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ISSUING LEVEL II VERSUS LEVEL III ADRS: DO COUNTRY CHARACTERISTICS MATTER?

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ABSTRACT

We explore whether country characteristics influence a firm's decision to internationalize for increased visibility or to raise funds-that is, what influences the decision to issue Level II versus Level III American Depositary Receipts (ADRs). We apply panel probit and tobit models to a panel of 20 countries that spans 368 exchange-listed ADR issues during 1996-2010. Our results indicate that the domestic country's macroeconomic environment does play a role in firm's choice between Level II and Level III ADRs. Specifically, lower inflation and higher credit available to the private sector are associated with increases in Level II ADR issuance while improvements in corporate governance and stock market development are associated with issuance of Level III ADRs.

INTRODUCTION

American Depositary Receipts (ADRs) are securities traded in the United States that represent ownership in a foreign company. For U.S. investors, ADRs provide convenience in international investment because they offer familiar trade, clearance and settlement procedures. Perhaps more importantly, an ADR investment offers U.S. investors international diversification benefits. Furthermore, ADRs benefit their respective issuers because they offer an expanded shareholder base, higher liquidity, higher global visibility, and a lower cost of capital (Karolyi, 1998; 2006).

When cross-listing, firms choose what type of ADR to issue: Level I, Level II, Level III, or private placements. [1] Level I ADRs are traded in over-the-counter exchanges. Private placements of ADRs to institutional investors can be issued under Rule144A in which shares are placed amongst qualified institutional buyers (QIBs). Neither requires registration with the Securities and Exchange Commission (SEC). Of interest to this study are ADR issues of Levels II and III because these issues are traded on the New York Stock Exchange (NYSE) and NASDAQ. Consequently, issuers are obligated to meet SEC disclosure requirements and conform to U.S. Generally Accepted Accounting Principles (GAAP) which enhances the legal protection of the firm's investors and thus increases the value of the firm (Coffee, 2002; Doidge, Karolyi, & Stulz, 2004). While both are listed on exchanges, ADRs of Levels II and III differ significantly in purpose. Level II ADRs are issued with the intent to meet U.S. investor demand for foreign equity while Level III ADRs are issued with the intent to raise capital in the U.S. market.

Boubakri, Cosset and Samet (2010) document that the choice between Level II and III ADRs is influenced by several characteristics including the issuing firm's country of origin. Their analysis of country level characteristics focuses primarily on investor protection and the quality of accounting standards. We aim to contribute to the existing literature by asking: Does

the domestic macroeconomic environment influence a firm's choice between Level II and Level III ADRs?

To examine this question, we apply probit and tobit models to a panel dataset consisting of 20 countries which span 368 exchange listed ADR issues during 1996-2010. Our results suggest that macroeconomic characteristics of the home country do affect firms' choice of cross-listing mechanism in the host country. Specifically firms from countries with stable macroeconomic environments and greater credit available to the private sector are more likely to issue Level II ADRs. Firms in these countries are less likely to be credit constrained in the domestic market and seek primarily to increase their shareholder base with ADR issuance. Our results also indicate that improvements in the home market's regulatory quality and higher liquidity in the domestic stock market are consistent with issuance of Level III ADRs. This is consistent with evidence in Claessens and Schmukler (2006) who argue that countries with better developed stock markets have greater internationalization and more capital raising issues abroad.

MEASURES EMPLOYED

Characteristics of the Country of Origin

As reviewed by Dodd (2013), a vast amount of literature examines *why* firms internationalize, but little attention has been paid to *how* firms internationalize. A notable exception is Boubakri et al. (2010) which documents that large firms, firms with high pre-tax income, firms with high growth opportunities, and privatized firms tend to issue more Level III ADRs. However, they examine little in terms of the country characteristics that impact the ADR choice; they find that the regulatory environment as firms from weak investor protection environments tend to issue more Level III ADRs.

We focus on the macroeconomic environment because more developed countries typically have more developed financial markets (Demirgüç-Kunt & Levine, 1996) and countries with better economic fundamentals have more firms that internationalize and that raise capital internationally (Claessens, Klingebiel & Schmukler, 2006; Claessens & Schmukler, 2007). In addition, less developed countries are more likely characterized by economic or financial problems such as high inflation. Inflation can have a detrimental effect on financial development because it decreases real returns on all assets resulting in worsening trading activity in equity markets (Huybens & Smith, 1999; Boyd, Levine, & Smith, 2001). Therefore, we conjecture that the domestic environment can impact not only the decision to cross-list but also the choice of ADR. To measure macroeconomic conditions in the home country we include two variables—GDP per capita and the annual inflation rate based on an index of consumer prices.

The superior financial development of rich countries may be partially explained by better legal environments and law enforcement (La Porta, Lopez-de-Silanes, Schleifer, & Vishny, 1997). The bonding hypothesis suggests that firms will cross-list in order to "bond" themselves to the tougher legal, regulatory and capital market institutions of the host country. As discussed by Karolyi (2012), the firm benefits from a foreign listing because global investors are more willing to invest in a firm that offers a credible commitment to stringent oversight of the firm's activities thus leading to a revaluation of the firm's shares. Thus, the regulatory environment can also impact the ADR choice. To measure investor protection mechanisms, we obtain measures of *Rule of Law* which "reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts." In our model we include the difference

in governance between the ADR's home and host markets such that increases in this measure reflect improvements in governance of the home country relative to the United States.

A major criticism of the bonding hypothesis is that SEC regulation is not as effective as bonding proponents suggest and that corporate governance is secondary to the main reasons for cross-listing which are raising capital and increasing the shareholder base (Licht, 2003). If this is the case, we expect the motive to be stronger for firms that are financially constrained in their domestic markets. Existing evidence indicates that the ability to raise funds is a benefit that accrues primarily to firms from emerging markets (Lins, Strickland, & Zenner, 2005). To gauge financial constraints, we include a measure of credit available to the private sector (*Private Sector Credit*) and measures of stock market development—size and liquidity. To measure *Market Size*, we employ the monthly market capitalization ratio divided by Gross Domestic Product (GDP). We complement size with *Market Liquidity*, which is the total monthly value of shares traded in the stock market scaled by market capitalization. This provides additional information about a market's development because values will be low for markets that have a large number of listed but inactive shares.

ADR Issuance

We measure the relative issuance of Level II ADRs versus Level III ADRs in two ways. First, we create a binary variable *NetIssuer2* that takes on the value of one if the firm is a net issuer of Level II ADRs and zero otherwise. A country is a net issuer of Level II ADRs if the cumulative number of Level II ADR issues exceeds the cumulative count of Level III issues in that year. Suppose in year 1 Country A issues one Level II but no Level III ADR, then it would be considered a net issuer of Level II ADRs in year 1. In year 2, Country A issues 1 ADR of each Levels II and III ADRs. Country A is classified as a net issuer of Level II ADRs also in year 2 because the total number of Level II issues exceeds the number of Level III issues.
A limitation of this approach is that year-to-year variations in the number of Level II (or Level III) issues are ignored. To contend with this issue, we employ a second measure, *Proportion II*, which captures the number of Level II ADRs as a fraction of all exchange-listed ADR programs in the country. By construction, *Proportion II* is bounded by zero and one.

SAMPLE AND METHODOLOGY

The sample includes exchange-listed ADRs trading during the period 1996-2010 available from the ADR databases of: JP Morgan Chase, Bank of New York, Citibank, and Deutsche Bank. In cases where these databases offered incomplete/conflicting information, data were collected from SEC filings, the New York Stock Exchange and the NASDAQ. We include active and terminated ADRs to avoid survivorship bias and include only countries with a minimum of three ADRs.

Table 1 shows the distribution of ADRs in our 20 country panel. Brazil, China, and the UK dominate the sample with 43, 119, and 58 issues respectively. Table 1 also shows significant variation across mean values of *Proportion II* (defined in Section II). Some countries
only issue one type of ADR: only Level II for Australia and South Africa and only Level III for Ireland and Russia such that *Proportion II* takes on the value of 1 for the former and 0 for the latter throughout the sample period. In the remaining countries, the average of *Proportion II* ranges from 0.02 in Spain to 0.98 in Germany.

Table 1
ADR Issuance by Level and Country

	Net Level II Issuers				Net Level III Issuers		
	II	III	Average Proportion II		II	III	Average Proportion II
Australia	6	0	1	Argentina	2	8	0.22
Brazil	29	14	0.71	China	1	118	0
Chile	5	2	0.66	France	5	12	0.22
Germany	5	1	0.98	Hong Kong	1	7	0.13
Japan	8	6	0.61	India	3	13	0.17
South Korea	6	4	0.64	Ireland	0	6	0
Mexico	8	7	0.53	Israel	1	3	0.35
Netherlands	4	3	0.51	Russia	0	6	0
S. Africa	3	0	1	Spain	1	5	0.02
UK	40	18	0.79	Switzerland	4	3	0.57

Notes: Data collected by authors on exchange-listed ADRs trading during the period 1996-2010. Only countries with a minimum of three exchange-listed ADRs are included.

Table 2 shows descriptive statistics of the domestic country variables. There is a wide range of per capita income across our sample—in 1996, $410 in India but $44,123 in Switzerland. Russia had the most inflation in across most years, but overall, inflation averaged approximately 5%. On average, *Regulatory Quality* was negative such that countries tend to score lower than the U.S. on the quality and enforcement of contracts and property rights. The statistics also indicate a wide range in the average *Private Sector Credit* and the stock market development variables, *Market Size* and *Market Liquidity*. We found remarkably high values of *Market Liquidity* in 2008 (not shown), likely reflecting the selloffs associated with the peak of the global financial crisis.

Table 2
Country of Origin Characteristics

	Year	Mean	Std. Dev.	Minimum	Maximum
GDP per capita	1996	16,451.88	12,765.99	410.82	44,123.03
	2010	27,654.37	19,110.08	1,419.11	70,370.02
Inflation	1996	8.47	12.06	0.13	47.74
	2010	3.33	3.32	-0.95	11.99
Regulatory Quality	1996	0.92	0.74	-0.44	2.02
	2010	0.91	0.85	-0.76	1.91
Private Sector Credit	1996	81.62	51.31	8.33	202.43
	2010	123.83	65.27	14.62	215.06
Market Size	1996	68.58	67.37	9.50	281.36
	2010	112.96	98.29	17.33	472.09
Market Liquidity	1996	68.59	70.99	10.42	328.62
	2010	84.34	46.33	4.58	168.94

Notes: Annual data obtained from the World Bank.

Our empirical approach involves estimating a probit model applied to panel data in the following form:

$$y_{i,t}^{*} = X_{i,t-1}\beta + \epsilon_{i,t} \tag{1}$$

$$y_{i,t} = 1\left(y_{i,t}^{*} > 0\right)\ t = 1, \dots, T; i = 1, \dots, N$$

where the vector $y_{i,t}^{*}$ is related to whether a country is a net issuer of Level II ADRs ($y_{i,t}$); The vector $X_{i,t-1}$ includes macroeconomic characteristics including *GDP per capita*, *Inflation*, *Regulatory Quality*, *Private Sector Credit*, *Market Size*, and *Market Liquidity* as previously described. The independent variables are lagged one year to account for the fact that the decision to cross-list is made prior to the actual cross-listing. Because firms must first ensure that they meet U.S. listing requirements which can be costly, we believe that the lagged information is more likely to influence what ADR type is issued than coincidental data. Given significant cross-country differences across several variables, we apply logs to transform all variables.

An important limitation of the approach above is that the dependent variable captures only two states—either a country is a net issuer of Level II ADRs or a net issuer of Level III ADRs. To capture variations in the number of Level II relative to the number of Level III ADRs, we employ *Proportion II* which is bounded by [0,1] by construction. To handle the bounds of the dependent variable, we employ a tobit model with random effects that takes on the following form:

$$y_{i,t} = X_{i,t-1}\beta + \epsilon_{i,t} \tag{2}$$

where $y_{i,t}$ represents *Proportion II* and $X_{i,t-1}$ contains the lagged economic data.

RESULTS

The results from estimating Equation (1) are displayed in Panel A of Table 3. Country characteristics are related to the choice of ADRs. Column (1) shows that GDP per capita is positive and statistically significant indicating that more developed countries tend to be net issuers of Level II and not Level III ADRs. However, the result becomes statistically insignificant when we control for other country characteristics. The negative coefficient on inflation indicates that countries with higher inflation tend to issue more Level III ADRs than Level II ADRs. Since high inflation is typically a problem of emerging and not developed countries, these results are consistent with the GDP results—more developed countries tend to be issuers of Level II and not Level III ADRs. Columns (3) through (5) show that the result is consistent across different specifications. Surprisingly, *Regulatory Quality* is not statistically significant at any conventional level. However, the results support the propositions of Licht (2003) in that *Private Sector Credit* is positive and statistically significant. This suggests that countries with greater access to credit are more likely to be issuers of Level II and not Level III ADRs. This result is intuitively appealing because it suggests that firms internationalize through a Level II issue when they are not financially constrained. The relationship holds when we consider the country's stock market development. Table 3 also shows a negative and statistically relationship between *Market Size* and the likelihood of being a net issuer of Level II ADRs. This result is consistent with the findings of Claessens et al. (2006) which suggest that firms with

Table 3

Panel A: Panel Probit Results of Country Characteristics on Level II ADR Issuance

	(1)	(2)	(3)	(4)	(5)
GDP per capita	0.092**	0.071	0.094*	0.033	0.060
	(0.042)	(0.044)	(0.048)	(0.047)	(0.049)
Inflation		-0.820*	-0.825**	-1.098***	-1.120***
		(0.428)	(0.419)	(0.385)	(0.383)
Regulatory Quality			-0.101	-0.099	-0.107
			(0.084)	(0.074)	(0.074)
Private Sector Credit				0.150*	0.167**
				(0.079)	(0.079)
Market Size					-0.101***
					(0.035)
Market Liquidity					0.011
					(0.033)
Constant	-0.803*	-0.576	-0.847	-0.925*	-0.879
	(0.483)	(0.503)	(0.558)	(0.537)	(0.537)
Panel B: Panel Tobit Results on Level II ADR Issuance					
GDP per capita	0.012	-0.004	0.024	-0.016	0.003
	(0.025)	(0.026)	(0.028)	(0.031)	(0.031)
Inflation		-0.679***	-0.777***	-0.914***	-0.930***
		(0.260)	(0.260)	(0.255)	(0.251)
Regulatory Quality			-0.091**	-0.096**	-0.077**
			(0.039)	(0.038)	(0.038)
Private Sector Credit				0.126***	0.116**
				(0.048)	(0.048)
Market Size					-0.007
					(0.022)
Market Liquidity					-0.053***
					(0.018)
Constant	0.356	0.534**	0.214	0.018	0.150
	(0.252)	(0.260)	(0.293)	(0.298)	(0.297)

Notes: Annual data ranging from 1996-2010. Panel A: Panel probit regression of Net Issuer 2 (a binary variable that takes on the value of 1 if the country is a net issuer of Level II ADRs) on country level characteristics including: *GDP per capita* (in current U.S. dollars), *Inflation* (based on consumer prices), *Regulatory Quality* (the difference between a home country and U.S. index, *Credit to Private Sector* (scaled by GDP), *Market Size* (market capitalization) and *Market Liquidity* (turnover). All variables except *Regulatory Quality* are transformed via logs due to significant cross-country differences. Panel B: Panel tobit regression of Proportion II (a variable that measures the number of Level II ADR issues relative to all exchange-listed issues) on country level characteristics. Standard errors are shown in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% respectively.

better developed stock markets tend to internationalize more and raise more capital internationally. However, since the *Market Size* variable is negative and statistically significant but the *Market Liquidity* variable is not statistically significant at any conventional level, this result may also arise from the fact that market capitalization will be high in a market that has many listed shares even if these shares are inactively traded—a problem typically associated with emerging markets, which as stated above, tend to issue more Level III ADRs.

Panel B of Table 3 presents the results from estimating Equation (2). Consistent with our previous results, GDP per capita is not statistically significant at any conventional level but inflation is negative and statistically significant across all specifications. Therefore, increases in inflation are consistent with a declining proportion of Level II ADRs. This would suggest that poor macroeconomic conditions are consistent with Level III ADR issuance. In addition, and unlike the probit results, the corporate governance variable *Regulatory Quality* is statistically significant at the 5% level across all specifications. The coefficient is negative which indicates

that as corporate governance in the home market improves relative to the host (U.S.) market, *Proportion II* decreases—possibly driven by an increase in Level III ADRs. ADR issuance can act as a market liberalization event such that firms that cross-list attract global attention and bring increased visibility, credibility and enhanced liquidity to other local market stocks. Consequently, local financial intermediaries feel competitive pressure from global markets and begin improving the efficiency of trading systems, through greater transparency and more stringent disclosure requirements. While controversy exists about the impact of internationalization on domestic stock market development, some evidence suggests that ADR issuance does benefit the domestic market (Halling, Pagano, Randl & Zechner (2008) for developed markets and Hales & Mollick, 2014 for Latin America). If this mechanism is operative, corporate governance mechanisms improve. Despite improvements, some countries will still have poor governance environments and firms from these countries still stand to gain from bonding. Therefore, the capital-constrained Level III issuers will be willing to give up private managerial benefits to bond to the U.S. environment and receive necessary funding. Furthermore, as before *Private Sector Credit* is still positive and statistically significant suggesting that as credit availability increases, so does Level II ADR issuance as firms have a lesser need to tap international financial markets. Finally, the results indicate that stock market development is related to ADR issuance. Specifically, higher levels of liquidity in the stock market, as measured by *Market Liquidity*, are associated with lower levels of *Proportion II*. This is consistent with the findings of Claessens et al. (2006) that greater stock market development is associated with subsequent higher internationalization and more capital raised abroad.

CONCLUSION

This paper examines whether conditions in the home country influence firms' choice of ADR issue in the host country. Specifically, this paper focuses on the choice between Level II and Level III ADRs since both are exchange listed which requires SEC registration and adherence to U.S. GAAP. We employ probit and tobit models applied to panel data to explore the relationship between domestic country conditions and the choice of ADR. Our results indicate that the home country characteristics are associated with the ADR choice; specifically, countries with better macroeconomic environments—lower inflation and higher domestic credit available to the private sector—tend to issue more Level II than Level III ADRs. In addition, the results indicate that improvements in corporate governance mechanisms and stock market development are consistent with increases in Level III issuance relative to Level II. Since Level III issuance raises new capital, an important question left for further research is, does Level III ADR issuance foster economic growth?

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