Diplomarbeit

International Equity-Listings: Factors Influencing the Foreign Stock Exchange Selection
- A Clinical Study of Cross-Listings on the Swiss Exchange SWX

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1 Introduction

Over the last years, the number of international cross-listings increased dramatically. Almost every month a major European firm announces its plans to list its shares on a foreign stock exchange. The number of foreign firms listing their securities as depositary receipts on the U.S. capital market illustrates this trend. Their number increased by 756 percent in the period of 1986 to 1994, amounting to a total of 800 by year end 1994.1

Alone in the first six months of 2000, 85 new depositary receipt programs were established with companies from 33 countries. At the same time depositary receipt trading activity reached an all-time high in the first half of 2000. Share-trading volume and dollar-trading volume on the three major U.S. exchanges (NYSE, NASDAQ, and AMEX) exceeded 14 billion shares valued at $676 billion, up 65 percent and 121 percent, respectively, from the first half of 1999.2 This raises the question of why do so many firms seek an international cross-listing of their securities? In other words, what are the motives for firms to list their shares outside their home country and which advantages do they expect to obtain from cross-listing abroad?

Taking a look at the world's five biggest stock markets, by market capitalization in 19993, indicates that not all exchanges have had equal success in attracting foreign firms to list on their exchanges. While the number of foreign firms listing on the largest exchange, the NYSE increased from 355 to 406, or by 14.3 percent, in the last two years, other markets experienced a decline in the number of foreign listers. The NASDAQ, for instance lost 14 percent, Tokyo 28 percent, and London and Paris each 4 percent of their foreign issuers4.

This gives rise to a second question. Why do some exchanges seem to be better suited for cross-listing firms than others? Or what influences firms in their

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1 See Miller (1999).
3 As reported by the International Federation of Stock Exchanges (FIBV).
4 See FIBV (2000).
foreign exchange location decision? This thesis attempts to shed some light on both the *why* and *where* questions of international cross-listing decisions. 

The remainder of the paper is organized as follows. Section two outlines the different methods available for firms to list their shares internationally. Because most of the cross-listings in the U.S. take place in the form of depositary receipts and the programs differ in various important aspects from each other, this instrument for cross-listing is explicated in greater detail. Section three describes the various motives for foreign listings, from the corporation's, the investor's and the management's point of view, i.e. why do firms list abroad. Following to the theoretical aspects, some empirical evidence on this topic is provided. Section four deals with the where question by describing factors influencing a firm's foreign listing decision, and summarizing some important empirical studies regarding this question. Two theoretical approaches modeling the impact of disclosure requirements, one of the most important factors in the cross-listing decision, on the listing behavior of firms and the consequences for the stock exchanges, are also outlined briefly. Section 5 contains the empirical part of this thesis. Here I demonstrate the time, country and industry pattern of foreign listings on one of the major European capital markets, the Swiss Exchange SWX. Section six concludes the paper.
2 Typology of Foreign Listings

To understand this work, the term cross-listing has to be defined. One possible definition is:

"Cross-listing stocks (and bonds\(^5\)) issued in Country A on the exchanges of Country B. Foreign listing does not necessitate a public offering to take place in the foreign country\(^6\)."

Thus, a foreign listing can refer to either an additional listing on the stock exchange abroad or to a situation where firms by-pass their home market and list exclusively in a foreign country. In the literature, a great number of synonyms are used interchangeably for this term, e.g., international listing or overseas listing. The expressions foreign listing and cross-listing are used as synonyms in many cases too. If the foreign listing happens on a single foreign stock exchange in addition to the domestic market, it is often referred to as dual listing. A multiple listing describes a foreign listing on more than one additional exchanges.

The foreign listing of a firm's equity can take place in several forms. The firm can either list directly on the foreign stock exchange, like domestic firms, or establish a depositary receipt program. Country funds and Siamese Twins are not foreign listing types in the narrower sense, but also provide a means for firms to facilitate foreign investors access to their shares. The decision of which method should be chosen by firms seeking a cross-listing depends on the benefits and costs associated with each form.

2.1 Direct Listing

A direct or "ordinary" listing of a firm's shares abroad normally has to take place on a stock exchange. In the U.S. for instance, a direct listing obligates the foreign shares to the same settlement facilities as domestic securities, but

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\(^5\) This work deals exclusively with foreign listing of stocks.

foreign issuers face somewhat different GAAP reporting and SEC registration requirements.\(^7\)

While a direct listing of stock on the investors' home market is the common way of foreigners listing in Europe\(^8\), it is less common in the U.S. With rare exceptions, Canadian firms are the only companies that maintain ordinary listings.\(^9\)

### 2.2 Depositary Receipts\(^{10}\)

Depositary Receipts (DRs) were designed in 1927 by the Morgan Guarantee Bank with the intention to provide a means for U.S. investors to participate in the London Stock Market without accessing the stock market itself. Since DRs were first issued in the U.S., they are often called American DRs, or ADRs. An ADR is a negotiable certificate issued by a depositary bank and denotes depositary shares (American Depositary shares, or ADSs\(^{11}\)) that represent a specific number of underlying shares remaining on deposit in the issuer's home country. Therefore ADRs indirectly represent ownership of shares in the corporation for domestic investors. New receipts for the investor can be created when the requisite number of shares is deposited in the custodial account in the home market. The underlying share and the ADR are virtually perfect substitutes for each other\(^{12}\), since the holder of the ADR has the right to redeem the receipt for the underlying share.

Relative to a direct investment in home market shares through a purchase in a foreign stock exchange, ADRs offer the following potential advantages for the U.S. investor: (a) they allow for investment in countries which have restricted access to their primary equity market (for example, Korea); (b) clearing and

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\(^7\) See Foerster and Karolyi (1999).

\(^8\) See Licht (2000).


\(^11\) ADSs are the instruments that are actually traded. Although the terms ADR and ADS are used interchangeably, the difference is that an ADR is a certificate that represents a number of ADSs. See J.P. Morgan (2000).
settlement follows U.S. laws and occurs in the U.S., which may be faster and more reliable than in the home market and makes trade fails very rare; (c) their price is quoted and their dividend is paid in U.S. dollars, all currency conversions are completed by the bank; (d) lower trading costs\textsuperscript{13}; (e) the depositary bank is responsible for the distribution of financial statements to investors; (f) withholding tax payments may be simpler; (g) many DR programs can lead to greater company disclosure due to the required SEC registration.

\textbf{2.2.1 Types of Depositary Receipt Programs in the U.S.}

An ADR can be sponsored or unsponsored. Unsponsored DR programs are created on the request of investors, without company sponsorship. Because these programs can be initiated without company authorization, the foreign firm does not bear any of the costs associated with it. Furthermore it is not obliged to follow U.S. disclosure rules. The program may be duplicated by other banks too, leading to multiple depositaries for any given issue. The first sponsored DR programs were created in the 1950s by Australian and South African mining companies.

To establish a sponsored program, a firm has to sign an agreement with one depository to be the sole agent for its DRs. This gives the company more control of its DRs, allowing it to compile ownership characteristics of its investors. Since 1983, all new DR programs must have company approval in order to be established. The fact that sponsored ADRs have to be registered with the SEC and the foreign issuer has to file periodical disclosure statements makes them very similar to regular American stocks.

\textsuperscript{12} After adjusting for transaction cost, which include fees for cancellation paid to the Depositary Bank.

\textsuperscript{13} The cost effect can be substantial. According to Radebaugh et al. (1995), who refer to Deutsche Bank Equity Sales as source, a U.S. institutional investor subject to standard terms has to pay a commission of about 0.31 to 0.36 percent of the market value when buying one Daimler-Benz share on the Frankfurt stock exchange. To obtain the equivalent of one Daimler-Benz share in ADRs (in this case, 10 ADRs represent one underlying share), the investor has to pay only $0.60 or 0.128 percent.
Firms have a choice of four types of DR programs: three levels of public offerings as well as a private placement. These programs differ in various aspects from each other, like accounting standards, SEC registration, capital raised, time to completion, trading location and costs. Table one provides an overview on the characteristics of the different programs.

2.2.1.1 Level-I
Level-I DR programs offer the least costly way for a company to cross-list its shares. They do not involve new capital raising and trade in the U.S. over the counter (OTC) "pink sheet" market with limited liquidity. Level-I ADRs require only minimal disclosure and no GAAP compliance, firms are exempt from filing Form 20-F under rule 12g3-2(b). With that exemption, the issuer agrees to send to the SEC copies or summaries of any public reporting documents released in his home market.\(^{14}\)

2.2.1.2 Level-II
Level-II ADRs are traded on the NASDAQ, AMEX, or NYSE, but do not offer a capital raising element. These programs require full registration and reporting under the Exchange Act of 1934 and must file Form 20-F\(^ {15}\) annually. Firms issuing Level-II ADRs must meet partial reconciliation of financial statements to U.S. GAAP and the listing requirements of the particular exchange where they seek a listing.

2.2.1.3 Level-III
Level-III ADRs, the most prestigious and costly type of listing, are designed to raise new equity capital in public offerings and trade like Level-II ADRs on the

\(^{14}\) See J.P. Morgan (2000).
\(^{15}\) Generally, the major elements of Form 20-F include following: a description of business, property, pending legal proceedings, control of registrant; financial statements prepared in U.S. GAAP, or with a full reconciliation of home market GAAP to U.S. GAAP; business segment reporting; management's discussion and analysis of financial condition and results of operations; aggregate compensation of directors and officers; interest of management in transactions with the company. However, for Level-II programs the Form 20-F only requires a partial reconciliation to U.S. GAAP, i.e. disclosing the amount of material variations between major balance sheet and income statement differences using home market and U.S. GAAP; and no segment reporting. See J.P. Morgan (2000).
major three U.S. exchanges. This program requires the most stringent reporting and disclosure rules. The issuers are obliged to full SEC disclosure and U.S. GAAP reconciliation. Furthermore the company must meet the listing rules of the exchange where it chooses to list.

2.2.1.4 Rule 144A
Rule 144A Depositary Receipts (RADRs) are also intended to raise new equity capital, but their distribution is restricted to Qualified Institutional Buyers (QIBs)\textsuperscript{16}. Prior to rule 144A a holding restriction was imposed on privately placed ADRs, they had to be held by the investor for a minimum of three years until he was allowed to re-sell them. RADRs trade among QIBs without such a holding restriction. The trading location for RADRs is PORTAL\textsuperscript{17}, a screen based automated trading system that provides security descriptions and pricing information. The 144A market offers very poor liquidity, the majority of trades takes place in unregulated offshore markets. However, the major advantage of these tools for private placements is their exemption from SEC registration and U.S. reporting (under rule 12g3-2(b)). This way capital can be raised without meeting the reporting and disclosure requirements of a U.S. public offering.

2.2.2 Other Types of DR Programs\textsuperscript{18}
Despite the fact that DR programs were first developed and issued for the U.S. market, they are used nowadays all around the globe.
Global Depository Receipts (GDRs) for instance, are depositary receipts designed for raising capital in multiple markets. Typically, these instruments are targeted to reach institutional investors in Europe and the United States. GDRs usually trade in either London or Luxembourg, but can also trade in

\textsuperscript{16} QIBs are either institutions that manage at least $100 million in securities or registered broker-dealers owning and investing $10 million in securities of non-affiliates. See Miller (1999).
\textsuperscript{17} PORTAL is an acronym for Private Offerings, Re-sales and Trading through Automated Linkages.
private (Rule 144A) or public U.S. markets. The settlement of GDRs can take place outside the U.S.

While GDRs and ADRs are denominated in U.S. dollar, EDRs (Euro-Denominated Depositary Receipts) are depositary receipts which are priced, traded and pay dividends in euro. These negotiable securities are intended to facilitate ownership and trading of non-euro zone securities for European investors and traded or listed for example in London, Luxembourg, Frankfurt, Paris and Vienna.

"Local" DRs, such as International depositary receipts (listed in Brussels), Dutch depositary receipts (listed in Amsterdam), and Swedish depositary receipts (listed in Stockholm) are used to facilitate the listing of a foreign stock on a local exchange where a direct listing is not possible.

2.3 Country Funds

Mutual funds that specialize in the stocks of a particular country can be an alternative to direct investment on a foreign stock exchange. These funds offer investors easy exposure to emerging markets, where expected yields may be higher but trading is impractical. Institutional investors however, are likely to avoid the management fees associated with these funds and engage in this country directly, through trading of particular stocks on the local exchanges.

2.4 Siamese Twins

"Siamese Twins" are a special case of multiple listed corporations. One prominent example is the multinational company Unilever which was created when the British Lever Brothers joined the Dutch group Margarine Unie. The Unilever group is formed by to groups, Unilever NV and Unilever Plc, incorporated in the Netherlands and England, respectively. These two parts act

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19 See Licht (2000).
as a single company, have equal cash flows (due to an equalization agreement) and use the same board of directors but remain separately incorporated. This complicated construction has been chosen to avoid the tax consequences of a straightforward merger. The stock of Unilever NV and Unilever Plc trade in eight European countries and the U.S.\textsuperscript{22}

3 Motives for Foreign Listings

This chapter deals with the question of why do firms list on foreign stock exchanges? The academic literature provides several hypotheses for motivations of international cross-listings. The band width ranges from cost of capital considerations over marketing related motivations to the goal of simply becoming an "international firm". One way to categorize all these motives is to group them by parties involved in the foreign listing process, i.e. the corporation, the potential foreign shareholders and the firm's management. First, the theoretical concepts underlying the cross-listing motivations are explained, then an overview on the empirical evidence concerning these concepts is provided.

3.1 Corporate Motivations

The motives for cross-listings from the firm's point of view can be subdivided in financial and non-financial reasons.

3.1.1 Financial Reasons

The objective of the financial motives is to lower the firm's cost of capital either through reducing the expected rate of return of the share or the firm's risk. Below the three most frequently named financial motives, namely the investor recognition-, segmentation-, and the superior liquidity hypotheses and two other motivations are outlined.

3.1.1.1 Investor Recognition Hypothesis

In his American Finance Association Presidential Address, Merton (1987) proposed:

"Ceteris paribus,...an increase in the relative size of the firm's investor base will reduce the firm's cost of capital and increase the market value of the firm. Thus, ...managers of the firm have an incentive to expand the firm's investor base."
The main assumptions of Merton's capital market equilibrium model with incomplete information are the standard frictionless-market conditions of no taxes, no transaction costs, no restrictions on borrowing and short-selling. There are n firms and N investors, each of them acts as a price taker, is risk averse and selects an optimal portfolio according to the Markowitz-Tobin mean-variance criterion.

In contrast to the standard CAPM, Merton assumes that investors generally know only about a subset of the available securities and that these subsets differ across investors. This leads to the key behavioral assumption with respect to the security selection process of the individual investor: an investor uses security \( k \) for the construction of his optimal portfolio only if he knows about security \( k \). This assumption is explained by the fact that actual portfolios contain only a small fraction of all the traded securities available. Merton then shows that expected returns depend on factors other than just market risk. Specifically, the shadow cost of incomplete diffusion of information among investors for security \( k \) is given as

\[
\lambda_k = \delta \sigma_k^2 x_k (1 - q_k)/q_k
\]

where \( q_k \) denotes the fraction of all investors who know about security \( k \), \( x_k \) the fraction of the market portfolio invested in security \( k \), \( \sigma_k^2 \) is the firm-specific component of the stock's return variance and \( \delta \) is the coefficient of aggregate risk aversion.

The effect of incomplete information on security prices in equilibrium is similar to applying an additional discount rate, the incremental equilibrium expected

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23 In this context, an investor is said to be informed (know) about a security \( k \) if he knows the expected return, variance and the factor \( b_k \). \( b_k \) is defined as \( a_k I_k/V_k \), where \( a_k \) represents a factor of firm \( k \)'s production technology, \( I_k \) denotes the amount of physical investment in firm \( k \) and \( V_k \) the equilibrium value of firm \( k \) at the beginning of the period. A conditional-homogeneous-beliefs assumption is proposed, which means that all investors who know about security \( k \) agree on these parameter values, to ensure that all informed traders in security \( k \) have the same information about it.

24 Merton notes, that there are a number of other factors (e.g. market segmentation and institutional restrictions including limitations on short sales, taxes, transaction costs, liquidity, imperfect divisibility of securities) in addition to incomplete information that may contribute to this observed behavior.
return on security k is proportional to its shadow cost. In other words, the relationship between the actual expected excess return of security k, \( E(R_k) \), and the expected excess return under complete information (when \( q_k \) equals 1), \( E(R_k^*) \), is

\[
E(R_k) - E(R_k^*) = \lambda \frac{E(R_k^*)}{R}
\]

where \( R \) equals one plus the risk free rate of return\(^{25}\).

The standard Sharpe-Lintner-Mossin CAPM lacks a firm-specific risk component because in this model such risk can be eliminated through diversification and is therefore not priced. The Merton framework in contrast, limits investors in their securities selection to only the shares that they are aware of, complete diversification of risk is not attainable. The investor therefore requires a higher rate of return. This expected return is the greater the higher the firm's specific risk and the greater the weight of the security in the investor's portfolio-measured by market value per shareholder.

Therefore, the main implication of the Merton Investor Recognition Model is, that a firm can reduce the cost of capital through a broadening of the investor base of their shares. This increase in the investor base leads to a lower required return and a higher stock price. Managers of firms with few shareholders should therefore have an incentive to undertake activities that expand the investor base of the firm's shares.

Listing on an exchange is one possibility for a firm to increase the investor base of their shares. In Japan, for example, firms can expand the investor base of their stock by reducing their minimum trading unit or lot size\(^{26}\). Stock splits provide another vehicle for expanding the investor base, by reducing the minimum monetary value necessary for trading a given lot size\(^{27}\).

\(^{25}\) In the complete information case, the model reduces to the Sharpe-Lintner-Mossin Capital Asset Pricing Model.
\(^{26}\) Lot size is the minimum number of shares that can be traded on an exchange.
\(^{27}\) See Amihud, Mendelson and Uno (1999).
3.1.1.2 Segmentation Hypothesis

A major theoretical motivation for foreign listings is to overcome the segmentation of capital markets. Saudagaran (1988) defines segmentation as follows:

"A national capital market is considered segmented if the required rate of return on securities on that market differs from that on securities of comparable expected return and risk traded on other national or international markets after adjusting for tax and foreign exchange rates".

Capital market segmentation can be the result of many barriers to international investment. Jorion and Schwartz (1986) for example classify these market imperfections in two categories: indirect and legal barriers. Indirect barriers include difficulties in obtaining information about foreign stocks, differences in the depth and quality of financial reporting due to differences in accounting disclosure requirements, impediments based on traditional practices such as aversions to deal with foreigners, or any other cost of doing investment business abroad. As a second category they name legal barriers. These barriers originate from differences in the juridical status between domestic and foreign investment, e.g. tax considerations, restrictions on ownership of foreign securities or more generally any other barrier linked to the country of origin of the security.

Capital market segmentation can be either complete or partial. In completely segmented capital markets, investors of one country are unable to invest in securities of the other country and vice versa. In contrast, a completely integrated capital market provides domestic and foreign investors with the same opportunity set that consists of all domestic and foreign securities. The entire grey area between complete segmentation and integration is called partial segmentation. Errunza and Losq (1985) for instance, provide a model of "mild" segmentation, where investment barriers are asymmetric. In their two country model, the investors of country 1 are allowed to invest in the securities of country 2, but country 2's investors are prohibited from investing in securities
from country 1. Country 2’s (eligible) securities are priced as if the market was not segmented, i.e. completely integrated, but country 2’s (ineligible) securities require a "super" risk premium.

Stapleton and Subrahmanyam (1977) also note that the complete segmentation case suffers from lack of realism. In their opinion, markets are not completely integrated but not rigidly segmented either. In practice, they conclude, markets are reasonably integrated with some restrictions on capital movement across national boundaries (e.g. restrictions on the amount of investment in foreign securities allowed for each individual or a percentage premium or tax levied on investment in foreign securities).

The link between capital market segmentation and foreign listing is that managers should have an incentive to adopt financial policies that can effectively reduce the negative effects associated with capital market segmentation. Stapleton and Subrahmanyam (1977) name three corporate financial policies that can be taken to undo the barriers faced by investors: (1) foreign portfolio/direct investment by firms; (2) mergers with foreign firms; and (3) dual listing of the securities of the firm on foreign capital markets.

Dual listing therefore can be an appropriate way to eliminate to some degree the barriers to international portfolio investment that cause segmentation. For example, dual listing allows investors to trade the security in their own currency. This saves transaction costs and helps to circumvent any existing foreign exchange regulations. In addition, if the firm is required to disclose more information or more security analysts follow the stock subsequent to the foreign listing, a reduction in information costs may be achieved.29

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29 See Alexander, Eun and Janakiramanan (1988). They also note that dual listing may not dismantle all the barriers. Legal barriers (e.g. restrictions on the proportionate ownership of domestic firms by foreign investors) are not affected by foreign listings.
3.1.1.3 Superior Liquidity Hypothesis
Superior market liquidity provided by some foreign stock exchanges may provide another explanation for the observed changes in stock prices subsequent to a cross-border listing. Indeed, 27.5 percent of the responding managers in a survey by Mittoo (1992) cited increased liquidity as a benefit of foreign listing.

Amihud and Mendelson (1986) provide a theoretical framework for controlling the effects of changes in liquidity resulting from exchange listings. In their analysis of asset pricing and the bid-ask spread, they measure illiquidity as the cost of immediate execution. An investor willing to make a transaction is confronted with a trade-off between immediate execution at the current bid-ask price or a favorable price. The ask price includes a premium for immediate buying and the bid price reflects a concession required for immediate sale. The spread between the bid and ask price, which is the sum of the buying premium and the selling concession, is therefore a natural measure of illiquidity. Their model predicts that expected asset returns are an increasing and concave function of liquidity as measured by the relative bid-ask spread (=dollar spread divided by asset value). The authors also test the predicted spread-return relationship and find the empirical evidence consistent with their hypothesis. A main implication of the Amihud-Mendelson model is that firms can reduce their opportunity cost of capital by increasing the liquidity of their securities, because according to their model, lower bid-ask spread should lead to lower expected returns. Thus listing on a stock exchange which can provide superior liquidity for the firm's stocks, can lead to lower bid-ask spreads and as a further consequence to a lower expected return, i.e. lower a cost of capital for the firm.

3.1.1.4 Other financial Motivations
Beside the motives outlined above, several other financial motivations for cross-listings are named in literature. The improvement of access to external sources of capital and the implementing of a firm's shares as a medium of exchange for future mergers or takeovers are among the most frequently named.
3.1.1.4.1 Enhancing Access to External Capital
One often-mentioned motivation for foreign listings is the enhancement of the firm's access to external capital markets. The improvement of access to external capital markets may be of particular interest for a firm if the domestic capital market can not provide sufficient capital or the dependence on internally generated cash flows is extraordinarily high30.

3.1.1.4.2 Acquisition currency
A foreign listing may also improve a firm's position to undertake foreign mergers and acquisitions by establishing the bidders' shares as "acquisition currency" for the transaction. According to Saudagaran (1988) in some countries only firms listed on the local stock exchange are permitted to make tender offers, a listing in these countries can therefore facilitate tender offers and stock swaps.

In the U.S. for instance, ADRs are a popular instrument for financing takeovers. There, the trend to use ADRs as acquisition currency in cross-border mergers and acquisition transactions continues and accelerates. Some of the largest deals where ADRs have been used include the 60.3 billion dollar takeover of AirTouch Communications by Vodafone in January 1999, the purchase of Amoco by British Petroleum in August 1998 (54.3 $BN) or the announced acquisition of VoiceStream Wireless by Deutsche Telekom in July 2000 ($BN 50.7).31

3.1.2 Non-financial Reasons
Motivations directly connected to corporate finance issues are an important, but not exclusive explanation for cross-listings. In literature several non-financial motivations are named, for example marketing-, political-, employee relations and global strategy motivations.

30 See Lins, Strickland and Zenner (2000).
3.1.2.1 Marketing Motivations

An important aspect of a foreign listing is the increase in publicity and name recognition that accompanies the listing. Due to this increased corporate visibility potential investors become more interested in the firm and its products, which may lead to a greater market demand for its products as well as its shares. Several Multinationals, e.g. Hewlett Packard and Sony cited this visibility gains as a major motive for listing abroad.32 Saudagaran (1988) suggests that this "free" advertising may be particularly advantageous to producers of industrial and consumer goods, which may save part of the enormous sums necessary to achieve the same marketing effect. Therefore, the importance of this factor to individual firms is likely to be directly related to the firm's proportion of foreign sales to domestic sales.

Public relations efforts also may improve due to the foreign listing. A company seeking a foreign listing must meet with various capital market professionals, like regulation authorities, lawyers, journalists, financial analysts and bankers, distribute a prospectus and advertise in the local press. This improves the relationship to the national financial community and boosts public relation work.33

Mittoo (1992) notes that cross-listing on a larger exchange with stringent requirements may also serve as a signal by the management to the market about the future prospects of the firm. The foreign listing can give the impression that the firm is a major player in international business and listing on a larger and more prestigious stock exchange may enhance the prestige and image of the company. A study by Choi and Stonehill (1982)34 lists the enhancement of corporate prestige on an international level as the most common response of Japanese and Korean companies considering a listing in the U.S.

3.1.2.2 Political Motivations

A foreign listing may also result from political considerations. In some countries, nationalistic economic policies require that at least a certain part of the firm ownership is in the hand of locals. Joint ventures are one way to achieve that, but may involve sharing the technology with local partners. Here, a cross-listing of the firm's shares on the stock exchange of the host country provides a means to meet the local ownership requirement without losing control over technology. In addition, multinational corporations may be confronted with hostile nationalistic sentiments in the host country. Acquisition of stock in the company by local investors may remove at least some of this potential animosity. Licht (2000) quotes Japanese multinationals faced with political hostility in the U.S. or Europe as examples. For these firms, a listing on the NYSE or in London might be a viable option for reducing negative attitudes towards them. He also supposes that the 1993 listing of Daimler-Benz on the NYSE may have been motivated by such considerations as well.

3.1.2.3 Employee Motivation

Employee stock-ownership plans are popular tools used by firms to bring in line their own interests with those of their employees. The expectation is that employees with ownership interests in the firm are better motivated and more sensitive to the problems and economic performance of the firm. Stock options and stock purchase programs may also be offered to the employees in the foreign operations of the firms. For the success of such programs, an uncomplicated and cost efficient trading of the employers' stocks is essential. Listing the stock on the host countries' stock exchange in addition to the home exchange is one way to ensure this.

Another employee related aspect is that a firm's listing on a foreign market signifies a long-term commitment to a market. This may be important for attracting top management and quality employees to such firms.37

3.1.2.4 Global Strategy Motivations
Licht (2000) criticizes existing studies investigating the motivations for foreign listings for failing in identifying a "broader, more fundamental impetus", which he termed "global strategy motivation". General Motors (GM) and Daimler-Benz are quoted as examples. GM operates worldwide through wholly owned subsidiaries. To facilitate the participation of foreign nationals in the profits made in GM's host countries, the international listing of its stock was enforced (GM is listed in several stock exchanges around the world and its shareholders represent over 80 countries). The goal is, to enable investors in host countries to buy the security of the parent company on the same basis as U.S. residents can.

In 1993, Daimler-Benz has been the first German firm listing on the NYSE. One of the main motivations for the management to list in the U.S. was the strong discrepancy between Daimler-Benz's international operating activity and its shareholder structure (40% percent of sales were generated outside the European Union but only 7.2 percent of its shares were trading outside of Germany). Therefore, as a part of its globalization strategy, management advocated a more even distribution of its shares among Europe, North America and Japan.38 Licht (2000) notes that this statement could also be interpreted in the context of the broader-shareholder base theory. But he argues that the relatively small benefits associated with an increase in the shareholder base cannot possibly compare with the indirect cost of the listing.39 His conclusion is, that in this case, broader strategic considerations were overriding the decision.

37 See Licht (2000).
38 See Radebaugh et al. (1995).
39 After several years of negotiations with the SEC, Daimler-Benz finally capitulated to the SEC's requirements that disclosure statements be reconciled with U.S. disclosure rules. This capitulation entailed reporting of huge losses and caused great embarrassment for the company.
3.2 Investor Motivations

From the investor's point of view, foreign listings provide several benefits, which are naturally closely related to the corporate motivations discussed above. One of the most important ones is international portfolio diversification. Listings of firms on foreign stock exchanges allows investors in that country, at least to a certain degree, to internationally diversify their portfolios, that is lowering the risk, without investing abroad. Another benefit for investors lies in segmentations gains. As listing abroad removes part of the barriers to international capital flows (e.g. differences in language auditing and reporting practices; currency risk, time zone differences etc.) the acquisition and trading of foreign companies' stock by domestic investors is facilitated. Local listings may also eliminate certain taxes levied on trade in non-listed foreign securities. In particular for small investors, these reductions in transaction costs could be essential for trading in foreign securities.

3.3 Managerial Motivations

Licht (2000) deals with the role of the firm's management in the foreign listing process and the regulatory concerns that arise with that question. A detailed explanation of this topic would be beyond the scope of this work, but one example of the potential conflicts of interests arising from the agency problem is provided to demonstrate the impact of the firm's management interests on the foreign listing decision.

From the managers viewpoint the degree of disclosure required on the foreign listing location is one of the main sources of concern. Differences in disclosure requirements relate also to executive compensation. In the U.S. for example, domestic issuers are required to disclose salaries and other benefits of the five top-earning executives on an individual basis. Most other countries allow disclosure only on an aggregated basis. The more stringent U.S. requirements

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40 See Licht (2000).
41 See Saudagarman (1988).
may therefore discourage foreign companies from listing in the United States. From the companies' point of view, such disclosure requirements should make no difference since the expense is already reflected in its financial statements. But for the highest earning managers (who are normally responsible for the decision to list abroad) it is likely to make a difference. The disclosure of their earnings on a detailed basis may draw public attention to their compensation schemes and create pressure to align them with business results. Licht (2000) assumes, that at least in some cases, such managerial behavior may have prevented their companies from realizing the supposed benefits of a U.S. listing.

3.4 Empirical Evidence

Some recent cases of European firms seeking a cross-listing overseas generally support the motives for foreign listings outlined above. For example, in June 2000, BASF has been the first German chemical firm to list its shares as ADRs on the New York Stock Exchange, the Swiss firm Ciba followed this example in August. Two other firms from the same industry, Schering and Bayer, also announced a U.S. cross-listing. BASF stated that it plans to buy several firms in the U.S. and thus established its ADRs as acquisition currency for stock-swap mergers. Another main motivation for the cross-listing was to attract top-management to the firm through stock option plans. To increase the investor base in the States from now 8.5 percent to 15 percent in the next years was an additional motive for BASF. The listing on the NYSE was moreover a strategic move for the firm. A few weeks ago it acquired the herbicide business of the U.S. firm American Home Products and considers now to move the whole operative administration of this branch to the U.S., which is the most important single market for the firm. BASF wants further to participate the employees in the firm through employee stock option plans, like it is usual today in a lot of
U.S. firms. Bayer, Ciba and Schering named in general the same motives for their cross-listings.\(^{42}\)

Another German industry giant, Siemens, recently announced a listing of its internet subsidiary Unisphere Solutions Inc. on NASDAQ. The establishing of an acquisition currency for further expansion in the U.S. and the binding of top qualified employees to the firm via stock option plans were once more the main motivations named for the overseas listing.\(^{43}\)

The consumer products multinational Unilever has applied for a listing of its subsidiary holding company Unilever China, which comprises 14 joint-ventures, on the Shanghai Stock Exchange in China. The main motives named by the firm are: getting access to new important sources of financing in China, strengthening the brand name of their products on this market, the introduction of an employee stock options plan and finally the access to the common Chinese investors.\(^{44}\)

These examples demonstrated the motives of some recent cross-listing cases. Now a more detailed picture of the empirical evidence is provided by a summary of some important empirical studies concerning the hypotheses for cross-listing presented above.

### 3.4.1 Segmentation Hypothesis

A lot of empirical work has been done with respect to the market segmentation/integration theory. Jorion and Schwarz (1986) for example test the segmentation hypothesis based on stock price reactions subsequent to the cross-listing of Canadian firms listing in the U.S. Alexander et al. (1988) and Miller (1999) did the same for a sample of international firms listing on the three major U.S. exchanges. Howe and Madura (1990) base their test on

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changes in the risk characteristics of cross-listed stocks. Finally, Foerster and Karolyi (1999) use both, stock price and risk changes for their study.

3.4.1.1 Canadian Evidence - Jorion/Schwartz (1986)
Jorion and Schwartz (1986) analyze the market integration and segmentation hypothesis for the Canadian stock market relative to a global North American market. In their paper, integration is defined as follows:

"...a situation where investors earn the same risk-adjusted expected return on similar financial instruments in different national markets."

Their sample for the period from 1968 to 1982 includes 749 Canadian common stocks that were traded on the Toronto Stock Exchange and 98 interlisted Canadian securities traded on the NYSE or AMEX. They tested an integration and a segmentation hypothesis using regression analysis on excess returns. The definition of excess returns is based on the international CAPM model. The empirical results show that the joint hypothesis of integration of the North American equity market combined with the CAPM can be rejected, indicating evidence of segmentation in the pricing of Canadian stocks.

They further separated the sample of Canadian firms into firms interlisted on U.S. and Canadian markets and firms that are not, called purely "domestic" firms. This procedure is used to identify the source of segmentation. The indirect barrier argument is much weaker for the interlisted stocks because from the viewpoint of U.S. investors they are subject to the same listing requirements and are as easy to trade as U.S. stocks. An integration of interlisted stocks and a segmentation of domestic stocks would therefore lead to the conclusion that all the segmentation stems from indirect barriers. If both, domestic and interlisted stocks were segmented, this would be an indicator that the effective barriers are of a legal type.

Here too, integration is rejected in favor of segmentation for domestic as well as for interlisted firms. This indicates that a major source of segmentation can be traced to legal barriers linked to the country of origin of listed securities.
3.4.1.2 U.S. Firms listing abroad - Howe and Madura (1990)
Howe and Madura (1990) use a different approach to study capital market segmentation by measuring the impact of international listings on risk. The idea is that if capital markets are segmented and if cross-listing is an effective way for reducing the degree of segmentation, then an international listing should have an impact on the stock's risk characteristics. They define a segmented market as:

"...having two salient characteristics. First, capital does not flow into or out of a perfectly segmented market. Second, an asset in a segmented market is priced in the context of that market. That is, the risk of an asset is measured relative to the systematic factor(s) present in that market."

The authors use several risk characteristics and related measures and compare their pre- and post-listing values. These are the domestic betas (measured in a single-index as well as in a two-index model), "foreign betas" (sensitivity of the stock return to the market index for the country in which the listing occurred), standard deviation of stock returns, the R-squared of the single-index model and the residual variance from the two-index model (as a proxy for information asymmetry). Their sample consists of international listings by U.S. firms in Germany, France, Japan and Switzerland in the period 1969-1984. Although their results show small changes in the risk-measures applied, none of them are statistically significant. The authors therefore conclude that markets are already reasonably well integrated or listing is an ineffective mechanism for reducing segmentation. An alternative interpretation of their findings is that the degree of segmentation is a function of the type and size of the firm. Firms listing abroad, are normally large\footnote{This view is consistent with recent empirical evidence, Pagano, Röell and Zechner (1999) for instance show that cross-listing firms are significantly larger than only domestically listed firms.} and well-established and might have already eliminated the indirect barriers to investment via direct foreign investment and/or mergers with foreign firms.\footnote{As suggested by Stapleton and Subrahmanyam (1977).} This might be an explanation why foreign listings have little or no effect on risk.
3.4.1.3 Foreign Firms listing in the U.S. - Alexander, Eun, Janakiramanan (1988)

Alexander, Eun, Janakiramanan (1988) test the capital market integration-segmentation hypothesis by observing the behavior of stock returns surrounding international listings. The hypothesis tested is that the international listing of a security should, conditional on a complete or "mild" segmentation of capital markets, lead to a reduction in expected returns. Their sample contains all foreign firms that became dually listed for the first time between 1969 and 1982 on either the NYSE, AMEX, or NASDAQ. To test for changes in expected returns, they apply the Cumulative Abnormal Return (CAR\(^{47}\)) technique. To verify if the "international listing effect" varies across host countries, the hypothesis is tested separately for Canadian and non-Canadian firms because the U.S. stock market covaries more highly with the Canadian stock market than with other foreign stock markets. Therefore, decline in expected returns is expected to be relatively small for Canadian firms compared to non-Canadian companies. Indeed, their results show a decline in expected returns for both, Canadian and non-Canadian firms, but the decline for Canadian firms was much smaller and statistically insignificant. In detail, the cumulative abnormal returns (CARs) for the non-Canadian sample, (Canadian sample) increase in the two years before listing by an annualized 17 (13) percent and fall by an annualized 37 (14) percent in the three years following the listing. The authors conclude, that this results could suggest that non-Canadian stock markets are more severely segmented from the U.S. market than is the Canadian stock market. An alternative explanation is that that the Canadian market underlies the same degree of segmentation with respect to the U.S. market as non-Canadian markets but has the relatively higher covariance with the U.S. market.

\(^{47}\) To calculate the CARs, a benchmark model, such as the market model, is used to generate the abnormal (or residual) returns for each stock. Next, for each day around the listing these returns are averaged across different stocks. The average residuals are then summed over particular time intervals around the listing date to obtain cumulative abnormal returns.
3.4.1.4 Foreign listings in the U.S. - Foerster and Karolyi (1999)

In their recent study, Foerster and Karolyi (1999) draw two predictions related to two non-U.S. firms listing in the United States. The first prediction is that abnormal returns around interlistings should be positive, the second one that this abnormal returns should vary across stocks by home market. Firms from countries with a higher degree of capital market segmentation (e.g., emerging market countries) are likely to experience larger abnormal returns than firms from developed markets, where segmentation is expected to be less severe. They perform several different tests. First the pre- and postlisting returns performance of a sample of 152 firms from 11 countries is evaluated. The average weekly excess returns, i.e. in excess of the risk-free rate (here the one month T-bill is used), for the periods one year before listing, the week around listing and one year after listing is computed. The results are a 0.38 percent (in local currency) per week increase in the pre-listing period, a 1.2 percent increase in the listing week and a average postlisting decline of -0.27 percent. While these results are in agreement with the findings of Alexander et al. (1988), they show in comparisons across different regions that the stock price reactions for Canadian firms are at least as dramatic as most of the others.

The second test is designed to calculate the expected returns around the interlisting date. They note that the standard event study methodology, where expected returns are derived from the standard CAPM, used for this task by former studies (e.g., Alexander et al. (1988)) is a limiting approach. Foerster and Karolyi (1999) therefore apply a modified two-factor International Asset Pricing Model (IAPM) that captures both domestic and global market risk to compute abnormal excess returns. The results show that in the year before listing the average beta on the local market excess return is 1.03 and that of the global market is much smaller (0.22) but statistically different from zero. In the postlisting period, the local market beta experiences a sharp and significant

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48 Domestic market risk is computed as the stocks beta relative to a local market index, global market risk as the beta value relative to the weekly excess return on the Datastream International World Index.
drop from 1.03 to 0.74 and the global market beta decreases from 0.22 to 0.12, but this is not statistically significant. However, the key result is that a cross-listing on the U.S. market leads to important changes in risk exposure. Local market risk exposure is reduced and exposure to global market risk does not change significantly.

The abnormal return pattern for interlisted stocks is robust even after adjusting for these statistically important risk changes around the listing. Furthermore, some important differences related to the home region of the firms are found. Finally, tests based on differences in region, exchange and capital raising differences are performed, where the latter provide surprising results. Capital-raising firms experience positive abnormal returns in the postlisting period whereas non-capital-raising firms experience negative abnormal returns. Foerster and Karolyi note that this contrast to the existing literature on IPO/SEO where negative post-issue abnormal returns are reported and suggest that global equity secondary offerings may differ from domestic equity offerings. Their findings on share price reactions around international listings are generally consistent with the market segmentation hypothesis.

3.4.1.5 Evidence from DR Programs - Miller (1999)
A recent study by Miller (1999) provides additional support for the market segmentation hypothesis as motivation for foreign listings. The price impact of international dual listings is examined, using a sample of 181 firms from 35 countries that initiated their first DR program in the U.S. over the period 1985-1995. In contrast to prior studies, he focuses on the date the dual listing is announced, (most studies take the listing day as reference point) and also examines the differences in stock price reaction across each type of DR program.

To examine the stock price reaction, the CAR method is used. He finds positive abnormal returns around the announcement period, this is consistent with the hypothesis that dual listing increases firm value. The abnormal returns around the listing period are also positive, which contrasts, the findings of Alexander et
al. (1988) and Foerster and Karolyi (1999) who found negative postlisting abnormal returns for DRs, but is consistent with the results of Jayaraman et al (1993)\(^{49}\) and Domowitz et al. (1998).\(^{50}\) To test for market segmentation, the DR exchange is used as a proxy for two specific indirect barriers, investor recognition and illiquidity\(^{51}\). Then the firms are grouped by the development of their economy (developed markets, free emerging markets and restricted emerging markets\(^{52}\)) to proxy for both indirect and direct (legal) barriers. The idea behind this method is that if capital markets are segmented by legal barriers, there should be a direct positive relationship between the abnormal returns and the degree of legal barriers in the firm's country of origin. The results found are consistent with the superior liquidity and investor recognition hypotheses. Firms listing on a major exchange (NYSE or NASDAQ) experienced the largest stock price response. Firms listing on PORTAL, where investor recognition and liquidity are low, experienced the smallest average abnormal returns. Test results on the geographic location appear to be inconsistent with the market segmentation hypothesis because the returns for firms located in restricted emerging markets (largest degree of legal barriers) are lower than those of firms from developed markets. Miller (1999) notes that a sample selection bias might be an explanation for that. Finally, multivariate regressions estimated, confirmed the prior findings that the DR location is an important determinant of abnormal returns. No evidence for a significant influence of direct barriers on abnormal returns is found. The author therefore

\(^{49}\) Jayaraman et al. (1993) reported a negative but statistically insignificant cumulative abnormal postlisting return of -0.93 percent.

\(^{50}\) It should be noted, that the results in this study vary considerably across the different types (series) of shares. The excess returns for all shares derive largely form the series (type B) open to foreign investors prior to cross-listing.

\(^{51}\) Miller (1999) explains the selection of the DR exchange as proxy for investor recognition and illiquidity with the findings of Kadlec and McConnel (1994), who found that the positive returns experienced by firms listing on the NYSE are positively related to a reduction in the bid/ask spreads and an increase in the number of shareholders.

\(^{52}\) The author lists Chile as an example for a restricted emerging market. Chile allows the repatriation of capital only after a one year holding period.
concludes that indirect barriers are the dominating factor in segmenting markets.

3.4.2 Investor Recognition Hypothesis
In addition to the study of Miller (1999) presented above, which also examines Merton's investor recognition hypothesis, two more papers are introduced in the following section. First, a joint test of investor recognition and illiquidity by Kadlec and McConnel (1994) is presented. In continuation, a study by Baker, Nofsinger and Weaver (1999), addressing changes in firm visibility subsequent to cross-listings, is discussed.

3.4.2.1 Evidence from OTC Upgrades - Kadlec and McConnell (1994)
In their study, Kadlec and McConnel (1994) investigated the impact of a NYSE listing on the share price and performed a joint test of Merton's (1987) investor recognition hypothesis and Amihud and Mendelson's (1986) superior liquidity hypothesis as explanations for the observed effects. The sample consists of 273 U.S. domiciled OTC traded firms upgrading NYSE listings between 1980 and 1989. The results show a cumulative average abnormal return of 25 percent in the year prior to the announcement of listing, significant and positive abnormal returns of 1.7 percent on average during the announcement week. The abnormal returns continue to be positive and statistically significant following the week of the announcement but end precisely at the end of listing. While this finding is consistent with prior studies, their observation that abnormal returns are not significantly negative over the first weeks of the postlisting period, is not. One divided by the change in the number of registered shareholders from the pre- to the postlisting period, multiplied with the level of firm-specific risk and the relative market value of the security, is used to proxy for Merton's investor recognition factor. They find that NYSE listings are accompanied with an average increase of 19 percent in the number of registered shareholders. 69 percent of the sample firms experience an increase in the number of institutional shareholders with an average increase of 27 percent.
Relative bid-ask spreads are used to control changes in liquidity. On average, a 7 percent reduction in relative spreads from before to after listing is observed. Changes in absolute spreads are also computed to verify that the observed changes in relative spreads are not due solely to changes in share price. The results show an average 5 percent reduction in absolute spreads.

The findings of positive stock price reactions accompanied by a reduction in bid-ask spreads and an increase in the investor base subsequent to the announcement of a NYSE listing are generally consistent with both, the investor recognition- and the superior liquidity- hypothesis. However, to obtain more direct evidence, cross-sectional regressions are conducted. The results support both hypotheses, investor recognition and superior liquidity lead to increasing share prices in the post listing announcement period.

3.4.2.2 Cross-Listing and Visibility - Baker, Nofsinger and Weaver (1999)

While various studies have found empirical support for Merton's investor recognition hypothesis by showing that the shareholder base increases after the cross-listing of the firm, empirical evidence about the cause of this observed increase is poor. A study by Baker, Nofsinger and Weaver (1999) fills this void by examining the mechanisms that increase investor recognition. Two sources of information are assumed to be related with investor recognition: reports of the firms in the media and analyst coverage. The authors refer to the extent to which analysts follow a firm's stock and the amount of a firm's news coverage as firm visibility. The study tests the hypothesis that non-domestic cross-listing is associated with increased firm visibility by examining visibility changes on the two stock exchanges with the largest number of foreign listings, the NYSE and the LSE. To measure changes in analyst coverage the difference in the number of analysts following the firm one year before and one year after the listing date is used. The change in the number of times a firm is cited in newspaper articles (Financial Times, Wall Street Journal and a home country local or regional newspaper) in the pre- and post-listing period is applied as measurement for media visibility. Listing costs on the NYSE are considerably
higher than on the LSE, therefore the hypothesis that increased listing costs are associated with greater visibility gains is also tested. Their study covers the period 1976 to 1996 and the sample includes 193 firms listing on the NYSE and 210 foreign listers on the LSE. The overall finding is that a foreign listing on either NYSE or the LSE is accompanied by a significant increase in firm visibility. Analyst following increases by 128 percent in the post listing period for firms listing on the NYSE and by 48 percent for LSE listers. NYSE listing is also associated with a significant increase in newspaper citations (32 percent increase in WSJ articles, 78 percent more FT citations and a 37 percent rise in home newspaper articles). For firms listing on the LSE, the average number of FT citations increased by 49 percent. The authors conclude that their findings support the hypothesis that foreign cross-listing increases firm visibility and hence investor recognition.

Comparisons in the visibility changes subsequent to listing on the NYSE or LSE show that the visibility changes are significantly larger for foreign firms listing on the NYSE than for non-domestic firms listing on the LSE. Baker et al. (1999) suggest that this may partially compensate for the higher listing fees on the NYSE. Additional tests for the sub-sample of firms issuing new equity showed no significant differences in visibility changes compared to firms without an equity offering. Finally, the authors examined also the possibility that the increase in visibility might be due do other factors than the foreign listing. Securities analysts, for example, tend to initiate recommendations on firms that have strong fundamentals and discontinue to cover firms with poor prospects. Other factors that might influence analyst coverage and newspaper citations include the firm's home country capital market type (emerging versus developed market), the firm's home country geographical region and the popularity of a firm's industry or country. The evidence of analyst coverage is robust even after controlling these factors. But the tests for media visibility

showed that at least part of the increase in newspaper citations is due to industry and country factors.

3.4.3 Superior Liquidity Hypothesis

The papers dealing with the superior liquidity hypothesis presented here include the study by Noronha et al. (1996), which investigates the impact on liquidity of U.S. firms listing abroad, and the second part of Foerster and Karolyi's (1999) study.

3.4.3.1 U.S. Firms listing Abroad- Noronha, Sarin and Saudagar (1996)

The study of Noronha, Sarin and Saudagar (1996) examines the impact on liquidity of 126 AMEX/NYSE listed stocks that were subsequently listed on the London (LSE) or the Tokyo stock exchanges (TSE) between 1983 and 1989. It is expected that cross-listing leads to additional competition for specialists on the NYSE/AMEX, reducing the monopoly rents they can earn and in consequence improves the quotes, i.e. narrows the stock's bid-ask spreads. But the test results indicate a different behavior. No change in the bid-ask spreads is observed for either the entire sample or the LSE sub-sample, on the contrary, the spreads for the TSE listings increase significantly in the post-listing period. This is in contrast to the hypothesis that increased competition reduces the bid-ask spreads. One possible explanation for the lack in improvement of the spread of the quote could be an increase in informed trading (investors trading with superior information). Indeed, the results obtained show that the level of informed trading increases for both the complete sample and the LSE sample.

The depth of quotes (this is the average number of shares a market maker is willing to purchase at the quoted bid and ask prices) is the second measure of market liquidity used in the tests of Noronha et al. (1996). Here the results show an increase in the depth of quotes of around 10 percent for the entire sample. But this increase disappears once for changes in price, volume and return variance is accounted.
3.4.3.2 Foreign Firms listing in the U.S. - Foerster and Karolyi (1999)

In their study Foerster and Karolyi (1999) further test Merton's (1987) investor recognition hypothesis and Amihud and Mendelson liquidity theory as two alternative explanations for the abnormal return patterns around global cross-listings.

To test the increase in the shareholder base (their sample firms experience an average increase in their shareholder base of 28.8 percent), the same proxy for the shadow cost of incomplete information and cross-sectional regressions as in Kadlec and McConnell (1994) are used.

The regression results show that the abnormal returns in the pre-, post- and listing period are not significantly related to the firm's size. In all periods a negative relationship between the abnormal returns and Merton's market incompleteness factor exists, which supports the Merton hypothesis and is consistent with the findings of Kadlec and McConnell (1994).

Due to lack of data availability (no data on bid-ask spreads in home markets were available for their sample firms), only an indirect test of the liquidity hypothesis is provided by allowing the coefficient on the Merton incompleteness factor to interact with a dummy variable for the NYSE, AMEX, and NASDAQ. This stock exchange related coefficient is only significant in the listing period, where the AMEX and NASDAQ coefficients are negative and the NYSE one is positive. If the NYSE is considered as more liquid than the other two, then these results are inconsistent with the Amihud and Mendelson (1986) hypothesis of superior liquidity. But Foerster and Karolyi (1999) note that these results should be interpreted with caution due to the indirect construction of the test.

3.4.4 Other financial Motivations

The importance of the acquisition currency motive has been demonstrated with the actual examples at the beginning of this section. Empirical evidence on the second non-financial motive treated in this work, the enhancing access to external capital motive, is presented in continuation.
3.4.4.1 Test of the Access to External Capital Motive - Lins et al. (2000)

Lins, Strickland and Zenner (2000) study the "enhancing access to external capital" motive for foreign listing by examining whether a U.S. listing by a non-U.S. firm reduces the firm's dependence on internally generated cash flows and enhances access to external capital markets. Three methods are used to test the hypothesis that non-U.S. firms list in the U.S. to relax capital constraints. Firstly, the investment to cash flow sensitivity of a sample of firms issuing ADRs on the NYSE or NASDAQ over the 1986-1996 period is examined. Secondly, the annual reports, 10K and 20F filings of these ADR listing firms are analyzed for firm-issued statements on the importance of external capital market access to the internal growth and investment objectives. Finally, the frequency and magnitude of the actual access (equity and debt issues) of the firms in the pre- and post-listing period are examined.

Their results show a significant decline in the investment to cash flow sensitivity in the post-listing period for emerging market firms listing in the U.S. For the developed market firms, no such decline in the investment to cash flow sensitivity is found but the authors note that this does not imply that these firms do not benefit from a U.S. listing since both types of firms may benefit from other factors, like increased visibility, the opportunity to establish their stock as an acquisition currency for takeovers or the possibility to establish stock ownership plans for their employees. The authors explain the argument, that a decline in the investment to cash flow sensitivity is almost natural since a ADR listing is often associated with an equity issue, with the fact that most of the emerging market firms raise money while many of the developed market firms do not. Thus if the decrease in the investment to cash flow sensitivity is solely due to a raising of money with the ADR listing, developed market firms should experience the decrease too. They conclude that the decline in the investment to cash flow sensitivity is not attributable to the fact that firms actually raise money with the ADR listing. The examination of the annual reports and other documents issued by the firms showed that many of the firms explicitly mentioned the need for external capital to finance additional capital
expenditures, whereas emerging market firms expressed this need more frequently. The last series of tests indicated an increase in the number and amounts of debt and equity issued in the post-listing period for both, emerging and developed market firms. The increase is more pronounced for emerging market firms.

### 3.4.5 Non-financial Reasons

The two important studies presented in this section emphasize the role of non-financial factors in the foreign listing decision. In a pioneering study Saudagaran (1988) tests various factors likely to influence the cross-listing decision. Mittoo's (1992) study examines this question directly by evaluating the benefits and costs of foreign listings as perceived by the management involved in the cross-listing process.

#### 3.4.5.1 Evidence from International Cross-Listings - Saudagaran (1988)

Saudagaran (1988) was one of the first who tried to identify the factors influencing the foreign listing decision. His sample contains 481 firms from ten countries\(^{54}\), 223 of them listed on a foreign exchange\(^{55}\) and 258 did not. The data cut-off date was 1981. The author tested the following four hypotheses: (1) firms that are relatively large by domestic standards are most likely to list on a foreign exchange; (2) firms with greater dependence on foreign markets (higher percentage of foreign sales) are most likely to list abroad; (3) firms with relatively high proportions of foreign assets are most likely to be foreign stock exchange listers; (4) firms with a relatively large number of employees abroad are most likely to list on foreign stock exchanges.

The test results lend support to the marketing- (number 2) and size-hypothesis (number one). The relative size on the firm in its domestic capital market and its share of foreign sales have a significant influence on its decision to list

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54 The sample firms studied were domiciled in the following countries: USA, UK, Netherlands, Canada, France, Japan, Germany and Switzerland.

abroad. Larger firms (by domestic standards) and firms with greater dependence on foreign sales are more likely to cross-list.

The remaining two hypotheses were not supported by the data. There is no evidence that a significant relationship between the proportion of foreign assets or the ratio of foreign employment and the foreign listing exists. But the author notes, that this may be due to the measurement method employed and the lack of data availability\textsuperscript{56}.

3.4.5.2 Canadian Evidence - Mittoo (1992)

Mittoo (1992) circumvents the problem of data availability that limited Saudagaran's (1988) study by collecting information directly from firms. A mail questionnaire was sent out in 1991 to 190 Canadian companies that were listed at this time on stock exchanges in the U.S. and U.K. to study the managerial perception of the costs and benefits of foreign listing. The null hypothesis tested was that the perceived net benefits of foreign listing are zero. To explain the cross-sectional variation in the perceived net benefits, additional hypotheses were constructed. It was assumed that firms with at least one of the following characteristics are likely to perceive higher net benefits from foreign listing: higher percentage of securities issued abroad, higher percentage of stock trading on the foreign exchange, larger degree of foreign operations, larger size. It was also tested, if the characteristics of the stock exchange influence the perceived net benefits. The question was, if listing on NASDAQ, which has much lower listing requirements, registration and listing fees relative to the organized exchanges in the U.S., leads to different perceived net benefits than listing on a larger exchange, such as NYSE or LSE, where the benefits of increased image and prestige may be greater. The null hypothesis assumed was that no such differences exist. 78 firms responded to the questionnaire: the main benefits of foreign listing perceived by the management were: Access to foreign capital markets/ increased ability to raise equity (38.7 percent), increase of

\textsuperscript{56} Many factors that are important in the motivation to list abroad do not lend themselves to convenient measurement or data relating to these factors is not publicly available.
shareholder base (32.2 percent), increased liquidity/depth of the trade/large stock floats/trade on a larger market (27.5 percent), to increase interest/visibility/exposure/name recognition of the company/public relations (27 percent), to appeal to institutional/foreign investors (23.2 percent), increased disclosure/credibility (9.6 percent), to enhance the prestige/image of the company (8.1 percent), to increase the product identification/marketing efforts in the foreign markets (8.1 percent). These results are generally in line with the theoretical motivations. Interestingly despite the fact that 72.5 percent of the respondents have operating facilities and 87.5 percent own subsidiaries abroad only very few respondents consider marketing advantages as a significant benefit. More than half of the respondents (60.1 percent) listed SEC reporting/compliance requirements as the major perceived costs. The author notes that this is also an interesting point, because the disclosure requirements in the U.S. and Canada are very similar. The other perceived costs were: legal/accounting/investment banking fees (44.2 percent), listing fees (31.7 percent), maintenance of an investor relations program (16.4 percent) and staff time involved/multi-jurisdictional requirements/other reasons (15.4 percent).

Tests on the perceived net benefits indicated that the perceived benefits of foreign listing outweigh the costs, but the difference is only marginal. Finally, tests of hypotheses pertaining the relationship between perceived net benefits and firm specific factors were performed. A positive relationship between the percentage of equity issued in the foreign capital markets, the percentage of a firm's stock trading on the foreign exchanges and the perceived net benefits was found. The degree of foreign activity hypothesis is not supported by the results. The tests showed a negative relationship between the degree of foreign activity and perceived net benefits. There is also no evidence for any association between the size of the firm or the listing location (NASDAQ versus centralized exchange) and the perceived net benefits. Probably one of the most interesting findings of these tests may be that the managerial perceptions of positive benefits were strongly linked to the levels of trading volume in the firm's stock on foreign exchanges.
4 Factors influencing the Foreign Listing Decision

The last chapter demonstrated that a foreign listing may yield several financial and non-financial benefits for firms listing abroad. Now two questions arise. Firstly, if the potential benefits for cross-listing firms are that striking, what deters firms from listing abroad? Secondly, if a firm decides to list abroad, which factors influence the firm's decision where to list? The significant costs associated with a cross-listing may affect a firm in both aspects, first in the decision why do list abroad and then in the question of the appropriate listing location, because listing costs differ significantly across stock exchanges.

Besides the costs of the cross-listing, several other factors may influence a firm's foreign listing location decision. These factors range from legal variables, such as the protection of minority shareholder rights, over company related factors to the geographic and cultural characteristics of the foreign stock exchange location.

The costs of listing on a foreign exchange can be classified in financial and non-financial ones. The first include accounting, legal, printing and registration fees associated with the first time registration with the securities regulation authority. In the case of a U.S. listing for instance, these costs can be quite substantial, a first time registration with the SEC could typically cost $400,000-$1,000,000. The initial listing costs on the stock exchange, for example on the NYSE are around $50,000, with a modest annual fee thereafter.

Non-financial costs of foreign listings pertain to providing information to the new financial community. This additional disclosure that accompanies the listing includes both, the required financial information as well as voluntary disclosure expected by market participants. In addition to the disclosure costs there may also be perceived competitive disadvantage costs. However,

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57 See Radebaugh et al. (1995).
additional disclosure requirements may also be beneficial for the firm, if this improves its position in the race for new capital or lowers its cost of capital.\textsuperscript{59}

4.1 Financial Disclosure Levels\textsuperscript{60}

Accounting and regulatory disclosure requirements are among the most frequently cited considerations in exchange listing decisions.\textsuperscript{61} In a study by Mittoo (1992), investigating the managerial perceptions of the benefits and costs of foreign listings, 60.1 percent of the respondents named SEC reporting and compliance requirements as the major costs of foreign listings.

Disclosure standards are a major topic for accounting regulators and policy makers around the world. The decision of appropriate standards is influenced by the need to protect domestic investors from misleading financial disclosures on the one hand, and providing these investors reasonable access to foreign investment opportunities, on the other.\textsuperscript{62} The competitiveness of domestic stock exchanges in attracting foreign listings is also crucially related to the amount of disclosure required by the regulation authorities. The often cited debate between the NYSE, calling for a relaxation of reporting requirements for foreign listers, and the SEC, concerned about investor protection, is one example of the scope of this difficult problematic.\textsuperscript{63} To demonstrate how the differences in accounting and auditing practices, financial reporting and registration requirements, regulatory and legal restrictions can create substantial costs for firms choosing among alternative foreign stock exchange locations, some examples are provided.

\textsuperscript{59} See Radebaugh et al. (1995).
\textsuperscript{60} Following Saudagaran and Biddle (1992), the term financial disclosure level is interpreted broadly to include mandated accounting, listing, and regulatory requirements, and voluntary disclosures dictated by the expectations of market participants.
\textsuperscript{62} See Saudagaran and Biddle (1992).
\textsuperscript{63} See Saudagaran and Biddle (1995).
4.1.1 Disclosure and Regulatory Costs of Foreign Listing

One source of potential costs for firms intending to list its shares abroad can arise from converting its financial reporting system to the reporting standards required by the local regulatory authority. The required degree of adaptation of financial reports differs substantially across the different markets. Firms willing to list their securities in the U.S. must provide financial information substantially similar to that provided by domestic firms in accordance with U.S. generally accepted accounting principles (GAAP). Other exchanges, e.g. the Amsterdam Exchange accept "home country" financial statements with very few modifications.

Differences in auditing practices between the host and home country also can cause substantial costs for the firms. U.S. auditing standards, for example, require the auditors to observe physical inventories and obtain direct confirmation of receivables. If the auditing standards in the firm's home country do not require these steps, the firm has to bear these additional costs.

The number of financial reports required per year by the foreign stock exchanges or regulatory authorities is another potential cost factor for firms. For example if a firm has to provide financial statements at home on a semi-annual basis but the foreign exchange requires quarterly reporting, additional costs can arise.

If the management has to disclose business information that would not have been required in other markets, significant additional costs can occur. An often mentioned example is segment reporting (i.e., segmentation of financial information of a business by industry and/or geographic area in which the entity operates). While U.S. regulations require this detailed reporting of financial information (FASB statement No. 14), segment reporting it is not required under Japanese accounting principles. Japanese firms therefore complain that

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64 See Saudagaran and Biddle (1995).
65 This can be quite costly. Saudagaran and Biddle (1992) quote an investment banker stating that "the cost of converting to U.S., accounting standards is at least $1 million for a major Japanese of British company".
the disclosure of this additional information put them at a competitive disadvantage relative to other Japanese firms not listing in the U.S.⁶⁶

Lengthy registration procedures due to extensive pre-registration requirements of some markets can also cause significant additional costs and may deter foreign firms from listing on those stock exchanges.

⁴.¹.² The Regulatory Response⁶⁷

Growing pressure for less stringent reporting requirements led regulatory authorities to relax several rules over the last decades. For instance, critics of the SEC argued, that the application of almost the same strict registration and reporting rules, required for domestic firms, on foreign listers, makes U.S. exchanges less attractive and deters many firms from listing in the U.S. The Securities and Exchange Commission responded to this growing critique and adopted the Integrated Disclosure System (IDS) in 1982. The goal of the IDS was to reduce the paperwork associated with the registration and to modify other burdensome disclosure requirements to make U.S. listings more attractive to foreign listers. Part of the IDS is a facilitation of the SEC registrations. Firms can now use their domestic-, as opposed to of U.S.- GAAP, for preparing SEC filings (Form 20-F) when their domestic GAAP is part of a comprehensive set of standards. If there are any material differences between the amounts determined under their domestic GAAP and those that would have resulted under SEC Regulation S-X and U.S. GAAP, they have to be reconciled.

Segment reporting rules also have been relaxed under the IDS, foreign firms using their domestic GAAP are not required to disclose assets, revenues, and profits by line of business and geographic area if they do not have to do so under their domestic GAAP. But if a segments contribution to total profits is


materially different from its share of revenues, a narrative explanation must be provided\(^68\).

The IDS had an effect on the timeliness requirements too. U.S. domiciled firms must generally provide financial statements not older than 135 days at the date of filing for registration. The IDS extended this period for foreign firms, which can now use financial statements up to six months old. However, if the foreign firm discloses its financial statements in compliance with foreign law, more recent figures are required.

The IDS also made some concessions to foreign listers with respect to management compensation. Foreign firms are now allowed to disclose top management remuneration on an aggregate basis. Disclosure of management compensation on an individual basis is only required if the firm routinely discloses this data to the shareholder or the public in its home country.

No concessions were made with respect to auditing requirements. The SEC continues to require foreign firms listing in the U.S. to obtain audits in accordance with the U.S. generally accepted auditing standards.

These examples show, that IDS made major concessions to non U.S. issuers. The SEC argues that it can not relax its requirements any further, without running risk that a two-tiered reporting system could put U.S. firms at a competitive disadvantage.\(^69\) However, under continuing pressure from U.S. investors and stock exchanges, the SEC loosened reporting requirements for private placements under its Rule 144A. Rule 144A removed the two years holding period for privately placed securities traders had to meet in order to avoid SEC registration of the securities. However, trading of rule 144A DRs is restricted to Qualified Institutional Buyers. This created a new market for private-placements allowing foreign issuers to raise capital in the U.S. without meeting the reporting and disclosure requirements of a U.S. public offering.\(^70\)

\(^{68}\) Saudagaran and Biddle (1992) note, that materiality is not defined in this context.
\(^{69}\) See Saudagaran and Biddle (1995).
\(^{70}\) See Saudagaran and Biddle (1992).
4.2 Protection of Minority Shareholder Interests

Reese and Weisbach (2000) developed a hypothesis which states that non U.S. firms cross-list in the U.S. to increase the protection of their minority shareholders. But the question is, why should the management of the firm be interested in a better protection of minority shareholders' interests? Reese and Weisbach (2000) provide the following explanation for their hypothesis. They refer to recent empirical studies on international contracting differences which document that in countries with poor legal protection of minority claimholders it is considerably more difficult for a firm to raise external capital than for a similar firm in a country that protects minority shareholder interests as well. Firms wishing to raise external capital can bond themselves to protect the interests of their minority shareholders. Reese and Weisbach (2000) suggest, that one way for a firm to achieve this bonding is to list its shares on an organized exchange in the U.S., where the protection of minority shareholder rights is as good as anywhere in the world. A firm listing in the U.S. has to register with the SEC, reconcile its financial statements with U.S. GAAP, meet the listing requirements of the stock exchange and is at least to some extent subject to U.S. securities laws. Firms can therefore bond themselves on a voluntary basis to at least some shareholders' protection under U.S. securities law. The OTC market and PORTAL for Rule 144A ADRs provide an alternative for firms wishing to enter the U.S. capital market but are not willing to bond themselves to investor protection laws.

4.3 Company Characteristics

Some stock exchanges may be in a better position to provide the appropriate listing environment for a specific type of firms, than other. For instance, larger, more mature firms are likely to have different needs with respect to their foreign listing location than young, fast growing, dynamic firms. The firms

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characteristic factors may also be strongly related to other, the firm's foreign listing location decision influencing, factors. For instance, when company characteristics are compared on the basis of the high tech orientation of the firm, the firm's characteristic factor is strongly related to factors like the availability of skilled industry analysts on the foreign listing location or the listing requirements associated with a given exchange.

4.4 Other Factors influencing the Foreign Listing Decision

Besides the factors mentioned above, several other factors may influence the decision to list on a given stock exchange abroad, e.g. geographic factors, the firm's industry and product market or tax considerations.

4.4.1 Geographic proximity

One important factor is geographic proximity between the firm's domicile and the foreign listing location. Although geographic proximity is in most cases identical with cultural proximity, the latter one also plays an important role. The U.K., for example, is from the geographical point of view located in Europe. It's similarities with the U.S. and Canada in language, culture, business practices and legal tradition may position it, at least in the business world, closer to those countries than to continental Europe. A SEC release on multinational securities offering grouped the U.S., Canada and the U.K. together when discussing harmonization, reciprocity arrangements, and listing requirements. South African firms might be another example for the impact of cultural proximity on the foreign listing decision of firms. One would expect that South African firms are more likely to list in the culturally closer U.K. than in geographically closer African countries. Some authors therefore define the term geographic proximity broadly to proxy also for similarities in language, culture, product markets, factor markets and familiarity with business

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practices\textsuperscript{74}. Others view cultural proximity as a separate factor, different from geographic classifications. Reese and Weisbach (2000) for example classify their sample countries according to their legal tradition.

\textbf{4.4.2 The Firm's Product Markets}

The firm's product market location may also affect a firm when deciding to list it's shares internationally. A foreign listing may increase the demand for the firm's products. Pagano, Röell and Zechner (1999) call this the product market spillover hypothesis.

\textbf{4.4.3 The Firm's Industry}

An important role in the foreign listing decision may play the firm's industry. Firms might choose a certain stock exchange due to location-specific characteristics of the host country, historical links, or a "follow-the-leader" effect\textsuperscript{75}. The availability of industry experts, e.g. security analysts with special knowledge of the industry might also be a reason for a firm, especially from high-tech sectors, to list on a given exchange\textsuperscript{76}.

\textbf{4.4.4 Tax concerns}

Sarkissian and Schill (2000) mention that some countries may successfully attract a great number of cross-listing firms by providing an attractive trading environment for both, investors and firms. Firms benefit from the advantageous tax regime, which allows foreign listed firms to largely avoid tax burdens, that these countries have with respect to company taxation. In addition to the tax concessions, these so called "tax haven" countries generally maintain very limited restrictions on asset ownership, capital investment, profit repatriation, and listing requirements. Investors are attracted to tax havens by the absence or low capital gains taxes on investments.

\textsuperscript{74} See Saudagaran and Biddle (1995).
\textsuperscript{75} See Saudagaran and Biddle (1995).
\textsuperscript{76} See Pagano, Röell and Zechner (1999).
4.5 Empirical Evidence

Now some empirical evidence on the question of which factors might influence a firm in its foreign listing location decision, is presented. A lot of work has been done in the field of the impact of disclosure requirements, but recently some important research on the geographical pattern of cross-listings has been done as well.

4.5.1 Disclosure Level Motive

As the examples above show, firms are confronted with a wide array of differences in financial disclosure requirements when they seek to list their shares on a stock exchange outside their home country. The main question arising from this topic is, whether the additional cost associated with those stringent legal and regulatory environments deter potential foreign listers from listing abroad. Several empirical studies addressed this question, the main results are presented below.

4.5.1.1 Canadian Firms listing Abroad - Mittoo (1992)

The findings of Mittoo (1992) provide a good starting point to the empirical results on this topic. The author surveyed Canadian firms listing in the U.S. and U.K. and finds that, while 41.7 of the respondents perceived the benefits to exceed the costs, more than 61 percent named the SEC reporting and compliance requirements as the greatest cost of listing abroad. These findings are generally confirmed by studies of Baker (1992) and Fanto and Karmel (1997).77

4.5.1.2 A Direct Test of Disclosure Levels - Saudagaran and Biddle (1992)

A study by Saudagaran and Biddle (1992) provides a direct test of the relationship between financial disclosure levels and foreign stock exchange

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listings. They suggested an inverse relation between the probability that a firm will list on a foreign exchange and the disclosure level of that exchange. Specifically they tested the following hypothesis (H1): The probability that a firm will list on a given foreign stock exchange is inversely related to the exchange's disclosure level, *ceteris paribus*. While this hypothesis implies that this inverse relation operates throughout the whole range of possible stock exchange choices, it is more likely that the impact of disclosure requirements on the listing decision is more severe for firms intending to list on an exchange with more stringent requirements than their current listing location. This leads to another related hypothesis (H2): The probability that a firm will list on a given foreign stock exchange is inversely related (unrelated) to the exchange's disclosure level when the exchange's disclosure level is higher (lower) than the firm's current level, *ceteris paribus*. Thus, a firm's listing location choice is expected to be independent of disclosure levels if the current level of the firm is higher than the required level of disclosure on the foreign stock exchange.

The sample comprises a number of internationally traded firms that had at least one foreign listing on one of nine major stock exchanges (NYSE, AMEX, and the exchanges of Toronto, London, Amsterdam, Paris, Tokyo, Frankfurt and Zurich) at year-end 1981 or at year-end 1987. To conduct the test related to disclosure levels, first the amount of disclosure requirements to be examined has to be defined and then a measure for differences in the levels has to be found. Saudagaran and Biddle (1995) used a broad interpretation of disclosure levels and included both voluntary and mandated disclosures dictated by accounting, listing, and regulatory requirements. Voluntary disclosures were included because the authors argued that foreign firms might disclose information on a voluntary basis even if they are exempted by the regulations for foreign listers, simply to satisfy the expectations of the market participants. One of the main challenges of such tests lies in the ranking of disclosure levels

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78 To be included in the final sample, the firm had to be domiciled in one of the eight countries where the examined stock exchanges are located. The final 1981 (1987) sample consisted of 207 (302) firms with 475 (690) foreign listings.
prevailing in the different countries. One way to measure differences in disclosure levels is to rank the comprehensiveness of financial disclosures based on inspections of published financial statements. The authors argued that this method may not reflect fully a manager's perception of the accounting, regulatory, and other related costs of listings in a given foreign country. Thus a survey was conducted of 200 individuals (managers, investment bankers, public accountants, stock exchange officials, attorneys and academics) actively involved in the foreign listing process. The participants were asked to rank the eight countries on four factors. Based on 142 responses, the authors computed a "Disclosure Level Rank" which showed the following result: the U.S. were ranked the highest overall disclosure level on first place, followed by Canada, the U.K., the Netherlands, France, Japan, Germany and finally Switzerland with the lowest overall disclosure levels.

To control for other factors besides disclosure levels, four additional variables were used in the test: geographic location, the firms industry, its product market and the relative size of the firm in its domestic capital market. Two sets of tests were conducted. The first based on cross-listings as of year end 1987. Here, cross-sectional univariate and multivariate regressions lent support to hypothesis 1, stating that exchange choices have been influenced by disclosure levels. Hypothesis 2 is not supported by the data as of year end 1987. The second test focuses on changes in listings between 1981 and 1987. Randomization tests are applied and the results support both hypothesis 1 and 2. The overall conclusion that can be drawn from these tests is that financial disclosure levels influence the foreign stock exchange listing decisions.

4.5.1.3 Saudagaran and Biddle (1995)
Saudagaran and Biddle (1995) repeated their test on factors influencing the firm's choices of foreign stock exchanges. This study differs from their 1992 paper in several aspects. Firstly, the sample size increases to 459 firms with a total of 1012 foreign listings as of year-end 1992. Secondly, because data as of year-end 1992 is used, it is more likely that the results reflect the changes in
foreign listing and regulatory requirements in the U.S. and other countries in the early 1980s. Thirdly, besides the disclosure level hypothesis another hypothesis is tested.

Hypothesis 1 has been modified slightly, but its implications stay the same. Hypothesis 1: "Firms will be more likely to list on foreign stock exchanges with lower financial disclosure levels than their domicile." The authors further assume that, if listing on a foreign stock exchange is associated with an increase in visibility, then one would expect a direct relationship between the importance of a country as a product market for the firm and the probability of listing on its exchange. This is expressed in hypothesis 2: "Firms will be more likely to list on foreign stock exchanges in countries that represent larger markets for the firm's products." To measure the reporting and regulatory costs of foreign listings as perceived by managers, the same disclosure level ranking as in the 1992 study is used. To measure a firm's current disclosure level, the disclosure level of a firm's home country is used as a proxy. No firm's specific data on the exports of firm's going to a given exchange country was available, thus the proportion of exports from a given industry and domicile to a given foreign exchange country is used as proxy for the firms' product markets. The same control variables (industry, geographic location, and firm's size relative to the domestic capital market size) as in the 1992 study are applied. The results of univariate tests are consistent with hypothesis 1, on all exchanges (except Paris and Frankfurt) a greater proportion of firms with more stringent domestic disclosure requirements are listed than with less stringent domestic standards. The results of multivariate tests indicate overall positive signs for the disclosure level and exports variables, consistent with both hypothesis one and two. Only for NYSE/AMEX, Frankfurt and Zurich is the location variable positive and statistically significant. For London the location variable is negative, opposite to the expected sign. The authors provide two explanations for this observation. Firstly, the negative sign may be due to the classification of the U.K. with other European countries although the cultural links and familiarity with language and business practices may make U.K. firms more likely to list in the U.S. and
Canada instead of the geographic closer European continent. Secondly, a listing in London may be motivated by the consideration to facilitate 24-hour trading in its stock by listing it on stock exchanges located in other continents. The market capitalization variable is positive for all eight exchanges while most of the industry dummies are not statistically significant. Their findings can be summarized as follows: The probability that a firm will list on a given foreign exchange seems to be positively related to the disclosure level of a firm's home country and the importance of the foreign country as a market for the firms products.

4.5.2 Minority Shareholder Rights Protection Motive

As mentioned above, the voluntary binding of a firm to more stringent investor protection regulations via cross-listing in countries where such strict regulations prevail, might be an important factor in the listing decision of firms. In continuation empirical evidence regarding this hypothesis is provided.

4.5.2.1 Foreign Listings in the U.S. - Reese and Weisbach (2000)

To test their hypothesis, Reese and Weisbach (2000) study several firms cross-listing in the U.S., using either ADRs or a direct listing, as of June 1999. The final sample consists of 107 firms cross-listing directly on the NYSE, 178 listing directly on NASDAQ, 326 direct listing firms on the OTC "Pink Sheets" market and 1329 ADRs listing on NYSE, NASDAQ, OTC or 144A. In sum, the sample includes 1942 non-U.S. firms cross-listing in the U.S. as of June 1999.

To classify the cross-listing firms according to their level of investor protection they use a direct measure (in contrast to classifications based on home country or level of economic development) based on the legal tradition of the country of origin. The authors justify this type of classification with the recent work of

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79 Most of their firms studied belong to one of the following legal systems (other firms, mainly form Poland, Russia and China were excluded in the final sample): English Common Law(Australia, Canada, Hong Kong, India, Ireland, Israel, Kenya, Malaysia, New Zealand, Nigeria, Pakistan, Singapore, South Africa, Sri Lanka, Thailand, U.K., Zimbabwe); French Civil Law (Argentina, Belgium, Brazil, Chile, Colombia, Ecuador, Egypt, France, Greece, Indonesia, Italy, Jordan, Mexico, Netherlands, Peru, Philippines, Portugal, Spain, Turkey,
La Porta et. al (1997, 1998, 2000) and Demirguc-Kunt and Maksimovic (1998) which suggests that legal tradition affects both the explicit laws protecting minority shareholder rights and the net effect of these laws on corporations' ability to receive financing. These papers show that English Common Law countries protect shareholders' rights better than countries with civil law tradition. Within the latter, French Civil Law provides significantly less shareholder protection, while German and Scandinavian Civil Law countries provide an intermediate level of protection. This better protection leads to easier access to capital and more subsequent external financing. The authors then outline the possibilities foreign firms have to access the U.S. capital market, the main aspects of the different ADR programs and the disclosure and reporting requirements associated with it. They argue that these requirements are at least to some extent voluntary, since OTC and PORTAL listings are generally exempted from them.

U.S. securities laws are often cited for their excellent protection of minority shareholder interests. But how to they achieve this intensive protection? Reese and Weisbach (2000) summarize the six provisions of U.S. securities laws explained in the paper of Coffee (1999a, pp. 683-691), that go well beyond those typically found overseas in the degree to which they aid small shareholders\(^{80}\). The authors note, although the SEC is probably less likely to prosecute foreign firms than U.S. ones, managers listing their firm's shares in the U.S. should expect that such a listing will reduce their ability to expropriate wealth from minority shareholders. They conclude that the investor protection associated with a SEC registering is one explanation for observed stock price increases in the firm's home countries subsequent to the establishing of an ADR program.

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\(^{80}\) See appendix.

Uruguay, and Venezuela); German Civil Law (Austria, Germany, Japan, South Korea, Switzerland, Taiwan); Scandinavian Civil Law (Denmark, Finland, Norway, Sweden).

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The test results of the univariate tests show that it is twice as likely for a firm from a French Civil Law country to list on an organized U.S. exchange\textsuperscript{81} (4.9 percent of all domestic firms list on NYSE or NASDAQ) as for firms from an English Common Law country (2.38 percent). They find that it is at least suggestive that firms list on organized U.S. exchanges to bond themselves to investor protection laws. But they note that evidence is weak because of country-specific factors\textsuperscript{82} and the fact that German and Scandinavian Civil Law countries do not appear to follow the pattern set by English and French legal regimes\textsuperscript{83}.

In the multivariate test, three other measures of shareholder protection in the firm's home country are used in addition to the legal system variable. These are an index of "anti-director" rights, the country's accounting standards and the efficiency and integrity of a nation's judicial system\textsuperscript{84}. The results generally confirm their findings from the univariate tests, giving emphasize to the shareholder protection rights motive in foreign listing decisions.

The authors then test, whether other motivations for cross-listing, such as to increase the access to U.S. investors (to overcome market segmentation or increase the investor base) or to benefit from the greater liquidity of U.S. markets might explain the increase in cross listings. For this reason, they examine the equity raising behavior of the firms inside and outside of the U.S. subsequent to the cross-listing. While the bonding hypothesis implies an increase in equity offerings all over the world, the liquidity- and investor access hypothesis suggest only an increase in the U.S. The results show a substantial

\textsuperscript{81} The NASDAQ and NYSE are considered to be the organized exchanges since listing on this exchanges requires specific accounting and disclosure information not required for listing on PORTAL or OTC.

\textsuperscript{82} For example, after removing India from the sample, which has 7686 domestic but only one organized exchange cross-listing the difference is only marginally.

\textsuperscript{83} According to La Porta et al. the investor protection level of these legal system lies in between the English and the French Law systems but German Civil Law countries have the lowest percentage of organized exchange cross-listings (1.18 percent) and Scandinavian Civil Law countries with 9.56 percent the highest.

\textsuperscript{84} Reese and Weisbach (2000) note that these measures are all obtained from La Porta et al. (1997, 1998, 2000).
increase in equity offerings in the U.S. as well as outside the States. Further, the
relation between subsequent equity offerings and the level of shareholder
protection in the firm's home country is investigated. They find that weaker
shareholder protection in the firm's home country increases the quantity of
equity issued by the firm subsequent to the cross-listing, both inside and outside
the U.S. While these results are consistent with the investor protection
hypothesis, they do not confirm the market segmentation or investor
conclude in their paper that "the desire to protect shareholder rights appears to
be one of a number of reasons why non-U.S. firms cross-list in the U.S."

4.5.3 Company Characteristics
Pagano et al. (1999) relate the cross-listing behavior of firm's to their
microeconomic variables to study their pre-listing characteristics and their
postlisting performance. Blass and Yafeh (1999) provide empirical evidence on
Israeli IPOs in the U.S.

4.5.3.1 The Geography of Cross-Listings - Pagano, Röell and Zechner
(1999)
Pagano, Röell and Zechner (1999) examine the pattern of cross-listings in the
period 1986-1997 for firms listing on the three major U.S. stock exchanges
(NYSE, NASDAQ and AMEX) and nine European stock exchanges (the
exchanges of Amsterdam, Brussels, Frankfurt, Madrid, Paris, Stockholm,
Vienna, the Italian Stock Exchange and Easdaq). The study comprises two
parts: first trends in the geography of listings in Europe and the U.S. are
documented and then the characteristics of the listing firms in the pre-listing
period and their performance subsequent to the cross-listing are computed and
compared to a control sample of firms not listing abroad in this period.
The geographical pattern of cross-listing indicates following main results.
European firms (with the exemption of the U.K. in 1997) tend to list more
frequently within Europe when listing abroad. Further, firms tend to list in
countries geographically or culturally close to their home country of
incorporation. The authors note, that this proximity preference may serve as a proxy for informational asymmetries, for an U.S. investor, for instance, the accounting and financial reports of British firms may be more familiar than those of French or Spanish firms. The examination of changes in geography of cross-listings provide following picture: while the number of European firms listing abroad increased significantly, the number of foreign firms listing on European stock exchanges declined on overall. In contrast, the number of U.S. firms listing in Europe dropped sharply (from 284 to 184) while the number of European firms listed on the U.S. exchanges increased almost four times from 53 in 1986 to 207 in 1997. In the same period, the listings of EU9 firms within Europe increased only moderately from 267 to 309. Comparisons of the number of foreign listings with the number of domestic listings on a specific stock exchange demonstrate the general ability of the exchange in attracting new issuers. Here again, it seems that European exchanges have lost in attractiveness compared to their U.S. counterparts. While, with the exemption of Frankfurt and London, most of the European exchanges did not attract a significant number of new listers, both domestic and foreign, on the U.S. exchanges domestic and foreign listings increased by 29 and 150 percent, respectively. Another measure of the tendency of domestic companies to cross-list abroad is the ratio of a country's firms cross-listed abroad to the total of domestically listed firms, which the authors call "diaspora index". This index has increased for most of the European countries, where the smaller countries experienced the strongest rise. In the next step, the changes in the cross-listing pattern are linked to firm characteristics (accounting standards\textsuperscript{85}, degree of investor protection\textsuperscript{86}, size of the market measured by both, market capitalization and turnover, and trading costs) of the stock exchanges and host countries. The overall results indicate, that good accounting standards, a high level of investor protection and low trading costs may play an important role in

\textsuperscript{85} Accounting standards are rated using the measure of La Porta et al. (1998).
\textsuperscript{86} Investor protection is the Antidirector Rights index from La Porta et al. (1998).
the firm's cross-listing decisions. In the second part of their study, Pagano, Röell and Zechner (1999) use microeconomic variables to get a more detailed picture of the cross-listing pattern observed in the first part. For this reason, the pre- and post- listing characteristics and performance of the cross-listing firms are compared to a control sample of firms without a foreign listing. The results show that cross-listing firms tend to be larger, higher leveraged, faster growing, more skill-intensive and more export orientated than purely domestically listed ones. The trading activity for cross-listing firms is also larger, while the market-to-book ratios and the return on assets do not differ significantly from purely domestic listed firms. These tests are repeated separately for firms cross-listing in the U.S. and within Europe, respectively. Firms cross-listing in Europe tend to be larger (in terms of total assets and number of employees) than firms cross-listing in the States, both in the pre- and post- listing period. Another striking difference is the higher R&D intensity and long-run profitability of the firms listing in the U.S.

Regression analysis is then used to identify which company characteristics predict a cross-listing and the stock exchange where it takes place. The results show that the proportion of sales abroad and the size of the company are the two most significant predictors of a foreign listing. The high-tech characteristic variable is also a significant predictor of a cross-listing. The authors note that this is consistent with the idea that high-tech firms choose to list abroad because foreign investors and intermediaries know more about the firm's business and their domestic counterparts, and thus can better evaluate the stock. Next, the authors try to predict where the firms cross-list. Generally speaking, the result is that firms which have expanded rapidly and therefore have accumulated a substantial amount of debt, and high-tech companies prefer to cross-list in the U.S. European stock exchanges instead are chosen by governments as the listing location for privatized firms. An interesting finding is, that firms cross-listing in the States do not tend to list their shares in Europe too after listing there. For European listings no such behavior is observed. The geographic proximity findings are also confirmed by the listing location prediction tests.
British firms, for instance, are more likely to list in the U.S. than German or Austrian firms.

The test of the post-listing performance of cross-listing firms also demonstrates significant differences between firms cross-listing in the U.S. and firms listing within Europe. For instance, the former experience a permanent increase in total assets and the growth rate of employees, while the latter end up with a reduction in both factors. Besides that, they differ also in the development of their capital structures and the degree of export orientation subsequent to the cross-listing.

4.5.3.2 Israeli IPOs in the U.S.
Blass and Yafeh (1999) found similar results as Pagano et al. (1999) regarding a quality difference in cross-listings. They studied Israeli firms going public between 1990 and 1996. All but two of the Israeli firms listing exclusively, i.e. by-passing their domestic market, in the U.S. belonged to the electronics and computer software industries, they are young, with low current profits and extremely R&D intensive. This firms tend to perform better than local (Tel Aviv) IPOs in terms of postlisting revenue growth rates and post-IPO stock price returns.

4.5.4 Other Factors
While in most empirical studies the geographic proximity factors only have been used as one of many control variables in the construction of the test, a study by Sarkissian and Schill (2000) focuses on this topic.

4.5.4.1 Geographic Proximity - Sarkissian and Schill (2000)
Sarkissian and Schill (2000) examine whether a proximity preference in financing behavior exists when firm managers decide where to cross-list their firm's shares. Using a sample of 2367 foreign listings as of 1998 from 44 countries and 5 continents they study the country-to-country patterns in the distribution of cross-listings. First, they summarize the motives for foreign listing and provide some testable predictions about how they expect managers
to act according to the hypotheses when choosing their foreign listing location. These predictions are: (1) If the reduction of cost of capital through overcoming market segmentation is an important motive for foreign listings, they expect that the firm's management will prefer foreign markets that lead to the most significant drop in their market risk exposure. Thus they expect that, other things equal, those markets whose returns are at least correlated with the domestic market can provide the greatest cost of capital gain for firms. The firm's manager therefore should have an incentive to select the markets with the smallest return correlation to their home market. (2) If the superior liquidity provided by some foreign markets is an important factor, one can expect that firms list on those foreign markets that can provide the greatest improvements in liquidity for the stock. (3) If improvements in investor recognition are a motivation, firms are expected to prefer countries with large equity market capitalization. (4) If product market considerations are of importance, they expect to see more firms from a given home country in a given foreign market if the proportion of total exports from the home country to the foreign country is large. (5) Firms are expected to list their shares in "tax haven" countries if tax considerations are a motivation for cross-listing. (6) Finally, they also test for the impact of financial disclosure costs and accounting standards on the foreign listing location decision.

The sample data of the 2367 foreign listings shows following country frequency distribution of cross-listings. Luxembourg has the by far highest ratio of foreign to domestic listings (3.04), this means for every domestic firm more than 3 foreign firms are listed on this stock exchange. Other relatively attractive markets include Switzerland with a ratio of 0.77, the Netherlands (0.71), and Belgium (0.58). The country-to-country frequency distribution of foreign listings indicate that firms listing abroad tend to prefer to list in neighboring markets. For example, Hungarian firms tend to list in Vienna and Frankfurt, Benelux companies within Benelux countries or Canadian firms in the U.S. When the listing data is connected to the domestic market size, (measured as gross domestic product GDP or total equity market capitalization CAP) the
following picture emerges: on the one hand, the most popular host countries (United States, U.K. and Germany) also belong to the largest economies. But on the other hand is Japan, the second largest economy in terms of market capitalization and GDP, only on the ninth place in the foreign listing rank with only 60 foreign firms listing on its stock exchange. Switzerland and Luxembourg, ranked fourth and fifth in terms of foreign firms hosted, also have relatively small economies. The authors conclude that these countries may attract foreign listers through other, tax, legal of disclosure requirement advantages and that other factor besides market capitalization also play an important role in the listing decision.

The measures of aggregate liquidity (when market volatility is used as measure) indicates that markets with a large number of foreign listings are also the least volatile.

To test the relevance of this observation and their proposed hypothesis, a regression with the following proxies for market characteristics is estimated: The countries GDP and relative size of the equity market (total capitalization of equity market divided by GDP) is used as a proxy for the investor base. As a proxy for liquidity, the standard deviation of the monthly market returns between 1990 and 1998 is used, where a higher return volatility is expected to be associated with lower market liquidity. Imports divided by GDP are employed as a measure for trade-based motivations and three proxy variables (U.S. GAAP; IAS GAAP; and EU\(^87\)) proxy for financial disclosure costs. The authors summarize the results of several regressions the following way: The relative equity capital size, the host country GDP and liquidity as measured by low market volatility seem to play an important role in the development of foreign listing destination countries. These factors appear to be more important.

\(^87\) This proxy variable is explained by the authors with the recommendation of the International Organization of Securities Commissions that in the EU, offerings of listings registered in an EU member state that take only place within member states should not be considered to be "cross-border".
than trade, tax, or disclosure requirements. And finally, the U.S. market appears to be a highly, abnormally attractive market for foreign listings.

Next, Sarkissian and Schill (2000) test the impact of geographic proximity and cost of capital on the foreign listing decision. First, each of these motives is tested separately. To test proximity bias, the sample countries are grouped into three regions: the Americas, Australasia, and Europe-Africa-Middle East (EAME). The results show some evidence of intra-regional clustering. 42 percent of the listings in the Americas come from this region, 49 (47) percent of the foreign listings in Australasia (EAME) come from Australasia (EAME). To test whether the motives for foreign listings may be different for firms within the largest markets, the test is repeated after excluding all the listings originating within the G-5 countries.

The findings indicate, that for countries outside the G-5 the tendency to list in a neighboring market appears to be even more pronounced. For example, of the 660 firms listing in the EAME region, 67.7 percent also originate from it. As outlined above, firms are expected to list in countries with a low return correlation to their home market, if their motive for foreign listing is to lower the cost of capital. To test this hypothesis, a test on the difference in the number of cross-listings between high correlation and low correlation markets is conducted. The overall results of this test do not support the diversification motive for cross-listing, firms do not appear to cross-list in markets with low return correlations with their domestic market.

Next, the measures of the cost of capital motive and the proximity bias are combined with the measures for the other cross-listing motives. Following regression equation is estimated:

\[
N_{i,j}^F / N_{i,j}^D = b_0 + b_1 \ln(GDP_{i} / GDP_{j}) + b_2 \ln(CAP_{i} / GDP_{j}) \ln(GDP_{i} / GDP_{j}) + b_3 \ln(EXPORTS_{i,j} / s_j) + b_4 \text{COR}_{i,j} + b_5 D(\text{Stringency}_{i,j}) + b_6 D(U.S._i) + b_7 D(TAX_j) + b_8 \text{PROXIMITY}_{i,j} + e_{i,j}
\]

88 France, Germany, Japan, U.K. and the U.S.A.
where \( \text{GDP}_j / \text{GDP}_i \) and \( (\text{CAP}_j / \text{GDP}_j) / (\text{CAP}_i / \text{GDP}_i) \) proxy for the differences in investor base between the home country (i) and the foreign market (j); \( s_j / s_i \) is the proxy for the difference in liquidity; \( \text{EXPORTS}_{i,j} \), is the percentage of country i's exports going to country j and proxies the trade-based hypothesis; \( \text{D(Stringency}_{i,j}) \) is a dummy variable for accounting disclosure differences\(^\text{89}\); \( \text{D(TAX)} \) is a variable which indicates whether the country is considered as tax haven; \( \text{D(U.S.)} \) is a variable for U.S. listings; \( \text{CORR}_{i,j} \) is the correlation coefficient for the market returns; and \( \text{PROXIMITY}_{i,j} \) is the great circle distance (in 1,000 km) between the respective capital cities. The regression results show that the relative market size and liquidity variables are not significant. \( \text{EXPORT} \) is positive and highly significant, indicating that firms tend to list in markets which are also their main export markets. \( \text{D(US)} \) is positive and significant. The cost of capital variable \( \text{CORR} \) is positive and highly significant which indicates that firms tend to list in markets with a high return correlation to their home market. Thus, these findings do not support the cost of capital motive. The disclosure requirement variable is close to zero indicating that reporting standards do not have an influence on the cross-listing decision. Finally, the \( \text{PROXIMITY} \) variable is negative and significant at the 1 percent level. The authors conclude that "this finding suggests that when choosing among overseas listing destinations, firms are biased towards those markets which are closest to home. This observation is consistent with the home bias observed in investor portfolios. Just as proximity appears to matter with investor purchases, proximity affects the sale of equity by firms."

Finally, the authors argue that due to information asymmetry, firms from small countries are more likely to be constrained from listing in distant markets. Thus, the sample is divided in listings from the G-5 group and one with the 39 other countries. While the findings for the small countries sub-samples are consistent with the overall findings, for the G-5 sample only the \( \text{D(US)} \) variable is significant.

\(^{89}\) The variable takes on the value 1 if country j requires financial disclosure which is significantly different than that of country i. Disclosure standards and requirements as reported by the IASC are used.
is significant. The authors conclude that the evidence suggests that proximity bias is particularly acute for firms from small countries but even the G-5 country firms are perhaps not fully immune to it.

4.5.4.2 Cross Listings and Exchange and Country Characteristics
Pagano, Randl, Röell and Zechner (2000) investigate the specific attributes responsible for the attractiveness of certain stock exchanges. They do so by relating the foreign-listing choices of firms cross-listed on ten European and the three major U.S. exchanges to the exchange and host country characteristics. First, the difference regarding exchange characteristics between the destination and origin exchange is computed. The results show that firms tend to list on more liquid markets when listing abroad. The mean difference in trading costs between destination and origin exchange is -11.5 basis points. Trading costs on the destination exchange are also 4.2 basis points lower than the average of all exchanges in the sample. The market capitalization of the destination stock market is on average 665.9 billion U.S. dollars larger than the market capitalization of the firm's home country exchange, emphasizing the importance of this factor. In contrast to the findings of Baker et al. (1999) a lower analyst coverage is observed, the number of earnings forecasts per firm is 0.54 lower on the host market than at home. The results lend support to the notion that a firm's industry might influence the selection of a foreign listing location as well. On average there are 2.4 more firms of the same industry listed on the destination market than on the origin stock exchange. Expressed as a fraction of all cross-listings in the same industry the difference is 7.5 percent, i.e. there are 7.5 percent more firms of the same industry listing on the destination market than at the home exchange.

The analysis of the host country characteristics with respect to accounting and legal variables indicate the following: the destination exchanges tend to have lower accounting standards but better ratings concerning investor protection, the enforceability of contracts and bureaucratic speed.
Furthermore they found some evidence of cultural proximity preference, 56 percent of all cross-listings take place within the same cultural group.

4.6 Implications for the Stock Exchanges

Empirical evidence indicates that financial disclosure requirements have significant impact on the firm's foreign listing decision. But how should stock exchanges and securities regulation authorities react to this fact? Are lower or higher disclosure requirements the appropriate response to maximize the number of firms listing on a given exchange? Two theoretical models, dealing with this question, are outlined briefly.

4.6.1 Signaling Model (Fuerst 1998)

Fuerst (1998) provides a theoretical model to analyze the managers' decision as to which international market to cross-list their firms' shares on. He argues, that because of the ongoing globalization of capital markets and the reduction of the barriers to international capital flows in many countries, it is not clear that the capital market segmentation hypothesis is the major argument for global equity listings. In addition, given the fact that most institutional investors can invest across markets, he notes that it is not clear what factors influence a foreign firm in its cross-listing decision, i.e. why do for instance some firms list in London and others on the NYSE/NASDAQ/AMEX when they decide to list on a major capital market? The model Fuerst (1998) presents, indicates that the announcement of a listing could be accompanied by a favorable stock price reaction even when there is no market segmentation or any difference between the markets with respect to liquidity or investor base. The author notes that although the U.S. investor protection regulations are often cited as deterring foreign firms from listing securities and raising capital in the U.S.\textsuperscript{90}, foreign listings on U.S. exchanges have increased, both absolutely and relatively to

other major stock exchanges. Fuerst argues, that this observation can be explained with the difference in the regulatory environment between capital markets. In his model he shows, that stricter investor protection regulations allow managers of highly profitable firms to convey their private information regarding their firms' future prospects more effectively than environments with looser investor protection regulations. Thus, through listing on a stock exchange with a strict regulatory environment, highly profitable firms can separate themselves from firms with lower future profitability. The additional regulatory exposure these firms have to bear is more than offset by a higher price for their shares. According to the author, the empirical evidence is consistent with the main predictions of his model: Firstly, foreign firms listing in the U.S. achieve abnormal operating performance in the years subsequent to the listing. Secondly, U.S. firms cross-listing abroad to not experience such abnormal operating performance. This indicates that, because the home country environment is strict, the investor protection regulations hypothesis was not a factor in the foreign listing decision. Thirdly, the market reaction to the cross-listing announcement is correlated with the expected improvement in operating performance of the cross-listing firms (as derived from the listing decision). Fourthly, the less strict the regulatory environment in the firms' home country, the more pronounced is the abnormal operating performance associated to firms cross-listing abroad.

4.6.2 The Model of Huddart et al. (1998)

Huddart et al. (1998) model the influence of disclosure standards (which they define as the mandated precision of public signals) on the listing decision of firms and the allocation of liquidity across stock exchanges. In their model, two stock exchanges with distinctive disclosure requirements compete for the listings of a number of firms. In each firm exists a corporate insider who controls the exchange listing choice and whose sole objective is to maximize

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profits that arise from trading on his inside information. According to their model, if an exchange has sufficient liquidity, which implies that share prices are less sensitive to insider trading, firm insiders will choose to list on that exchange even though disclosure standards are high. Thus, the main result of their model is, that trading concentrates on high disclosure exchanges and that stock exchanges will engage in a "race for the top" in which the disclosure requirements increase and trading costs fall. Here, in the implication for the stock exchanges, lies the main difference to the Fuerst (1998) model. According to Fuerst (1998), in addition to the home market, two competing exchanges are most likely to co-exist when the difference in their regulatory environment is not too large but not too small. Thus, differences in the regulatory environment allow the exchanges to co-exist and paradoxically they benefit from this outcome.

5 Foreign Listings on the Swiss Exchange SWX

The Swiss Exchange (SWX) has been chosen for this work because it is the most "international" exchange\(^{92}\) among the 10 largest stock markets in the world. In 1999, the SWX had been ranked 10\(^{th}\) place worldwide in terms of market capitalization (USD 693.133 billion) after occupying 7\(^{th}\) place the year before (USD 689.199 billion)\(^{93}\). But in both years, the SWX had the highest ratio of foreign firms among the top 10 exchanges\(^{94}\). In 1998, 46 percent of all firms listing on the SWX came from abroad. In 1999, this ratio decreased slightly to 42 percent, but is still the highest value among the top 10 exchanges worldwide. The ratios of other top 10 stock markets range from a mere 2 percent in Tokyo to 40 percent in Amsterdam.

5.1 The Swiss Exchange\(^{95}\)

The SWX Swiss Exchange resulted through a merger of the Geneva (founded in 1850), Zurich (1873) and Basle (1876) stock exchanges which took place in 1995. On the 2\(^{nd}\) of August 1996, all firms listed on the former three exchanges were moved to a single, fully automated trading, clearing and settlement system. In addition to the domestic and foreign shares, approximately 1300 Swiss bonds, about 750 foreign bonds, over 500 warrants as well as eurobonds and repos are traded on the SWX. The SWX offers issuers four different equity segments: the main market, the Swiss New Market for emerging-growth firms, the segment for investment companies and the parallel market.

\(^{92}\) When the ratio of foreign listings to the total number of listings on a given exchange is used as measure.


\(^{94}\) Note, this figures differ slightly from my own findings reported below because here FIBV data is used for better comparability with the other exchanges.

\(^{95}\) Source: SWX (2000b), and SWX (2000c).
5.2 Sample Description

The sample contains all firms (financial and non-financial, excluding investment funds) listing on the main market of the SWX from 1996-1999 and all firms listing on the main market of its three predecessors in the pre-merger period of 1986-1995. Because it was impossible to obtain data regarding the Geneva Stock Exchange, only data of the two other exchanges, the Basle Stock Exchange and the Zurich Stock Exchange has been processed. The data for the Zurich Stock Exchange\(^{96}\) and the SWX\(^{97}\) were obtained from the official price lists of the exchanges, and data on Basle listings from the stock exchange's year book\(^{98}\). The results have been cross-checked with the figures published by the FIBV\(^{99}\) and found generally in agreement, in several cases, differences to the FIBV numbers were found. A detailed investigation of these differences showed that in some cases the FIBV data included also the parallel market or stated the number of securities instead of firms (for example, firms listed with registered and bearer shares have been counted twice). One of the greatest challenges in the data processing has been to keep track with the great number of name changes. The guideline applied was following: when the firm changed its name but the securities number stayed the same it was treated as one listing, but if the securities number changed too, it was counted as delisting and a subsequent new listing.

5.3 The Pattern of Foreign Listings

In this section the results of my study are presented. First, a survey of the change in the number of domestic and foreign listings on the Swiss Exchange over the last 14 years is provided. The ability of the SWX to attract foreign listers and the tendency of Swiss firms to get listed outside their home country are analyzed thereafter. A study of the geographic and industrial pattern of the

\(^{99}\) See FIBV (2000).
foreign listings as well as an examination of potential cultural proximity preference of the SWX listers concludes this section.

5.3.1 Domestic and Foreign Listings on the SWX 1986-1999

Table 5 shows the development of the number of foreign (panel A), domestic (panel B) and total listings (panel C) on the SWX\textsuperscript{100} in the period 1986 to 1999. While the number of domestic companies increased from 130 in 1986 to 203 in 1999, the number of foreign firms experienced a decrease from 194 to 167 in the same period. Most of the firms (domestic and foreign) listed on the Zurich Stock Exchange in the years 1986-1996 were also listed on the Basle Stock Exchange at this time. However, some firms listed exclusively in Basle. The column "Basle only" states the number of firms listed in Basle but not in Zurich. Figure 1 displays the number of domestic and foreign firms listed on the SWX as well as their total number.

5.3.1.1 Domestic Listings

The number of domestic issuers increased continuously until 1997 with annual growth rates up to 10.77 percent. In 1998 and 1999 the number declined 0.47 and 3.33 percent, respectively. The decline in 1998 can be explained with the creation of the new segment\textsuperscript{101} for investment companies\textsuperscript{102}, 13 firms listed on the main market in the years before were moved to this new segment. Without this change in market segments, the number of firms listing in 1998 would have increased by 5.68 percent. The abnormally high increase in 1996 has to be interpreted with caution. It is likely that, due to the 1995 merger which became

\textsuperscript{100} To avoid confusion, I also use the terms SWX and Swiss Exchange for the predecessors of the SWX in the pre-merger period.

\textsuperscript{101} The new segment for investment companies has been introduced on March 1\textsuperscript{st} 1998. See SWX (1998).

\textsuperscript{102} The SWX defines investment companies as follows: "In the sense of these Listing Rules, investment companies are capital investment bodies organized according to company law, which have the purpose, either exclusively or mainly, of generating yields/or capital gains and which do not pursue active entrepreneurial activities in the original sense of the term. If by majority vote or by any other means a company combines with one or several other companies and/or undertakes investments either directly or indirectly under unified management (as a
effective on August, 2\textsuperscript{nd} 1996, some of the 31 firms appearing the first time at the SWX in 1996 were listed in Geneva before. This point can be only assumed because Geneva stock exchange data was not obtainable. But if one assumes some cultural or regional preferences in the listing behavior of Swiss firms before 1996, the high percentage of firms listing for the first time on the SWX in 1996 with a French company name is a reasonable indicator for a prior listing of some of those firms in Geneva. Therefore I cross-checked this with data published in the "Neue Zürcher Zeitung\textsuperscript{103} and found 8 firms of the 1996 "new" listings already listed 1995 in Geneva\textsuperscript{104}.

5.3.1.2 Foreign Listings
The number of foreign firms listing in Switzerland increased steadily from 194 in 1986 to 259 in 1991. (See figure 2). In this year, the number of foreign firms reached it's peak. Thus, the SWX seems to follow the general trend of foreign listings documented in Pagano et al. (1999). Their data show for most of the European exchanges the same inverse U-shaped pattern, with the peak of foreign listings in 1991. Since then, the number declined, where the negative trend accelerates from year to year to a new low of 167 firms in 1999. Despite the merger, the number of firms declined in 1996 by almost 7 percent. The number of "new" listings in 1996 amounted to 9 firms. This information was cross-checked also with the NZZ data. 3 firms listed in Geneva prior to 1996 were found. The remaining six firms have been contacted by telephone and/or email. 3 firms confirmed a prior listing in Geneva, the remaining 3 did not respond. Thus I conclude that the merger had no significant effect on the number of foreign listings in Switzerland.

\textsuperscript{103} See Neue Zürcher Zeitung, Zürich, various issues, 1986-1999.
\textsuperscript{104} The NZZ only publishes the price of a security if there has been a transaction in this particular security on the day before. Thus it does not state all the firms listed the day before and can be used only as a guideline, but the fact that at least 8 firms listed in Geneva before lends support to the assumption that the high increase in domestic listings in 1996 in not caused exclusively by firms listing the first time on a Swiss Exchange.
5.3.2 Swiss Firms Listing Abroad vs. Foreign Firms Listing on the SWX

Figure 3 shows the history (1986-1997) of foreign listings from nine EU countries\(^{105}\) and the U.S. on the SWX in comparison to the number of Swiss firms listed in those countries\(^{106}\). Only a small number of Swiss firms lists abroad (solid line), but their number has grown slightly in the last years. This is consistent with the findings of Pagano et al. (1999) who report a decline in the number of foreign firms on European exchanges and a rise in the foreign listings of European firms. However, the rise in the number of domestic firms listing abroad seems to be less pronounced in the case of the SWX when compared to many other European markets.

5.3.3 Proportion of Foreign Companies on the SWX

Although the proportion of foreign firms (see table 5 panel C and figure 4) listing on the SWX decreased from 0.6 to 0.45 in the observation period, the SWX has still the highest ratio among the top 10 stock exchanges by market capitalization. According to Pagano et al. (1999), this measure of the "outward orientation" of stock exchanges decreased between 1986 and 1997 for most European markets (Frankfurt, London, Amsterdam and Vienna) while increasing substantially for the NYSE.

The sharp decrease in 1996 can be explained with the stock exchange merger i.e., the inclusion of the firms listed in Geneva prior to the merger, which appear in my data as "new" domestic listings but are not included in data in the years before.

5.3.4 Diaspora Index

Pagano et al. (1999) call the ratio of domestic firms listed abroad to the number of domestic firms listed on the domestic exchange the "diaspora index". This

\(^{105}\) Austria, Belgium, France, Germany, Great Britain, Italy, the Netherlands, Spain, and Sweden.

\(^{106}\) Source: Pagano et al. (2000) and own data.
index represents the tendency of domestic firms in seeking a listing outside their home country. Figure 5 shows the diaspora\textsuperscript{107} index for the SWX in the period 1986-1997. This figure demonstrates that compared to other European exchanges\textsuperscript{108}, such as Amsterdam or Frankfurt, only a relatively small fraction of the Swiss firms listed on their domestic exchange looked for a listing abroad. In 1997 the diaspora index increased significantly which may be related to the stock exchange merger.

For the stock exchange itself, the trading volume of domestic stocks on foreign exchanges might be of greater interest than their number. In this context, the SWX claims that the Federal Stamp Duty (0.75 per mille on Swiss securities and 1.5 per mille on foreign securities) represents an increasing competitive disadvantage for the SWX in the international competition for trading volume. The SWX states this as a reason for the increase in trading volume of Swiss securities abroad and the decline of foreign listings on its exchange. According to their data, the portion of the London Stock Exchange in the trading of Swiss stocks almost doubled in the period from 1996 to 1999, from 12 to 23 percent.\textsuperscript{109}

5.3.5 Foreign Listings by Country of Origin

Table 6 breaks down the foreign listings by the country of origin. With 69 firms coming from the U.S. in 1999, this country represents by far the most important country of origin. Next in line are Germany (30 firms), the Netherlands (18) and Japan with 15 firms. This confirms the findings of Pagano et al. (1999) who found that American firms are the single largest source of foreign listings in Europe.

In total, firms from 19 different countries are listed on the exchange in Switzerland\textsuperscript{110}. Among the 5 strongest represented countries (as of 1999),

\textsuperscript{107} The number of Swiss firms listing abroad is obtained from Pagano et al. (1999).
\textsuperscript{108} See Pagano et al. (1999).
\textsuperscript{109} See SWX, (1999).
\textsuperscript{110} Some firms from Liechtenstein also list on the SWX, but they are classified as domestic listings by the SWX.
Japanese firms experienced the most significant increase. Their number almost doubled in the 1986-1999 period (+87.5 percent). Canadian firms are on second place (+60 percent), followed by the Netherlands (+28.5 percent). In contrast, the number of U.S. firms declined sharply from 104 to 69 (-33.5 percent).

Table 7 subdivides the counties of origin in 4 groups, Europe\textsuperscript{111}, U.S. and Canada, Japan and other countries\textsuperscript{112}. The picture here shows that the percentage of U.S. and Canadian firms decreased from over half of all foreign listings in 1986 to 46 percent in 1999, but this region remains the most important source of foreign listings on the SWX (see figure 6). The share of Japanese firms doubled in this period and the percentage of European firms increased slightly. The percentage of firms originating from the rest of the world increased from 4.6 to 6 percent.

5.3.6 Cultural Proximity

When cultural proximity is solely based on a common language\textsuperscript{113}, as of 1997 only 50 firms out of 215 (or 23.2 percent) originated from the same "common language" group. Interestingly, no Italian or Austrian firms were ever listed on the SWX as of year end 1999\textsuperscript{114}. On the other hand, the SWX represents the largest destination exchange for German companies listing abroad\textsuperscript{115}. In 1997, 35 German firms listed on the SWX. With 20 firms from Germany, the Vienna Stock Exchange is the second most important destination exchange for German firms.\textsuperscript{116} Thus, with the exemption of German firms, no indication of a common language preference in the listing decision of foreign issuers in Switzerland can be observed.

\textsuperscript{111} Belgium, Denmark, France, Germany, Luxembourg, Netherlands, Norway, Spain, Sweden and U.K.

\textsuperscript{112} Australia, Argentina, Netherland Antilles, Panama, South Africa, Virgin Islands.

\textsuperscript{113} In the case of Switzerland countries with French, German or Italian as one of their official language are considered to belong to the same group. In 1999, the "common language" group consisted of Germany, Belgium, France and Luxembourg.

\textsuperscript{114} The first Austrian firm listed this year on the Swiss New Market segment.

\textsuperscript{115} The comparison is based on the figures reported in Pagano et al. (1999).

\textsuperscript{116} Source: Pagano et al. (1999).
The application of a broader definition of cultural proximity as used in Pagano et al. (2000), where Austria, Germany, the Netherlands and Switzerland are considered as one culturally homogeneous group, increases the percentage of foreign firms originating from the same group (as of 1997) slightly to 26 percent. But this is a significant lower value compared to the findings of Pagano et al. (2000) who found that 56 percent of cross-listings take place within the same cultural group.

Based on the data of Pagano et al. (1999), in 1997 the SWX represented the most important destination exchange for firms from the Netherlands listing abroad. 21 Dutch firms listed in Switzerland, 19 on the Frankfurt Stock Exchange and 17 on Nasdaq. This underlines the fact that the SWX seems to play an important role for the firms of their top three countries of origin (the U.S., Germany, and the Netherlands). In 1997, the SWX has been the second largest host country for U.S. firms\textsuperscript{117} (behind London and equal with Amsterdam) and the most important destination country for cross-listings from Germany and the Netherlands.

5.3.7 Foreign Listings by Industry

For the classification of the listed firms according to their business, the categories used by the SWX to calculate the sector indices of the Swiss Performance Index are applied. Because this categorization was available only for the actual year, a reliable grouping of the firms could be achieved solely for the most recent year of the data, 1999. For firms not included in the SWX classification, the industry category as stated in the official price lists of the stock exchanges has been used where available. For the remaining firms in 1999, information available in the internet has been used to identify their industry. In various years, the official price lists used only a very broad classification, thus the class "financial corporation" may contain both, services

\textsuperscript{117} Based on the data of Pagano et al. (1999).
and industry firms. The investment companies and all other firms are included in the "other" rubric.

Figure 7 compares the industry structure of the domestic listings with the one of the foreign listings. An interesting aspect is, that in both cases the banking sector is relatively strong represented with around 10 percent of all listed firms. The overall picture indicates that the Swiss Stock Exchange seems to be an attractive listing location for foreign firms, especially for banks, large "Blue Chip" stocks and firms from Germany, the Netherlands and the U.S.
6 Conclusion

This thesis was aimed to provide a better understanding of why firms decide to cross-list on certain exchanges. As described in section 3, the motives for listing abroad are numerous. Empirical evidence generally lends support to both, financial and non-financial motivations for cross-listings. An important motive seems to be the overcoming of international barriers to investment which segment capital markets. Recent studies suggest that the increase in media attention and analyst coverage subsequent to a foreign listing increases the visibility of a firm and in further consequence its recognition by investors. A cross-listing thus provides a means to increase the investor base of a firm. This investor recognition hypothesis for cross-listings is also well supported by empirical evidence. The results of the liquidity hypothesis test do not provide a definite picture. While Kadlec and McConnel (1994) for example find a reduction in the bid-ask spread in the postlisting period, Noronha et al. (1996) did not observe such a reaction. Other financial motivations, such as gaining greater access to capital markets, seem to be of importance, especially for firms from emerging markets. The boom in ADR financed mergers and takeovers in the U.S. emphasizes the strategic importance of a foreign listing for firms wishing to expand globally.

Non-financial motivations seem to play a substantial role in cross-listing decisions. Empirical evidence suggests that a listing on a foreign stock exchange is considered by many firms as an important marketing instrument for both, the firm's shares and its products. To enhance the firm's reputation internationally or to establish a stock options program for the employees and management are other frequently named motives. The degree of financial disclosure required by the foreign stock exchange appears to be one of the most important factors influencing a firm in its foreign listing location decision. The direct and indirect costs associated with stringent financial reporting requirements are perceived as a major costs of listing.
abroad. These costs may deter many firms from listing abroad at all or direct them towards low disclosure exchanges. On the other hand, theoretical models, e.g. Fuerst (1998) suggest that firms may list on exchanges with a stricter regulatory regime to distinguish themselves from their competitors. The characteristics of the firms also influence their cross-listing behavior. Pagano et al. (1999) for instance show that there is not only a difference in quantity between European and U.S. markets with respect to the changes in cross-listings, but also a quality dimension. Dynamic, European high-tech firms prefer to list on U.S. exchanges, European exchanges in contrast are chosen by more mature companies. Geographic and cultural proximity of foreign stock exchanges also seems to play an important role in the host market selection of foreign listers.

As the broad spectrum of theory and empirical evidence suggests, no universally valid conclusion regarding the motives for listing on a certain stock exchange abroad can be drawn. But the trend to globalization of product and capital markets continues, thus it is likely that foreign listings will remain an important strategic issue for firms and stock exchanges.
References


Appendix

Six provisions of U.S. securities laws that go well beyond those typically found overseas in the degree to which they aid small shareholders (Coffee 1999a, pp. 683-691, summarized and quoted by Reese and Weisbach 2000).

1. Section 13(d) of the Securities Exchange Act of 1934 requires any person or group beneficially owning at least 5 percent of any equity to file a report within five days of when the 5 percent threshold is crossed. This 5 percent is noticeably smaller than the 10 percent 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.

2. Under Section 14(d) of the Exchange Act, all tender offers for corporations registered with the SEC have to comply with U.S. 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 U.S., even if the shares traded in the U.S. 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 U.S. thus substantially increases the rights of shareholders on non-U.S. firms when faced with a tender offer.

3. Firms cross-listing on a U.S. exchange are subject to most of the rules of the exchange regarding corporate governance. In particular, the NYSE requires foreign cross-listed firms to have at least two outside directors on the board, an audit committee made up of outside directors and specific quorum requirements for shareholder meetings. NASDAQ and AMEX have similar requirements.

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 U.S. 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 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 U.S. investors may sue under this rule, but all investors benefit through the improved managerial incentives.
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<th>Item</th>
<th>No Capital Raising</th>
<th>Capital Raising with New Issue</th>
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<td>Level-I</td>
<td>Level-II</td>
</tr>
<tr>
<td>Description</td>
<td>Unlisted</td>
<td>Listed on major U.S. exchange</td>
</tr>
<tr>
<td>Trading Location</td>
<td>OTC Pink Sheet trading</td>
<td>NYSE, AMEX, or Nasdaq</td>
</tr>
<tr>
<td>SEC registration</td>
<td>Registration Statement Form F-6</td>
<td>Registration Statement Form F-6</td>
</tr>
<tr>
<td>U.S. reporting required</td>
<td>Exemption under Rule 12g3-2(b)</td>
<td>Form 20-F filed annually</td>
</tr>
<tr>
<td>GAAP requirement</td>
<td>No GAAP reconciliation required</td>
<td>Only partial reconciliation for financials</td>
</tr>
<tr>
<td>Time to completion</td>
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<td>14 weeks</td>
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<td>Costs</td>
<td>≤$25,000</td>
<td>$200,000-700,000</td>
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Table 1: Depositary Receipt Programs by Type

---

### TABLE 2: FIBV MEMBER EXCHANGES

**MARKET CAPITALIZATION OF SHARES OF DOMESTIC COMPANIES 1998-1999**

(Excluding Investment Funds, in 000,000 of US$)


<table>
<thead>
<tr>
<th>Time zone</th>
<th>Exchange</th>
<th>End 1999</th>
<th>End 1998</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1999/98</td>
<td></td>
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<tr>
<td><strong>North</strong></td>
<td>Amex</td>
<td>NA</td>
<td>$126,307,00</td>
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<td>$1,323,30</td>
<td>$1,500,00</td>
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<td></td>
<td>CDNX</td>
<td>$11,735,00</td>
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<td>-</td>
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<td></td>
<td>Chicago</td>
<td>$244,86</td>
<td>$297,58</td>
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<tr>
<td></td>
<td>Mexico</td>
<td>$154,043,84</td>
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<tr>
<td></td>
<td>Montreal</td>
<td>$448,47</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>Nasdaq</td>
<td>$5,204,620,36</td>
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<td></td>
<td>NYSE</td>
<td>$11,437,597,30</td>
<td>$10,277,899,80</td>
<td>11</td>
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<td></td>
<td>Toronto</td>
<td>$789,179,53</td>
<td>$543,394,01</td>
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<td>TOTAL</td>
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<td>$13,284,878,18</td>
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<td><strong>South</strong></td>
<td>Buenos Aires</td>
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<td>$227,962,09</td>
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<td>$12,091,87</td>
<td>$9,868,51</td>
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<td></td>
<td>Santiago</td>
<td>$68,227,52</td>
<td>$51,866,17</td>
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<td>TOTAL</td>
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<td>$267,953,85</td>
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<td>$695,195,95</td>
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<td>Brussels</td>
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<td>Copenhagen</td>
<td>$105,292,68</td>
<td>$98,880,98</td>
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<td></td>
<td>Deutsche Börse</td>
<td>$1,432,166,98</td>
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<td>$150,669,99</td>
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<td>Ljubljana</td>
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<td>$2,984,94</td>
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<td>London</td>
<td>$2,855,351,17</td>
<td>$2,372,738,15</td>
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<td>Luxembourg</td>
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<td>$37,930,73</td>
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<td>Time zone</td>
<td>Exchange</td>
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<td>End 1998</td>
<td>% Change</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>-----------</td>
<td>----------</td>
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<td>$46.272,61</td>
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<td>$984,949,72</td>
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<td>$701,576,27</td>
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<td>Tehran</td>
<td>$17,242,46</td>
<td>$11,115,14</td>
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<td>Tel-Aviv</td>
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<td>$39,230,07</td>
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<td>Warsaw</td>
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<td>$20,461,09</td>
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<td>$8,075,658,96</td>
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**Asia, Pacific**

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<th>Exchange</th>
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<th>End 1998</th>
<th>% Change</th>
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<td>Colombo</td>
<td>$1,583,99</td>
<td>$1,704,81</td>
<td>-7</td>
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<td>Hong Kong</td>
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<td>$343,566,53</td>
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<td>Jakarta</td>
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<td>$22,077,86</td>
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<td>Japan</td>
<td>$4,554,886,28</td>
<td>$2,495,757,36</td>
<td>83</td>
</tr>
<tr>
<td>(of which Tokyo)</td>
<td>$4,455,348,09</td>
<td>$2,439,548,79</td>
<td>83</td>
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<td>Korea</td>
<td>$306,127,53</td>
<td>$114,593,31</td>
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<td>Kuala Lumpur</td>
<td>$139,907,89</td>
<td>$95,560,64</td>
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<td>New Zealand</td>
<td>$27,827,12</td>
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<td>$6,804,383,30</td>
<td>$3,852,572,30</td>
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Table 2: FIBV Member Exchanges, Market Capitalization of Shares of Domestic Companies 1998-1999
<table>
<thead>
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<th>Rank</th>
<th>Stock Exchange</th>
<th>Market Capitalization (USD BN)</th>
<th>Number of Foreign Listings/Number of Total Listings</th>
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<td></td>
<td></td>
<td>1999</td>
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<td>1.</td>
<td>New York</td>
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<td>0.13</td>
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<tr>
<td>2.</td>
<td>Nasdaq</td>
<td>5.204,620,4</td>
<td>0.09</td>
</tr>
<tr>
<td>3.</td>
<td>Tokyo</td>
<td>4.455,348,1</td>
<td>0.02</td>
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<tr>
<td>4.</td>
<td>London</td>
<td>2.855,351,2</td>
<td>0.20</td>
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<td>5.</td>
<td>Paris</td>
<td>1.502,951,8</td>
<td>0.15</td>
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<td>6.</td>
<td>Deutsche Börse</td>
<td>1.432,167,0</td>
<td>0.27</td>
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<td>7.</td>
<td>Toronto</td>
<td>789,179,5</td>
<td>0.03</td>
</tr>
<tr>
<td>8.</td>
<td>Italy</td>
<td>728,240,4</td>
<td>0.02</td>
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<td>695,196,0</td>
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<td>10.</td>
<td>Switzerland</td>
<td>693,133,0</td>
<td>0.42</td>
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<td></td>
<td></td>
<td>1998</td>
<td></td>
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<tr>
<td>1.</td>
<td>NYSE</td>
<td>10.277,899,8</td>
<td>0.15</td>
</tr>
<tr>
<td>2.</td>
<td>Tokyo</td>
<td>2.439,548,8</td>
<td>0.03</td>
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<td>3.</td>
<td>London</td>
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Table 3: The 10 Biggest Stock Markets in the World by Market Capitalization 1998-1999
TABLE 4: FIBV MEMBER EXCHANGES  
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(Main and Parallel Markets, excluding Investment Funds)  
T = Total Number of Firms, D = Number of Domestic Firms, F = Number of Foreign Firms  

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**Table 5: Number of Domestic and Foreign Firms Listed on the SWX 1986-1999**

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### Panel C: Domestic and Foreign Firms

|   | BAN | BUI | CHE | ELE | FIN | FOOD | IND | INS | MAC | OTH | RET | SER | TRA | UTI | TOTAL | Growth Rate | Basle Only | F/D | F/T |
|---|-----|-----|-----|-----|-----|------|----|----|-----|-----|-----|-----|-----|-----|-------|--------------|------------|-----|-----|-----|
| 1986 | 31  | 3  | 22  | 26  | 26  | 16  | 76 | 10 | 13  | 36  | 6  | 24  | 7  | 28  | 324  | 13 | 1,49 | 0,60 |
| 1987 | 36  | 4  | 24  | 32  | 31  | 17  | 80 | 12 | 15  | 46  | 6  | 27  | 8  | 32  | 370  | 14,20% | 25 | 1,57 | 0,61 |
| 1988 | 39  | 4  | 25  | 34  | 33  | 16  | 84 | 13 | 15  | 47  | 6  | 27  | 8  | 32  | 383  | 3,51% | 21 | 1,55 | 0,61 |
| 1989 | 45  | 4  | 25  | 37  | 41  | 14  | 87 | 13 | 16  | 49  | 6  | 28  | 9  | 33  | 407  | 6,27% | 20 | 1,47 | 0,59 |
| 1990 | 45  | 5  | 25  | 38  | 39  | 15  | 90 | 14 | 17  | 50  | 6  | 31  | 9  | 34  | 418  | 2,70% | 18 | 1,52 | 0,60 |
| 1991 | 46  | 5  | 26  | 38  | 38  | 16  | 91 | 13 | 19  | 50  | 6  | 33  | 9  | 35  | 425  | 1,67% | 22 | 1,56 | 0,61 |
| 1992 | 48  | 6  | 26  | 37  | 36  | 16  | 88 | 13 | 20  | 51  | 7  | 33  | 9  | 35  | 425  | 0,00% | 24 | 1,53 | 0,60 |
| 1993 | 47  | 6  | 25  | 37  | 35  | 17  | 86 | 13 | 20  | 54  | 7  | 33  | 8  | 35  | 423  | -0,47% | 23 | 1,50 | 0,60 |
| 1994 | 45  | 6  | 27  | 38  | 33  | 17  | 83 | 13 | 21  | 58  | 8  | 33  | 9  | 35  | 426  | 0,71% | 22 | 1,42 | 0,59 |
| 1995 | 44  | 5  | 30  | 39  | 29  | 17  | 78 | 12 | 22  | 57  | 9  | 35  | 9  | 34  | 420  | -1,41% | 15 | 1,39 | 0,58 |
| 1996 | 44  | 6  | 31  | 40  | 25  | 18  | 74 | 13 | 24  | 60  | 8  | 45  | 11 | 35  | 434  | 3,33% | 11 | 1,0 | 0,52 |
| 1997 | 43  | 7  | 33  | 40  | 20  | 19  | 78 | 11 | 25  | 52  | 8  | 45  | 11 | 34  | 426  | -1,84% | 10 | 1,02 | 0,50 |
| 1998 | 41  | 8  | 33  | 40  | 17  | 19  | 81 | 11 | 26  | 34  | 8  | 45  | 12 | 33  | 408  | -4,23% | 94 | 0,94 | 0,49 |
| 1999 | 37  | 8  | 33  | 42  | 10  | 19  | 78 | 9  | 25  | 15  | 9  | 45  | 12 | 28  | 370  | -9,31% | 82 | 0,82 | 0,45 |

Table 5: Number of Domestic and Foreign Firms listed on the SWX 1986-1999
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Table 6: Number of Foreign Listings on the SWX by Country of Origin 1986-1999
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<th>Percentage</th>
<th>Japan</th>
<th>Percentage</th>
<th>Other</th>
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Table 7: Number of Foreign Listings on the SWX by Region 1986-1999
Figure 1: History of Companies listed on the SWX 1986-1999

Figure 1: History of Companies listed on the SWX 1986-1999
Figure 2: History of Foreign Listings on the SWX 1986-1999
Figure 3: History of Cross-Listings on the SWX 1986-1999

Source: Pagano et al. (1999) and own data.
Figure 4: Proportion of Foreign Companies on the SWX 1986-1999

Number of foreign companies listed on the SWX / total number of companies listed on the SWX.
Figure 5: Diaspora Index SWX 1986-1997

(Number of Swiss companies listed abroad / number of domestic companies listed on the SWX)

Source: Pagano et al. (1999) and own data.
Figure 6: Number of Foreign Listings on the SWX by Region 1986-1999
Figure 7: Number of Domestic vs. Foreign Listings by Industry on the SWX in 1999