FDI and Human Development: What is the Role of Governance?

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I. Introduction

This paper examines how the quality of governance alters the effect of Foreign Direct

Investment (FDI) inflows on human development. The *Benchmark Definition of Foreign Direct*

Investment explains the category of investment FDI falls under,

> Direct investment is a category of cross-border investment made by a resident in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor. The motivation of the direct investor is a strategic long-term relationship with the direct investment enterprise to ensure a significant degree of influence by the direct investor in the management of the direct investment enterprise. The "lasting interest" is evidenced when the direct investor owns at least 10% of the voting power of the direct investment enterprise (OECD, 2008, p. 17).

Over the past 50 years, developing countries' attitudes towards FDI have changed substantially.

Until the mid-1980s, many were wary of FDI's influence on their respective economies.

However, these attitudes towards FDI began to change. Policymakers sought FDI in an effort to

finance development and integrate themselves into the global economy. FDI inflows to

developing economies increased rapidly from $29.9 billion in 1985 to $564.4 billion in 2000 to

about $702.8 billion in 2012 (constant 2012 dollars, UNCTADSTAT database). Additionally,

international pressures began to push developing countries towards creating pro-FDI

environments, as evidenced by pro-FDI policy's inclusion in the Washington Consensus

(Birdsall et al., 2010). Policies towards foreign investors are now at the forefront of economic

policymaking in developing countries.

Understanding governance's effect on FDI's effectiveness is vital for sound

policymaking. Kaufmann et al. (2000) define governance as "the traditions and institutions that

determine how authority is exercised in a particular country." This paper considers governance

under this definition and judges the quality of governance based on the six dimensions of

governance measured by the World Governance Indicators (WGIs): voice and accountability,

political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. It's likely that better governance improves development. However, quantifying the magnitude of this impact and investigating how governance interacts with the FDI-development relationship is important. If worse governance leads to less effective FDI, then poorly governed countries should focus their efforts on improving governance before implementing pro-FDI policies. Moreover, investigating which dimensions of governance have the greatest impact on the FDI-human development relationship provides further valuable insight.

A great deal of research has been conducted investigating FDI inflow's impact on a country's welfare. The most commonly investigated welfare outcome has been economic growth. Although the results are somewhat ambiguous, most empirical findings indicate that FDI has a positive effect on growth (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004; Balasubramanyam, Salisu, & Sapsford, 1996; Borensztein, De Gregorio, & Lee, 1998; Carkovic & Levine, 2002; De Mello, 1999; Li & Liu, 2005; Nair-Reichert & Weinhold, 2001; Sylwester, 2005; Zhang, 2001). Recently, studies have started to consider human development, a more comprehensive welfare outcome (Lehnert, Benmamoun, & Zhao, 2013; Reiter & Steensma, 2010; Sharma & Gani, 2004). Furthermore, studies are beginning to consider the heterogeneity of FDI's impact on welfare outcomes based on host countries' characteristics (Alfaro et al., 2004; Balasubramanyam et al., 1996; Lehnert et al., 2013; Reiter & Steensma, 2010). Despite these contributions, there is still limited literature on how governance alters the relationship between FDI and welfare outcomes. This analysis seeks to build upon past research by considering governance as a host country characteristic that can alter FDI's impact on broad measures of human development.

This paper analyzes a sample of 158 countries over the 1996-2010 period using the panel least squares method with fixed effects as the main empirical approach. The dependent variables are the well-known United Nations Development Programme's (UNDP) Human Development Index (HDI) and its three component indices. The independent variable of primary interest is FDI inflows (% of GDP) and the models will use the Worldwide Governance Indicators (WGI) as measures of governance. The models consider the potential synergistic effect of governance by including six FDI-governance interaction terms, one for each dimension of governance measured in the WGI database.

The following section provides background on comprehensive measures of welfare, discusses the means by which FDI can improve development, and elaborates on how this analysis contributes to previous literature. The third section provides details on the data and empirical strategy. The fourth section presents and interprets the results of each model. The final section concludes the analysis and recognizes its limitations.

II. Background and Literature Review

II. A. Comprehensive measures of welfare

Over the past few decades, measures of country welfare have expanded upon economic growth. Recent attempts have been made to consider other factors such as education and health. Amartya Sen's work has highlighted the limitations of economic growth as a measure of overall welfare. He illustrates this in a comparison of China, Sri Lanka, South Africa, Brazil, and Gabon. In 1992, China and Sri Lanka had far lower GNP per capita but had higher life expectancies when compared to South Africa, Brazil, and Gabon (Sen, 1995). Measures of development expand on the notion of economic welfare by including other indicators of quality of living and freedoms. The most commonly used and widely available comprehensive measure

is the UNDP's HDI (UNDP International Human Development Indicators 2013). Following Anand and Sen (1994) I define overall welfare as encompassing the three components of HDI: life expectancy, education, and income.

II. B. How FDI can improve welfare and empirical evidence

FDI can directly affect countries through additional tax revenue, employment, and additional capital. Past research suggests it can indirectly affect welfare through industry structure, technological spillovers, and human capital development. It is possible that FDI can alter industry structure by "crowding in" domestic investment and increasing productivity. Past research suggests that FDI's effect on domestic investment varies by region, income level, and level of human capital (Agosin and Machado, 2005; Al-Sadig, 2013). Mixed empirical results also characterize the literature regarding FDI's impact on productivity. Case studies on Venezuela, Mexico, Indonesia and Morocco find that some level of foreign ownership can increase the productivity of a firm. However, the case studies don't all find that these productivity boosts spillover to domestic firms (Aitken and Harrison, 1999; Blomstrom and Sjoholm, 1999; Blomstrom and Wolff, 1994; Haddad and Harrison, 1993). Furthermore, spillovers not only vary across industries and firms but countries as well. Past findings suggest that technology spillovers are dependent on a host country's level of human capital (Borensztein et al., 1998).

Further evidence suggests that FDI can improve levels of human capital in host countries. It is possible that FDI can cause technology spillovers that increase the demand for skilled labor. This demand could focus countries on further developing human capital. Improving human capital would have long-term payoffs on human development. An analysis of manufacturing industries in Mexico found that FDI could account for a significant portion of the increase in

skilled labor's share of total wages (Feenstra and Hanson, 1997). Aitken et al.'s (1996) results

from Venezuela, Mexico, and the U.S. suggest that foreign firms have greater human capital

formation and lower turnover. These findings indicate that FDI has a positive effect on human

capital formation, especially when it's in the interest of foreign owned firms.

Previous country case studies suggest that FDI can directly and indirectly positively

affect host country welfare. However, these positive effects aren't always guaranteed. Empirical

results have found that FDI generally has a positive effect on economic growth (Alfaro, Chanda,

Kalemli-Ozcan, & Sayek, 2004; Balasubramanyam, Salisu, & Sapsford, 1996; Borensztein, De

Gregorio, & Lee, 1998; Carkovic & Levine, 2002; De Mello, 1999; Li & Liu, 2005; Nair-

Reichert & Weinhold, 2001; Sylwester, 2005; Zhang, 2001). Studies that use human

development as a welfare outcome yield similar results (Lehnert, Benmamoun, & Zhao, 2013;

Reiter & Steensma, 2010; Sharma & Gani, 2004). I build off of this literature by considering

governance as a host country characteristic that FDI's effect can be dependent on.

II. C. The importance of host country characteristics and governance

Collectively, empirical results yield positive, but ambiguous results on FDI's impact on

host countries. However, it has become increasingly clear that FDI's impact is dependent on

host country characteristics. This paper considers the quality of governance of host countries. A

country with better governance can utilize funds more effectively and implement more

competent policy. However, to what degree can governance improve FDI's impact? Olson et al.

(2000) argue that the quality of governance is responsible for differences in growth among

developing countries. Furthermore, they find that productivity growth is higher in better-

governed countries. These results support the notion that quality governance can improve the

spillover effects of FDI. Additionally, better-governed countries appear to attract more FDI

inflows (Globerman and Shapiro, 2002; Zhao et. al, 2003). Not only does better governance attract more FDI, but research also suggests that FDI inflows help improve the institutional environment of host countries (Kwok and Tadesse 2006). From the results of this research, Lehnert et al. (2013) posit that better governance interacts with FDI to create pass-through influences on welfare.

Thus far, Reiter and Steensma (2010) and Lehnert et al. (2013) are the only studies to consider a governance measure that can alter the FDI-development relationship. Reiter and Steensma (2010) find that the relationship between FDI inflows and improvements in human development is more strongly positive when corruption is low. However, they only consider changes in HDI over one year. I consider changes in human development over five year periods since they're more likely to reflect meaningful changes in health and education outcomes. I also introduce five additional measures of governance into my models by using the WGI database. Lehnert et al. (2013) find that FDI stock has a positive influence on human development and that governance positively synergizes this influence. I contribute to their findings by seeing if these results hold for the relationship between FDI inflows and period-to-period improvement in human development. FDI stock measures the level of FDI in a country in a given year while FDI inflows measure the additional FDI received by a country in a given year. I also consider each individual dimension of governance in the WGI database rather than a composite governance measure.

III. Data and Empirical Strategy

III. A. Data and Sample

The sample consists of an unbalanced panel of 158 countries over the time period of 1996-2010. The unit of observation is a country in a given five-year period. The 5-year periods

are: 1996-2000, 2001-2005, and 2006-2010. The availability of data for FDI inflows, HDI, and governance indicators was the primary factor in selecting the countries and years. I refined the raw dataset by excluding observations that had missing values for any variable included in the full model. As a result, the final balanced panel dataset used for the estimations has 405 observations. The dataset consists of data from five different sources:

- This analysis uses HDI and HDI component data from the UNDP's International Human Development Indicators online database. The database contains HDI data for 187 economies for the following years: 1980, 1990, 2000, 2005, and 2006-2012. This paper's dataset interpolates values for HDI and its components between available years. HDI uses four development indicators in its calculation: life expectancy at birth, mean years of schooling, expected years of schooling, and gross national income per capita. The index is the geometric mean of its education, health, and income components, as indicated in Table 1a. Although the dataset covers a large number of countries and years, its unbalanced nature further limits the total number of observations in the final sample.

- The FDI inflows data come from the United Nations Conference on Trade and Development's (UNCTAD's) online database UNCTADSTAT. FDI inflows data are available from 1970-2012. This analysis scales FDI by economy size by considering FDI inflows *as a percentage of GDP*.

- Following the previous literature on the effects of FDI, I draw control variables from two different sources (Lehnert et al, 2013; Reiter and Steensma, 2010).   Aid inflows data are from the World Bank's World Development Indicators (WDI). These data are available for 214 economies from 1960-2012 as well. The WDI measures aid inflows per capita as the net official development assistance (ODA) per capita received from members of the

Development Assistance Committee (DAC), non-DAC countries, and multilateral

institutions. Trade openness measures how liberalized a host country's trade regime is.

The Penn World Table Version 7.1 measures trade openness as total exports plus imports

as a share of GDP. The unbalanced dataset covers 189 countries from 1960-2010.

- The World Bank's Worldwide Governance Indicators (WGI) measures six dimensions of

  governance for 215 countries from 1996-2012. The WGI reports the following

  governance indicators: voice and accountability, political stability and absence of

  violence, government effectiveness, regulatory quality, rule of law, and control of

  corruption (see Table 1b for descriptions of each indicator). There are 31 data sources

  used in creating the composite measures: 9 from surveys of households and firms, 4 from

  commercial business information providers, 10 from non-governmental organizations,

  and 8 from public sector organizations. The composite measures are normalized to be

  mean-zero with standard deviations of one. They range from approximately -2.5 to 2.5.

Table 2a and 2b contain the descriptive statistics for the sample. Table 2a considers the

sample using a country in a given year as the unit of observation. The mean annual changes in

HDI and each of its components are small since development outcomes change over long periods

of time. Table 2b considers the sample using a country in a given 5-year period. This is the

sample used in the estimates. The mean period changes in HDI and its components are far larger

and more likely to reflect meaningful changes in education and health outcomes. The mean

scores of HDI, the Income Index, the Education Index, and the Health index are representative of

a country with medium human development. This reflects the range of development in the

sample, as one can see in Appendix Table 1. The means are close to 0 and the standard

deviations are close to 1 for all six governance dimension. This suggests that the sample has a representative distribution of governance as well.

   III. B. Empirical Strategy

   I estimate the models using panel linear regression with country-specific and time-specific fixed effects. Country-specific fixed effects control for unobserved variables that vary across countries, but not across time. Relevant examples of such variables are initial levels of GDP, initial stock of FDI, initial level of human development, and national culture. Including time-specific fixed effects controls for unobserved variables that vary over time but not across states. The upward global trend of HDI, justifies the inclusion of a time-specific fixed effect. Inclusion of these effects and the control variables reduce the concerns for omitted variable bias.

   All independent variables are averaged over five year periods. Furthermore, the change observed in HDI in period *p* is the difference in HDI from the last year in period *p* and the last year in period *p-1*. This analysis considers governance as a host country characteristic that can alter FDI's impact on development. The model tests this by including interaction terms between FDI and the six governance measures. The following four models estimate the empirical relationship between FDI inflows and host-country welfare:

(1)-(4) $\Delta W_{i,p} = \beta_0 + \beta_1(fdi)_{i,p} + \beta_2(aid)_{i,p} + \beta_3(openness)_{i,p} + \beta_4(corruption)_{i,p} + \beta_5(rule\ of\ law)_{i,p} + \beta_6(gov.\ effectiveness)_{i,p} + \beta_7(political\ stability)_{i,p} + \beta_8(regulatory\ quality)_{i,p} + \beta_9(fdi\ x\ voice\ and\ accountability)_{i,p} + \beta_{10}(fdi\ x\ corruption)_{i,p} + \beta_{11}(fdi\ x\ rule\ of\ law)_{i,p} + \beta_{12}(fdi\ x\ gov.\ effectiveness)_{i,p} + \beta_{13}(fdi\ x\ political\ stability)_{i,p} + \beta_{14}(fdi\ x\ regulatory\ quality)_{i,p} + \beta_{15}(fdi\ x\ voice\ and\ accountability)_{i,p} + v_i + \mu_p + u_{i,p}$

   The $\Delta W_{i,p}$ term is representative of the four dependent variables: UNDP's HDI, Income Index, Education Index, and Health Index. The dependent and independent variables are defined

in Tables 1a and 1b. The terms v_i, μ_p, and $u_{i,p}$ are the unobservable country-specific fixed effects (v_i), time-specific fixed effects (μ_p), and observation error terms ($u_{i,p}$). This model seeks to estimate how FDI inflows impact period-to-period improvement in three aspects of welfare: income, education, and health. These aspects of welfare correspond to the three components of the UNDP's Human Development Index (HDI). Although it might seem intuitive to consider annual improvements in HDI, year-to-year changes are difficult to interpret. Improvements in educational and health outcomes, such as mean years of schooling and life expectancy, occur gradually over long periods of time. Thus, large annual changes in HDI are likely due to economic growth rather than changes in education and health outcomes. This paper considers changes in HDI over 5-year periods. Changes over these periods are more likely to reflect meaningful changes in education and health.

IV. Results

IV. A. Effect of FDI and governance on HDI

The estimates in table 3a test how average levels of FDI inflows in 5-year periods impact the change in HDI over a period. Model (1) has estimates for the base specification. Adding aid and trade openness into the regression appears to have a minimal effect on the FDI coefficient. The only statistically significant coefficient is of average aid inflows. However, the coefficient on average FDI inflows is positive as well. Based on model (4), increasing average FDI inflows (% of GDP) in a period by one standard deviation (approximately 4.8% of GDP) will increase period-to-period improvement in HDI by 0.0008 points. The magnitude of the coefficient on FDI inflows is not economically significant considering the standard deviation in HDI period change. Consider the case of Nigeria, the most populous country in Africa. From 2006-2010, their average annual FDI inflow (% of GDP) was about 3.75% and their average HDI was

0.4528. Had they attracted one standard deviation above the mean average FDI inflow (9.235% of GDP), model (4) predicts that the improvement in HDI from 2006 to 2010 would only increase by about 0.0009 points. Now consider the upper bound of the 95% confidence interval of the FDI coefficient (0.00099). In this case, increasing average FDI inflows by one standard deviation will increase period-to-period improvement in HDI by 0.0048 points. Thus, model (4) rejects the null hypothesis that a one standard deviation increase in FDI would increase HDI improvement by more than 0.0048 points. Thus, the model finds it highly unlikely that FDI has an economically significant effect on improvements in HDI.

The estimates in Table 3b add the governance and FDI-governance interaction terms. Model (7) includes all the governance and governance interaction terms. Table 4 has the F-tests conducted for the models in Table 3b. FDI and all the FDI-governance interaction terms are jointly significant. This suggests that FDI's impact on period-to-period change in HDI is statistically significant. Consider the case where a country has average values for all their governance indicators. If this country increases their average FDI inflows by one standard deviation (approximately 4.8% of GDP), model (7) predicts that the change in HDI will increase by 0.0027 points. This is not an economically significant effect given the standard deviation and distribution of HDI period change. Now consider the upper bounds of the 95% confidence intervals of each coefficient of an FDI term. Now model (7) predicts that if a country with average governance increases their average FDI inflows by one standard deviation, then their change in HDI will only increase by 0.0056 points. Thus, the model rejects the null hypothesis that a one standard deviation increase in FDI would increase HDI improvement by more than 0.0056 points. Similar to the results of the models without governance, FDI inflows do not appear to have economically significant effects on HDI improvements.

The F-tests from model (7) also indicate that governance's effect is statistically significant. The model estimates that if a country with average FDI inflows had governance scores one standard deviation higher, then their improvement in HDI would increase by 0.0121 points. This improvement in governance is essentially equivalent to the difference in governance between the Republic of Congo and Brazil in the 2000-2005 period. This suggests that governance has a positive and economically significant effect on improvements in HDI. More specifically, voice and accountability's and political stability's effect on HDI change are statistically significant. Consider the Central African Republic in the 2006-2010 period. They attracted average FDI inflows that were 3.36% of their GDP and had an average voice and accountability score of -1.04 (approximately 1 standard deviation below the mean). Model (7) predicts that if they had the same voice and accountability score as Japan did from 2006-2010 (0.97, approximately 1 standard deviation above the mean), then they would have improved their change in HDI by 0.0270 points. Now consider Uganda in the 2006-2010 period. They attracted average FDI inflows that were 4.86% of their GDP and had an average political stability score of -1.01 (approximately 1 standard deviation below the mean). Model (7) predicts that if they had the same political stability score as Canada did from 2006-2010 (0.99, approximately 1 standard deviation above the mean), then they would have improved their change in HDI by 0.0289 points. These are both economically significant effects given that the Central African Republic and Uganda improved their HDI's in this period by 0.0360 points and 0.0420 points, respectively.

A positive coefficient on an FDI-governance interaction term suggests that the governance indicator has a positive synergistic effect on the relationship between FDI inflows and changes in human development. The only statistically significant interaction term is the

FDI-voice and accountability interaction. Once again consider if the Central African Republic improved their voice and accountability score to Japan's level from 2006-2010. This improvement would alter the marginal effect of increasing their FDI inflows by 1 standard deviation by 0.0100 points. Considering that the Central African Republic improved their HDI in this period by 0.0360 points, this alteration in FDI's marginal effect is economically significant. Thus, voice and accountability not only positively affects HDI, but also appears to positively synergize the FDI-HDI relationship. Collectively, the FDI-governance interaction terms are not statistically significant. This suggests that overall governance may not have a strong synergistic effect on the FDI-HDI relationship.

IV. B. Effect of FDI and governance on HDI's components

Tables 5a, 7a, and 9a estimate how average FDI inflows affect improvements in each HDI component index. The models in these tables exclude the governance variables. The results from these tables indicate that FDI's effect is only statistically significant when the Income Index is the dependent variable. Based on model (4) in Table 5a, increasing average FDI inflows (% of GDP) in a period by one standard deviation (approximately 4.8% of GDP) will increase period-to-period improvement in the Income Index by 0.0049 points. This effect is not economically significant considering the standard deviation of period-to-period change in the Income Index (0.022). This model also rejects the null hypothesis that increasing average FDI inflows (% of GDP) in a period by one standard deviation will increase period-to-period improvement in the Income Index by more than 0.0088 points. Thus, the model suggests that it's highly unlikely that FDI has a strong economically significant effect on the Income Index.

Tables 5b, 7b, and 9b also estimate FDI's effect on improvements in each of the component indices. The models in these tables now include governance and their corresponding

interaction terms. Tables 6, 8, and 10 have F-tests corresponding to the models in Tables 5b, 7b, and 9b. Model (7) in each of the tables has the full specification for their respective dependent variable. Similar to the previous results, FDI's effect is statistically significant only in the Income Index model. If a country with average governance increases their average FDI inflows by one standard deviation (approximately 4.8% of GDP), model (7) in Table 5b predicts that the improvement in the Income Index will increase by 0.0056 points. This is not an economically significant amount given the standard deviation of Income Index's period-to-period change (0.022). However, unlike the results for HDI, the model doesn't rule out the possibility that FDI has somewhat economically significant effects. The estimates reject the null hypothesis that a one standard deviation increase in FDI would increase the improvement in the Income Index by more than 0.0093 points. Although this upper bound is not a drastic increase in improvement, it is somewhat significant and greater than the upper bound of the FDI's effect on HDI. The results from models (7) in Tables 7b and 9b find that the upper bound of FDI's effect on the Education Index and Health Index are also somewhat economically significant. The estimates reject the null hypothesis that increasing FDI inflows in a period by one standard deviation will increase improvement in the Education Index by more than 0.0085 points and improvement in the Health Index by more than 0.0116 points for a country with average governance. Although FDI's effect on the Education and Health Index is not statistically significant, the results don't rule out the possibility of positive and economically significant effects.

The F-tests indicate that governance's effect on all three component indices is statistically significant. Models (7) from Tables 5b and 7b estimate that if a country with average FDI inflows had governance scores one standard deviation higher, then their improvement in the Income Index and Education Index would increase by 0.0236 points and 0.0292 points,

respectively. However, model (7) in Table 9b finds that their improvement in the Health Index would decrease by 0.0302 points. Overall, governance appears to have economically significant effects on all three component indices. Surprisingly, the effect on the Health Index is negative and different from the effects on HDI and the other indices.

The only individual dimensions of governance that have statistically significant effects on any of the component indices are voice and accountability and rule of law. Voice and accountability has a statistically and economically significant effect on the Income Index. Once again, consider the Central African Republic in the 2006-2010 period. Model (7) in Table 5b predicts that if they had the same voice and accountability score as Japan did from 2006-2010, then they would have increased their improvement in the Income Index by 0.0336 points. This suggests that they would have more than quadrupled their improvement in the Income Index over this period. Rule of Law has a statistically and economically significant effect on the Health Index. Consider the Southeast Asian country Laos in the 2006-2010 period. They attracted average annual FDI inflows of 4.96% of GDP and had an average rule of law score of -0.93 (approximately 1 standard deviation below the mean). Model (7) predicts that if they had the same rule of law score as South Korea did from 2006-2010 (0.94, approximately 1 standard deviation above the mean), then they would have reduced their improvement in the Health Index by 0.0335 points. This suggests that they would have reduced their improvement in the Health Index over this period by about 75%.

Overall, governance appears to only have a statistically significant synergistic effect on the Income Index and Health Index. Consider a country which improves each dimension of governance by 1 standard deviation. This improvement would reduce the marginal effect on the Income Index of increasing their FDI inflows by 1 standard deviation by 0.0019 points. This

would also reduce the marginal effect on the Health Index by 0.0005 points. The results suggest that governance has a negative and statistically significant synergistic effect on the FDI-Income Index relationship and the FDI-Health Index relationship. However, these effects are small and not economically significant.

The only individual dimensions of governance that appear to have synergistic effects are voice and accountability and rule of law. Similar to the results for HDI, voice and accountability has a statistically significant synergistic effect on the FDI-Income Index relationship. Once again, consider if the Central African Republic improved their voice and accountability score to Japan's level from 2006-2010. This improvement would increase the marginal effect on the Income Index of increasing their FDI inflows by 1 standard deviation by 0.0126 points. This is economically significant considering they improved their Income Index by only 0.0070 points in this period. Unlike the results for HDI, rule of law has a statistically significant synergistic effect on the FDI-Health Index relationship. Once again, consider if Laos improved their rule of law score to South Korea's level in the 2006-2010 period. This improvement would decrease the marginal effect on the Health Index of increasing their FDI inflows by 1 standard deviation by 0.0466 points. This is economically significant considering that they improved their Health Index by 0.0410 points in this period.

V. Conclusions

Pressures on policymakers to reduce barriers to FDI have made investigating FDI's impact on host countries increasingly important. Researchers have started to look more closely at host country characteristics and broader measures of host country welfare when considering FDI's effect. This paper ultimately considers how FDI and governance affect development and how governance alters the effect of FDI on human development. The preceding results consider

the possible synergistic effect of six different dimensions of governance by including FDI-governance interaction terms.

The estimates suggest that FDI inflows have a positive impact on improving HDI. Although this impact is statistically significant, the magnitude of this impact does not appear to have strong real world implications. These results are not surprising since previous empirical studies suggest that FDI's impact is positive, but can depend on host country characteristics. The results further suggest that governance has a strong positive statistically significant effect on improving HDI. More specifically, voice and accountability has positive and significant effects on improving HDI and on the FDI-HDI relationship.

Disaggregating HDI reveals closer insight into the FDI-human development relationship. FDI's effect on the component indices is only statistically significant for the Income Index. This effect is also positive and not economically significant. Similar to the HDI findings, governance has strong positive effects on improvements in the Income Index and Education Index. More specifically, voice and accountability has strong positive effects on the Income Index. Surprisingly, the results suggest that governance has strong negative effects on the Health Index. Countries with good governance likely have high life expectancies that are difficult to further improve. This could explain why the results suggest better governance will reduce improvements in the Health Index. Collectively, governance does not appear to have strong synergistic effects on any of the component indices. However, voice and accountability has a strong positive synergistic effect on the FDI-Income Index relationship.

Several conclusions arise from these results. FDI has a positive, but small effect on improving human development. This conclusion is consistent with previous literature that uses HDI as a welfare outcome (Lehnert, Benmamoun, & Zhao, 2013; Reiter & Steensma, 2010;

Sharma & Gani, 2004). However, this effect is primarily representative of FDI's effect on the income component of human development. Governance has strong positive effects on human development as well. More specifically, voice and accountability has a positive and notable effect on improving human development. Collectively, governance does not appear to have a synergistic effect on human development. However, voice and accountability is the only governance dimension that definitively has a positive synergistic effect. It's unclear why the results indicate that voice and accountability is the only influential dimension of governance.

There are several limitations to the conclusions of this analysis. First, using period as opposed to annual data limits the observations. This makes it more difficult to make strong conclusions from the results. Over the next few decades it will be possible to conduct similar studies, but with more observations and more precise estimates. Once there are more years of governance data available, it might be more appropriate to use 10-year periods instead of 5-year periods, since they're more likely to reflect meaningful changes in health and education. Second, the governance indicators capture the perceptions of governance not necessarily the true level of governance. Finally, the empirical specification might not be optimal when using the education index and health index as the dependent variable. FDI may have a lagged effect on educational and health outcomes. It might be appropriate to consider lagged FDI when measuring the effect on improvements in these indices. This will be possible once there are more years of governance data available.

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Tables and Figures

Table 1a: Variable Descriptions

Variable	Description	Data Source
Dependent Variables	$HDI = \sqrt[3]{II + EI + HI}$ Income Index (II): Measured by the GNI per capita (PPP$) Education Index (EI): Measured by the mean years of schooling and expected years of schooling Health Index (HI): Measured by the life expectancy at birth	International Human Development Indicators. (2013). from United Nations Development Programme
FDI (% of GDP)	(FDI/GDP)*100%	UNCTADSTAT. (2013). from United Nations Conference on Trade and Development
Aid per capita	Net official development assistance (ODA) per capita (current US$)	World Development Indicators. (2013). from The World Bank
Trade Openness	((Exports+Imports)/GDP)*100%	Heston, A., Summers, R., & Aten, B. (2012). Penn World Table Version 7.1. from Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania

Table 1b: Governance Variable Descriptions

Variable	Description	Data Source
Voice and Accountability	The extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	
Political Stability and Absence of Violence	The likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.	
Government Effectiveness	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	The ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	Kaufmann, D., Kraay, A., & Mastruzzi, M. (2013). Worldwide Governance Indicators.
Rule of Law	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.	
Control of Corruption	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.	

Table 2a Descriptive Statistics: Country in a given year as unit of observation

Variable	N	Mean	Std. Dev.	Min	Max
HDI	2096	0.635	0.186	0.220	0.952
Change in HDI (from year *t* to *t-1*)	2049	0.005	0.004	-0.013	0.057
Income Index	2096	0.590	0.198	0.127	0.982
Change in Income Index (from year *t* to *t-1*)	2087	0.003	0.006	-0.047	0.058
Change in Education Index (from year *t* to *t-1*)	2096	0.598	0.210	0.099	1.000
Change in Education Index (from year *t* to *t-1*)	2058	0.007	0.008	-0.028	0.111
Change in Health Index (from year *t* to *t-1*)	2096	0.747	0.170	0.306	0.997
Change in Health Index (from year *t* to *t-1*)	2096	0.004	0.005	-0.025	0.022
FDI Inflows (% of GDP)	2096	4.483	6.613	-55.075	85.963
Aid inflows per capita	2096	47.716	107.484	-130.430	2,122.800
Trade openness	2096	84.942	49.783	12.708	421.682
Government Effectiveness	2096	0.031	1.007	-2.325	2.357
Political Stability and Absence of Violence	2096	-0.131	0.984	-2.995	1.668
Regulatory Quality	2096	0.049	0.946	-2.413	2.247
Voice and Accountability	2096	-0.060	0.972	-2.155	1.826
Control of Corruption	2096	-0.006	1.047	-2.057	2.586
Rule of Law	2096	-0.050	1.009	-2.205	2.000

Table 2b Descriptive Statistics: Country in a given 5-year period as unit of observation

Variable	N	Mean	Std. Dev.	Min	Max
Average HDI	401	0.636	0.186	0.227	0.951
HDI period change	405	0.025	0.017	-0.043	0.104
Average Income Index	405	0.591	0.198	0.135	0.975
Income Index period change	405	0.016	0.022	-0.086	0.139
Average Education Index	401	0.598	0.210	0.105	0.996
Education Index period change	405	0.036	0.026	-0.027	0.163
Average Health Index	405	0.748	0.170	0.309	0.991
Health Index period change	405	0.020	0.023	-0.126	0.109
Average FDI inflows (% of GDP)	405	4.429	4.806	-5.853	30.472
Average aid inflows per capita	405	42.631	63.138	-3.738	483.465
Average trade openness	405	85.017	50.632	14.927	418.357
Average Government Effectiveness	405	0.046	1.007	-2.270	2.303
Average Political Stability and Absence of Violence	405	-0.139	0.962	-2.824	1.631
Average Regulatory Quality	405	0.068	0.937	-2.156	2.192
Average Voice and Accountability	405	-0.058	0.962	-2.073	1.687
Average Control of Corruption	405	0.002	1.051	-1.863	2.495
Average Rule of Law	405	-0.045	1.008	-2.046	1.950

Table 3a: Effect of FDI inflows on period-to-period change in HDI (standard errors in parentheses)

	HDI Period Change (1)	HDI Period Change (2)	HDI Period Change (3)	HDI Period Change (4)
Avg. FDI	0.00027 (0.00044)	0.00017 (0.00042)	0.00023 (0.00043)	0.00017 (0.00042)
Avg. Aid		0.00014 (0.00005)***		0.00014 (0.00005)***
Avg. Open			0.00009 (0.00012)	0.00000 (0.00011)
R^2	0.03	0.10	0.04	0.10
N	405	405	405	405

*$p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 3b: Effect of FDI inflows on period-to-period change in HDI with governance interactions (standard errors in parentheses)

	HDI Period Change (1)	HDI Period Change (2)	HDI Period Change (3)	HDI Period Change (4)
Avg. FDI	0.00011 (0.00041)	0.00012 (0.00035)	0.00022 (0.00040)	0.00044 (0.00038)
Avg. Aid	0.00014 (0.00005)***	0.00012 (0.00005)**	0.00014 (0.00005)***	0.00014 (0.00004)***
Avg. Open	-0.00002 (0.00011)	-0.00003 (0.00010)	-0.00001 (0.00011)	-0.00004 (0.00009)
Avg. Gov. Effectiveness	0.00938 (0.00726)			
Avg. FDI x Avg. Gov. Effectiveness	0.00013 (0.00038)			
Avg. Political Stability		0.01386 (0.00449)***		
Avg. FDI x Avg. Political Stability		0.00026 (0.00046)		
Avg. Regulatory Quality			-0.00181 (0.00621)	
Avg. FDI x Avg. Regulatory Quality			0.00031 (0.00040)	
Avg. Voice and Accountability				0.01614 (0.00583)***
Avg. FDI x Avg. Voice and Accountability				0.00064 (0.00041)
R^2	0.11	0.16	0.10	0.16
N	405	405	405	405

*$p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 3b (cont.) (standard errors in parentheses)

	HDI Period Change (5)	HDI Period Change (6)	HDI Period Change (7)
Avg. FDI	0.00015 (0.00041)	0.00017 (0.00041)	0.00059 (0.00035)*
Avg. Aid	0.00014 (0.00005)***	0.00014 (0.00005)***	0.00013 (0.00003)***
Avg. Open	-0.00002 (0.00011)	-0.00002 (0.00011)	-0.00000 (0.00010)
Avg. Corruption	0.00812 (0.00599)		-0.00190 (0.00709)
Avg. Rule of Law		0.00330 (0.00670)	-0.01584 (0.00914)*
Avg. Gov. Effectiveness			0.01403 (0.01074)
Avg. Political Stability			0.01437 (0.00590)**
Avg. Regulatory Quality			-0.01025 (0.00765)
Avg. Voice and Accountability			0.00997 (0.00576)*
Avg. FDI x Avg. Corruption	0.00021 (0.00037)		0.00036 (0.00112)
Avg. FDI x Avg. Rule of Law		0.00018 (0.00042)	-0.00044 (0.00125)
Avg. FDI x Avg. Gov. Effectiveness			-0.00156 (0.00133)
Avg. FDI x Avg. Political Stability			0.00002 (0.00063)
Avg. FDI x Avg. Regulatory Quality			0.00118 (0.00100)
Avg. FDI x Avg. Voice and Accountability			0.00103 (0.00044)**
R^2	0.11	0.10	0.23
N	405	405	405

*p<0.1; ** p<0.05; *** p<0.01*

Note: All regressions include country and period fixed effects

Table 4: P values for F tests for Models in Table 3b

Testing Joint Significance of Coefficients of:	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
Avg. Gov. Effectiveness and Avg. FDI x Avg. Gov. Effectiveness	0.3422	-	-	-	-	-	0.3941
Avg. Political Stability and Avg. FDI x Avg. Political Stability	-	0.0019	-	-	-	-	0.0058
Avg. Regulatory Quality and Avg. FDI x Avg. Regulatory Quality	-	-	0.7328	-	-	-	0.3568
Avg. Voice and Accountability and Avg. FDI x Avg. Voice and Accountability	-	-	-	0.0005	-	-	0.0011
Avg. Corruption and Avg. FDI x Avg. Corruption	-	-	-	-	0.2203	-	0.9411
Avg. Rule of Law and Avg. FDI x Avg. Rule of Law	-	-	-	-	-	0.7787	0.0781
Avg. FDI and all FDI-governance interaction terms	-	-	-	-	-	-	0.0350
All avg. governance terms and all FDI-governance interaction terms	-	-	-	-	-	-	0.0000
All FDI-governance interaction terms	-	-	-	-	-	-	0.0633

Note: All tests are two-sided

Table 5a: Effect of FDI inflows on period-to-period change in the Income Index (standard errors in parentheses)

	Income Index Period Change	Income Index Period Change	Income Index Period Change	Income Index Period Change
	(1)	(2)	(3)	(4)
Avg. FDI	0.00119 (0.00044)***	0.00105 (0.00042)**	0.00111 (0.00044)**	0.00102 (0.00042)**
Avg. Aid		0.00020 (0.00009)**		0.00019 (0.00008)**
Avg. Open			0.00020 (0.00016)	0.00009 (0.00013)
R^2	0.08	0.16	0.09	0.16
N	405	405	405	405

*$p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 5b: Effect of FDI inflows on period-to-period change in the Income Index with governance interactions (standard errors in parentheses)

	Income Index Period Change	Income Index Period Change	Income Index Period Change	Income Index Period Change
	(1)	(2)	(3)	(4)
Avg. FDI	0.00075 (0.00037)**	0.00086 (0.00035)**	0.00083 (0.00039)**	0.00092 (0.00041)**
Avg. Aid	0.00018 (0.00007)**	0.00017 (0.00008)**	0.00019 (0.00008)**	0.00018 (0.00007)**
Avg. Open	0.00009 (0.00013)	0.00008 (0.00013)	0.00008 (0.00013)	0.00005 (0.00012)
Avg. Gov. Effectiveness	0.02408 (0.00924)**			
Avg. FDI x Avg. Gov. Effectiveness	-0.00082 (0.00035)**			
Avg. Political Stability		0.01646 (0.00555)***		
Avg. FDI x Avg. Political Stability		-0.00074 (0.00041)*		
Avg. Regulatory Quality			0.01517 (0.00725)**	
Avg. FDI x Avg. Regulatory Quality			-0.00060 (0.00037)	
Avg. Voice and Accountability				0.02463 (0.00783)***
Avg. FDI x Avg. Voice and Accountability				-0.00023 (0.00050)
R^2	0.22	0.22	0.19	0.22
N	405	405	405	405

*p<0.1; ** p<0.05; *** p<0.01

Note: All regressions include country and period fixed effects

Table 5b (cont.) (standard errors in parentheses)

	Income Index Period Change	Income Index Period Change	Income Index Period Change
	(5)	(6)	(7)
Avg. FDI	0.00083 (0.00038)**	0.00078 (0.00037)**	0.00128 (0.00037)***
Avg. Aid	0.00018 (0.00008)**	0.00019 (0.00008)**	0.00019 (0.00005)***
Avg. Open	0.00010 (0.00013)	0.00009 (0.00013)	0.00009 (0.00011)
Avg. Corruption	0.01251 (0.00717)*		-0.00981 (0.00904)
Avg. Rule of Law		0.01283 (0.00876)	-0.01482 (0.01097)
Avg. Gov. Effectiveness			0.02552 (0.01249)**
Avg. Political Stability			0.01119 (0.00615)*
Avg. Regulatory Quality			0.00241 (0.00693)
Avg. Voice and Accountability			0.01236 (0.00635)*
Avg. FDI x Avg. Corruption	-0.00074 (0.00037)**		0.00025 (0.00128)
Avg. FDI x Avg. Rule of Law		-0.00082 (0.00040)**	-0.00080 (0.00124)
Avg. FDI x Avg. Gov. Effectiveness			-0.00199 (0.00166)
Avg. FDI x Avg. Political Stability			-0.00014 (0.00056)
Avg. FDI x Avg. Regulatory Quality			0.00111 (0.00102)
Avg. FDI x Avg. Voice and Accountability			0.00130 (0.00057)**
R^2	0.19	0.19	0.29
N	405	405	405

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 6: P values for F tests for Models in Table 5b

Testing Joint Significance of Coefficients of:	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
Avg. Gov. Effectiveness and Avg. FDI x Avg. Gov. Effectiveness	0.0106	-	-	-	-	-	0.1217
Avg. Political Stability and Avg. FDI x Avg. Political Stability	-	0.0095	-	-	-	-	0.1341
Avg. Regulatory Quality and Avg. FDI x Avg. Regulatory Quality	-	-	0.0632	-	-	-	0.2616
Avg. Voice and Accountability and Avg. FDI x Avg. Voice and Accountability	-	-	-	0.0081	-	-	0.0021
Avg. Corruption and Avg. FDI x Avg. Corruption	-	-	-	-	0.0718	-	0.4685
Avg. Rule of Law and Avg. FDI x Avg. Rule of Law	-	-	-	-	-	0.0663	0.0872
Avg. FDI and all FDI-governance interaction terms	-	-	-	-	-	-	0.0036
All avg. governance terms and all FDI-governance interaction terms	-	-	-	-	-	-	0.0027
All FDI-governance interaction terms	-	-	-	-	-	-	0.0480

Table 7a: Effect of FDI inflows on period-to-period change in the Education Index (standard errors in parentheses)

	Education Index Period Change (1)	Education Index Period Change (2)	Education Index Period Change (3)	Education Index Period Change (4)
Avg. FDI	0.00010 (0.00076)	0.00003 (0.00076)	0.00009 (0.00074)	0.00004 (0.00074)
Avg. Aid		0.00010 (0.00004)**		0.00010 (0.00004)**
Avg. Open			0.00004 (0.00015)	-0.00002 (0.00017)
R^2	0.01	0.02	0.01	0.02
N	405	405	405	405

*$p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 7b: Effect of FDI inflows on period-to-period change in the Education Index with governance interactions (standard errors in parentheses)

	Education Index Period Change (1)	Education Index Period Change (2)	Education Index Period Change (3)	Education Index Period Change (4)
Avg. FDI	0.00003 (0.00069)	0.00010 (0.00064)	0.00023 (0.00067)	0.00070 (0.00068)
Avg. Aid	0.00008 (0.00004)*	0.00007 (0.00005)	0.00010 (0.00004)**	0.00010 (0.00005)**
Avg. Open	-0.00010 (0.00014)	-0.00008 (0.00015)	-0.00007 (0.00015)	-0.00009 (0.00014)
Avg. Gov. Effectiveness	0.01840 (0.00887)**			
Avg. FDI x Avg. Gov. Effectiveness	0.00128 (0.00069)*			
Avg. Political Stability		0.01362 (0.00626)**		
Avg. FDI x Avg. Political Stability		0.00126 (0.00087)		
Avg. Regulatory Quality			-0.00418 (0.01076)	
Avg. FDI x Avg. Regulatory Quality			0.00140 (0.00071)**	
Avg. Voice and Accountability				0.01471 (0.00846)*
Avg. FDI x Avg. Voice and Accountability				0.00157 (0.00074)**
R^2	0.07	0.07	0.05	0.07
N	405	405	405	405

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 7b (cont.) (standard errors in parentheses)

	Education Index Period Change	Education Index Period Change	Education Index Period Change
	(5)	(6)	(7)
Avg. FDI	0.00013 (0.00068)	0.00027 (0.00066)	0.00058 (0.00075)
Avg. Aid	0.00009 (0.00004)**	0.00009 (0.00004)**	0.00007 (0.00005)
Avg. Open	-0.00009 (0.00014)	-0.00009 (0.00015)	-0.00009 (0.00015)
Avg. Corruption	0.01417 (0.00874)		0.01156 (0.01302)
Avg. Rule of Law		0.00298 (0.01019)	-0.03108 (0.01771)*
Avg. Gov. Effectiveness			0.02126 (0.01523)
Avg. Political Stability			0.01665 (0.00903)*
Avg. Regulatory Quality			-0.01046 (0.01401)
Avg. Voice and Accountability			0.01086 (0.00971)
Avg. FDI x Avg. Corruption	0.00125 (0.00066)*		-0.00095 (0.00227)
Avg. FDI x Avg. Rule of Law		0.00142 (0.00076)*	0.00231 (0.00264)
Avg. FDI x Avg. Gov. Effectiveness			-0.00037 (0.00244)
Avg. FDI x Avg. Political Stability			-0.00042 (0.00118)
Avg. FDI x Avg. Regulatory Quality			0.00023 (0.00190)
Avg. FDI x Avg. Voice and Accountability			0.00079 (0.00094)
R^2	0.07	0.05	0.12
N	405	405	405

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 8: P values for F tests for Models in Table 7b

Testing Joint Significance of Coefficients of:	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
Avg. Gov. Effectiveness and Avg. FDI x Avg. Gov. Effectiveness	0.0124	-	-	-	-	-	0.2558
Avg. Political Stability and Avg. FDI x Avg. Political Stability	-	0.0151	-	-	-	-	0.1338
Avg. Regulatory Quality and Avg. FDI x Avg. Regulatory Quality	-	-	0.1441	-	-	-	0.7317
Avg. Voice and Accountability and Avg. FDI x Avg. Voice and Accountability	-	-	-	0.0040	-	-	0.2190
Avg. Corruption and Avg. FDI x Avg. Corruption	-	-	-	-	0.0148	-	0.6744
Avg. Rule of Law and Avg. FDI x Avg. Rule of Law	-	-	-	-	-	0.1662	0.2134
Avg. FDI and all FDI-governance interaction terms	-	-	-	-	-	-	0.4006
All avg. governance terms and all FDI-governance interaction terms	-	-	-	-	-	-	0.0035
All FDI-governance interaction terms	-	-	-	-	-	-	0.3364

Table 9a: Effect of FDI inflows on period-to-period change in the Health Index (standard errors in parentheses)

	Health Index Period Change	Health Index Period Change	Health Index Period Change	Health Index Period Change
	(1)	(2)	(3)	(4)
Avg. FDI	-0.00057	-0.00061	-0.00051	-0.00054
	(0.00056)	(0.00055)	(0.00058)	(0.00058)
Avg. Aid		0.00006		0.00008
		(0.00006)		(0.00006)
Avg. Open			-0.00014	-0.00019
			(0.00016)	(0.00017)
R^2	0.06	0.07	0.07	0.08
N	405	405	405	405

*$p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 9b: Effect of FDI inflows on period-to-period change in the Health Index with governance interactions (standard errors in parentheses)

	Health Index Period Change	Health Index Period Change	Health Index Period Change	Health Index Period Change
	(1)	(2)	(3)	(4)
Avg. FDI	-0.00033	-0.00056	-0.00035	-0.00046
	(0.00057)	(0.00058)	(0.00057)	(0.00054)
Avg. Aid	0.00010	0.00008	0.00008	0.00009
	(0.00006)*	(0.00006)	(0.00006)	(0.00006)
Avg. Open	-0.00015	-0.00020	-0.00016	-0.00020
	(0.00016)	(0.00017)	(0.00016)	(0.00017)
Avg. Gov. Effectiveness	-0.02797			
	(0.01391)**			
Avg. FDI x Avg. Gov. Effectiveness	-0.00007			
	(0.00032)			
Avg. Political Stability		0.00434		
		(0.00628)		
Avg. FDI x Avg. Political Stability		0.00003		
		(0.00031)		
Avg. Regulatory Quality			-0.02356	
			(0.01216)*	
Avg. FDI x Avg. Regulatory Quality			-0.00000	
			(0.00031)	
Avg. Voice and Accountability				0.00019
				(0.01072)
Avg. FDI x Avg. Voice and Accountability				0.00020
				(0.00032)
R^2	0.13	0.08	0.13	0.08
N	405	405	405	405

*$p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 9b (cont.) (standard errors in parentheses)

	Health Index Period Change	Health Index Period Change	Health Index Period Change
	(5)	(6)	(7)
Avg. FDI	-0.00049	-0.00047	-0.00035
	(0.00060)	(0.00057)	(0.00040)
Avg. Aid	0.00009	0.00009	0.00010
	(0.00006)	(0.00006)	(0.00006)*
Avg. Open	-0.00018	-0.00014	-0.00011
	(0.00018)	(0.00017)	(0.00015)
Avg. Corruption	-0.00901		0.00045
	(0.01084)		(0.01055)
Avg. Rule of Law		-0.01510	0.00777
		(0.01414)	(0.01507)
Avg. Gov. Effectiveness			-0.03012
			(0.01441)**
Avg. Political Stability			0.01161
			(0.00983)
Avg. Regulatory Quality			-0.02297
			(0.01126)**
Avg. Voice and Accountability			0.00271
			(0.01163)
Avg. FDI x Avg. Corruption	-0.00002		0.00111
	(0.00028)		(0.00146)
Avg. FDI x Avg. Rule of Law		-0.00028	-0.00518
		(0.00034)	(0.00175)***
Avg. FDI x Avg. Gov. Effectiveness			0.00138
			(0.00141)
Avg. FDI x Avg. Political Stability			0.00035
			(0.00075)
Avg. FDI x Avg. Regulatory Quality			0.00173
			(0.00092)*
Avg. FDI x Avg. Voice and Accountability			0.00063
			(0.00055)
R^2	0.09	0.10	0.21
N	405	405	405

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: All regressions include country and period fixed effects

Table 10: P values for F tests for Models in Table 9b

| Testing Joint Significance of Coefficients of:	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
Avg. Gov. Effectiveness and Avg. FDI x Avg. Gov. Effectiveness	0.0978	-	-	-	-	-	0.1104
Avg. Political Stability and Avg. FDI x Avg. Political Stability	-	0.7575	-	-	-	-	0.1462
Avg. Regulatory Quality and Avg. FDI x Avg. Regulatory Quality	-	-	0.1256	-	-	-	0.0970
Avg. Voice and Accountability and Avg. FDI x Avg. Voice and Accountability	-	-	-	0.8004	-	-	0.2992
Avg. Corruption and Avg. FDI x Avg. Corruption	-	-	-	-	0.6448	-	0.6967
Avg. Rule of Law and Avg. FDI x Avg. Rule of Law	-	-	-	-	-	0.2983	0.0102
Avg. FDI and all FDI-governance interaction terms	-	-	-	-	-	-	0.0537
All avg. governance terms and all FDI-governance interaction terms	-	-	-	-	-	-	0.0190
All FDI-governance interaction terms	-	-	-	-	-	-	0.0387

Appendix

Appendix Table 1: Countries in Sample Sorted by Number of Periods Observed in Model

Number of Periods Observed	Countries	Total
1	Belarus, Bosnia and Herzegovina, Burkina Faso, Burundi, Comoros, Djibouti, Georgia. Guinea, Guinea-Bissau, Hungary, Iraq, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Nigeria, Poland, Romania, Russian Federation, Samoa, Sao Tome and Principe, Sierra Leone, Suriname, Timor-Leste, Tonga, Ukraine, United Arab Emirates, Uzbekistan	29
2	Angola, Cambodia, Chad, Dominica, Equatorial Guinea, Ethiopia, Kazakhstan, Liberia, Madagascar, Maldives, Slovenia	11
3	Afghanistan, Albania, Algeria, Argentina, Armenia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belgium, Belize, Benin, Bolivia, Botswana, Brazil, Brunei, Darussalam, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Congo, Congo (Dem. Rep), Costa Rica, Croatia, Cyprus, Côte d'Ivoire, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Fiji, Finland, France, Gabon, Gambia, Germany, Ghana, Greece, Guatemala, Guyana, Haiti, Honduras, Hong Kong SAR,, China, Iceland, India, Indonesia, Iran (Islamic Republic of), Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Korea, Republic of, Kuwait, Kyrgyzstan, Lao People's Dem. Rep., Lesotho, Malawi, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Moldova (Republic of), Mongolia, Morocco, Mozambique, Namibia, Nepal, Netherlands, New	118

| | Zealand, Nicaragua, Niger, Norway, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Qatar, Rwanda, Saudi Arabia, Senegal, Singapore, Slovakia, South Africa, Spain, Sri Lanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Tanzania (United Republic of), Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, United Kingdom, United States, Uruguay, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe | |

Appendix Figure 2: Relationship between FDI Inflows (% of GDP) and Period Change in HDI Conditional on Levels of Governance
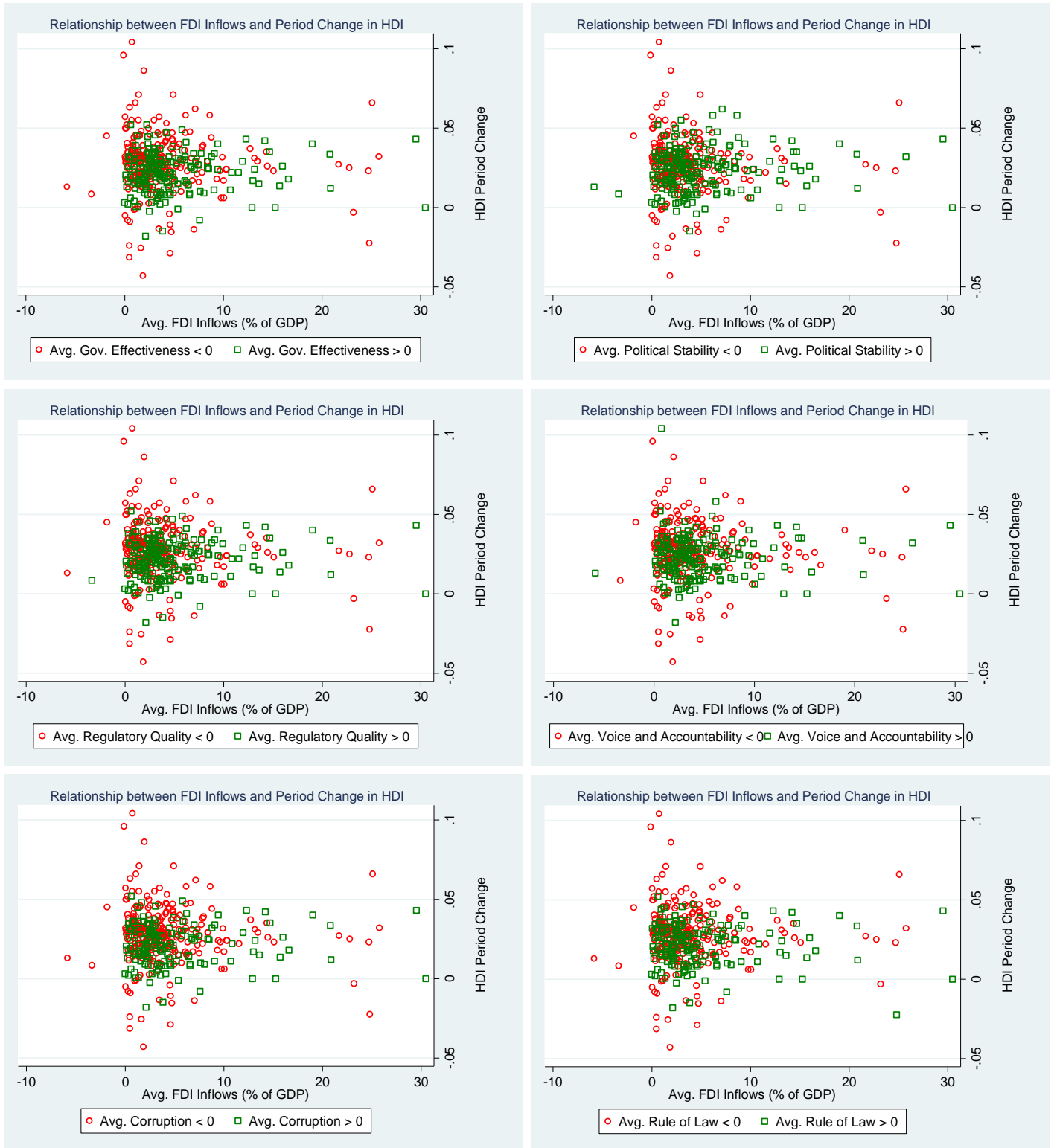
Appendix Figure 3: Relationship between FDI Inflows (% of GDP) and Period Change in the Income Index Conditional on Levels of Governance
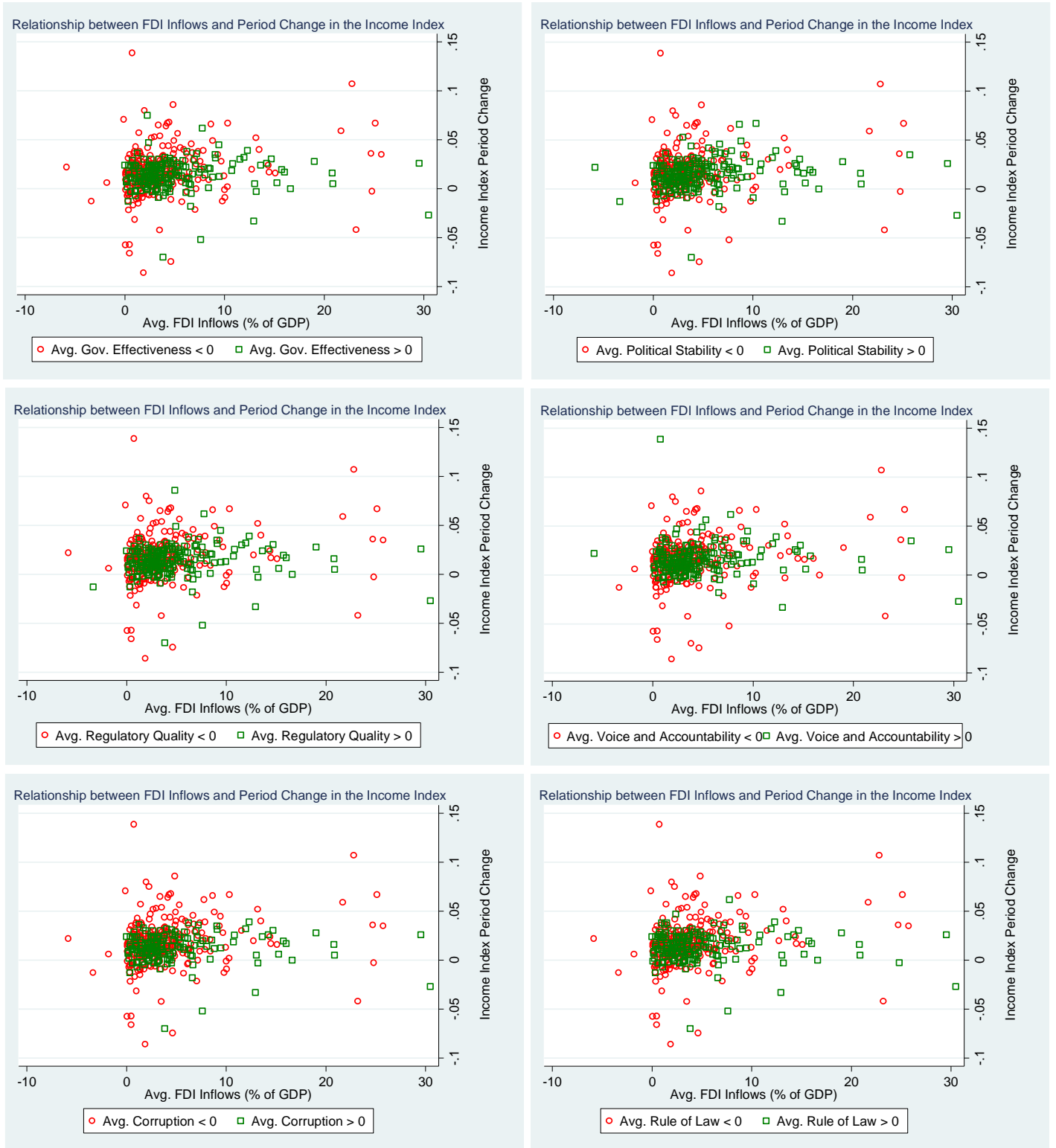
Appendix Figure 4: Relationship between FDI Inflows (% of GDP) and Period Change in the Education Index Conditional on Levels of Governance
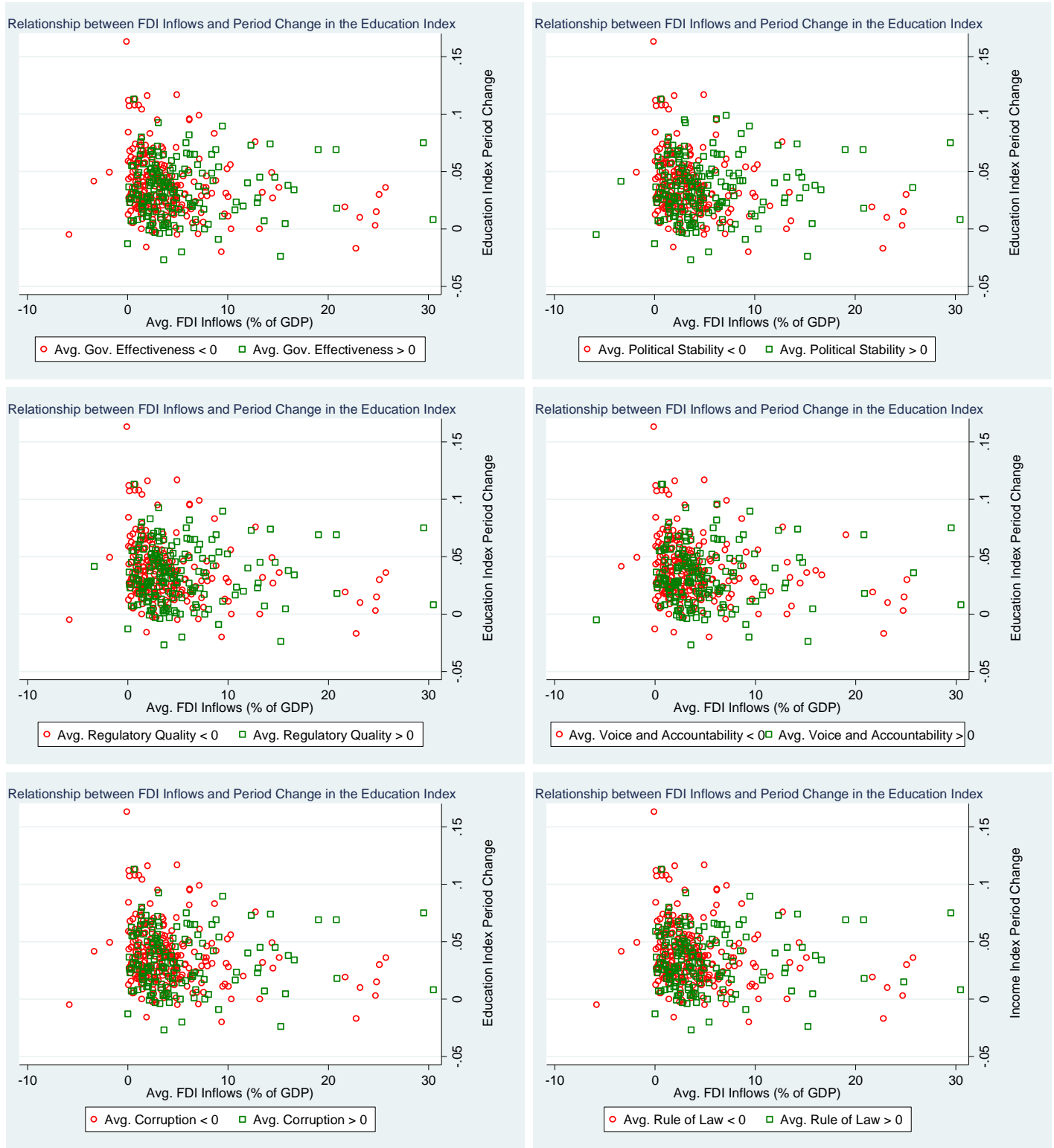
Appendix Figure 5: Relationship between FDI Inflows (% of GDP) and Period Change in the Health Index Conditional on Levels of Governance