesale trade FDI. Looking at the exact composition of features here, these are sectors with low or medium-low skills and technology, which would not lead to positive backward linkages to the country's economy, and might even cause tensions due to the potential exploitation of cheap labour. But these sectors were also characterised by a market-seeking, integrative business motivation, which could lead to positive outcomes via human rights export. The coefficients for all three sectors are negative. Therefore, the second point to be made here is that a market-seeking motivation alone may not be able to produce positive effects on rights outcomes; it only seems to have positive effects when skills and technology levels are high at the same time.

It should be noted that the human rights export argument has not yet been tested comprehensively in the quantitative literature about FDI effects on rights. The results here

may indicate that the export argument works only in theory; or if it works, it is not very strong because it can not outweigh non-existent or negative effects in low-skilled and low-tech industries. The results in [Table 4](#) therefore indicate that skills and technology characteristics of industry sectors seem to be a stronger driving force behind sectoral FDI effects in conflicting cases. While I did not test this directly, but only through the overall coefficients of each sector, this is a plausible claim. Similar findings exist in other fields. There is a comprehensive body of work in international business studies and development that emphasises and provides abundant evidence that high skills and technology levels can foster spillover effects, growth and economic development ([Nunnenkamp and Spatz 2004](#); [Moran 2006](#)).

In sum, these results support the argument that FDI effects vary across industry sectors and indicate that skills and technology levels may be more influential than the human rights export argument.

## **Robustness Checks**

I conducted a range of robustness checks that (1) examine resource FDI in subsets of the data, and address (2) the choice of U.S. sectoral FDI data, (3) the human rights measurements, (4) time effects, (5) regional and country effects, and (6) missing data.

The results remained largely the same, with the models for aggregate FDI generally being more robust to different specifications than the sectoral models. The online appendix contains all results tables for the robustness checks.

The U.S. Bureau of Economic Analysis provides separate data for petrol FDI only until 1998, and for mining FDI only from 1999.<sup>23</sup> The respective other years contain missing values. The attempt to include both mining and petrol FDI in the main models would result in zero rows after listwise deletion. I therefore examine these two sectors on subsets of the data according to the years in which they are available (Table A6).

Petrol FDI is negatively connected to rights, supporting hypothesis 1, but only when measured by the Latent scores. The coefficient's sign is also negative for the two other rights measures, but insignificant. For mining FDI, the connection to rights protection is either insignificant, or, surprisingly, weakly positive in one case (for the PTS scale).

This would mean that investment in metal and non-metallic mining may benefit rights protection in the host country in some instances. Given that qualitative case studies about mining companies paint a very negative picture, this would be a surprising result. An explanation could be that the single-case literature has been selective, so that mining investments were shown to have negative effects in particular cases; but there is no support for consistently negative effects across countries and time. The result for mining FDI could then be seen as evidence against the conventional wisdom that all resource FDI has a negative impact, and contradicts hypothesis 1.

The second robustness check relates to the use of FDI data from the United States. This study employed sectoral U.S. FDI because it is the largest investor world wide, and global sectoral FDI data (stemming from all investors) in developing nations are not available. UNCTAD used to provide such data for a fee; this service has now been

discontinued. The OECD provides sectoral FDI data, but only from OECD nations to OECD nations, not to developing nations. To control for the economic influence of U.S. FDI in terms of total present FDI in the host country market, I added a variable for the share of U.S. FDI in overall FDI in a country-year, *U.S. Dominance*, to all total and sectoral FDI models.<sup>24</sup> U.S. Dominance is insignificant in all twelve models but one, where the PTS scale is used (Table A7). The coefficient is very small (-0.006, significant at the .05 level). In addition, a dummy was created to distinguish between cases where U.S. FDI dominates overall FDI, and where it does not (1 for U.S. Dominance larger than 50 percent). This dominance dummy is insignificant in all models (Table A8), which suggests that on the whole concerns about using only U.S. FDI are justified, though do not affect in practical terms the baseline results in the main models.<sup>25</sup>

A further robustness check relates to the human rights measurements. In the main models, the only scores selected were of the Political Terror Scale based on Amnesty International reports to rule out potential bias in U.S. State Department reports, which might favourably report on U.S. partner countries. While such bias may no longer be a major concern in the contemporary context, for the historical data used here (from the 1980s), a bias may be present in the data. To examine if a bias exists, following (Young 2009), the Amnesty scores of the PTS were replaced by the State Department scores.

Alternatively, an additive variable created from the two PTS scales (AI + State Dep. divided by 2)<sup>26</sup> was also employed, which produced a 9-point scale. Using these two alternatives as outcome variables did not substantively change the FDI effects (Table A9).

Since the PTS Amnesty variable contains more observation points than the two alternatives, it remained in the main model to preserve a larger sample size.

The next robustness check relates to time effects. A common issue in panel-data analysis is that there might be variation in measures over time that is not captured by existing covariates. A continuous time variable has been added as a control variable,<sup>27</sup> with no substantive changes in the coefficients for most of the variables (Tables A10 and A11). An exception is that once temporal variation is accounted for, global FDI turns out to be insignificant for models employing the CIRI outcome measure. This coefficient was previously negative. It seems that the relationship was largely driven by the failure of the CIRI outcome variable to account for changes in monitoring practices over time. The sectoral FDI variables remain mostly the same in terms of significance and direction.

A further check regarding time relates to the one-year lag between explanatory factors and human rights protection that has been employed, assuming that it takes (at least) one year or so for effects to show. Since I use FDI *stock* data, which have accumulated over time and have (partially) been present in a country for years, a one-year lag has been seen as reasonable (Hafner-Burton 2005; Sorens and Ruger 2012). As an alternative, I added two, three, four and five year-lags between FDI and human rights (Tables A12 and A13). Most results remain stable for the two-year lag<sup>28</sup>, but the variables begin to lose significance levels with larger lags, which indicates that the effects may not be detectable anymore (also, longer lags mean fewer observations due to the introduction of missing values in the time

series). The model fit between a one and two year lag does not substantively improve, so that the one-year lag remained in the main model.

Human rights protection and repression differ across region and countries in the world, indicating that neighbouring influences and country-related factors such as culture or history might be at work as well. To account for the potential impact of such unobserved time-invariant variables, I employ a simple OLS model with region dummies (East Asia and Pacific; Latin America and Caribbean; Middle East and North Africa; South Asia and Sub-Saharan Africa; with the reference category Europe and Central Asia). When reanalysing the total and sectoral FDI models with the regional controls, most results remained substantively similar to the previous findings (Table A14 and A15). Chemical FDI lost significance, which could indicate that the negative coefficient from the main results was influenced by regional factors.

In addition, country dummies were included in a separate model to account for country-specific factors (Tables A16 and A17). Again, most FDI coefficients remain similar, with chemical FDI losing significance. An exception is that machinery FDI is now significant and positive. This sector has a high-medium skills and technology, and efficiency-seeking set-up like electrical and transport FDI, and the results are in line with the earlier results with these sectors.<sup>29</sup>

Finally, missing data is an important and common problem in human rights research involving developing nations. The sample size of the main sectoral models ranges between 806 (PTS) and 935 (Latent Scores), and when sector size is included, it



is reduced to max. 326 after listwise deletion.<sup>30</sup> An examination of percentages of missing data points shows that many observations for the sectoral FDI variables are not available (Table A22). I therefore explored if one can predict the missingness of the sectoral FDI data from existing variables in the data set. For each FDI sector, I created a corresponding dummy (0 = FDI observation is available, 1 = observation missing), which was used as an outcome variable in logistic regressions, where the predictors are the control variables from the main analysis (GDP per capita, democracy etc.). Indeed the control variables can predict missingness, which supports the common argument that often poorer, authoritarian, conflict-ridden countries are more likely to have missing data (Table A23). The main findings are likely not biased by this non-random missingness since I do not only control for these variables in the main regressions, but I also have enough variation in each variable (Table A5). There is still a good range of country-years in the sample ranging from poor to rich, autocratic to democratic, at peace vs. at war, small vs. large countries, so that the analysis provides a good insight into the role of sectoral FDI for personal integrity rights protection.

Still, larger sample sizes are always better, and I explored several options to increase the sample size. First, I entered each sector into its own equation instead of all sectoral FDI at once. Most of the results did not substantially change (Tables A24, A25, A26).<sup>31</sup> While some of the sector coefficients dropped or gained significance, most of them kept the same sign. Among those sectors which are significant, none produced surprises, so that the finding that higher skilled sectors have positive effects while those with lower skills and

technology have negative effects, holds. When including sector size controls, many results still stayed the same. However, for the models including the variables Employment in Services and Employment in Industry have even smaller sample sizes, so the results from entering each sector separately are of particular interest. Among the 24 models, which mostly confirmed my findings, three of the sectors (machinery, electrical, depository FDI) had significant coefficients with directions that were not in line with the expectations and the main results (Tables A27, A28, A29). I suspect that omitted variable bias may be at work here. The sectoral FDI variables are correlated with each other (and the outcome variable), as the correlation matrix (Table A2) shows. FDI in one sector is likely to be a key omitted variable in a regression of FDI in another sector. For the models without sector size controls this does not seem to matter much since the results are similar, but for those where sector size is included the changes in some of the coefficients indicate that these models should be treated cautiously.

Another way to increase the sample size is to include all countries, and not just developing nations, in the analysis. When I re-ran the models, the main results were similar (see table A32). Again, some variables lost or gained significance, but the main results generally hold.<sup>32</sup>

## Conclusions

This article addressed the question: How does foreign direct investment affect levels of repression and personal integrity rights? The main purpose was to introduce a sectoral view

of FDI to the human rights literature, since virtually all studies on effects of FDI on rights protection used lump-sum FDI measures and yielded conflicting results. The conventional mixed-bag effect was confirmed here: when employing total FDI as a first step, effects on rights protection were inconclusive (negative or insignificant). Total FDI data was then replaced by sectoral FDI. This result supported the main argument that sectors matter. Depending on the industry, FDI was connected to rights in different ways. Generally, FDI was positively connected to rights outcomes when medium- and high-skilled workers and technology were present. Sectors with low skills and technology levels had negative effects. This held even when sectors were characterised by investment motivations that are not necessarily beneficial for rights protection. In several instances, skills and technology levels seemed to be the driving force behind FDI effects and trumped potential influences via the motivation link. The strong influence of skills and technology levels on fostering economic development reflects findings in the literature on spillover effects and growth in international business studies and development (Nunnenkamp and Spatz 2004; Moran 2006). The results were robust across several measures for repression and rights protection, as well as when accounting for sector size, region and country influences, and time effects.

The results of this study have pointed to many opportunities to follow up with qualitative and quantitative human rights research from a sectoral perspective. First, further case-study work needs to examine the pathways discussed here in more detail, and in specific country contexts. Secondly, FDI increasingly comes from non-Western countries, and many previously developing nations now invest in neighbouring countries. It would be

interesting to conduct statistical analyses on sectoral FDI stemming from non-traditional investors such as China.

To sum up, the sectoral models employed here showed that an industry breakdown gives more insight into the relationship between FDI and rights than in previous work, and illustrated the importance of exploring industry-specific links to extend the findings presented here. In doing so, this article answered long existing calls in the human rights literature requesting such an analysis (Kim and Trumbore 2010; Apodaca 2002; Sorens and Ruger 2012). To the best of my knowledge, this is the first study on effects of FDI on repression that integrates sector-specific factors into a theoretical framework and tests this in a cross-country time-series analysis. The study therefore adds important insights to the literature on determinants of repression and aims to inspire new discussions regarding the previously “unstable” (Davenport 2007:14) findings about FDI effects on host countries.

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## **Supplemental Material**

Supplemental materials, including tables for the robustness checks, can be accessed in the online appendix on the publisher's website.

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## Notes

<sup>1</sup>The replication data used in the study can be obtained at

<http://thedata.harvard.edu/dvn/dv/jhr>.

<sup>2</sup>There are no cross-country measures for direct human rights violations conducted by multinational corporations (MNCs) in host countries. Rather, the existing indices are suitable for assessing the levels of government repression and rights violations by state actors.

<sup>3</sup>See reports on the Business and Human Rights Resource Centre website, e.g.

<http://business-humanrights.org/en/oil-pollution/human-rights-impacts-of-oil-pollution-nigeria> (accessed June 9, 2016).

<sup>4</sup>Exceptions are Smith et al. (1999) and Timberlake and Williams (1984).

<sup>5</sup>One could also make the opposite case and argue that expropriation of MNCs, and subsequent MNC withdrawal, might result in hindering human rights (Johnston et al. 2016).

<sup>6</sup>There are no efficiency-seeking and low-skilled FDI industries included in this study due to data availability. I can therefore not fully test the skills variation argument within efficiency-seeking FDI.

<sup>7</sup>Cingranelli, David L. and David L. Richards. 2008. The Cingranelli-Richards Human Rights Dataset Version 2008.03.12. <http://www.humanrightsdata.com/p/data-documentation.html>.

<sup>8</sup>Political Terror Scale 1976-2010. Retrieved October 25, 2011, from the Political Terror Scale Web site: <http://www.politicalterrorscale.org/>.

<sup>9</sup>Latent Human Rights Protection Scores (Version 2), provided by Christopher Fariss by email. Up- dates of this measurement are available from <http://humanrightsscores.org/>. See Fariss (2014), and further also Schnakenberg and Fariss (2014).

<sup>10</sup>As Blanton and Blanton (2015) have also noted, data for sectoral FDI invested in developing nations in the form of flow data are not available from e.g. the World Bank, U.S. BEA, UNCTAD or OECD. Therefore, a robustness check using data for sectoral FDI flow is not possible.

<sup>11</sup>Direct investment abroad is defined by the U.S. Bureau of Economic Analysis (BEA) as “[o]wnership or control, directly or indirectly, by one U.S. person, or entity, of 10 percent or more of the voting securities of an incorporated foreign business enterprise or an equivalent interest in an unincorporated foreign business enterprise.” See <http://www.bea.gov/glossary/> (accessed June 9, 2016).

<sup>12</sup>UNCTAD used to provide similar data for a fee; this service is now discontinued. The OECD provides data for sectoral outward FDI but only for OECD host countries - and not developing nations, which are the focus of this study.

<sup>13</sup>While some studies (Nunnenkamp and Spatz 2004; Meyer 1996) have argued that U.S. FDI in a host country can serve as proxy for its total inward FDI position, I hesitate to make this claim.

<sup>14</sup>Adolph et al. (2016) demonstrate that a country's labour culture and labour regulation can influence other states via trade relations. In particular, Africa's exports to China can influence labor practices and worker rights in Africa.

<sup>15</sup>Some observations for U.S. FDI stock were negative. The reason is that the investment position abroad is measured as the net financial claims that U.S. companies have on their foreign affiliates. A negative position means that U.S. companies are in a net liability position toward their foreign affiliates, which can occur e.g. if the U.S. parent companies received loans from their foreign affiliates (email correspondence with BEA Feb 13, 2012). In this paper, similar to Blanton and Blanton (2009), all negative or zero values of FDI/GDP were recoded to 1 before logging, which then logs to zero.

<sup>16</sup>For example, judicial independence (Abouharb et al. 2013) or treaty membership (Brysk and Jimenez 2012; Sandholtz 2012).

<sup>17</sup>Data for a greater disaggregation into sector size of each particular industry sector examined here is not available.

<sup>18</sup>For the ordered logit models, I use the functions `lrm()` and `robcov()` from the R package "rms" version 4.3-0, which produces the same results as the corresponding STATA command `ologit` with the `cluster()` modification (STATA version 13.0). For OLS with PCSE, I use the functions `plm()` and `vcovBK()` from the R package "plm" version 1.3.1, which produces the same results as the STATA command `xtpcse` with the pairwise specification.

<sup>19</sup>A second, alternative explanation of the negative coefficients for total global FDI refers to the three outcome measures. Only the coefficients for CIRI and PTS are negative and significant, while the Latent Scores remain insignificant. Only the Latent Scores correct for more monitoring of violations in recent years. In fact, the robustness section will show that for the CIRI outcome variable, the negative effect of FDI vanishes once temporal variation is accounted for.

<sup>20</sup>In the main models, I use the “polity2” scale, which includes values of -10 (most autocratic) to 10 (most democratic). Davenport and Armstrong (2004) have argued that effects of democracy may only take place after certain threshold. Following Davenport and Armstrong (2004) and Young (2009), I use binary composition which inserts dummy variables for each of the democracy level into the models. I find, consistent with the authors, that there may be a threshold effect above a democracy level of 8 in some cases. The coefficients, signs and goodness of fit are not affected by this (Tables A20 and A21 in the appendix).

<sup>21</sup>The repression literature has suggested that civil war is much more prevalent and crucial than international war in its impact on rights protection. When replacing my conflict measure, which combines both domestic and international war following Apodaca (2001), with separate variables for major and minor civil wars, the results are not affected (Tables A18 and A19 in the appendix).

<sup>22</sup>Since global sectoral data located in non-OECD nations are not available from UNCTAD, OECD or the World Bank, models employ only U.S. FDI in this section.

<sup>23</sup>The BEA classified FDI data up until 1998 according to Standard Industrial Classification (SIC); FDI data starting from 1999 were classified according to the North American Industry Classification System (NAICS). Most sectors employed here remain practically the same and can be examined for the full timeline. However, petrol and mining FDI are available only for the two separate time periods (petrol is only available until 1998; mining is only available from 1999). The BEA notes: “For earlier years, petroleum is shown as a separate major industry group because petroleum-related activities accounted for a major portion of all direct investment activity; however, their relative importance has declined significantly in recent years, reducing the need for a separate group.” See [http://www.bea.gov/scb/account\\_articles/international/0899iid/box\\_2.htm](http://www.bea.gov/scb/account_articles/international/0899iid/box_2.htm) (accessed 12 April 2016).

<sup>24</sup>U.S. FDI total divided by UN FDI total multiplied by 100 (per country-year); lagged by one year as all independent variables.

<sup>25</sup>I thank an anonymous reviewer for making this point. Peter Nunnenkamp and Robert G. Blanton provided helpful feedback on how to deal with this issue.

<sup>26</sup>I thank an anonymous reviewer for this suggestion.

<sup>27</sup>This is preferred to adding time fixed effects, which would over-specify the model in light of the small sample size.

<sup>28</sup>Investment in food sectors turns, for the two year lag, to a positive sign, and then becomes insignificant. Food is the least stable sector across the robustness



checks. An explanation could be that it depends on country characteristics not accounted for by the control variables; when adding country and region dummies, food FDI becomes insignificant in all models.

<sup>29</sup>Power analysis for multiple regression indicates that models including country dummies are least able to detect small effects. For example, for the Latent Scores as an outcome, the model with country dummies includes 118 predictors and has good power to detect a medium sized effect, but it has little power to detect small effect sizes (Cohen's  $f^2 = 0.02$ ), leaving an about 70 percent chance of a type II error. Since the effect sizes of the sectoral FDI data are rather small across all models employed here, the country dummy model is least favourable.

<sup>30</sup>In terms of statistical power, the sample size in the main sectoral models (Table 4, models 1-3) is large enough to detect small effects. When sector size controls are included (Table 4, models 4-6), only medium size effects can be detected so that chances of missing smaller effects are higher (see power calculations in Tables A30 and A31).

<sup>31</sup>I thank an anonymous reviewer for this suggestion.

<sup>32</sup>An exception is one model, where wholesale trade has a significant positive coefficient (which was previously mostly negative), which could be explained by the fact that we now have quite different country-year compositions in the sample, including OECD members and not just developing nations, as in all the other models here.

Table 1: Features of Sectoral FDI and the Expected Impact on Rights Protection

FDI	Description	Skills and Technology	Motivation	Impact
<b>Extractive:</b>				
Petrol	oil and gas extraction	low	resource	-
Mining	metal mining, non-metallic mining & quarrying	low	resource	-
<b>Manufacturing:</b>				
Food	food and kindred products e.g. beverages, preserved fruits	low	market	ind.
Chemical	industrial chemicals and synthetics, drugs, cleaners etc.	high	market	+
Metals	primary metals; fabricated metals e.g. metal cans, cutlery	low-medium	market	ind.
Machinery	industrial machinery and equipment e.g. construction machinery, computer and office equipment, engines and turbines, special industry machinery	high- medium	efficiency	+
Electrical	electrical equipment, appliances e.g. household appliances, electronic components	medium- high	efficiency	+
Transport	equipment such as motor vehicles, aerospace and ship products	medium- high	efficiency	+
<b>Service:</b>				
Wholesale Trade	durable goods (e.g. motor vehicles, electrical goods); non-durable goods (e.g. apparel, groceries)	medium-low	market	ind.
Depository Institutions	depository institutions such as banks and savings institutions	high	market	+

FDI motivation drawn from Blanton and Blanton (2009:478). Skills levels and technology intensity are drawn from OECD (2005:182) and OECD (2009:201). Mining and petrol industries are not commonly classified according to technology levels and are market here as 'low' for low skills (OECD 2009). Service sectors are not usually categorised in terms of technology intensity, but as (non-)knowledge intensive (OECD 2009:201); but knowledge highly related to skills/technology and therefore used in the same column as technology. Wholesale trade is non-knowledge intensive (marked as 'low'), and depository institutions is knowledge intensive (marked as 'high').

Table 2: Variable Descriptions

Variable	Description	Scores
<b>Outcome:</b>		
CIRI Integrity	torture, extrajudicial killings, disappearance, political imprisonment ("PHYSINT" variable from CIRI data set); score of 8 represents full rights protection	0 to 8
PTS	execution, torture, forced disappearance, unlawful imprisonment, discrimination based on beliefs; original scale <i>reversed</i> so that score of 5 represents full rights protection ("Amnesty" from PTS data set)	1 to 5
Latent Scores	Latent protection scores based on previous measurements (repression, torture, physical integrity rights); higher scores represent better rights protection	continuous; standard normal
<b>FDI:</b>		
Total FDI	FDI stock per GDP (log) from U.S. Bureau of Economic Analysis, and global FDI measures from UNCTAD data base; negative and zero values of FDI stock/GDP were recoded to 1, then logged	continuous
Sectoral FDI	FDI stock per GDP (log) for ten industries across resource, manufacturing and service sectors; from U.S. Bureau of Economic Analysis	continuous
<b>Controls:</b>		
Trade	sum of total trade divided by GDP (log) from World Bank Indicators database	continuous
GDPpc	economic development measured as GDP per capita (log) from World Bank Indicators	continuous
Population	total population (log) from World Bank Indicators	continuous
Democracy	measure of democracy level ("polity2" from Polity IV data set); scores of -10 are most autocratic states; 10 are most democratic states	-10 to +10
Conflict	international or domestic conflict in a country-year; score of 0 represents no conflict in a country-year; 1 = conflict; from UCDP/PRIO Armed Conflict Dataset	binary
Employment in Services and Industry	share of the labor force employed in the industrial sector and in services as percentage of total employment (log); World Bank Indicators	continuous

Table 3: Total FDI and Personal Integrity Rights Protection (1983-2010)

	<i>Dependent variable:</i>					
	CIRI Integrity	PTS Amnesty	Latent Scores	CIRI Integrity	PTS Amnesty	Latent Scores
	<i>logistic</i>	<i>logistic</i>	<i>panel</i>	<i>logistic</i>	<i>logistic</i>	<i>panel</i>
			<i>linear</i>			<i>linear</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Global FDI p. GDP	-0.033** (0.017)	-0.037** (0.018)	-0.001 (0.001)			
US FDI p. GDP				-0.022 (0.024)	-0.029 (0.028)	0.002 (0.002)
Trade	0.091 (0.092)	0.243** (0.116)	-0.001 (0.007)	0.133 (0.121)	0.316** (0.155)	-0.001 (0.008)
GDP p. capita	0.102** (0.045)	0.104* (0.054)	0.010*** (0.004)	0.114** (0.049)	0.099 (0.064)	0.004 (0.004)
Population	-0.335*** (0.034)	-0.225*** (0.039)	-0.014*** (0.004)	-0.337*** (0.042)	-0.242*** (0.046)	-0.016*** (0.004)
Democracy	0.036*** (0.008)	0.015* (0.008)	0.001*** (0.0005)	0.043*** (0.009)	0.020** (0.010)	0.001** (0.001)
Conflict	-0.688*** (0.128)	-0.932*** (0.151)	0.001 (0.011)	-0.844*** (0.158)	-0.912*** (0.192)	0.003 (0.013)
Past	0.990*** (0.042)	1.854*** (0.094)	0.969*** (0.010)	0.959*** (0.055)	1.800*** (0.110)	0.972*** (0.011)
Observations	2,799	2,523	2,934	1,879	1,697	1,925
R <sup>2</sup>	0.681	0.617	0.972	0.690	0.623	0.974
Adjusted R <sup>2</sup>			0.969			0.970

*Note:*

\* p<0.1;

\*\* p<0.05;

\*\*\* p<0.01

Ordered logit with country-clustered standard errors in parentheses below the coefficient estimates. OLS with panel corrected standard errors (PCSE) in parentheses below the coefficient estimates. FDIpGDP, GDPpc, population, trade are logged. Past is the lagged dependent variable (LDV).

Table 4: Sectoral FDI and Personal Integrity Rights Protection (1983-2010)

	<i>Dependent variable:</i>					
	CIRI Integrity	PTS Amnesty	Latent Scores	CIRI Integrity	PTS Amnesty	Latent Scores
	<i>logistic</i>	<i>logistic</i>	<i>panel</i>	<i>logistic</i>	<i>logistic</i>	<i>panel</i>
		<i>Baseline</i>	<i>linear</i>		Sector Size Included	<i>linear</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Food FDI	-0.030 (0.039)	-0.004 (0.043)	0.004 (0.004)	-0.128** (0.060)	-0.058 (0.098)	0.001 (0.007)
Chemical FDI	-0.056* (0.030)	-0.054 (0.040)	-0.003 (0.004)	-0.089* (0.050)	-0.018 (0.114)	0.001 (0.006)
Metal FDI	-0.035 (0.034)	-0.056 (0.034)	-0.010*** (0.004)	-0.034 (0.038)	-0.155** (0.062)	-0.005 (0.004)
Machinery FDI	0.021 (0.037)	-0.024 (0.031)	0.005 (0.004)	-0.031 (0.057)	-0.125 (0.080)	-0.002 (0.005)
Electrical FDI	0.020 (0.029)	0.053* (0.031)	0.006** (0.003)	0.027 (0.051)	0.115* (0.062)	0.001 (0.005)
Transport FDI	0.010 (0.028)	-0.0001 (0.034)	0.003 (0.003)	0.031 (0.043)	-0.032 (0.053)	0.006* (0.003)
Wholesale FDI	-0.023 (0.020)	-0.006 (0.027)	-0.006** (0.003)	0.011 (0.035)	-0.008 (0.058)	-0.004 (0.004)
Depository FDI	0.055 (0.035)	0.107*** (0.027)	0.004** (0.002)	0.090* (0.050)	0.144* (0.082)	-0.001 (0.004)
Trade	0.078 (0.145)	0.361** (0.183)	0.010 (0.012)	-0.150 (0.220)	0.289 (0.280)	0.019 (0.023)
GDP p. capita	0.045 (0.089)	0.071 (0.082)	0.005 (0.007)	0.098 (0.164)	-0.021 (0.176)	0.001 (0.015)
Population	-0.385*** (0.078)	-0.211** (0.095)	-0.008 (0.008)	-0.613*** (0.181)	-0.648*** (0.211)	-0.019 (0.019)
Democracy	0.049*** (0.012)	0.027*** (0.012)	0.002* (0.001)	0.048*** (0.016)	-0.022 (0.023)	-0.001 (0.002)
Conflict	-0.868*** (0.214)	-1.118*** (0.244)	-0.016 (0.013)	-1.698*** (0.356)	-0.800** (0.400)	-0.015 (0.028)
Employ. Services				-0.072 (0.423)	0.387 (0.711)	0.061 (0.044)
Employ. Industry				-0.444 (0.281)	-0.312 (0.442)	-0.048* (0.025)
Past	0.816*** (0.063)	1.652*** (0.160)	0.957*** (0.014)	1.023*** (0.114)	1.649*** (0.209)	0.956*** (0.020)
Observations	882	806	935	324	282	326
R <sup>2</sup>	0.637	0.611	0.967	0.764	0.683	0.978
Adjusted R <sup>2</sup>			0.952			0.927

Note:

\* p<0.1;

\*\* p<0.05;

\*\*\* p<0.01

Ordered logit with country-clustered standard errors. OLS with panel corrected standard errors. All FDI is divided by GDP, then logged. GDP p. capita, population and trade are logged.

Past is the lagged dependent variable (LDV).