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Financial efficiency and accounting quality: The impact of institutional micro-factors on FDI

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Abstract

In this paper, we explore whether factors such as financial markets and accounting qualities contribute to foreign direct investment (FDI). We use a unique data source: the survey data from World Economic Forum, to measure the efficiency of the financial markets and the quality of accounting standards. With this unique data, we demonstrate that financial markets and accounting quality are important factors of FDI inflow into a country. In particular, FDI is positively correlated with the strength of financial audits and reporting standards and venture capital availability for all countries. We also show that accounting quality measures are more important for developing and emerging countries than for developed countries. On the other hand, financial market measures, especially the access to venture capital, have a bigger impact in attracting FDI flow into developed countries. These results support the hypothesis that local financial markets and accounting quality affect FDI. The results have strong policy implications for governmental regulatory agencies.

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1. Introduction

The World Bank defines Foreign Direct Investment (FDI) as a long-term investment made by a company based in one country into a company based in another country. Multinational Corporations (MNCs) over the years, through FDI, have invested in multiple countries at the same time. They have done this either through cross-border acquisition, joint ventures with local firms, or establishing new facilities in the host countries. Investing overseas has contributed enormously to the rapid growth of multinational corporations. At the same time, Foreign Direct Investment has contributed to rapid economic growth in many countries. Because of this mutual benefit, from 1970 to the present, FDI has grown significantly and has been a major source of private capital and economic development in both developed and developing countries.

To become more competitive in attracting foreign investors into their markets, many countries have employed various strategies. For example, countries have liberalized their economies, privatized state-owned enterprise, joined the World Trade Organization (WTO), and negotiated regional economic trade bloc agreements to stay competitive in the global markets. The factors that drive a nation's competitiveness on the world's stage have been the subject of inquiry for many years. Some researchers focus on the macroeconomic (Alam & Shah, 2013; Asamoah, Adjasi, & Alhassan, 2016) and political institutional factors (Biglaiser & Staats, 2010; Jensen, 2003; McLean, Zhang, & Zhao, 2012; Sun, 2014) as key determinants of FDI. In this paper, we contribute to the academic literature of FDI by exploring other factors such as financial market efficiency and accounting qualities.

The efficiency of the financial market and the quality of accounting reports can be key factors affecting FDI. The role of an efficient financial market in reducing transaction costs, allocating resources efficiently, promoting economic growth, and enhancing economic activities has been studied extensively in the finance and economic literature (Greenwood & Jovanovic, 1990; Levine, 1997). Bruhn and Love (2014) show that easy access to banks and local equity market affects poverty and the labor market. La Porta, Lopez-De-Silanes, and Shleifer (2006) demonstrate that an effective securities exchange market promotes stock market development and enhances economic growth. Meanwhile, strong investor and shareholder protection improves financial development and increases the availability of external financing (Brown, Martinsson, & Petersen, 2013; McLean et al., 2012), and good credit ratings attract investors to a company (Afonso, Furceri, & Gomes, 2012; Bolton, Freixas, & Shapiro, 2012). Studies have shown that a sound banking system plays a major role in enhancing economic activities and the overall economic growth of a country (Fatima, 2014; Bourkhis & Nabi, 2013).

The important role of accounting quality in a nation's economic activities has been extensively documented in the literature. Among others, most accounting researchers have shown that accounting/reporting quality regulated accounting standards timely loss recognition, reduce smoothing or management of accounting numbers, and the ability of financial statements to capture and explain the stock price, returns, and value of the firm accurately reduces information asymmetry, increases transparency, market liquidity, equity valuation, and lowers the cost of capital (Barth, Landsman, & Lang, 2008; Bischof & Daske, 2013; Daske & Gebhardt, 2006; Jeanjean & Stolowy, 2008; Lambert, Leuz, & Verrecchia, 2007). Other studies indicate that high accounting/reporting quality increases the likelihood of cross-border merger (Erel, Liao, & Weisbach, 2012), and increases the financing and investing capacity of a firm (Balakrishnan, Core, & Verdi, 2014). This is similar to the conclusion of quality reporting standards found in the policy implications of the paper.

How to measure the efficiency of the financial market and the quality of accounting reports is a difficult question. In this paper, we use a unique data source: the survey data from World Economic Forum. With this unique database, we demonstrate that financial markets and accounting quality are important factors of FDI inflow into a country. In particular, FDI is positively correlated with the strength of financial audits and reporting standards, and venture capital availability for all countries. These results support the hypothesis that the local financial market and accounting quality affect FDI. This has strong policy implications for financial and accounting standards. The result also shows accounting quality is a stronger contributor for developing and emerging countries than for developed countries. On the other hand, access to the venture capital market has a bigger impact in attracting FDI flow into developed countries than developing countries.

We contribute to the literature of FDI in four significant ways. First, the paper goes beyond previous studies that only examine macro-economic and political institutional factors as key determinants of FDI. Instead this paper shows that domestic economic institutions such as financial markets and accounting quality are key determinants of FDI. GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development. GOVTREG found that, using a logistic regression, this variable was significant at the 1 % level in this paper. This has strong policy implications for both developing and emerging market countries and less of an effect on developed countries. Second, the paper contributes to the debate that developing countries have more to gain in the global economy by improving the efficiency of their domestic economic institutions. Third, the paper contributes to the broader literature that domestic institutions matter in a global economy. Therefore, by making its domestic institutions efficient, a nation is more likely to be competitive in the global market. From a policy perspective, this is important as countries seek to attract FDI, this may be the time to focus on improving domestic economic institutions along with macro and political institutions. Fourth, the paper advances the debate over the key determinants of FDI, thereby adding to the literature for future consideration and research.

The rest of the paper is organized as follows: Section 2 outlines our research design, Section 3 describes the sample selection procedure, Section 4 reports the empirical results, Section 5 discusses the policy implications, and Section 6 provides the conclusions of the paper.

2. Research design

2.1. Hypothesis

While the focal point of most of the studies discussed above analyzes the effect of political and macroeconomic factors on FDI, the focus of this study is on microeconomic factors such as local financial markets and accounting/reporting quality. To examine the effect of local financial markets and accounting/reporting quality on FDI, we investigate two hypotheses.

Hypothesis 1. The quality of the local accounting/reporting standards has an effect on a country's ability to attract FDI.

Hypothesis 2. The quality of the local financial markets affects a country's ability to attract FDI.

2.2. Methodology

Drawing from various researchers that have investigated the impact of macroeconomic factors (Alam & Shah, 2013; Asamoah et al., 2016), political institutional factors (Biglaiser & Staats,

2010; Jensen, 2003; McLean et al., 2012; Sun, 2014), and IFRS (Gordon, Loeb, & Zhu, 2012) on FDI, we utilize these same macroeconomic and political institutional factors as control variables to determine the effect of financial markets and accounting qualities on FDI.

In particular, we study the following regression model:

$$\begin{aligned} \text{FDI}_t = & \beta_0 + \beta_1(\text{GDP}_{t-1}) + \beta_2(\text{GDPPerCapita}_{t-1}) + \beta_3(\text{GDPGrowth}_{t-1}) \\ & + \beta_4(\text{OPEN}_{t-1}) + \beta_5(\text{PHONE}_{t-1}) + \beta_6(\text{EXCHANGE}_{t-1}) + \beta_7(\text{INTEREST}_{t-1}) \\ & + \beta_8(\text{VOICE}_{t-1}) + \beta_9(\text{STABILITY}_{t-1}) + \beta_{10}(\text{GOVTSVS}_{t-1}) + \beta_{11}(\text{GOVTREG}_{t-1}) \\ & + \beta_{12}(\text{LAW}_{t-1}) + \beta_{13}(\text{CORRUPT}_{t-1}) + \beta_{14}*(\text{Keyvariables}_{t-1}) + \epsilon_t \end{aligned}$$

FDI is the logarithm of Foreign Direct Investment. The control variables are similar to the previous literature. GDP is the logarithm of Gross Domestic Product of a country; GDPPerCapita is the country's GDP divided by its midyear population; GDPGrowth is the growth rate of GDP; OPEN is the sum of Import and Export divided by GDP; PHONE is the accessibility to a land line per 1000 people and mobile phone per 100 people; EXCHANGE is the average annual exchange rate based on the U.S. Dollar; INTEREST is the average interest rate per year; VOICE is a measure of citizen participation in selecting their government as well as freedom of expression; STABILITY is a measure of the likelihood of political instability and/or politically-motivated violence; GOVTSVS is a measure of the quality of public services and civil services; GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development; LAW is confidence in the rules of law and the quality of contract enforcement; CORRUPT is the extent to which power is exercised for private gain.

Key variables are the accounting quality measures and financial market variables from World Economic Forum Global Competitive Index data (GCI). See Table 1 for a detailed description of the variables used in this study.

3. Data and sample selection

We acquired the data from various sources. For the macroeconomic variables, the data is from the World Bank World Development indicators (WDI) database and International Monetary Fund (IMF) database; for the political institution variables, the data is from the World Bank Worldwide Governance indicator database. The data for accounting quality measures and financial market measures is from the World Economic Forum Global Competitive Index (GCI).

The World Economic Forum (WEF) “was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland.” (www.weforum.org.) Every year, the organization holds an annual World Economic Forum in Davos, Switzerland in which it brings “together the world's foremost CEOs, heads of state, ministers and policy-makers, experts and academics, international organizations, youth, technology innovators and representatives of civil society in an impartial space with the aim of driving positive change.”

To support its role in driving positive change and enhancing national competitiveness, “the Forum has built world-class research capabilities, producing cutting-edge data on some of the world's most significant issues” including the Global Competitive Index (GCI). The GCI measures the micro-and macroeconomic foundation of a nation's competitiveness. The GCI is

Table 1
 Description of the measures from World Economic Forum Global Competitive Index data (GCI).

Variables	Measurement/survey question
Accounting quality measures	
AuditStandard	Survey question, In your country, how strong are financial auditing and reporting standards? [1 = extremely weak; 7 = extremely strong]
MinorityHolder	Survey question, in your country, to what extent are the interests of minority shareholders protected by the legal system? [1 = not protected at all; 7 = fully protected]
InvestorProtection	Survey question, what is the Strength of Investor Protection in your country 0–10 (best) scale
Financial market measures	
LoanAccess	Survey question, in your country, how easy is it to obtain a bank loan with only a good business plan and no collateral? [1 = extremely difficult; 7 = extremely easy]
VCAccess	Survey question, in your country, how easy is it for entrepreneurs with innovative but risky projects to find venture capital? [1 = extremely difficult; 7 = extremely easy]
BankHealth	Survey question, in your country, how would you assess the soundness of banks? [1 = extremely low-banks may require recapitalization; 7 = extremely high-banks are generally healthy with sound balance sheets]
ExchangeReg	Survey question, in your country, how effective are the regulation and supervision of securities exchanges? [1 = not at all effective; 7 = extremely effective]
LocalEquity	Survey question, in your country, how easy is it for companies to raise money by issuing shares on the stock market? [1 = extremely difficult; 7 = extremely easy]

This table describes the accounting and legal quality measures and financial market measures from World Economic Forum Global Competitive Index data (GCI).

comprised of a weighted average of many variables (about 120) that measure different aspects of a nation’s competitiveness which can be grouped into many pillars, such as financial markets and accounting quality variables. Every year the Forum conducts an Executive Opinion survey. The goal of the survey is to assess the competitive and investing environment of each country in order to provide relevant data to policymakers and investors in their effort to make investment and policy decisions. Currently, the survey covers over 140 countries and captures the opinions of over 14,000 business leaders. The survey format includes face-to-face interviews, telephone conversations, mailed paper questionnaires, and online surveys. The Forum uses best practice survey methods with the participation of business leaders, executives, labor unions, and business administrators. Out of these variables, we selected three accounting quality measures and five financial market measures to test how these measures impact the FDI. The three accounting quality measures are AuditStandard, MinorityHolder, and InvestorProtection. They are GCI variables from survey questions about accounting standard, minority shareholder protection, and investor protection, respectively. The five financial market measures are LoanAccess, VCAccess, BankHealth, ExchangeReg, and LocalEquity. They are GCI variables from survey questions about access to bank loans, access to venture capital (VC) finance, the health of banks, the effectiveness of security regulations, and the ability to raise capital from the local equity market, respectively. See Table 1 for the detailed description. All GCI variables, with the exception of InvestorProtection, are measured from 1 to 7, with 7 being extremely positive. InvestorProtection is measured from 1 to 10, with 10 being extremely strong.

Table 2
Descriptive statistics.

	Mean	First quartile	Median	Third quartile	Standard deviation
FDI	21.774	20.46	21.59	23.2	2.074
Accounting Quality					
AuditStandard	4.945	4.272	4.994	5.701	0.904
MinorityHolder	4.328	3.763	4.265	4.876	0.754
InvestorProtection	5.511	4.7	5.3	6.3	1.472
Financial market					
LoanAccess	3.07	2.443	2.937	3.625	0.845
VCAccess	2.918	2.337	2.765	3.372	0.768
BankHealth	5.178	4.564	5.264	5.864	0.926
ExchangeReg	4.338	3.698	4.328	5.046	0.962
LocalEquity	3.761	3.015	3.772	4.555	1.000
Control variables					
GDP	25.256	23.69	25.1	26.59	1.944
GDPperCapita	9.43	8.72	9.57	10.37	1.142
GDPGrowth	3.492	1.629	3.486	5.795	4.077
OPEN	93.705	56.718	80.021	110.00	64.034
PHONE	103.17	80.63	106.92	126.98	39.44
EXCHANGE	2.681	0.08	2.05	4.48	2.763
INTEREST	5.252	0	2.843	7.039	19.905
VOICE	0.13	-0.533	0.092	0.939	0.881
STABILITY	-0.025	-0.656	0.031	0.725	0.883
GOVTSVS	0.257	-0.5	0.108	0.996	0.911
GOVTREG	0.314	-0.348	0.274	0.994	0.864
LAW	0.154	-0.617	-0.091	0.92	0.96
CORRUPT	0.124	-0.635	-0.19	0.835	0.995

FDI is the logarithm of Foreign Direct Investment. Accounting quality measures and financial market measures are described in Table 1. GDP is the logarithm of Gross Domestic Product of a country; GDPperCapita is the logarithm of the country's GDP divided by its midyear population; GDPGrowth is the growth rate of GDP; OPEN is the sum of Import and Export divided by GDP; PHONE is the accessibility to a land lines per 1000 people and mobile phone per 100 people; EXCHANGE is the average annual exchange rate based on the U.S. Dollar; INTEREST is the average interest rate per year; VOICE is a measure of citizens participation in selecting their government as well as freedom of expression; STABILITY is a measure of the likelihood of political instability and/or politically-motivated violence; GOVTSVS is a measure of the quality of public services and civil services; GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development; LAW is the confidence in the rules of law and the quality of contract enforcement; CORRUPT is the extent to which power is exercised for private gain. VOICE, STABILITY, GOVTSYS, GOVTREG, LAW, and CORRUPT are all scaled from -2.5 (weak) to +2.5 (strong). Descriptive statistics are based on a sample with 981 observations for all the variables.

4. Empirical results and analysis

4.1. Summary statistics

Table 2 reports the summary statistics for all the variables used in the analysis. There are 115 countries in our analysis, 90 of which are developing countries, and 25 are developed countries. The total number of observation is 981. 200 observations are from developed countries, and 781 observations are from developing countries. The mean of FDI is 21.77 in the whole sample, and its standard deviation is 2.07. The means of accounting standard, minority shareholder protection, and investor protection measures are 4.9, 4.4, and 5.5, respectively. The means of the financial

Table 3

Descriptive statistics of FDI and measures of accounting quality and financial markets.

	Mean	First quartile	Median	Third quartile	Standard deviation
Developed countries (Nobs = 200)					
FDI	23.776	22.93	24.015	24.9	1.651
AuditStandard	5.603	5.25	5.808	6.076	0.613
MinorityHolder	5.078	4.762	5.129	5.505	0.607
InvestorProtection	6.446	5	6	8.3	1.748
LoanAccess	3.639	2.995	3.748	4.379	0.944
VCAccess	3.636	3.031	3.649	4.307	0.832
BankHealth	5.61	5.015	6.003	6.51	1.129
ExchangeReg	5.21	4.775	5.38	5.771	0.686
LocalEquity	4.493	4.076	4.636	5.069	0.848
Developing countries (Nobs = 781)					
FDI	21.262	20.18	21.18	22.49	1.849
AuditStandard	4.777	4.107	4.772	5.385	0.89
MinorityHolder	4.136	3.682	4.092	4.54	0.663
InvestorProtection	5.272	4.3	5.3	6	1.289
LoanAccess	2.925	2.386	2.822	3.351	0.752
VCAccess	2.734	2.264	2.614	3.055	0.631
BankHealth	5.068	4.5	5.168	5.697	0.831
ExchangeReg	4.114	3.575	4.122	4.776	0.893
LocalEquity	3.573	2.819	3.579	4.266	0.948

FDI is the logarithm of Foreign Direct Investment. Accounting quality measures and financial market measures are described in Table 1.

market measures, access to bank loans, access to venture capital (VC) finance, the health of banks, the effectiveness of security regulations, and the ability to raise capital from the local equity market are 3.1, 2.9, 5.2, 4.3, and 3.8, respectively.

Table 3 provides summary statistics of FDI, the accounting quality variables and the financial market variables in the developed countries and developing countries separately. In general, the means of these measures of all developed countries are higher than those of all developing countries. For example, for the measure about strength of audit and financial reporting (AuditStandard), the mean of the developing countries is 4.78 and the standard deviation is 0.89. However, the mean of the developed countries is 5.6 and the standard deviation is 0.61. This is consistent with the general opinion that the auditing standards are higher in developed countries than in developing countries; and it is evident that developed countries receive more FDI than developing countries.

Similarly, the mean for the strength of protection of minority shareholders (MinorityHolder) for developed countries in the sample is 5.08 and the standard deviation is 0.61. In Panel B, the mean for the strength of protection of minority shareholders for developing countries is 4.14 and the standard deviation is 0.66.

The strength of investor protection (InvestorProtection) in general is very important for foreign investors in a country. It provides foreign investors an indication of whether their investment would be protected by laws, especially in non-democratic countries. Studies have shown that foreign assets were seized by some countries in the early 1970s. The mean strength of investors' protection for developing countries is 5.27, with a standard deviation of 1.29; while the mean for the strength of investors' protection for developed countries is 6.45, with a standard deviation of 1.75. Here again the result is consistent with the expectation that developed countries tend to have stronger investors' protection rules and regulations.

The financial market measures follow a similar pattern. The mean for Access to Loan (LoanAccess) for all countries is 3.07, with a standard deviation of 0.85. For developing countries, the mean is 2.93 and the standard deviation is 0.75. For developed countries, the mean for Access to Loans is 3.64 and the standard deviation is 0.94. These results show that the perception of the ability to access loans is higher in developed countries than in developing countries.

Similarly, the mean for the availability of Venture Capital (VCAccess) for developing countries is 2.743 and the standard deviation is 0.63; while the mean for developed countries is 3.64 and the standard deviation is 0.83. This difference in means for developed and developing countries is consistent with the observation that developed countries tend to have more venture capitalists and therefore attract more FDI than developing countries. In other words, entrepreneurs in developed countries with innovative ideas are more likely to receive venture capital funding than those in developing countries.

Banks in developed countries tend to have stronger balance sheets than those in developing countries, and banks in developed countries are healthier. The mean for soundness of banks (BankHealth) in developing countries is 5.07 and the standard deviation is 0.83. The mean for soundness of banks for developed countries is 5.61 with a standard deviation is 1.13.

The strength of regulation of securities exchange (ExchangeReg) shows whether the regulation of the security exchange market is effective. The mean for the developing countries is 4.11 and the standard deviation is 0.89. The mean for developed countries is 5.21 and standard deviation is 0.69. This result is consistent with expectation that security exchange in developed countries tend to be more effectively managed and regulated. The measure about the easiness to raise external capital in local equity market (LocalEquity) is another indication of access to financial market. The mean of LocalEquity for the developing countries is 3.57 and the standard deviation is 0.95. The mean for developed countries is 4.49 and standard deviation is 0.85. Again, it is easier to raise capital in developed countries' equity markets than in developing countries.

4.2. Regression analysis

Table 4 reports results of four multi-linear regression models for all countries in the sample. In all the models, the dependent variable is FDI which is the logarithm of Foreign Direct Investment. All regressions include macroeconomic control variables (GDP, GDPPerCapita, GDPGrowth, OPEN, PHONE, EXCHANGE, INTEREST), as well as political institutions control variables (GOVTSVS, STABILITY, VOICE, GOVTREG, CORRUPT, LAW). The sample consists of 115 countries, 90 developing and 25 developed countries. The FDI variable is from 2008 to 2016, and the other control variables are from 2007 to 2015.

In the first model, we regress FDI on the accounting standard measure and other control variables. The regression coefficient of AuditStandard is significantly positive at 0.121 with a t-statistic of 2.51. This shows that when the strength of audit standard is improved, foreign direct investment increases. The effect is economically significant, too. For an increase of one standard deviation of audit standard measure, the foreign direct investment increases by 10.9 %. The other control variables are generally consistent with previous results. GDP is positively correlated with FDI. GDPPerCapita is negatively correlated with FDI, and this is probably caused by the effect that GDPPerCapita is negatively correlated with the population. FDI is also positively correlated with GDPGrowth, OPEN, STABILITY, and GOVTREG. These results are consistent with prior literature.

In the second model, we regress FDI on the minority shareholder protection measure and other control variables. In the third model, we regress FDI on the investor protection measure

Table 4
FDI and accounting quality.

Dependent variable: FDI				
AuditStandard	0.121 (2.51)**			0.139 (2.40)**
MinorityHolder		0.040 (1.48)		0.022 (0.78)
InvestorProtection			0.024 (0.36)	−0.076 (−0.98)
GDP	0.944 (35.26)***	0.943 (35.07)***	0.945 (35.15)***	0.944 (35.16)***
GDPperCapita	−0.171 (−2.27)**	−0.154 (−2.04)**	−0.146 (−1.93)	−0.186 (−2.42)**
GDPGrowth	0.038 (4.21)***	0.040 (4.40)***	0.041 (4.46)***	0.038 (4.19)***
OPEN	0.008 (11.51)***	0.008 (11.34)***	0.008 (11.45)***	0.008 (11.38)***
PHONE	−0.001 (−1.03)	−0.001 (−0.92)	−0.001 (−0.90)	−0.001 (−1.10)
EXCHANGE	−0.023 (−1.52)	−0.020 (−1.29)	−0.019 (−1.21)	−0.026 (−1.65)
INTEREST	0.001 (0.42)	0.001 (0.71)	0.001 (0.76)	0.001 (0.41)
VOICE	0.043 (0.62)	0.043 (0.62)	0.049 (0.68)	0.022 (0.30)
STABILITY	0.258 (3.76)***	0.272 (3.88)***	0.253 (3.67)***	0.264 (3.76)***
GOVTSVS	−0.435 (−2.61)***	−0.449 (−2.68)***	−0.438 (−2.59)***	−0.418 (−2.47)**
GOVTREG	0.794 (6.12)***	0.797 (6.07)***	0.830 (6.42)***	0.774 (5.89)***
LAW	−0.445 (−2.75)***	−0.445 (−2.74)***	−0.459 (−2.82)***	−0.425 (−2.61)***
CORRUPT	0.099 (0.79)	0.136 (1.08)	0.121 (0.95)	0.123 (0.97)
Constant	−1.822 (−2.58)**	−1.595 (−2.28)**	−1.632 (−2.11)**	−1.537 (−1.99)**
Observations	981	981	981	981
R ²	0.744	0.743	0.742	0.744

FDI is the logarithm of Foreign Direct Investment. AuditStandard, MinorityHolder, and InvestorProtection are GCI variables from survey questions about accounting standard, minority shareholder protection, and investor protection, respectively. GDP is the logarithm of Gross Domestic Product of a country; GDPperCapita is the logarithm of the country's GDP divided by its midyear population; GDPGrowth is the growth rate of GDP; OPEN is the sum of Import and Export divided by GDP; PHONE is the accessibility to a land lines per 1000 people and mobile phone per 100 people; EXCHANGE is the average annual exchange rate based on the U.S. Dollar; INTEREST is the average interest rate per year; VOICE is a measure of citizen participation in selecting their government as well as freedom of expression; STABILITY is a measure of the likelihood of political instability and/or politically-motivated violence; GOVTSVS is a measure of the quality of public services and civil services; GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development; LAW is the confidence in the rules of law and the quality of contract enforcement; CORRUPT is the extent to which power is exercised for private gain. We report the estimated coefficients from a logistic regression and the corresponding z-statistics in parenthesis. *** (***) denote statistical significance at the 1 (5) percent level for a two-tailed test.

and other control variables. In both models, we do not find the coefficient of MinorityHolder or InvestorProtection to be significant.

In the fourth model, we regress FDI on all three accounting quality measures for the whole sample. The regression coefficient of AuditStandard remains significantly positive at 0.139 with a t-statistic of 2.40. Economically, this means that one standard deviation increase of the audit standard measure leads to an increase of 12.6 % of the foreign direct investment. The other two measures, minority shareholder protection and investor protection, remain insignificant for the whole sample. Overall, the strength of the audit standard is a significant contributor to FDI, but minority shareholder protection or investor protection does not appear to contribute in a significant way. In our paper, the GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development standards. In Table 4, the regression results in our paper illustrate that one of our proxies (GOVTREG) for quality accounting standards is significant at the 1 % level in all 4 running's of the model.

Table 5

FDI and accounting quality in developed countries and developing countries.

Dependent variable: FDI

Panel A. Developed countries

AuditStandard	-0.441 (-2.02)**			-0.276 (-0.83)
MinorityHolder		0.031 (0.55)		0.024 (0.43)
InvestorProtection			-0.369 (-1.89)	-0.186 (-0.63)
Controls	Yes	Yes	Yes	Yes
Observations	200	200	200	200
R ²	0.665	0.658	0.664	0.666

Panel B. Developing countries

AuditStandard	0.099 (2.03)**			0.094 (1.60)
MinorityHolder		0.080 (2.50)**		0.063 (1.86)
InvestorProtection			-0.002 (-0.02)	-0.076 (-0.96)
Controls	Yes	Yes	Yes	Yes
Observations	781	781	781	781
R ²	0.701	0.702	0.699	0.703

FDI is the logarithm of Foreign Direct Investment. AuditStandard, MinorityHolder, and InvestorProtection are GCI variables from survey questions about accounting standard, minority shareholder protection, and investor protection, respectively. The control variables are the following: GDP is the logarithm of Gross Domestic Product of a country; GDPPerCapita is the logarithm of the country's GDP divided by its midyear population; GDPGrowth is the growth rate of GDP; OPEN is the sum of Import and Export divided by GDP; PHONE is the accessibility to a land line per 1000 people and mobile phone per 100 people; EXCHANGE is the average annual exchange rate based on the U.S. Dollar; INTEREST is the average interest rate per year; VOICE is a measure of citizens participation in selecting their government as well as freedom of expression; STABILITY is a measure of the likelihood of political instability and/or politically-motivated violence; GOVTSVS is a measure of the quality of public services and civil services; GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development; LAW is the confidence in the rules of law and the quality of contract enforcement; CORRUPT is the extent to which power is exercised for private gain. We report the estimated coefficients from a logistic regression and the corresponding z -statistics in parenthesis. *** (***) denote statistical significance at the 1 (5) percent level for a two-tailed test.

Table 5 reports results of the same four multi-linear regression models for developed countries (Panel A) and developing countries (Panel B) respectively.¹ The results for developed countries are different from the results for all countries. In the first regression, when we regress FDI on the accounting standard measure and other control variables, the regression coefficient of AuditStandard is significantly negative at -0.44, with a t -statistic of -2.02. This is in contrast with the result for all countries. It may be the case that developed countries have better legal system and government regulations and it makes accounting standards less important in attracting foreign direct investment. When we regress FDI on all three accounting quality measures for the developed countries sample, we find none of the accounting quality measures has a significant coefficient.

For developing countries only, we find that accounting standard is important again. In the first regression, when we regress FDI on the accounting standard measure and other control variables, the regression coefficient of AuditStandard is significantly positive at 0.099, with a t -statistic of 2.03. Economically, this means that one standard deviation increase of the audit standard measure leads to an increase of 8.8 % of the foreign direct investment. In the second regression, when we regress FDI on the minority shareholder protection measure and other control variables, the regression coefficient of MinorityHolder is significantly positive at 0.08, with a t -statistic

¹ To save space, we only report the coefficients for the accounting standard measures. The control variables are the same as in Table 4 and their coefficients are not reported.

Table 6
FDI and financial market quality.

Dependent variable: FDI				
LoanAccess	−0.031 (−0.57)			−0.264 (−2.23)**
VCAccess		0.092 (1.38)		0.511 (3.88)***
BankHealth				−0.029 (−0.47)
ExchangeReg				0.083 (0.99)
LocalEquity			−0.090 (−2.05)**	−0.192 (−2.65)***
GDP	0.945 (35.19)***	0.940 (34.74)***	0.957 (34.86)***	0.939 (33.27)***
GDPperCapita	−0.145 (−1.91)	−0.153 (−2.03)**	−0.151 (−2.00)**	−0.144 (−1.91)
GDPGrowth	0.042 (4.54)***	0.039 (4.20)***	0.044 (4.82)***	0.041 (4.41)***
OPEN	0.008 (11.46)***	0.008 (11.28)***	0.008 (11.62)***	0.008 (11.27)***
PHONE	−0.001 (−0.91)	−0.001 (−0.92)	−0.001 (−1.02)	−0.002 (−1.20)
EXCHANGE	−0.019 (−1.26)	−0.018 (−1.17)	−0.020 (−1.30)	−0.015 (−0.95)
INTEREST	0.001 (0.83)	0.001 (0.71)	0.002 (1.01)	0.002 (0.97)
VOICE	0.031 (0.43)	0.070 (0.96)	0.024 (0.35)	0.066 (0.90)
STABILITY	0.248 (3.60)***	0.263 (3.80)***	0.228 (3.29)***	0.252 (3.61)***
GOVTSVS	−0.421 (−2.52)**	−0.457 (−2.72)***	−0.383 (−2.28)**	−0.459 (−2.73)***
GOVTREG	0.841 (6.45)***	0.814 (6.27)***	0.827 (6.41)***	0.825 (5.97)***
LAW	−0.460 (−2.83)***	−0.446 (−2.75)***	−0.424 (−2.61)***	−0.416 (−2.48)**
CORRUPT	0.141 (1.10)	0.095 (0.75)	0.127 (1.01)	0.051 (0.39)
Constant	−1.465 (−2.08)**	−1.591 (−2.27)**	−1.486 (−2.13)**	−1.523 (−2.07)**
Observations	981	981	981	981
R ²	0.742	0.742	0.743	0.748

FDI is the logarithm of Foreign Direct Investment. LoanAccess, VCAccess, BankHealth, ExchangeReg, and LocalEquity are GCI variables from survey questions about access to bank loans, access to venture capital (VC) finance, the health of banks, the effectiveness of security regulations, and the ability to raise capital from the local equity market, respectively. The control variables are the following: GDP is the logarithm of Gross Domestic Product of a country; GDPperCapita is the logarithm of the country's GDP divided by its midyear population; GDPGrowth is the growth rate of GDP; OPEN is the sum of Import and Export divided by GDP; PHONE is the accessibility to a land line per 1000 people and mobile phone per 100 people; EXCHANGE is the average annual exchange rate based on the U.S. Dollar; INTEREST is the average interest rate per year; VOICE is a measure of citizens participation in selecting their government as well as freedom of expression; STABILITY is a measure of the likelihood of political instability and/or politically-motivated violence; GOVTSVS is a measure of the quality of public services and civil services; GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development; LAW is the confidence in the rules of law and the quality of contract enforcement; CORRUPT is the extent to which power is exercised for private gain. We report the estimated coefficients from a logistic regression and the corresponding z -statistics in parenthesis. *** (**) denote statistical significance at the 1 (5) percent level for a two-tailed test.

of 2.5. The effect is economically significant, too. For an increase of one standard deviation of the minority shareholder protection measure, the foreign direct investment increases by 5.3 %. However, when we include all three accounting quality measures in the fourth regression model, all three measures appear to be insignificant, while the magnitudes of the coefficients remain the same. This may be caused by smaller sample size and a lack of statistical power.

Next we study the relation between financial market measures and foreign direct investment. We run regressions of FDI on each one of the five financial market measures separately and run one regression of FDI on all five measures together. To save space, we only report the results of four multi-linear regression models in Table 6. In all the models, the dependent variable is FDI, which is the logarithm of Foreign Direct Investment. All regressions include macroeconomic control variables (GDP, GDPperCapita, GDPGrowth, OPEN, PHONE, EXCHANGE, INTEREST), as well as political institutions control variables (GOVTSVS, STABILITY, VOICE, GOVTREG,

CORRUPT, LAW). The sample consists of 115 countries, 90 developing and 25 developed countries. The FDI variable is from 2008 to 2016, and the other control variables are from 2007 to 2015.

In the first model, we regress FDI on the loan access measure and other control variables. The regression coefficient of LoanAccess is insignificant at -0.03 , with a t-statistic of -0.57 . The other control variables are generally consistent with previous results. In the second model, we regress FDI on the venture capital access measure and other control variables. The regression coefficient of VCAccess is again insignificant. We also run regressions of FDI on the soundness of banks measure and the exchange regulation measure with other control variables. The coefficients of BankHealth and ExchangeReg are insignificant, and we do not report the results in the table.

In the third model of Table 6, we regress FDI on the local equity market measure and other control variables. The regression coefficient of LocalEquity is significantly negative at -0.09 with a t-statistic of -2.05 . This indicates that one standard deviation of increase in the easiness to raise capital in the local equity market leads to 9 % decrease in foreign direct investment. Thus, local equity market appears to be a substitute for foreign investment. When it is easy to raise capital in local market, the need for foreign investment declines.

In the fourth model of Table 6, we regress FDI on all five financial market measures and other control variables. In this model, we find the coefficients for the loan access (LoanAccess) and local equity market (LocalEquity) are significantly negative. When all the financial market variables are included in the regression, the ability to obtain loans in the local market appears to have a substitute effect on foreign direct investment. On the other hand, the coefficient for venture capital access (VCAccess) is significantly positive at 0.51 with a t-statistic of 3.88 . This shows that the availability of venture capital is important contributing factor to foreign direct investment. In Table 6, as in Table 4, the regression results in our paper illustrate that one of our proxies (GOVTREG) for quality accounting standards is significant at the 1 % level in all 4 running's of the model. These are the same findings that we found in Table 4. Accounting quality is surely an important governmental policy that countries in developing and emerging economies, as well as developed economies, should be very cognizant of when trying to attract FDI.

In Table 7, we run the same four regressions as in Table 6 for developed countries (Panel A) and developing countries (Panel B), respectively. For developed countries, the only significant effect we can find for the financial market measures is the access to venture capital in the fourth model. Given that venture capital market is in general mature in developed economies, it is not surprising to see that the access to venture capital contributes to foreign direct investment in these countries. The other effects are all insignificant.

In this case of developing countries, none of the financial market measures shows up as a significant factor for foreign direct investment. Comparing these results with results in Table 5, we find that accounting quality measures are more important than financial market measure in affecting foreign direct investment in developing economies. Foreign investors care more about accounting standard and the protection of investors and minority shareholders than the functioning of the local financial markets.

5. Policy implications

The policy implication of our paper is that accounting standard and financial markets play an important role in attracting FDI. This result is consistent with a number of articles that show governmental entities are indeed important to attract the level of FDI in their host countries. Our

Table 7
 FDI and financial market quality in developed countries and developing countries.

Dependent variable: FDI				
Panel A. Developed countries				
LoanAccess	−0.083 (−0.79)			−0.447 (−1.51)
VCAccess		0.064 (0.48)		0.870 (2.65)***
BankHealth				−0.215 (−1.59)
ExchangeReg				0.028 (0.09)
LocalEquity			−0.118 (−1.01)	−0.071 (−0.27)
Controls	Yes	Yes	Yes	Yes
Observations	200	200	200	200
R ²	0.659	0.658	0.66	0.682
Panel B. Developing countries				
LoanAccess	−0.076 (−1.19)			−0.250 (−1.72)
VCAccess		−0.021 (−0.27)		0.319 (1.89)
BankHealth				0.037 (0.50)
ExchangeReg				−0.001 (−0.01)
LocalEquity			−0.075 (−1.62)	−0.092 (−1.21)
Controls	Yes	Yes	Yes	Yes
Observations	781	781	781	781
R ²	0.7	0.699	0.7	0.702

FDI is the logarithm of Foreign Direct Investment. LoanAccess, VCAccess, BankHealth, ExchangeReg, and LocalEquity are GCI variables from survey questions about access to bank loans, access to venture capital (VC) finance, the health of banks, the effectiveness of security regulations, and the ability to raise capital from the local equity market, respectively. GDP is the logarithm of Gross Domestic Product of a country; GDPPerCapita is the logarithm of the country’s GDP divided by its midyear population; GDPGrowth is the growth rate of GDP; OPEN is the sum of Import and Export divided by GDP; PHONE is the accessibility to a land line per 1000 people and mobile phone per 100 people; EXCHANGE is the average annual exchange rate based on the U.S. Dollar; INTEREST is the average interest rate per year; VOICE is a measure of citizens participation in selecting their government as well as freedom of expression; STABILITY is a measure of the likelihood of political instability and/or politically-motivated violence; GOVTSVS is a measure of the quality of public services and civil services; GOVTREG is the ability of a government to formulate and implement regulations that promote private sector development; LAW is the confidence in the rules of law and the quality of contract enforcement; CORRUPT is the extent to which power is exercised for private gain. We report the estimated coefficients from a logistic regression and the corresponding z–statistics in parenthesis. *** (**) denote statistical significance at the 1 (5) percent level for a two-tailed test.

run GOVTREG variable, a proxy for quality accounting standards, is significant at the 1 % level in all 4 runnings of the model.

Goh (2011) analyzed how the FDI outflows of Malaysia related to market size and government policy. The authors found that market size was the most significant factor related to Malaysia’s outflow of FDI. They also found that trade openness, which includes governmental structures like relevant regulations and standards, was significant at the 5 % level. These findings are consistent with what we found in our paper present paper. Nicollletti, Golub, and Hajkova (2003) argue that government regulations can negatively impact multinational enterprises by increasing costs and decreasing returns related to FDI in Organization for Economic Co-operation and Development (OECD) countries. The authors used regression analysis with panel data to demonstrate that anti-competitive regulations can negatively impact the flow of FDI into OECD countries.

Adams (2009) looked at policy implications related to FDI in the Sub-Saharan Africa area. The author used panel data and regression analysis similar to Nicollletti et al. (2003). Adams (2009) used a proxy for political risk and found that the variable was significant at the 1 %, level showing that it had a positive effect on the level of political stability related to FDI. Lawson,

Du, and Bentum-Micah (2019) investigated the factors that affect the level of FDI in Ghana. The authors used a regression analysis to determine if FDI is affected by government incentives by tax incentives. The authors conclude that forms of tax incentives can positively influence the flow of FDI to their respective countries. Jabri and Brahim (2015) analyzed the effects of FDI in the Middle East and North Africa (MENA). Using regression analysis, the authors concluded that institutional indicators are positively related to the level of FDI. Our paper complements these studies by providing a comprehensive study of both developed and emerging market countries and developed countries.

6. Conclusion

In this paper, we study the contribution to foreign direct investment from two perspectives. First, we examine the relation between FDI and accounting quality measures. Specifically, the accounting quality measures we study are accounting qualities related to the strength of audit and reporting standards, protection of minority shareholders' interest, and the strength of investors' protection. Second, we examine the relation between FDI and financial market measures. Specifically, the financial market measures we study are access to loans, venture capital availability, soundness of banks, regulation of securities and exchanges, and the easiness to raise capital in local equity market. We study all countries in the sample first, and then we study developing countries and developed countries, respectively.

The results support the hypothesis that financial market and accounting quality are associated with FDI inflow into a country. Among others, the results reveal that FDI has a positive and statistically significant relation to the strength of financial audits and reporting standards and the availability of venture capital for all countries. For developing countries, the protection of minority shareholders makes a significant positive contribution to FDI. The results also show a negative and statistically significant relation between FDI and access to loans and local equity market.

These results support the proposition made that the local financial market and accounting quality will likely affect FDI. The results also show that accounting quality measures are more important for developing and emerging countries than for developed countries. This has strong policy implications for governmental regulation in developing and emerging markets. On the other hand, financial market measures, especially the access to venture capital, have a bigger impact in attracting FDI flow into developed countries. These results indicate that while most researchers have focused on macro-economic and political institutional factors as key drivers of FDI, other factors may be also important for foreign investors. Overall, the findings are consistent with the hypothesis that FDI can be attracted into countries that improve their domestic regulatory accounting standards.

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