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Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings[☆]

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Abstract

This paper examines the hypothesis that non-US firms cross-list in the United States to increase protection of their minority shareholders. Cross-listing on the NYSE or Nasdaq subjects a non-US firm to a number of provisions of US securities law, and requires the firm to conform to US GAAP. It therefore increases the expected cost to managers of extracting private benefits, and commits the firm to protect minority shareholders' interests. The expected relation between the quantity of cross-listings and shareholder protection in the home country is ambiguous, because managers will consider both expected private benefits and the public value of their shares. However, there are clear predictions about the relation between subsequent equity issues, shareholder protection, and cross-listings:

- (1) Equity issues increase following all cross-listings, regardless of shareholder protection.
- (2) The increase should be larger for cross-listings from countries with weak protection.
- (3) Equity issues following cross-listings in the US will tend to be in the US for firms

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from countries with strong protection and outside the US for firms from countries with weak protection.

We find evidence consistent with each of these predictions. Overall, the desire to protect shareholder rights appears to be an important reason why some non-US firms cross-list in the United States.

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1. Introduction

An implicit but often unrecognized part of any financial contract is the ability of a legal system to enforce it. The quality of legal protection affects the ability of parties to expropriate resources from one another ex post, and thus influences the contracts that will be observed ex ante. Differences across countries in the quality of protection they provide claimholders should, by this logic, lead to observable differences in financial contracting. In fact, recent empirical work documents that such international contracting differences exist and are substantial (see in particular La Porta et al., 1997, 1998). In countries where legal protections for minority claimholders are weak, it is considerably more difficult for a firm to raise external capital than for a similar firm in a country that protects minority interests well.

Coffee (1999a) and Stulz (1999) argue that firms wishing to raise capital respond by bonding themselves to protect the interests of their minority stockholders. One way to accomplish this bonding is to cross-list on an exchange (NYSE or Nasdaq) in the United States, whose legal system protects minority shareholder interests as well as any in the world. Such a cross-listing obligates the firm to conform to generally accepted accounting principles (US GAAP), to file reports with the US Securities and Exchange Commission (SEC), to comply with the requirements of the exchange on which it lists, and at least to some extent conform to US securities laws. It thus provides a mechanism by which foreign firms can voluntarily subject themselves to some shareholders' protections under US securities laws. For firms that want access to US capital markets without the voluntary bonding, the over-the-counter (OTC) market (also known as the Pink Sheets) and PORTAL (the market for firms issuing equity under SEC Rule 144a) provide such an opportunity.¹

In this paper, we examine the extent to which such voluntary bonding explains cross-listing behavior. We first develop hypotheses concerning the expected relations between cross-listings, shareholder protection, and equity offerings. A manager considering cross-listing a firm's stock in the US, when such a cross-listing has

¹SEC Rule 144a (adopted in 1990) allows for the trading of private placements among qualified institutional buyers (QIBs). PORTAL is an acronym for private offerings, resales, and trading through automated linkages.

potential implications for shareholder protection, must consider a number of factors in such a decision. First, one must consider the costs and benefits from the change in shareholder protection. Second, there are previously noted benefits of cross-listing, such as overcoming the obstacles of segmented markets (Stulz, 1981; Alexander et al., 1987, 1988; Errunza and Miller, 2000) and the problem of investor recognition (Merton, 1987; Foerster and Karolyi, 1999, 2000). These arguments imply that the expected relation between cross-listings and shareholder protection is theoretically ambiguous. However, the predictions regarding equity issues are clear: Equity issues should increase following all cross-listings, and the increase should be larger when the cross-listing increases shareholder protection. In addition, equity issues following cross-listings in the US from countries that protect shareholders well should be primarily in the US, while equity issues following cross-listings from countries with poor protection should occur in all countries.

We examine these hypotheses using a database of cross-listing firms and their history of equity issues. We first consider the relation between cross-listings and shareholder protection. Univariate statistics suggest that firms with weak protection at home are more likely to cross-list; however, when we control for other factors such as firm size, this relation is reversed and cross-listings are more common from firms with strong protection at home.

We report three main findings relating a firm's cross-listing, its quantity and location of equity offerings, and the level of shareholder protection in its home country. First, we find a large increase in both the number and value of equity offerings following a cross-listing. Second, firms with weak shareholder protection in their home countries are more likely to issue equity. They do so in larger quantities following cross-listings in the United States than do firms from countries with strong shareholder protection. Finally, we find that firms from countries with strong protection for minority shareholders are more likely to issue subsequent equity in the US. Meanwhile, firms from countries with weak shareholder protection are more likely to issue subsequent equity outside the US. Each of these findings is consistent with the shareholder protection arguments.

Overall, the desire to protect shareholder rights appears to be one reason why some non-US firms cross-list in the United States. Cross-listing, though, reduces expected private benefits and thus comes at a potentially large cost to managers. The effect of the extra shareholder protection resulting from cross-listing on the likelihood that an average firm will cross-list is unclear. However, when firms have a large demand for equity capital, they have incentives to cross-list in the US as a way to bond themselves to protect shareholders' interests all over the world. Such bonding has empirical implications consistent with the data on cross-listings, equity offerings, and home country shareholder protection.

Assessing the relative importance of cross-listing theories is complicated because the bonding arguments we stress here, and the more traditional explanations for cross-listing that are based on segmented capital markets and/or information imperfections, are not naturally nested. Therefore, it is not clear how one would design a statistical test to distinguish between these arguments. However, our paper documents substantial patterns between cross-listings, equity offerings, and

shareholder protection that are not predicted by any existing theory other than the shareholder protection arguments. In addition, a recent paper by Doidge et al. (2001) provides independent support for the bonding hypothesis. This paper finds that non-US firms cross-listing in the US trade at a premium relative to otherwise similar firms that do not cross-list. These authors argue that firms with growth opportunities (which are likely to be worth more) cross-list in the US to bond themselves to protect the interests of their minority shareholders. Thus, cross-listing facilitates an equity offering to finance the growth opportunities. We provide evidence in this paper that these equity offerings are much more likely to occur outside the US when the cross-listing firm's home country has traditionally weak protection for minority shareholders.

The remainder of the paper is structured as follows. Section 2 describes the mechanics of cross-listing and summarizes the cross-listing literature. Section 3 discusses why different legal systems vary in their protection of minority shareholders and explains how cross-listing in the US has implications for the protection of shareholder rights outside the US. Section 4 provides an intuitive discussion of the expected empirical relations between cross-listings, shareholder protection, and equity offerings. Section 5 describes how we construct the sample used in the empirical analysis. Section 6 presents empirical results characterizing cross-listing behavior and its relation to shareholder protection in the country of origin. Section 7 discusses the empirical results about equity offerings subsequent to cross-listings and their relation to shareholder protection in the home country, and Section 8 concludes.

2. Cross-listings

There are two ways that a foreign firm can choose to cross-list its shares on a US exchange. It can either list its shares directly or use American Depositary Receipts (ADRs).² ADRs are negotiable certificates that represent a foreign company's publicly traded equity or debt. Sponsored ADRs are created when, at the request of the company, an American broker purchases the company's shares on its home stock market and delivers them to a custodian bank.³ The custodian bank issues Depositary Receipts, which trade either on NYSE/Nasdaq, OTC, or on PORTAL.

While the vast majority of foreign firms choose to cross-list their stock using ADRs, some firms (primarily Canadian and Israeli) choose to list their equity directly on a US exchange. The listing and reporting requirements for firms

²We do not distinguish between ADRs and Global Depositary Receipts (GDRs) for the purposes of this paper.

³Historically, there have also been unsponsored depositary receipts, set up without the cooperation of the company. However, no unsponsored ADRs have been set up since 1983 when, under rule 12g3-2(b), depositaries were required to obtain the permission of the issuing firm before they could set up an ADR.

with direct cross-listings are essentially the same as for firms with an ADR. Therefore, we examine both ADRs and direct cross-listings in this paper.

Cross-listing in the United States substantially increases the disclosure and regulatory costs a company faces. If a foreign firm is cross-listed on NYSE/Nasdaq, the firm must conform to US GAAP and complete all required filings with the SEC. However, firms that choose to cross-list using the OTC Pink Sheets or Rule 144a are generally exempt from these requirements.⁴ The Federal Reporting Requirements are summarized in Panel A of Table 1. Additionally, there are three categories of requirements for listing that are imposed by the individual exchanges: Quantitative Standards, Corporate Governance Standards, and Financial Requirements. These are summarized in Panels B–D of Table 1. This table indicates that there are essentially no Federal reporting or exchange requirements for OTC or 144a listings, while the requirements for NYSE and Nasdaq are fairly stringent.

To some extent, these accounting and reporting requirements can be thought of as voluntary, since the OTC and PORTAL markets provide firms with the accessibility to US investors associated with a cross-listing without imposing these requirements. In fact, these requirements can have substantial ramifications. Coffee (1999a) and Radebaugh et al. (1995) emphasize how, when Daimler-Benz made the decision to list its stock on the NYSE in 1993, it was forced to restate its earnings as a significantly lower amount subsequent to its cross-listing (which preceded its purchase of Chrysler).

2.1. Why do firms cross-list?

This paper examines the hypothesis that legal considerations provide one reason for cross-listing in the United States. However, the legal considerations are only one of a number of reasons why firms choose to cross-list outside their home country. Recent literature has provided empirical support for a number of other factors that affect cross-listings. These reasons are not mutually exclusive, and complement the legal explanations emphasized here.⁵

2.1.1. Market segmentation/investor recognition

One reason for cross-listing is that it allows investors to avoid cross-border barriers to investment. These barriers could be regulatory restrictions, direct costs, or information problems such as uninformative accounting information or simply not

⁴Rule 144a, adopted in 1990, allows institutions with assets exceeding \$100 million to trade privately placed unregistered equities among themselves. Prior to April 4, 1998, foreign firms could also list their ADRs on the Over-the-Counter Bulletin Board (OTCBB) under the same exemptions as the Pink Sheets. On that day, however, the SEC's Office of International Corporate Finance issued a directive requiring all foreign firms listed on the OTCBB to meet the same reporting requirements as NYSE and Nasdaq. At the time, there were several hundred cross listings on OTCBB. Most of them switched to the Pink Sheets, while some of them went to Nasdaq. Virtually none remained on the OTCBB.

⁵Karolyi (1998) provides an excellent summary of this literature. Also see Licht (2000) for a legal perspective on the cross-listings literature.

Table 1
Regulatory standards for cross-listing

<i>Panel A: Federal reporting requirements</i>				
NYSE or Nasdaq non-capital raising		NYSE or Nasdaq capital raising	OTC	144a
Form 20-F filed annually		Form 20-F filed annually	Exempt from filing form 20-F under Rule 12g3-2(b)	Exempt from filing form 20-F under Rule 144
Financial statements must be partially reconciled to GAAP		Financial statements must be fully reconciled to GAAP	No GAAP reconciliation required	No GAAP reconciliation required
SEC registration statement form F-6 must be filed		SEC registration forms F-1 and F-6 must be filed	No SEC registration required	No SEC registration required
<i>Panel B: Quantitative standards</i>				
		NYSE ^a	Nasdaq	OTC and 144a
	US standards	Non-US standards		
Round-lot holders	2,000	5,000	300	N/A
Public shares	1 million	2.5 million	1 million	N/A
Market value of public shares	\$100 million (\$60 million for IPOs)	\$100 million	\$50 million	N/A
Earnings	\$2.5 million	\$25 million	\$750,000	N/A
Net tangible assets	N/A	N/A	\$2 million	N/A
Operating cash flow	\$25 million (over 3 years)	\$25 million	N/A	N/A
<i>Panel C: Corporate governance standards</i>				
Nasdaq				
Distribute annual reports to shareholders				
Appoint a minimum of two independent directors				
Establish and maintain an audit committee, with the majority of the members consisting of outside directors				
Hold an annual meeting of shareholders				
Establish a quorum of not less than one-third of the outstanding shares				
Provide proxy statements to shareholders				
Require shareholder approval for the issuance of new securities				
Submit to an audit by an independent public accountant				

NYSE

While the published corporate governance standards are the same as for Nasdaq, they can be waived if the NYSE receives written opinion from a home country counsel that the firm’s corporate governance standards are in-line with all home country laws

OTC and 144a

None

Panel D: Financial requirements

	NYSE		Nasdaq		OTC and 144a
		Total shares outstanding			None
Original fee plus	\$36,800, per million	< 1 million	\$29,525		
Shares or ADRs		1–2 million	33,750		
1st and 2nd million	\$14,750	2–3 million	43,750		
3rd and 4th million	14,750	3–4 million	48,750		
5th and up to 300 million	7,400	4–5 million	55,000		
In excess of 300 million	1,900	5–6 million	58,725		
Minimum fee	100,000	6–7 million	61,875		
		7–8 million	64,375		
		8–9 million	67,875		
		9–10 million	70,625		
		10–11 million	73,875		
		11–12 million	76,625		
		12–13 million	79,875		
		13–14 million	82,000		
		14–15 million	83,500		
		15–16 million	85,000		
		> 16 million	90,000		

^aTo list on the NYSE, firms can choose to meet either the US standards or the non-US standards. Only shares and assets in the US can be used to meet the US standards. The non-US standards can be met with shares and assets worldwide. A firm must meet either all the US standards or all the non-US standards. Sources: Bank of New York, NYSE, and Nasdaq websites, and Joe Lomnický of the NYSE International Dept.

knowing about a security (Merton, 1987). Theories of capital market integration suggest that removing these barriers and integrating markets will allow for more efficient diversification and lower the risk of a given security.⁶ The two main predictions of this idea are that stock prices will rise in the home country in response to a cross-listing and that a firm's cost of capital will decline when a firm cross-lists its security. Each of these predictions has been tested extensively in the literature.

Switzer (1986), Alexander et al. (1988), Foerster and Karolyi (1993, 1999), Jayaraman et al. (1993), and Miller (1999) all examine the stock-price reaction when non-US firms cross-list in the US. Though the results vary somewhat across samples, these studies generally find a small positive reaction to the announcement (or the listing). This finding is consistent with the market segmentation hypothesis, as well as other explanations for cross-listing.

A second implication of the market segmentation explanation for cross-listing is that the firm's cost of capital should decline following the cross-listing. A number of studies have estimated changes in the cost of capital after non-US firms cross-list in the US. Alexander et al. (1997), Foerster and Karolyi (1993, 1999), Jayaraman et al. (1993), Karolyi (1998), and Errunza and Miller (2000) generally find that the cost of capital declines following a cross-listing, consistent with the view that at least one effect of the cross-listing is a decrease in market segmentation. Lins et al. (1999) find that the investment to cash flow sensitivity of cross-listing firms decreases subsequent to the listing of an ADR on either the NYSE or Nasdaq by emerging market firms. This finding suggests that cross-listing has the effect of easing capital constraints for these firms.

2.1.2. *Liquidity*

A decrease in transaction costs is another channel through which a cross-listing might decrease a firm's cost of capital. There are a number of reasons why liquidity could improve following cross-listings. In particular, access to more investors could lead to higher volume, information asymmetries could decrease due to increased disclosure, and there could be exchange-specific reasons why transaction costs might be lower in the US than in the home country. Tinic and West (1974), Foerster and Karolyi (1998); Domowitz et al. (1998), and Smith and Sofianos (1997) all examine the effect of cross-listing in the US on the costs of transacting a particular security. These papers generally find that spreads decrease and trading volume increases following a cross-listing, both of which will likely reflect an increase in liquidity.

⁶Black (1974), Stapleton and Subrahmanyam (1977), Stulz (1981), Errunza and Losq (1985), Eun and Janakiramanan (1986), and Alexander et al. (1987) provide contributions to the theory of capital market integration. Stulz (1999) gives an intuitive summary of capital market integration and its implications for the cost of capital.

2.1.3. *Commitment to reveal information*

In the models of Cantale (1997) and Fuerst (1998), stock prices rise when firms list on exchanges with higher disclosure standards. The idea is that cross-listing commits managers to a policy of better disclosure and hence reduces managers' expected future private benefits. Moel (1999) estimates a model predicting the exchange on which firms choose to cross-list, conditional on a cross-listing. His empirical results are generally consistent with a model in which firms cross-list as a way of bonding themselves to subsequent information releases. Huddart et al. (1999) formalize the notion that exchanges competing for trading volume engage in a 'race for the top' in disclosure requirements. Consistent with this notion is empirical evidence in Pagano et al. (2001a, b) documenting that the increase in cross-listings in recent years is largest for exchanges with the highest disclosure requirements. Together, these papers suggest that firms from countries with poor investor protection clearly have incentives to cross-list as a way of committing to higher disclosure.

3. Legal systems and protection of minority shareholder interests

Different countries' legal systems have evolved in a number of ways, falling into two main categories: common law and civil law. Common law originated in England and spread to most of the former English colonies and a number of other countries. The evolution of common law depends on decisions made by judges, which are subsequently incorporated into written law by the legislature. In contrast, the civil legal tradition, which began with Roman law, relies on statutes and comprehensive legal codes. Civil law has evolved in three separate but related ways, which are generally referred to as French, German, and Scandinavian Civil Law. Most countries fall into one of the categories discussed here: English Common Law, French Civil Law, German Civil Law, or Scandinavian Civil Law. Table 2 includes a listing of the countries that fall into each of these categories.

An important difference between the two systems is the role of the judge and the concept of fiduciary duty (see Coffee, 1999b). Under civil law, judges are required to mechanically apply comprehensive codes to the cases before them. If a new case that is not specifically covered in an existing code comes before the court, the judge has little discretionary power to deal with it, regardless of the judge's opinions on the matter. In contrast, common law courts rely on the concept of fiduciary duty, which gives judges much greater discretion in issues involving shareholder rights. Recent evidence suggests that common law judges tend to apply this discretion in favor of minority shareholders, especially when the existing statutes do not directly address an issue the judge is considering.

Recent work has suggested that legal tradition affects both the explicit laws protecting minority shareholder rights and the net effect of these laws on a corporation's ability to receive financing (see La Porta et al., 1997, 1998, 2000a). In particular, this literature documents that countries with an English Common Law

Table 2

Cross-listings by exchange and per one hundred domestic listed firms

In this table, each panel looks at one of the four major legal systems. The table shows the number of firms that cross-listed in the United States (both depositary receipts and direct cross-listings) for each country with that particular legal system between January 1985 and June 1999. Countries whose home markets are classified as emerging by the International Finance Corporation are identified with an asterisk (*). Columns one through four sort the firms by the exchange that they are listed on. Column five is the total of columns one through four. Column six gives the total number of domestic listed firms from each country as of June 1999. Column seven calculates the total number of cross-listed firms from each country per one hundred domestic listed firms. Column eight calculates only the number of cross-listed firms that are listed on either NYSE or Nasdaq per one hundred domestic listed firms. The NYSE and Nasdaq exchanges are significant since these are the exchanges that require specific accounting and disclosure information in order for a firm to cross-list on it.

Country	Cross-listings					Domestic firms	CLs per 100 firms	NYSE/Nasdaq cross-listings per 100 firms
	NYSE	Nasdaq	OTC	144a	Total			
<i>Panel A: English Common Law countries</i>								
Australia	14	23	73	5	115	1,207	9.53	3.07
Canada	89	152	284	0	525	1,250	42.00	19.28
Hong Kong*	11	15	98	0	124	608	20.39	4.28
India*	0	1	0	48	49	7,686	0.64	0.01
Ireland	4	12	6	0	22	74	29.73	21.62
Israel*	6	67	10	0	83	778	10.67	9.38
Kenya*	0	0	0	0	0	65	0.00	0.00
Malaysia*	0	0	10	0	10	571	1.75	0.00
New Zealand	5	4	1	0	10	262	3.82	3.44
Nigeria*	0	0	0	1	1	191	0.52	0.00
Pakistan*	0	0	0	3	3	861	0.35	0.00
Singapore*	4	3	17	1	25	320	7.81	2.19
South Africa*	3	17	30	11	61	682	8.94	2.93
Sri Lanka*	0	0	0	1	1	227	0.44	0.00
Thailand*	0	0	13	2	15	414	3.62	0.00
United Kingdom	75	68	87	13	243	2,119	11.47	6.75
Zimbabwe*	0	0	0	0	0	65	0.00	0.00
Totals	211	362	629	85	1,287	17,380		
Per 100 firms	1.21	2.08	3.62	0.49	7.41			3.30
<i>Panel B: French Civil Law countries</i>								
Argentina*	11	2	5	7	25	168	14.88	7.74
Belgium	1	3	1	0	5	158	3.16	2.53
Brazil*	24	1	35	11	71	584	12.16	4.28
Chile*	26	1	1	2	30	299	10.03	9.03
Colombia*	3	0	3	5	11	121	9.09	2.48
Ecuador*	0	0	2	1	3	163	1.84	0.00
Egypt*	0	0	1	5	6	232	2.59	0.00
France	15	11	14	7	47	476	9.87	5.46
Greece*	1	4	3	5	13	227	5.73	2.20
Indonesia*	4	1	2	2	9	244	3.69	2.05
Italy	16	6	0	11	33	226	14.60	9.73

Table 2 (continued)

Country	Cross-listings					Domestic firms	CLs per 100 firms	NYSE/Nasdaq cross-listings per 100 firms
	NYSE	Nasdaq	OTC	144a	Total			
Jordan*	0	0	0	1	1	112	0.89	0.00
Mexico*	32	5	31	18	86	227	37.89	16.30
Netherlands	22	22	11	3	58	334	17.37	13.17
Peru*	4	0	4	2	10	252	3.97	1.59
Philippines*	3	0	7	9	19	216	8.80	1.39
Portugal*	4	0	2	3	9	195	4.62	2.05
Spain	16	0	5	5	26	383	6.79	4.18
Turkey*	0	0	5	11	16	193	8.29	0.00
Uruguay*	0	0	0	0	0	24	0.00	0.00
Venezuela*	3	0	13	4	20	101	19.80	2.97
Totals	185	56	145	112	498	4,935		
Per 100 firms	3.75	1.13	2.94	2.27	10.09			4.88
<i>Panel C: German Civil Law countries</i>								
Austria	0	0	15	4	19	112	16.96	0.00
Germany	8	6	17	5	36	421	8.55	3.33
Japan	12	12	20	4	48	2,253	2.13	1.07
South Korea*	3	0	0	19	22	745	2.95	0.40
Switzerland	4	4	12	4	24	240	10.00	3.33
Taiwan*	1	2	0	26	29	313	9.27	0.96
Totals	28	24	64	62	178	4,084		
Per 100 firms	0.69	0.59	1.57	1.52	4.36			1.27
<i>Panel D: Scandinavian Civil Law countries</i>								
Denmark	3	2	0	2	7	74	9.46	6.76
Finland	3	1	3	4	11	73	15.07	5.48
Norway	8	1	9	5	23	63	36.51	14.29
Sweden	4	18	9	3	34	125	27.20	17.60
Totals	18	22	21	14	75	335		
Per 100 firms	5.37	6.57	6.27	4.18	22.39			11.94

Sources: Websites for Bank of New York, NYSE, and Nasdaq, National Quotation Service Pink Sheets (5/21/99 edition), 1985–2000 NYSE Fact Books, Nasdaq Historical Research Department, Emerging Market Factbook and 1999 World Development Report.

heritage protect minority shareholders' rights better than those with civil law traditions. Within the civil law countries, French Civil Law provides significantly less protection for shareholders, while the German and Scandinavian traditions provide an intermediate level of protection. In addition, this literature finds that better legal

protections are associated with easier access to capital and a higher volume of external financing.⁷

3.1. *Legal requirements and cross-listings*

Registering with the SEC imposes substantially more requirements on firms than disclosure and reporting. US securities laws affect companies that choose to cross-list in a number of ways that inhibit potential agency problems resulting from large shareholder/small shareholder conflicts. Coffee (1999a) details six provisions of US securities laws that go well beyond those typically found overseas in the degree to which they aid small shareholders (pp. 683–691):

- (1) Section 13(d) of the Securities Exchange Act of 1934 requires any person or group beneficially owning at least 5% of any equity security to file a report within five days of when the 5% threshold is crossed. This 5% threshold is noticeably smaller than the 10% that is required by the European Community's Transparency Directive and clearly has a large impact on takeover strategies and their implications for small shareholders (see Shleifer and Vishny, 1986, p. 477 for example).
- (2) Under Section 14(d) of the Exchange Act, all tender offers for corporations registered with the SEC have to comply with US disclosure and procedural rules. These rules would apply if one European company makes an offer for a second European company that has an ADR in the US, even if the shares traded in the US amount to less than one percent of the outstanding shares. An important aspect of these procedural rules is that each shareholder of a particular class has the right to participate in any tender offer and to receive the best price paid to any other shareholder pursuant to the tender offer. Registering in the US thus substantially increases the rights of shareholders of non-US firms when faced with a tender offer.
- (3) Firms cross-listing on a US exchange are subject to most of the rules of the exchange regarding corporate governance (see Table 1).
- (4) The SEC is granted authority under Section 13(e) of the Exchange Act to regulate the treatment of minority shareholders in going private transactions. The impact of this provision, according to Coffee (1999a), is to “deny controlling shareholders the practical ability to squeeze out the minority at an unfairly low price”.
- (5) Under the Foreign Corrupt Practices Act, all registered US corporations are required to keep books and records that fairly reflect the transactions of the issuer. The purpose of this law is to prevent corporations from engaging in bribery or similar practices.
- (6) Rule 10b-5 gives shareholders the right to sue for losses ensued because of fraudulent statements made by a company whose equity they own. Listing in the

⁷Rajan and Zingales (1999) dispute this argument, claiming that the differences in shareholder protections observed between countries are caused by political differences rather than different legal systems. For our purposes, all that is relevant is that the differences in shareholder protections exist.

United States subjects foreign companies to this rule, and allows them to be sued in the United States for fraudulent statements made anywhere in the world. Only US investors can sue under this rule, but all investors are likely to benefit from it because of the disincentives it provides for managers to release fraudulent information. Of course, for plaintiffs to collect on such a suit, the firm has to have some assets in the United States. A firm without assets in the US, however, would presumably find it costly to have a judgement against it in the US, and thus the potential for such a judgement would provide incentives for managers *ex ante*.

The impact of these laws is mitigated somewhat by the fact that the SEC is probably less likely to prosecute foreign companies than US ones, and by any potential future decisions that limit the degree to which these rules apply to foreign companies. Still, it seems clear that any foreign manager choosing to list stock on a US exchange should expect that such a listing will reduce his ability to expropriate wealth from minority shareholders. Likewise, it seems plausible that the concerns of prospective shareholders of foreign companies about wealth expropriation should be at least partially alleviated by the company's listing in the US, even if they intend to purchase the stock on a foreign exchange. Thus, the existence of the protections that come from cross-listing securities on NYSE/Nasdaq is one of a number of explanations for why establishing a depository receipt program is associated with a stock price increase in the home country.

Fanto and Karmel (1997) report the results of surveys that they received back from 35 companies that have cross-listed their stock on US exchanges. They report (p. 65) that a number of the respondents,

... believed that a US listing made their company elite both in the international investment community and among home country investors. This belief probably stemmed from the fact that US listings signify a public presence in the world's largest capital market and compliance with the world's most difficult disclosure and listing requirements. ... Perhaps if a foreign company complies with US disclosure standards, it distinguishes itself from similarly situated companies that have not made such disclosure.

As an example of the effects of cross-listing on shareholder rights, consider the case of Bre-X Minerals, described in Irvine (2000). In the mid-1990s, Bre-X, a Canadian mining company, claimed to have found the largest gold deposit in the world, and its value surpassed 6 billion Canadian dollars. However, by June 1997, it was apparent that these claims were fraudulent, and Bre-X's stock price collapsed. Its shareholders sued. Shareholders who bought Bre-X stock on Nasdaq were able to sue under American Law, while shareholders who bought Bre-X on the Toronto Stock Exchange could only sue under Canadian Law. While the outcomes of the suits are still pending, it seems clear that any potential differences in protection between American and Canadian Law

could lead to differences in the eventual wealth of Bre-X's Canadian and American stockholders.

4. Legal protections, cross-listings, and implications for data

To evaluate empirically the importance of legal issues in the cross-listing decision, one must first understand the empirical implications of a cross-listing that provides incremental shareholder protection. With this in mind, suppose that cross-listing in the United States provides some extra protection for minority shareholders. Given this assumption, what should one expect to observe in the data? In particular, how should cross-listing behavior, the level of legal protection, and capital-raising activity be related?

Value maximization implies that a firm will cross-list its stock when the benefits of cross-listing are larger than the associated costs. The costs of cross-listing are primarily the monetary cost of listing, as well as increased disclosure and investor relations costs. The value of the non-legal benefits from cross-listing results from the potentially lowered cost of capital arising from decreased market segmentation and increased liquidity. Since cross-listing increases the overall liquidity of a firm's stock, these benefits are likely to be positive for most firms and to increase when a firm has high demand for external finance. In contrast, the costs of cross-listing are likely to be independent of external financing considerations. The value-maximizing choice for a firm will be to cross-list at any point in time if the present value of the expected subsequent benefits are greater than the present value of the expected subsequent costs.

If a cross-listing changes the level of legal protection for minority shareholders, then this change in legal protection will influence the desirability of a cross-listing to a manager. The private benefits accruing to a manager who is also a majority shareholder can go well beyond on-the-job consumption of perquisites. Johnson et al. (2000) emphasize that there are a number of ways in which majority shareholders can transfer the firm's wealth to themselves, including outright theft or fraud, asset sales or transfer pricing arrangements benefiting the majority shareholders, excessive executive compensation or loan guarantees from the firm. In addition, there are many ways in which a majority shareholder can increase his position in the firm at the expense of minority shareholders through dilutive share issues, minority freeze-outs, insider trading, creeping acquisitions, or other financial transactions that discriminate against minority shareholders. Johnson et al. document that many of these activities are in fact legal in some countries, and suggest that there is substantial variation across countries in the enforcement of laws prohibiting illegal wealth transfers from minority shareholders.

Presumably, a manager cares about both the private benefits he derives from managing the company, and the financial performance of his company. Changing the level of shareholder protection will affect both. Increased protection decreases the ability of managers to extract wealth from the firm and lowers expected private benefits accruing to them. In addition, changing shareholder protection will affect

the public value of the company for two reasons: First, this decrease in expected private benefits increases the value of the firm's public stock directly because it lowers expected wealth transfers out of current cash flows. Second, it will increase total expected cash flows indirectly, by enabling managers to undertake more positive net present value projects. These extra projects are those for which financing is potentially available when the firm is bonded to protect minority shareholders but for which no financing was available without this bonding (or equivalently, available but at a sufficiently high cost of capital to make the project unattractive). Managers will care about this change in the public value because of their personal financial stake in the firm, as well as the extent to which the firm's performance will affect their human capital in the managerial labor market.

An increase in shareholder protection creates two separate effects. There is a decrease in the private benefits accruing to managers and an increase in the public value of the firm. These effects go in opposite directions. The decrease in private benefits makes cross-listings less attractive while the increase in public value makes cross-listing more attractive. Therefore, the average impact of extra shareholder protection on the desirability of cross-listing is theoretically ambiguous.

To evaluate the circumstances under which the private-benefit effect or the public-value effect is likely to be larger, consider the two components of the increase in the public value of the firm's shares: the expected decrease in the wealth transfers from the managers and the value created by projects that will be able to receive financing with the additional shareholder protection. The first of these factors, the decrease in wealth transfers, will always be worth less to the managers than the private benefits they receive from these transfers, because they keep all of the private benefits but share the costs of the transfers with other shareholders. However, if the extra value created by new projects is sufficiently large, then the public-value effect can potentially be high enough to offset the loss in private benefits to the manager. These arguments suggest that when a potential cross-listing affects the legal protection for minority shareholders, extra protection will make cross-listing less attractive for firms with no demand for external finance and make it more attractive for firms with high demand for external finance. This intuition is consistent with the results of Lombardo and Pagano's (2000) formal model, in which managers who cannot get external financing prefer increased legal protection but managers who currently have sufficient external financing do not.

This analysis suggests a number of implications for the data. First, because the additional protection associated with cross-listing increases the value of shares but also decreases private benefits, it is theoretically possible for cross-listings either to increase or to decrease with shareholder protection. Second, we expect to see an increase in equity financing subsequent to a cross-listing for all firms. Third, this increase in equity financing should be stronger when a firm has weak shareholder protection in its home country. Finally, following cross-listings from countries with strong protection, the increase in subsequent equity issues should occur primarily in the country of the cross-listing. However, for cross-listings from countries with weak protection, the subsequent equity issues should be more likely to occur in the firm's home country and in other countries.

5. Sample description

To empirically test these implications, we obtain a complete list of depositary receipts from the Bank of New York web site (www.adrbny.com). This list provides the names, listing dates, country of origin, and exchange (NYSE, Nasdaq, OTC, or PORTAL) of every ADR and GDR as of June 1999. We obtain the same information on direct listings from the NYSE and Nasdaq websites and from the May 21, 1999 edition of the National Quotation Bureau's Pink Sheets. We also identify (from NYSE and Nasdaq records) firms that had been listed on either the NYSE or Nasdaq between January 1985 and June 1999 but had been delisted by June 1999. We obtain from CRSP the date that each of these firms first listed on their exchange. Adding these delistings to our firms that were listed in June 1999 gives us a complete data set of all firms that cross-listed on NYSE or Nasdaq between January 1985 and June 1999, plus all firms that were cross-listed OTC or on PORTAL as of June 1999.⁸ For firms that were listed both over-the-counter and on NYSE/Nasdaq at different points during this 14-year period, we classify them as NYSE/Nasdaq and consider the date that they listed there to be the cross-listing date.

Securities Data Corporation (SDC) provides information on new issues. SDC contains the date of issue, the market (country) in which the security was issued, and the proceeds from each issue.⁹ We compare the listing dates of the cross-listed firms with the issue dates of their new issues to determine the number of prior and subsequent equity offerings, their proceeds, and the country of issue.

The Bank of New York lists 2,018 depositary receipts. Of those, 285 are from countries whose legal system does not fall into one of the four we are examining. Most of these 285 ADRs are from Russia, China, and Poland.¹⁰ We eliminate the 165 ADRs for which the Bank of New York does not list its exchange. Finally, we delete 267 unsponsored ADRs (113 of which are from Japan) from our sample since these companies' cross-listings are not voluntary, and the arguments we wish to test apply only to voluntary cross-listings. Since there are just two ADRs listed on AMEX, we group them with the Nasdaq listings.

Because the legal implications of ADRs and direct cross-listings are essentially the same, we also include direct cross-listings in our sample. As of June 1999, there were 107 firms that directly cross-listed on the NYSE without an ADR, 178 on Nasdaq, and 326 on the OTC Pink Sheets. Combining the direct cross-listings and ADRs gives a sample of 1,912 non-US firms that were cross-listed in the US in June 1999. We add to this sample 126 firms that delisted from NYSE or Nasdaq between January 1985 and June 1999, resulting in a total of 2,038 cross-listings in our sample.

We obtain firm-specific information such as market value, earnings per share, and dividends per share from both Worldscope and Datastream. Unfortunately, only

⁸ Ideally, we would also like to obtain data on all the firms that traded OTC or on PORTAL between January 1985 and June 1999 but were not listed as of June 1999, but the data are unavailable.

⁹ Stock issued for the purpose of financing an acquisition is not considered to be a new issue by SDC.

¹⁰ Following La Porta et al. (1997, 1998), we exclude these countries because they were in a time of legal transition during our sample period.

1051 of the 2038 cross-listing firms have data available on either Worldscope or Datastream. Predictably, the firms with available data tend to be larger firms.¹¹ In designing our tests, there is a tradeoff between sample size and data availability; using the entire sample allows for approximately twice as many observations as does the subsample of firms with firm-specific data (which for ease of exposition we refer to as the Worldscope subsample). However, with the full sample we cannot control for potentially important factors such as firm size and profitability. Our approach is to present the results both ways, first using the entire sample of 2,038 cross-listing firms and, second, using the 1,051 firms for which we have firm-specific data.

6. Cross-listings by country of origin

6.1. Univariate differences

Table 2 provides data on cross-listings by country of origin, separating the countries by their legal system. Panel A provides information on the firms from English Common Law countries, Panel B from French Civil Law countries, Panel C from German Civil Law countries, and Panel D from Scandinavian Civil Law countries. Following La Porta et al. (1997, 1998), we focus on the differences between the French Civil Law and the English Common Law countries. There are two differences that are evident from this table. First, cross-listing is more common in French Civil Law countries than in English Common Law countries. In the French Civil Law countries 10.1% of publicly traded firms have listings of some sort in the US, while from the English Common Law countries, only 7.4% are cross-listed in the US. These percentages are significantly different from each other at the 1% level.

Second, the firms from French Civil Law countries appear to list disproportionately on NYSE and Nasdaq, particularly the NYSE. These differences are important because NYSE/Nasdaq listings, unlike OTC and PORTAL listings, subject the firm to accounting and regulatory requirements, bonding them to protect shareholder interests. Of the 498 firms from French Civil Law countries that have cross-listed, 37.1% of them have chosen to do so on NYSE. In comparison, of the 1,287 firms from English Common Law countries that cross-list in the US, only 16.4% list on NYSE. The difference in the percentage choosing to list on NYSE between English and French countries is also significantly different from zero at the 1% level.

Combining these two effects, it is significantly more likely for a firm from a French Civil Law country to list on NYSE/Nasdaq than one from an English Common Law country (4.9% vs. 3.3%). At first glance, this finding is suggestive that firms bond themselves to protect shareholder interests by listing in the United States. However,

¹¹ Interestingly, almost half of the cross-listing firms that are *not* found in the Worldscope database are from Canada, probably because smaller Canadian firms are more likely to cross-list in the US than similar firms from other countries.

this evidence is somewhat weak for several reasons. First, there are clearly country-specific factors influencing this pattern. India, an English Law country, has over 7,000 listed firms but only one exchange-listed cross-listing.¹² In addition, Canada, which has the largest number of direct cross-listings, represents over 40% of all English Common Law cross-listings (none of Canada's cross-listings use depositary receipts). Geographic proximity and the multi-jurisdictional disclosure rules lower the cost of cross-listing for Canadian firms, which is an independent reason for a higher number of cross-listings for the English Common Law firms. Clearly, there are country-specific factors that have unusual effects on these results. If we remove both Canada and India from the sample, the percentage of French Civil Law firms cross-listing on NYSE/Nasdaq becomes significantly larger than English Common Law firms.

Second, German and Scandinavian Civil Law countries do not appear to follow the pattern set by the English and French legal regimes. According to arguments in La Porta et al. (1998), these countries should have an “in-between” level of cross-listing, since their shareholder protections are higher than French Civil Law countries but lower than English Common Law ones. However, these countries do not appear to fit the overall pattern. German countries have the lowest level of cross-listing, while Scandinavian countries have the highest¹³. Finally, the univariate results do not control for other potentially relevant factors affecting cross-listings, such as firm size and the country's GNP. We now use explicit measures of shareholder protection to gauge the extent to which these measures predict which firms are more likely to list on NYSE/Nasdaq. In doing so, we are able to control for other factors that potentially affect cross-listings in a multivariate context.

6.2. *Multivariate differences*

We consider three separate measures of shareholder protection in the home country of a cross-listing firm, which are obtained from La Porta et al. (1997,1998). The first determinant of shareholder protection is in fact the legal tradition of the home country (French, German, or Scandinavian Civil Law, or English Common Law). Second, we use an index of anti-director rights, which aggregates six important shareholder rights within countries. According to La Porta et al. (1998),

The index is formed by adding 1 when (1) the country allows shareholders to mail their proxy vote to the firm, (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (3) cumulative voting or

¹²If we remove India from the sample, the fraction of English Common Law firms listing on NYSE or Nasdaq rises to 5.9%, which is significantly greater than the 4.9% of the French Civil Law firms listing on NYSE/Nasdaq.

¹³Japan has 114 unsponsored ADRs, which is by far the largest number for any country. Since we do not include unsponsored ADRs in our sample, this distorts the number of Japanese cross-listings and thus the entire sample of German Civil Law countries. Including these unsponsored ADRs would mean that German Civil Law countries have 7.1 cross-listings per 100 firms, more than the English Common Law countries.

proportional representation of minorities in the board of directors is allowed, (4) an oppressed minorities mechanism is in place, (5) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than or equal to 10% (the sample median), or (6) shareholders have preemptive rights that can be waived only by a shareholders' vote. The index ranges from zero to six.

These two measures of shareholder protection are emphasized by La Porta et al. (2000b) in their study of international dividend policies. Additionally, since conforming to US GAAP is an important requirement associated with cross-listing on NYSE/Nasdaq, we consider a measure of a country's accounting standards. The accounting standards variable is an index created by examining and rating companies' 1990 annual reports on their omission or inclusion of 90 items. Scores range from a low of 24 (Egypt) to a high of 83 (Sweden). Ratings are not available for eight countries: Ireland, Kenya, Pakistan, Sri Lanka, Zimbabwe, Ecuador, Indonesia, and Jordan.

In addition to the shareholder protection variables, we also attempt to control for other factors that could help explain cross-listing behavior. Lins et al. (1999) observe that firms from emerging markets access international capital markets more frequently following a US listing than those from developed markets. Accordingly, we include a dummy variable which takes on a value of one if the International Finance Corporation classifies a firm's home market as developed and zero if it is classified as emerging. Next, we include the log of the GNP (obtained from the 1996 World Development Report) of the firm's home country to control for the size of the firm's home market since firms from smaller markets potentially have a greater incentive to access the larger US investor base. Finally, when the equations are estimated on the *Worldscope* subsample, we include a variable for the log of the firm's market value as of the date of its cross-listing to control for the firm's size. On those occasions for which the cross-listing date was prior to the earliest date for which we could obtain the firm's market value, we include the earliest available market value.¹⁴ We also estimate similar equations using other firm-specific variables such as earnings per share and dividends per share, but in no case did the inclusion of any additional variable beyond the log of market value affect the results in a meaningful way.

We use three multivariate specifications to examine the relation between shareholder protection and cross-listings. First, we consider the universe of firms made up of the 1999 *Worldscope* database of 11,196 non-US firms and estimate the probability that a non-US firm has a cross-listing of any type in the US. Second, since cross-listing on NYSE or Nasdaq has legal implications while OTC and PORTAL cross-listings do not, we estimate the probability that each of these 11,196 firms cross-lists specifically on NYSE or Nasdaq. Finally, we restrict our sample to those firms with some kind of cross-listing in the US and estimate the probability

¹⁴We also estimate all the multivariate equations reported throughout the paper using market value numbers from 1999 with no noticeable difference in results.

that the cross-listing is on NYSE/Nasdaq. In this final equation, we also include a dummy variable indicating if the listing was an initial public offering (IPO), since US IPOs occur nonrandomly across countries and are more likely to occur on NYSE/Nasdaq. Because the dependent variable in each equation is dichotomous, we estimate all equations by logit.

Panel A of Table 3 presents results from the first specification, predicting the probability that the firms were cross-listed on any US exchange at that time. In this test (and subsequent ones) we estimate three separate equations, each using a different measure of shareholder protection. The measures are highly collinear, which makes the results extremely difficult to interpret when more than one measure is included in an equation. In addition to calculating the McFadden (pseudo) R^2 for each of the three equations, we calculate the McFadden R^2 for an equation that does not include any shareholder protection variable. This allows us to determine the incremental contribution of each of the various measures of shareholder protection beyond the traditionally accepted rationale for cross-listing. In contrast to the univariate results, Panel A indicates that firms from countries with strong shareholder protection are more likely to cross-list when we use the country's judicial system and the antidirector rights variables as our proxies for shareholder protection. As one would expect, larger firms are more likely to cross-list, and firms from smaller countries (in terms of GNP) and those classified as emerging are more likely to cross-list, presumably because there are fewer opportunities for these firms to raise capital at home. The McFadden R^2 results indicate that the judicial origin variables have the greatest incremental explanatory power and that the accounting standards variable has none.

Panel B of Table 3 presents the results from the second specification, in which the dependent variable takes on a value of one if the firm is listed on NYSE or Nasdaq. The results from Panel B are similar to those from Panel A and suggest that, if anything, when we control for other factors, firms with stronger protection at home are more likely to cross-list in the US, and more likely to choose to cross-list on NYSE/Nasdaq. It is, however, interesting to note that while firms from countries with developed markets are less likely to cross-list in the US, conditional on cross-listing they are more likely to cross-list on the exchanges that require significant accounting and reporting requirements.

The multivariate results stand in contrast to the univariate results from Table 2, in which firms with weak shareholder protection at home appear more likely to cross-list. The explanation for this pattern probably lies in the control variables. On average, larger firms are more likely to cross-list and the French Civil Law firms tend to be larger than the English Common Law firms. For example, in the *Worldscope* database, the 2,250 French Civil Law firms have an average market value of \$1.38 billion in 1999, while the 4,488 English Common Law firms have an average market value of only \$924 million. Overall, these results are consistent with the view that managers in weak protection countries are reluctant to cross-list in the US because of the potential loss of private benefits. In other words, theory suggests that the private-benefit effect and the public-value effect work in opposite directions. However, when the manager's personal share of the

Table 3

Multivariate estimates of the probability of cross-listing

Each panel looks at the probability of a foreign firm cross-listing its equity on a US exchange. Panel A uses a sample of 11,196 foreign firms that were listed in the Worldscope database in June 1999, and examines the unconditional probability that they were cross-listed on some (any) US exchange at that time. Panel B uses the same sample of firms to examine the unconditional probability that they were cross-listed on either NYSE or Nasdaq. Panel C considers the probability that a foreign firm would chose to list itself on NYSE/Nasdaq conditional on its decision to cross-list in the US. Panel C uses two separate samples of firms; all firms that cross-listed at that time and a subsample with firm-specific data from Worldscope. Each panel displays the results of three separate multivariate Logit regressions; each of which uses a different measure of shareholder protection. The legal tradition explanatory variables (French, German, and Scandinavian) are dummy variables taking a value of one if the firm came from a country with that legal tradition and zero otherwise. Since these are the civil law legal traditions, they each measure their difference from firms that come from countries with an English Common Law tradition. The second and third explanatory variables are taken from La Porta et al. (1997, 1998). The Antidirector Rights variable is an index aggregating six significant shareholder rights. The Accounting Standards variable is an index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items. For these two variables, a higher value means (respectively) greater rights for minority shareholders and tighter accounting standards. These variables are country-specific and are applied to each firm based on its home country. The Developed Market Dummy takes a value of one if the International Finance Corporation classifies a firm's home market as developed and zero if it is classified as emerging. In Panel C, the IPO dummy is given a value of one if the cross-listing occurs simultaneously with the firm's IPO and zero if the firm already had publicly traded shares. The log of GNP variable is used in each regression to control for the size of the firm's home country. It is taken from the 1996 *World Development Report*. For those samples, which use firms for which we have firm-specific data available, we include a variable for the log of the firm's market value to control for the size of the firm. *p*-Values appear in parentheses below each coefficient estimate.

Explanatory variable(s)	N = 11,196		
	#1	#2	#3
<i>Panel A: Unconditional probability of cross-listing</i>			
French Law Dummy	-0.3578 (0.0001)		
German Law Dummy	-1.3394 (0.0001)		
Scandinavian Law Dummy	-0.3163 (0.0734)		
Antidirector Rights		0.1726 (0.0001)	
Accounting Standards			0.004 (0.3599)
Developed Market Dummy	-0.6428 (0.0001)	-0.3505 (0.0006)	-0.4570 (0.0001)
Log of market value	0.6937 (0.0001)	0.6867 (0.0001)	0.6720 (0.0001)
Log of GNP	-0.1474 (0.0030)	-0.3950 (0.0001)	-0.3792 (0.0001)
McFadden R^2	0.2308	0.2164	0.2105

McFadden R^2 without any shareholder protection variables is 0.2108

Table 3 (continued)

Panel B: Unconditional probability of cross-listing on NYSE/Nasdaq

Explanatory variable(s)	N = 11,196		
	#1	#2	#3
French Law Dummy	-0.2151 (0.0823)		
German Law Dummy	-1.8388 (0.0001)		
Scandinavian Law Dummy	-0.4972 (0.0334)		
Antidirector Rights		0.2618 (0.0001)	
Accounting Standards			0.0147 (0.0339)
Developed Market Dummy	0.5203 (0.0040)	0.8323 (0.0001)	0.5183 (0.0021)
Log of market value	0.7308 (0.0001)	0.7380 (0.0001)	0.7188 (0.0001)
Log of GNP	-0.1952 (0.0055)	-0.4867 (0.0001)	-0.4193 (0.0001)
McFadden R^2	0.2524	0.2318	0.2176

McFadden R^2 without any shareholder protection variables is 0.2207

Panel C: Probability of cross-listing on NYSE/Nasdaq conditional on the decision to cross-list

Explanatory variable(s)	Full sample N = 2,038			Worldscope subsample N = 1,051		
	#1	#2	#3	#1	#2	#3
French Law Dummy	0.4529 (0.0008)			0.2295 (0.2479)		
German Law Dummy	-0.6891 (0.0006)			-1.1120 (0.0001)		
Scandinavian Law Dummy	0.2158 (0.4231)			0.2213 (0.5028)		
Antidirector Rights		0.0409 (0.3035)			0.1851 (0.0015)	
Accounting Standards			-0.0016 (0.8185)			0.0018 (0.8533)
Developed Market Dummy	1.0043 (0.0001)	0.8789 (0.0001)	0.9176 (0.0001)	1.4312 (0.0001)	1.3882 (0.0001)	1.3897 (0.0001)
IPO dummy	3.7734 (0.0001)	3.7715 (0.0001)	3.7088 (0.0001)	5.1180 (0.0001)	5.4113 (0.0001)	5.1632 (0.0001)
Log of market value				0.2018 (0.0001)	0.1982 (0.0001)	0.1687 (0.0001)
Log of GNP	0.0434 (0.5434)	0.0174 (0.7808)	0.0164 (0.8065)	0.0330 (0.7335)	-0.0788 (0.3345)	-0.0685 (0.4324)
McFadden R^2	0.1647	0.1544	0.1496	0.2284	0.2165	0.2042

McFadden R^2 without any shareholder protection variables is 0.1540 for the full sample and 0.2087 for the Worldscope subsample.

public value increase is large enough to offset the loss in private benefits, we expect a cross-listing to be more likely to occur. Thus, an additional implication is that there should be a positive relationship between managerial ownership and cross-listing for firms from countries with weak shareholder protection. The results from Table 3, although not controlling for managerial ownership, suggest that the private-benefit effect is the larger of the two. Panel C of Table 3 examines the probability that a firm will cross-list on NYSE/Nasdaq conditional on its decision to cross-list in the US. If the firm is cross-listed on NYSE/Nasdaq, the dependent variable is given a value of one, and if it is cross-listed Over-the-Counter or on PORTAL, the dependent variable is set to zero. Our first set of equations considers the full set of 2,038 firms that choose to cross-list in the US, while the second set of regressions is limited to the subset of 1,051 firms for which we have firm-specific data available through Worldscope or Datastream. Overall, the results are inconclusive. When we use the entire sample and do not control for size, French Law increases the probability of cross-listing on NYSE/Nasdaq significantly. However, when we restrict our results to the Worldscope subsample of larger firms, and control for firm size, the French Law dummy becomes insignificant. The Antidirector Rights variable in the Worldscope subsample indicates that stronger shareholder rights are associated with a greater tendency to cross-list on NYSE or Nasdaq. The Developed Market dummy variable gives a strong indication that cross-listing firms from emerging markets tend to avoid NYSE/Nasdaq. Overall though, the relation between shareholder protection at home and cross-listing is unclear, probably because of the two underlying effects pulling in opposite directions.

7. Equity issues and cross-listings

The theoretical arguments discussed above suggest that one reason for cross-listing in the US is to protect minority shareholder interests. Such protections are particularly important to a firm when it plans to issue equity in the near future. Thus we should expect an increase in equity offerings following cross-listings, and the size of the increase should be higher when home-country shareholder protection is lower.

7.1. *Equity issues subsequent to cross-listings*

Table 4 documents the volume of equity offerings subsequent to cross-listings.¹⁵ These data indicate a high incidence of equity offerings subsequent to cross-listing for firms from all countries. For the entire sample of 2,038 cross-listings (Panel E), there are a total of 675 firms issuing subsequent equity on 947 separate occasions. These offerings raise a total of \$355 billion, which is 28.7% of the proceeds raised by

¹⁵ These data include equity offerings that are floated concurrent with the cross listing, so that all equity issues at and after the cross-listing date are considered to be subsequent issues.

Table 4

New issues and proceeds from cross-listed firms

In this table, each panel looks at one of the four major legal systems. The first row of each panel gives the number of firms from that legal system that cross-listed in the US between January 1985 and June 1999. The second row states how many of those firms issued new equity at the time of or after their cross-listing date and what percentage of the firms cross-listing on that exchange issued the equity. The third row tells us how many times new equity was issued from those firms and the average number of new equity issues conditional on issuing equity. If a firm issued equity in more than one market at the same time, it is counted as a single issue in this table. The fourth row reports the total proceeds from these equity issues in millions of US dollars and the average proceeds per issue. The first four columns break down the data by the exchange that the foreign firm's shares cross-listed on. Column five is the total of columns one through four. Column six is the total of the NYSE and Nasdaq columns. This is significant since these are the exchanges that require specific accounting and disclosure information in order for a firm to cross-list on it. The final column states the new issues and proceeds on NYSE/Nasdaq as a percentage of the total new issues and proceeds issued between 1/1/84 and 5/1/99 from firms domiciled in the countries with that legal system (source: Emerging Market Factbook and World Development Report).

	NYSE	Nasdaq	OTC	144a	Total	NYSE/Nasdaq	Percent of all new issues
<i>Panel A: English Common Law countries</i>							
Number of cross-listings	211	362	629	85	1,287	573	
(% of total)	(16%)	(28%)	(49%)	(7%)	(100%)	(45%)	
CLs issuing equity after listing	77	168	96	41	382	245	
(% of cross-listings)	(36%)	(46%)	(15%)	(48%)	(30%)**	(43%)**	
New issues after listing	111	234	115	47	507	345	3.3%*
(issues per issuing cross-listing)	(1.4)	(1.4)	(1.2)	(1.1)	(1.3)	(1.4)	
Proceeds after listing (\$ mill.)	58,817	19,953	11,987	11,804	102,561	78,770	20.6%*
(ave. proceeds per new issue)	(530)	(85)	(104)	(251)	(202)	(228)	
All firms in English Common Law countries 1/1/84–5/1/99							
Total number of new issues—10,315							
Total proceeds from new issues—\$382,496 mill.							
<i>Panel B: French Civil Law countries</i>							
Number of cross-listings	185	56	145	112	498	241	
(% of total)	(37%)	(11%)	(29%)	(22%)	(100%)	(48%)	
CLs issuing equity after listing	89	36	16	57	198	125	
(% of cross-listings)	(48%)	(64%)	(11%)	(51%)	(40%)**	(52%)**	
New issues after listing	153	52	22	72	299	205	6.4%*
(issues per issuing cross-listing)	(1.7)	(1.4)	(1.4)	(1.3)	(1.5)	(1.6)	

Proceeds after listing (\$ mill.)	152,048	7,689	6,239	21,524	187,500	159,737	32.0%*
(ave. proceeds per new issue)	(994)	(148)	(284)	(299)	(627)	(779)	

All firms in French Civil Law countries 1/1/84–5/1/99

Total number of new issues—3,190

Total proceeds from new issues—\$494,460 mill.

Panel C: German Civil Law countries

Number of cross-listings	28	24	64	62	178	52	
(% of total)	(16%)	(13%)	(36%)	(35%)	(100%)	(29%)	
CLs issuing equity after listing	13	11	11	28	63	24	
(% of cross-listings)	(46%)	(46%)	(17%)	(45%)	(35%)	(46%)	
New issues after listing	23	13	14	42	92	36	1.3%
(issues per issuing cross-listing)	(1.8)	(1.2)	(1.3)	(1.5)	(1.5)	(1.5)	
Proceeds after listing (\$ mill.)	30,397	2,267	9,820	6,336	48,820	32,664	10.7%
(ave. proceeds per new issue)	(1,322)	(174)	(701)	(151)	(531)	(907)	

All firms in German Civil Law countries 1/1/84–5/1/99

Total number of new issues—2,777

Total proceeds from new issues—\$306,541 mill.

Panel D: Scandinavian Civil Law countries

Number of cross-listings	18	22	21	14	75	40	
(% of total)	(24%)	(29%)	(28%)	(19%)	(100%)	(53%)	
CLs issuing equity after listing	11	11	2	8	32	22	
(% of cross-listings)	(61%)	(50%)	(10%)	(57%)	(43%)	(55%)	
New issues after listing	19	15	4	11	49	34	4.9%
(issues per issuing cross-listing)	(1.7)	(1.4)	(2.0)	(1.4)	(1.5)	(1.5)	
Proceeds after listing	8,634	2,267	895	4,575	16,371	10,901	20.0%
(ave. proceeds per new issue)	(454)	(151)	(224)	(416)	(334)	(321)	

All firms in Scandinavian Civil Law countries 1/1/84–5/1/99

Total number of new issues—700

Total proceeds from new issues—\$54,551 mill.

Table 4 (continued)

	NYSE	Nasdaq	OTC	144a	Total	NYSE/Nasdaq	Percent of all new issues
<i>Panel E: Totals</i>							
Number of cross-listings	442	464	859	273	2,038	906	
(% of total)	(22%)	(23%)	(42%)	(13%)	(100%)	(44%)	
CLs issuing equity after listing	190	226	125	134	675	416	
(% of cross-listings)	(43%)	(49%)	(15%)	(49%)	(33%)	(46%)	
New issues after listing	306	314	155	172	947	620	3.7%
(issues per issuing cross-listing)	(1.6)	(1.4)	(1.2)	(1.3)	(1.4)	(1.5)	
Proceeds after listing (\$ mill.)	249,896	32,176	28,941	44,239	355,252	282,072	22.8%
(ave. proceeds per new issue)	(817)	(102)	(187)	(257)	(375)	(455)	
All firms in the four legal systems 1/1/84–5/1/99							
Total number of new issues—16,982							
Total proceeds from new issues—\$1,238,049 mill.							

*English Common Law and French Civil Law values are statistically different from each other at 1% level.

**English Common Law and French Civil Law values are statistically different from each other at 5% level.

all non-US offerings during the January 1984 to May 1999 period, clearly an economically important quantity of capital.¹⁶ One-third of the cross-listing firms choose to issue subsequent equity. Of those that do, the average firm issues new shares an average of 1.4 different times.

A metric for gauging whether the quantity of new issues for cross-listed firms is abnormally large is to compare it to the period prior to the cross-listing for same firms. During their two years prior to cross-listing, the entire sample of firms that raised equity capital between January 1986 and May 1997 issued 114 equity offerings. In comparison, these same firms issued 172 new equity offerings during the two years subsequent to the cross-listing, an increase of 84%. This calculation does not include offerings coinciding with the cross-listing, and counts simultaneous offerings in different countries as one offering. If we only consider firms listing on NYSE or Nasdaq, where the cross-listing provides protection for minority shareholders, the increase is even larger. In the two years prior to the cross-listing, using the same sample as above, there were 46 equity offerings compared to 111 in the two years afterwards. The proceeds from these 111 post-cross-listing equity offerings total \$55.2 billion, about 4.2 times as high as the proceeds from the 46 offerings in the two years prior to the cross-listing.¹⁷ There is clearly a substantial increase in equity offerings subsequent to cross-listing on NYSE or Nasdaq.

In contrast to the NYSE/Nasdaq cross-listings, there is no increase in equity offerings for firms listing on the OTC or PORTAL markets. The number and proceeds of equity offerings for firms listing on PORTAL is virtually identical in the two years before and after the listing, and for OTC it is actually less. The OTC firms had 46 offerings for \$10.6 billion in the two years before the cross-listing and 40 offerings for \$5.3 billion in the two years afterwards. The PORTAL firms had 22 offerings for \$3.7 billion in the two years before the cross-listing and 21 for \$3.7 billion in the two years subsequent to the cross-listing. The fact that equity offering behavior did not change for the OTC and PORTAL firms suggests that there is no mechanical link between cross-listings and equity offerings. It also suggests that the increase does not reflect some uncontrolled-for macroeconomic factor, such as the general increase in equity offerings resulting from the booming economic times during our sample period. Rather, it suggests that the increase for NYSE/Nasdaq firms is due to the incremental protection associated with these cross-listings.

Comparing all subsequent equity issues across legal systems in Table 4, there is a significant difference between legal systems. For firms from French Civil Law countries, 40% of all listings and 52% of the listings on NYSE/Nasdaq issue equity subsequent to their cross-listing. In contrast, from English Common Law countries, only 30% of all listings and 43% of those listing on NYSE/Nasdaq issue new equity after cross-listing. These differences are all statistically significant at the 5% level. As

¹⁶The total offerings for the period are also based on data provided by SDC.

¹⁷If we include offerings made at the time of the cross-listing, the number of equity offerings made during the two years after cross-listing jumps to 555 with proceeds of \$118 billion, which is almost seven times the number and over 18 times the proceeds of those in the two years prior. We focus our discussion on the offerings that do not coincide with the cross-listings as a way of biasing our results against the hypothesis that cross-listings are associated with increased equity offerings.

a fraction of the total equity offerings from these countries, there is a substantial difference across legal systems. New issues from the French Civil Law firms which cross-list on NYSE/Nasdaq are 6.4% of the total frequency and 32.0% of the total value of all new issues from those countries. In contrast, new issues from the English Common Law firms which cross-list on NYSE/Nasdaq amount to only 3.3% and 20.6% of the frequency and value of all new issues from their countries over the same period. In addition, the average new equity issue from a French Civil Law country is more than three times as large as one from an English Common Law country. These differences are statistically significant at the 1% level.

Table 5 examines the new issues and proceeds data from Table 4 in a multivariate context. The first six columns of Table 5 estimate (using logit) the probability that a foreign company cross-listing on NYSE/Nasdaq issues new equity at or after the time of its cross-listing, conditional on that firm cross-listing on NYSE/Nasdaq. The final six columns of Table 5 estimate equations (using tobit) predicting the proceeds from a cross-listing firm's subsequent equity issues. We estimate these equations both on the full sample of 906 firms that cross-list on NYSE/Nasdaq and on the subset of 455 cross-listing firms with firm-specific data available on *Worldscope* or *Datastream*. All these equations use the three proxies for shareholder protection discussed earlier: judicial origin, antidirector rights, and accounting standards. The developed market control dummy allows us to eliminate the possibility that the level of development of the firm's home market, rather than the level of shareholder protection might be driving our results.¹⁸ The Country New Issues/Country Total Proceeds variable controls for the total number of new issues (or proceeds) in the firm's home country between January 1985 and June 1999. We also include the same control variables that were used in Table 3 and calculate the McFadden R^2 values in the same manner.

The first six columns of Table 5 indicate that there is a relation between shareholder protection and the number of subsequent equity issues. Firms from countries with weaker levels of shareholder protection appear to be more likely to issue equity after cross-listing. These findings are statistically significant for all three measures of shareholder protection in the *Worldscope* subsample, as well as for the Antidirector Rights measure with the full sample. Columns 7–12 indicate that there is a strong relation between shareholder protection and new equity proceeds. This relation is present with all three proxies for shareholder protection, and is statistically significant both with the full sample and the *Worldscope* subsample. Clearly, there is an increase in equity offerings subsequent to a cross-listing, with a strong negative relationship between the quantity and value of these offerings, and the level of shareholder protection in the firm's home country. In addition, the increases in the McFadden R^2 values, though not universally consistent, indicate that the shareholder protection variables have some incremental explanatory value beyond other cross-listing considerations.

¹⁸ Interestingly, the French Civil Law and English Common Law systems each have only five countries that the IFC classifies as developed.

Table 5

Multivariate estimates of new equity issues

This table examines twelve separate multivariate analyses. The first six use Logit while the second six use Tobit with the dependent variable left-censored at zero and the model fit to a normal distribution. Columns 1–6 consider the probability that a foreign company cross-listing on NYSE/Nasdaq will issue new equity at or after the time of its cross-listing conditional on that firm cross-listing on NYSE/Nasdaq. For columns 7–12, the dependent variable is the proceeds from all of a firm’s new equity issues either simultaneously with or subsequent to its cross-listing on NYSE or Nasdaq. We examine three separate measures of shareholder protection. The legal tradition explanatory variables (French, German, and Scandinavian) are dummy variables taking a value of one if the firm came from a country with that legal tradition and zero otherwise. Since these are the civil law legal traditions, they each measure their difference from firms that come from countries with an English Common Law tradition. The next two explanatory variables are taken from La Porta et al. (1997, 1998). The Antidirector Rights variable is an index aggregating six significant shareholder rights. The Accounting Standards variable is an index created by examining and rating companies’ 1990 annual reports on their inclusion or omission of 90 items. For these two variables, a higher value means (respectively) greater rights for minority shareholders and tighter accounting standards. The Developed Market Dummy takes a value of one if the International Finance Corporation classifies a firm’s home market as developed and zero if it is classified as emerging. The country new issues variable controls for the total number of new issues in the firm’s home country between 1/1/85 and 6/1/99. The IPO dummy is given a value of one if the cross-listing occurs simultaneously with the firm’s IPO and zero if the firm already had publicly traded shares. The log of GNP variable is used in each regression to control for the size of the firm’s home country. It is taken from the 1996 *World Development Report*. Columns 1–3 and 7–9 use our entire sample of 906 firms that cross list on NYSE/Nasdaq between January 1985 and June 1999. Columns 4–6 and 10–12 consider the subsample of 454 firms for which we have firm-specific data from Worldscope. They include a variable for the log of the firm’s market value to control for the size of the firm. *p*-Values appear in parentheses below each coefficient estimate.

Explanatory variable(s)	Probability of issuing new equity						Proceeds from issuing new equity						
	Full sample <i>N</i> = 906			Worldscope subsample <i>N</i> = 455			Full sample <i>N</i> = 906			Worldscope subsample <i>N</i> = 455			
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	
French Law Dummy	0.195 (0.360)			0.956 (0.005)			900.09 (0.001)				1,011.5 (0.007)		
German Law Dummy	0.390 (0.287)			0.353 (0.433)			866.16 (0.049)				–331.8 (0.577)		
Scandinavian Law Dummy	0.725 (0.061)			0.730 (0.112)			670.10 (0.165)				189.49 (0.753)		
Antidirector Rights		–0.190 (0.005)			–0.338 (0.001)			–315.0 (0.001)				–256.4 (0.032)	
Accounting Standards			–0.017 (0.197)			–0.043 (0.024)			–59.87 (0.001)				–49.26 (0.039)
Developed Market Dummy	0.013 (0.963)	0.216 (0.378)	0.340 (0.296)	0.593 (0.134)	0.546 (0.099)	0.996 (0.029)	504.67 (0.111)	489.36 (0.090)	1,132.7 (0.002)	825.40 (0.092)	612.67 (0.150)	1,294.4 (0.026)	

Table 5 (continued)

Explanatory variable(s)	Probability of issuing new equity						Proceeds from issuing new equity					
	Full sample $N = 906$			Worldscope subsample $N = 455$			Full sample $N = 906$			Worldscope subsample $N = 455$		
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Country new issues/country total proceeds	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.104)	0.001 (0.081)	0.001 (0.230)	0.007 (0.001)	0.007 (0.001)	0.008 (0.001)	0.0022 (0.489)	0.003 (0.297)	0.0039 (0.236)
IPO dummy	2.832 (0.001)	2.727 (0.001)	2.767 (0.001)	2.105 (0.001)	2.103 (0.001)	2.079 (0.001)	2,103.1 (0.001)	1,975.5 (0.001)	2,148.3 (0.001)	2,073.0 (0.001)	2,137.7 (0.001)	2,132.1 (0.001)
Log of market value				-0.171 (0.010)	-0.160 (0.013)	-0.121 (0.053)				201.68 (0.018)	204.10 (0.015)	204.89 (0.016)
Log of GNP	-0.273 (0.031)	-0.328 (0.003)	-0.343 (0.005)	-0.154 (0.351)	-0.172 (0.209)	-0.222 (0.135)	-277.03 (0.090)	-229.0 (0.122)	-334.8 (0.042)	-83.85 (0.709)	-150.9 (0.458)	-252.73 (0.249)
McFadden R^2	0.223	0.225	0.212	0.122	0.124	0.110	0.046	0.041	0.045	0.104	0.090	0.090

McFadden R^2 without any shareholder protection variables is 0.219, 0.105, 0.025, and 0.091 respectively, for the four samples.

7.2. The location of equity offerings and shareholder protection

We have focused our discussion to this point on the hypothesis that firms can increase the value of their equity by bonding themselves to protect their minority shareholders by listing on a US exchange. The increase in equity offerings subsequent to cross-listing is consistent with this argument. However, there are some alternative nonmutually exclusive explanations for this finding as well. First, the firms listing in the US could wish to make their stock more easily accessible to US investors. Second, the relation could reflect an increased demand for capital, i.e., firms that have a demand for capital search for equity all over the world and thus attempt to access as many markets as possible. We next examine the location of the post-cross-listing equity offerings in an effort to provide some insight into the motivation behind a firm's decision to cross-list.

To evaluate the explanation that these cross-listings reflect the desire to access US investors, we consider the relation between cross-listings and non-US equity offerings. If the primary reason a firm cross-lists in the United States is to gain access to US investors or US markets, there should be no relation between the level of shareholder protection in a firm's home country and the location of its subsequent equity offerings. Firms from countries with weak shareholder protection should be just as likely to issue subsequent equity inside the United States as firms from countries with strong shareholder protection. However, if one reason for cross-listing is to better protect shareholder rights through registration with the SEC, one would expect an increase in equity offerings outside the United States following cross-listings in the US relative to firms that come from countries which already protect the rights of minority shareholders. This effect would occur because firms with weak protection at home will bond themselves to protect shareholders' interests all over the world by cross-listing in the US prior to issuing equity outside the US. We test this hypothesis by examining the location of equity offerings subsequent to cross-listings.

We separate equity offerings by location of issuance in Table 6. In contrast to the overall listing data discussed earlier, these numbers are constructed so that each country a listing is offered in counts as a separate listing. For example, when Cristalerias de Chile on January 24, 1994 simultaneously raised \$65.4 million in the US, \$21.8 million in Europe, and \$24.7 million in Chile, this is considered to be one US listing, one listing at home, and one elsewhere. These data indicate that firms from French Civil Law countries issue a higher proportion of their subsequent equity offerings outside the United States than do the firms from English Common Law countries. Subsequent to their cross-listing, the NYSE/Nasdaq-listed French Civil Law firms issue more than 62% of their new equity outside the US (29% in their home market and 34% elsewhere). In contrast, NYSE/Nasdaq-listed English Common Law firms place almost 65% of their subsequent new issues *inside* the US. The difference in the proportion of offerings in the US is statistically significant at the 1% level.

The value of these offerings follows a similar pattern. The NYSE/Nasdaq French Civil Law firms in our sample issue \$150 billion of new equity outside the US

Table 6

Equity issues by location of issuance

In this table, each panel looks at one of the four major legal systems. We look at those foreign firms that cross-listed in the US between January 1985 and June 1999 and also issued new equity either simultaneously with or after their cross-listing. The table separates the number of equity issues and proceeds by whether the capital was raised in the US, the country's home market, or elsewhere. In counting the number of issues, each issuance at a different location is counted as a separate issue. For example, if a firm issues equity simultaneously in its home market and in the US, we would count that as two separate issuances. The first four columns organize the issues and proceeds by the exchange that the cross-listed firm trades on. The fifth column totals the first four, and column six is the total of the NYSE and Nasdaq columns. This is significant since these are the exchanges that require specific accounting and disclosure information in order for a firm to cross-list on it. Values in parenthesis are percentages of the total for each exchange.

		NYSE	Nasdaq	OTC	144a	All exchanges	NYSE/Nasdaq
<i>Panel A: English Common Law countries</i>							
Number of equity issues (percent of total)	In US	95 (59.0%)	201 (67.9%)	21 (17.1%)	0 (0.0%)	317 (48.8%)*	296 (64.8%)*
	At home	19 (11.8%)	33 (11.1%)	68 (55.3%)	13 (30.2%)	133 (21.3%)	52 (11.4%)
	Elsewhere	47 (29.2%)	62 (20.9%)	34 (27.6%)	30 (69.8%)	173 (27.8%)	109 (23.9%)
	Total	161	296	123	43	623	457
	Proceeds from equity issues (\$ mill.) (percent of total)	In US	22,532 (32.6%)	10,887 (43.6%)	556 (1.9%)	0 (0.0%)	33,975 (25.2%)*
	At home	29,438 (42.6%)	7,548 (30.2%)	20,088 (70.1%)	7,153 (58.2%)	64,227 (47.6%)	36,986 (39.3%)
	Elsewhere	17,176 (24.8%)	6,534 (26.2%)	8,009 (28.0%)	5,132 (42.8%)	36,851 (27.3%)	23,710 (25.2%)
	Total	69,146	24,969	28,653	12,285	135,053	94,115
<i>Panel B: French Civil Law countries</i>							
Number of equity issues (percent of total)	In US	113 (35.0%)	42 (45.7%)	0 (0.0%)	1 (1.2%)	156 (29.6%)*	155 (37.3%)*
	At home	106 (33.8%)	15 (16.3%)	18 (66.7%)	46 (54.1%)	185 (35.1%)	121 (29.2%)
	Elsewhere	104 (32.2%)	35 (38.0%)	9 (33.3%)	38 (44.7%)	186 (35.3%)	139 (33.5%)
	Total	323	92	27	85	527	415
	Proceeds from equity issues (\$ mill.) (percent of total)	In US	30,481 (17.3%)	3,379 (41.6%)	0 (0.0%)	120 (0.5%)	33,980 (15.1%)*

	At home	105,647 (60.1%)	1,500 (18.5%)	10,476 (67.9%)	16,930 (66.2%)	134,553 (59.8%)	107,147 (58.2%)
	Elsewhere	39,711 (22.6%)	3,248 (40.0%)	4,943 (28.1%)	8,526 (33.3%)	56,428 (25.1%)	42,959 (23.4%)
	Total	175,839	8,127	15,419	25,576	224,961	183,966
<i>Panel C: German Civil Law countries</i>							
Number of equity issues (percent of total)	In US	16 (39.0%)	7 (41.2%)	0 (0.0%)	0 (0.0%)	23 (20.2%)	23 (39.7%)
	At home	8 (19.5%)	5 (29.4%)	11 (61.1%)	6 (15.8%)	30 (26.3%)	13 (22.4%)
	Elsewhere	17 (41.5%)	5 (29.4%)	7 (38.9%)	32 (84.2%)	61 (53.5%)	22 (37.9%)
	Total	41	17	18	38	114	58
Proceeds from equity issues (\$ mill.) (percent of total)	In US	8,032 (25.0%)	523 (22.4%)	0 (0.0%)	0 (0.0%)	8,555 (10.9%)	8,555 (25.5%)
	At home	15,898 (49.4%)	1,079 (46.2%)	28,229 (78.2%)	3,597 (44.8%)	48,803 (62.1%)	16,977 (50.7%)
	Elsewhere	8,235 (25.6%)	736 (31.5%)	7,863 (21.8%)	4,425 (55.2%)	21,259 (27.0%)	7,971 (23.8%)
	Total	32,165	2,338	36,092	8,022	78,617	33,503
<i>Panel D: Scandinavian Civil Law countries</i>							
Number of equity issues (percent of total)	In US	16 (43.2%)	7 (35.0%)	0 (0.0%)	0 (0.0%)	23 (31.1%)	23 (40.4%)
	At home	11 (29.7%)	6 (30.0%)	2 (50.0%)	6 (46.2%)	25 (33.8%)	17 (29.8%)
	Elsewhere	10 (27.0%)	7 (35.0%)	2 (50.0%)	7 (53.9%)	26 (35.1%)	17 (29.8%)
	Total	37	20	4	13	74	57
Proceeds from equity issues (\$ mill.) (percent of total)	In US	3,245 (35.8%)	461 (28.9%)	0 (0.0%)	0 (0.0%)	3,706 (19.9%)	3,706 (31.7%)
	At home	3,370 (37.2%)	1,048 (38.4%)	401 (24.4%)	2,771 (52.5%)	7,590 (40.8%)	4,418 (37.8%)
	Elsewhere	2,445 (27.0%)	1,107 (32.6%)	1,245 (75.6%)	2,511 (47.5%)	7,308 (39.3%)	3,552 (30.4%)
	Total	9,060	2,616	1,646	5,282	18,604	11,676

*English Common Law and French Civil Law values are statistically different from each other at 1% level.

following their cross-listing (\$107 billion at home and \$43 billion elsewhere). This figure is substantially larger than for the English Common Law firms, which issue only \$60 billion of new equity outside the US. The difference in values is also statistically significant at the 1% level. In terms of proportions, 81% of the new equity raised by these French Civil Law firms comes from outside the US, compared to only 65% for the English Common Law firms. Firms from German and Scandinavian countries follow a pattern similar to the French Civil Law countries, having proportionately more issues with higher proceeds outside the US. These differences suggest that firms from various legal regimes differ substantially in the location of their equity offerings subsequent to cross-listing.

These observations are reinforced by multivariate analysis. Table 7 estimates logit models predicting whether a particular offering will be done inside or outside the US, as well as the fraction of new equity proceeds issued outside the US using a two-tailed tobit model (left-censored at zero and right-censored at one) fit to a normal distribution. Each type of model is estimated both using our full sample of cross-listed firms and the subsample with firm-specific data available from *Worldscope* and *Datastream*. Both sets of equations use the previously discussed measures of shareholder protection as independent variables. The samples for the equations reported in Table 7 are restricted to those cross-listings on NYSE/Nasdaq that had at least one subsequent equity offering. The logit equations predicting the location of an offering count each offering in each country as an observation, resulting in 1,015 offerings from 416 firms for the full sample. The high ratio of offerings to firms indicates that many of the firms issued new equity more than once and/or in more than one country at a time. The tobit estimating the fraction of proceeds raised outside the US groups all offerings by a single firm into one observation, so that it is estimated on 416 observations for the full sample and 194 for the *Worldscope* subsample.

The results shown in Table 7 are striking and consistent with the view that shareholder protection is an empirically important reason for cross-listing in the US. In all the full sample tests, the coefficients on each of the civil law legal system dummies, as well as the antidirector rights and accounting standards, have signs consistent with the shareholder-protection arguments and are significantly different from zero at the 1% level. When we restrict our sample size and include a control variable for firm size, the results weaken only slightly.¹⁹ These results are consistent with the view that a higher fraction of offerings are placed outside the US when shareholder protections are weaker. When we run the tests on the full sample using the legal tradition explanatory variables, the explanatory power of shareholder protection (as measured by the McFadden R^2) more than triples compared to the same equations run without any shareholder protection variables. The implication is that shareholder protection, particularly as measured by legal tradition, is a significant determinant of the location of equity issues following a cross-listing.

¹⁹ We ran the same tests while restricting the equity issues to those made within three years of the cross-listing and found no significant change in the results.

Table 7

Multivariate estimates of equity issuances outside the US

This table examines twelve separate multivariate analyses. The first six use Logit while the second six use Tobit with the dependent variable left-censored at zero and the model fit to a normal distribution. Columns 1–6 consider the probability that a foreign company cross-listing on NYSE/Nasdaq will issue new equity outside the US at or after the time of its cross-listing (conditional on its decision to issue new equity). In each analysis, the dependent variable takes on a value of one if the equity is issued outside the US and 0 if it is issued in the US. For columns 7–12, the dependent variable is the proportion of proceeds from all of a firm’s new issues that were placed outside the US (conditional on the firm cross-listing on NYSE/Nasdaq and either simultaneously or subsequently issuing new equity). We examine three separate measures of shareholder protection. The legal tradition explanatory variables (French, German, and Scandinavian) are dummy variables taking a value of one if the firm came from a country with that legal tradition and zero otherwise. Since these are the civil law legal traditions, they each measure their difference from firms that come from countries with an English Common Law tradition. The next two explanatory variables are taken from La Porta et al. (1997, 1998). The Antidirector Rights variable is an index aggregating six significant shareholder rights. The Accounting Standards variable is an index created by examining and rating companies’ 1990 annual reports on their inclusion or omission of 90 items. For these two variables, a higher value means (respectively) greater rights for minority shareholders and tighter accounting standards. These variables are country-specific and are applied to each firm based on its home country. The Developed Market Dummy takes a value of one if the International Finance Corporation classifies a firm’s home market as developed and zero if it is classified as emerging. The IPO dummy is given a value of one if the cross-listing occurs simultaneously with the firm’s IPO and zero if the firm already had publicly traded shares. The log of GNP variable is used in each regression to control for the size of the firm’s home country. It is taken from the 1996 *World Development Report*. Columns 1–3 and 7–9 use our entire sample of firms that cross-listed on NYSE/Nasdaq between January 1985 and June 1999. There are 416 firms that issued equity a total of 1,015 times. Columns 4–6 and 10–12 consider the subsample of firms for which we have firm-specific data from Worldscope. They include a variable for the log of the firm’s market value to control for the size of the firm. *p*-Values appear in parentheses below each coefficient estimate.

Explanatory variable(s)	Probability of issuing equity outside the US						Proportion of equity proceeds outside the US					
	Full sample <i>N</i> = 1,015			Worldscope subsample <i>N</i> = 635			Full sample <i>N</i> = 416			Worldscope subsample <i>N</i> = 194		
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
French Law Dummy	1.124 (0.001)			0.721 (0.001)			0.526 (0.001)			0.259 (0.001)		
German Law Dummy	0.889 (0.002)			0.537 (0.171)			0.420 (0.001)			0.138 (0.301)		
Scandinavian Law Dummy	1.105 (0.001)			0.818 (0.031)			0.559 (0.001)			0.387 (0.005)		
Antidirector Rights		-0.192 (0.001)			-0.151 (0.029)			-0.110 (0.001)			-0.052 (0.045)	
Accounting Standards			-0.043 (0.001)			-0.017 (0.220)			-0.022 (0.001)			-0.005 (0.401)

Table 7 (continued)

Explanatory variable(s)	Probability of issuing equity outside the US						Proportion of equity proceeds outside the US					
	Full sample $N = 1,015$			Worldscope subsample $N = 635$			Full sample $N = 416$			Worldscope subsample $N = 194$		
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Developed Market Dummy	-0.070 (0.731)	-0.084 (0.639)	0.282 (0.187)	-0.182 (0.542)	-0.232 (0.366)	-0.070 (0.828)	0.003 (0.967)	0.024 (0.774)	0.202 (0.041)	-0.053 (0.624)	-0.035 (0.721)	0.001 (0.994)
IPO dummy	-0.275 (0.046)	-0.344 (0.009)	-0.274 (0.038)	0.070 (0.713)	0.091 (0.623)	0.069 (0.713)	-0.318 (0.001)	-0.366 (0.001)	-0.323 (0.001)	-0.083 (0.249)	-0.079 (0.292)	-0.073 (0.334)
Log of market value				0.131 (0.016)	0.171 (0.001)	0.169 (0.002)				0.074 (0.001)	0.089 (0.001)	0.093 (0.001)
Log of GNP	0.134 (0.123)	0.135 (0.071)	0.183 (0.025)	0.137 (0.236)	0.085 (0.390)	0.094 (0.359)	0.047 (0.179)	0.050 (0.134)	0.066 (0.072)	0.080 (0.057)	0.050 (0.178)	0.050 (0.211)
McFadden R^2	0.059	0.020	0.025	0.040	0.027	0.021	0.237	0.123	0.119	0.145	0.115	0.102

McFadden R^2 without any shareholder protection variables is 0.008, 0.020, 0.061, and 0.103 respectively, for the four samples.

These results suggest that English Common Law firms cross-list in the US for different reasons than do firms from Civil Law countries. English Common Law firms appear to list in the US to gain access to US markets and investors. While Civil Law firms also access US markets, an important motivation seems to be the protections provided by the cross-listing that allow them to issue more equity in their home country and around the world.

8. Conclusions

As capital markets have developed internationally, the decision of where a firm should list its securities has become an increasingly important choice for firms. It is well-recognized that legal protections of shareholder interests can affect valuations and the ability to raise capital externally (see La Porta et al., 1997, 1998, 1999; Grinblatt and Titman, 1998, p. 8). Cross-listing in the United States affords shareholders of non-US firms a number of legal protections, including the ability to free-ride on shareholder lawsuits of US shareholders for fraudulent statements made anywhere in the world, and requirements that the firm follow US GAAP, register with the SEC, comply with exchange rules, and follow a number of takeover procedures that have the effect of benefiting small shareholders. Coffee (1999a) and Stulz (1999) suggest that the ability to cross-list allows a firm to influence the legal regime under which it operates. This explanation for cross-listing complements other explanations discussed in the literature (see Karolyi, 1998). This paper evaluates the argument that one reason why non-US firms choose to cross-list in the United States is the protection of minority shareholder rights associated with SEC registration.

When cross-listing potentially affects the ability to extract private benefits, a manager considering cross-listing must consider a number of factors. Such a manager must balance the loss of private benefits with the benefits of increased access to foreign markets and an increase in shareholder protection. Thus, the expected empirical relation between cross-listings and incremental shareholder protection is ambiguous. However, there are clear predictions regarding cross-listings, shareholder protection, and subsequent equity issues: Equity issues should increase following cross-listings, and the increase should be larger when protection rises with the cross-listing. When a cross-listing firm comes from a country that already has a high level of shareholder protection, any increase in subsequent equity issues should primarily occur in the country of the cross-listing, since the purpose of the cross-listing would have likely been to overcome market segmentation and/or increase liquidity. In contrast, following cross-listings of firms from countries with weak shareholder protection, the increase in subsequent equity issues should not necessarily be concentrated in the country of the cross-listing, but will be more likely to occur in the firm's home country and elsewhere.

In this paper, we examine these hypotheses using a database of cross-listing firms and their history of equity issuance. Not surprisingly given the ambiguous nature of the theory, the empirical relation between cross-listings and shareholder protection is unclear. We document a large increase in both the number and value of equity

offerings following cross-listings. Firms from countries with weak shareholder protection are more likely to issue subsequent equity following their cross-listing than are firms from countries with strong shareholder protection. Conditional on issuing equity, firms with weak protection in their home country issue it in larger quantities.

Finally, we examine the location of equity issues subsequent to cross-listing. Firms cross-listing from countries with Civil Law tradition (that generally have weak protection at home) place the majority of their subsequent equity issues outside the US, while firms from English Common Law countries (that tend to have strong protection at home), issue primarily inside the US. Multivariate regression analysis supports this evidence, suggesting that following a cross-listing in the US, firms from countries with strong shareholder protection are more likely to issue equity in the US while firms with weak shareholder protection are more likely to issue outside the US. This empirical finding is consistent with a view that firms with strong protection at home tend to cross-list in order to access US investors and/or markets. In contrast, firms from countries with weak shareholder protection appear to cross-list, among other reasons, for the purpose of voluntarily bonding themselves to US securities and market regulations, allowing them to raise capital more easily at home and elsewhere outside the US.

References

- Alexander, G., Eun, C., Janakiraman, S., 1987. Asset pricing and dual listing on foreign capital markets: a note. *Journal of Finance* 42, 151–158.
- Alexander, G., Eun, C., Janakiraman, S., 1988. International listings and stock returns: some international evidence. *Journal of Financial and Quantitative Analysis* 23, 35–151.
- Black, F., 1974. International capital market equilibrium with investment barriers. *Journal of Financial Economics* 1, 337–352.
- Cantale, S., 1997. The choice of a foreign market as a signal. Unpublished working paper, INSEAD.
- Coffee, J., 1999a. The future as history: the prospects for global convergence in corporate governance and its implications. *Northwestern University Law Review* 93, 641–708.
- Coffee, J., 1999b. Privatization and corporate governance: the lessons from securities market failure. *Journal of Corporation Law* 25, 1–39.
- Doidge, C., Karolyi, G.A., Stulz, R.M., 2001. Why are foreign firms listed in the US worth more? Unpublished working paper, Ohio State University.
- Domowitz, I., Glen, J., Madhavan, A., 1998. International cross-listing, order-flow migration: evidence from Mexico. *Journal of Finance* 53, 2001–2028.
- Errunza, V., Losq, E., 1985. International asset pricing under mild segmentation: theory and test. *Journal of Finance* 40, 105–124.
- Errunza, V., Miller, D., 2000. Market segmentation and the cost of capital in international equity markets. *Journal of Financial and Quantitative Analysis* 35 (4), 577–600.
- Eun, C., Janakiraman, S., 1986. A model of international asset pricing with a constraint on the foreign equity ownership. *Journal of Finance* 41, 897–914.
- Fanto, J., Karmel, R., 1997. A report on the attitudes of foreign companies regarding a US listing. *Stanford Journal of Law, Business and Finance* 3 (1), 51–75.
- Foerster, S.R., Karolyi, A., 1993. International listings of stocks: the case of Canada and the US. *Journal of International Business Studies* 24, 763–784.

- Foerster, S.R., Karolyi, A., 1998. Multimarket trading and liquidity: a transactions data analysis of Canada–US interlistings. *Journal of International Financial Markets, Institutions, and Money* 8, 393–412.
- Foerster, S.R., Karolyi, A., 1999. The effects of market segmentation and investor recognition on asset prices: evidence from foreign stocks listing in the united states. *Journal of Finance* 54, 981–1013.
- Foerster, S.R., Karolyi, A., 2000. The long-run performance of global equity offerings. *Journal of Financial and Quantitative Analysis* 35, 499–528.
- Fuerst, O., 1998. A theoretical analysis of the investor protection regulations argument for global listing of stocks. Unpublished working paper, Yale School of Management, CT.
- Huddart, S., Hughes, J., Brunnermeier, M., 1999. Disclosure requirements and stock exchange listing: choice in an international context. *Journal of Accounting and Economics* 26, 237–269.
- Irvine, P., 2000. The Bre-X case. *Journal of Business Education* 1, 70–79.
- Jayaraman, N., Shastri, K., Tandon, K., 1993. The impact of international cross-listings on risk and return: evidence from American depositary receipts. *Journal of Banking and Finance* 17, 91–103.
- Johnson, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2000. Tunneling. *American Economic Review Papers and Proceedings* 90, 22–27.
- Karolyi, G.A., 1998. *Why Do Companies List Their Shares Abroad? A Survey of the Evidence and Its Managerial Implications*. Blackwell Publishers, Boston.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. *Journal of Finance* 52, 1131–1150.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. *Journal of Political Economy* 106, 1113–1155.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1999. Investor protection and corporate valuation. Unpublished working paper, Harvard University, MA.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000a. Investor protection and corporate governance. *Journal of Financial Economics* 58, 3–29.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000b. Agency problems and dividend policies around the world. *Journal of Finance* 55, 1–33.
- Licht, A., 2000. Regulatory arbitrage for real: international securities regulation in a world of interacting securities markets. *Virginia Journal of International Law* 38, 563–636.
- Lins, K., Strickland, D., Zenner, M., 1999. Do non-US firms issue stock on US equity markets to relax capital constraints? Unpublished working paper, University of North Carolina at Chapel Hill.
- Lombardo, D., Pagano, M., 2000. Law and equity markets: a simple model. Unpublished working paper, CSEF and University of Salerno, Italy.
- Merton, R., 1987. A simple model of capital market equilibrium with incomplete information. *Journal of Finance* 42, 483–510.
- Miller, D., 1999. The market reaction to international cross-listings: evidence from depositary receipts. *Journal of Financial Economics* 51, 103–123.
- Moel, A., 1999. The role of information disclosure on stock market listing decisions: the case of foreign firms listing in the US. Unpublished working paper, Harvard Business School, MA.
- Pagano, M., Randl, A., Roell, A., Zechner, J., 2001a. What makes stock exchanges succeed: evidence from cross-listing decisions. *European Economic Review* 45, 770–782.
- Pagano, M., Roell, A., Zechner, J., 2001b. The geography of equity listing: why do companies list abroad? *Journal of Finance*, forthcoming.
- Radebaugh, L., Gebhardt, G., Gray, S., 1995. Foreign stock exchange listings: a case study of daimler-benz. *Journal of International Financial Management and Accounting* 6 (2), 158–192.
- Rajan, R., Zingales, L., 1999. The politics of financial development. Unpublished working paper, University of Chicago, IL.
- Shleifer, A., Vishny, R., 1986. Large shareholders and corporate control. *Journal of Political Economy* 94, 461–488.
- Smith, K., Sofianos, G., 1997. The impact of a NYSE listing on the global trading of non-US stocks. Unpublished working paper, NYSE #97-02.

- Stapleton, R., Subrahmanyam, M., 1977. Market imperfections, capital market equilibrium, and corporate finance. *Journal of Finance* 32, 307–319.
- Stulz, R., 1981. On the effects of barriers to international investment. *Journal of Finance* 36, 923–934.
- Stulz, R., 1999. Globalization of equity markets and the cost of capital. *Journal of Applied Corporate Finance* 12, 8–25.
- Switzer, L., 1986. The benefits and costs of listing Canadian stocks in US markets. In: Sarna, L. (Ed.), *Corporate Structure, Finance, and Operations*. Carswell, Toronto, pp. 241–254.
- Tinic, S., West, R., 1974. Marketability of common stocks in Canada and the USA: a comparison of agent versus dealer dominated markets. *Journal of Finance* 29, 729–746.