EQUITY MARKET LIBERALIZATION IN EMERGING MARKETS

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Abstract

Equity market liberalizations, if effective, lead to important changes in both the financial and real sectors as the economy becomes integrated into world capital markets. The study of market integration is complicated because one can liberalize in many ways and many countries have taken different routes. To study the effectiveness of particular liberalization policies, the sequencing of liberalizations, and the impact on the real economy, systematic methods must be developed to date the liberalization of emerging equity markets. We provide a synthesis of the current methods and show the impact of liberalization on the real sector.

JEL Classifications: F36, G15

I. Introduction

One of the most important national policy decisions of the past twenty-five years has been the financial liberalization of equity markets across the world. Equity market liberalizations give foreign investors the opportunity to invest in domestic equity securities and domestic investors the right to transact in foreign equity securities.

It is important to distinguish between the concepts of liberalization and integration. For example, a country might pass a law that seemingly drops all barriers to foreign participation in local capital markets. This is a liberalization, but it might not be an effective liberalization that results in market integration. Indeed, there are two possibilities in this example. First, the market might have been integrated before the regulatory liberalization. That is, foreigners might have had the ability to access the market through other means, such as country funds and depository receipts. Second, the liberalization might have little or no effect because either foreign investors do not believe the regulatory reforms will be long lasting or other market imperfections exist.

To study liberalizations, they must be dated. This is difficult because countries have pursued different liberalization strategies. We begin our study by analyzing the progress that has been made on dating liberalizations. We examine regulatory changes, the ability of investors to access the local market via proxies such as country funds, and the behavior of foreign portfolio holdings.

If liberalization is effective, it leads to market integration, which has a fundamental effect on both the financial and real sectors of developing countries. In this article we also summarize some recent research on the impact of liberalization on the real sector.

II. Financial Liberalization

Official Equity Market Liberalization

As a start, Bekaert and Harvey (2000) provide a detailed examination of the key economic events that could affect the financial liberalization and reform process in a large number of emerging countries.[1] Furthermore, to explore the effects of foreign access to domestic equity markets, Bekaert and Harvey date an "official equity market liberalization" for each country, that is, a date of formal regulatory change after which foreign investors officially have the opportunity to invest in domestic equity securities and domestic investors have the right to transact in foreign equity securities abroad. As an example, Brazil rewrote its foreign investment law in May 1991. Resolution 1832 Annex IV stipulated that foreign institutions can own up to 49% of voting stock and 100% of nonvoting stock. Similarly, January 1992 signified a partial opening of the Korean stock market to foreigners, after which foreigner investors could own up to 10% of domestically listed firms.

In Table 1, we present the Bekaert-Harvey (2000) official liberalization dates for thirty emerging equity markets. As can be observed, many liberalizations

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[1]Detailed Bekaert and Harvey (2000), chronologies for each of the emerging market countries presented here are available on the Internet in the country risk analysis of http://www.duke.edu/~charvey/Countryrisk/couindex.htm.

TABLE 1.   Equity Market Opening in Emerging Countries.

Country	Official Liberalization Date	First ADR Introduction	First Country Fund Introduction	Estimate of Increase in Net U.S. Capital Flows
Argentina	89.11	91.08	91.10	93.04
Bangladesh	91.06	na	na	na
Brazil	91.05	92.01	87.10	88.06
Chile	92.01	90.03	89.09	88.01
Colombia	91.02	92.12	92.05	93.08
Cote d'Voire	95.00	na	na	na
Egypt	92.00	96.11*	na	na
Greece	87.12	88.08	88.09	86.12
India	92.11	92.02	86.06	93.04
Indonesia	89.09	91.04	89.01	93.06
Israel	93.11	87.08*	92.10	na
Jamaica	91.09	93.06*	na	na
Jordan	95.12	97.12*	na	na
Kenya	95.01	na	na	na
Korea	92.01	90.11	84.08	93.03
Malaysia	88.12	92.08	87.12	92.04
Mexico	89.05	89.01	81.06	90.05
Morooco	88.06	96.04*	na	na
Nigeria	95.08	98.05*	na	na
Pakistan	91.02	94.09*	91.07	93.04
Philippines	91.06	91.03	87.05	90.01
Portugal	86.07	90.06	87.08	94.08
South Africa	96.00	94.06*	94.03	na
Sri Lanka	90.10	94.03*	na	na
Taiwan	91.01	91.12	86.05	92.08
Thailand	87.09	91.01	85.07	88.07
Trinidad & Tobago	97.04	na	na	na
Tunisia	95.06	98.02*	na	na
Turkey	89.06	90.07	89.12	89.12
Venezuela	90.01	91.08	na	94.02
Zimbabwe	93.06	na	na	na

Note: The official liberalization dates, date of first American Depositary Receipt (ADR) issuance, and first country fund are based on Bekaert and Harvey (2000), augmented here to include ten additional emerging markets. The estimate of the break point in U.S. equity portfolio holdings is obtained from Bekaert and Harvey using the algorithm in Bai, Lumsdaine, and Stock (1998). For countries with an asterisk we obtain "effective dates" from the Bank of New York (http://www.adrbny.com). Note, the other "announcement" dates are from Miller (1999); however, he notes that the announcement usually only preceeds the issue by forty days, on average. For South Africa, the first ADR introduction date is associated with the post-apartheid period: there were many ADRs in the early 1980's which we ignore.

are clustered in the late 1980s or early 1990s. Based on the chronologies presented in Bekaert and Harvey, Table 2 provides a more detailed analysis describing the regulatory changes that occurred at the Bekaert-Harvey official liberalization dates. Generally, as in the examples provided, these reforms involved (for the first time) the removal of foreign restrictions on domestic equity holdings. Furthermore, these dates generally correspond to the liberalization dates provided by the International

TABLE 2.   Classifying an Official Equity Market Liberalization.

Country	Official Liberalization Date	Regulatory Changes
Argentina	89.11	Free repatriation of capital, remittance of dividends and capital gains.
Bangladesh	91.05	Purchases of Bangladesh shares and securities by nonresidents, including nonresident Bangladeshis, in stock exchange in Bangladesh were allowed, subject to meeting procedural requirements.
Brazil	91.05	Foreign investment law changed, Resolution 1832 Annex IV stipulates that foreign institution can now own up to 49% of voting stock and 100% of nonvoting stock. Economy ministers approved rules allowing direct foreign investments; 15% tax on distributed earnings and dividends but no tax on capital gains. Foreign investment capital must remain in country for 6 years as opposed to 12 years under previous law. Bank debt restructuring agreement.
Chile	92.01	Liberalization of foreign investment, reducing the minimum holding period and tax on investment income.
Colombia	91.02	Foreigners have the same rights as domestic investors.
Cote d'Voire	95	National Assembly approved a new Ivoirian Investment Code. For all practical purposes. there are no significant limits on foreign investment—or difference in the treatment of foreign and national investors—either in terms of levels of foreign ownerships or sector of investment.
Egypt	92	Capital Market Law 95 grants foreign investors full access to capital markets. There are no restrictions on foreign investment in the stock exchange.
Greece	87.12	Liberalization of currency controls allowed foreigners to participate in the equity market and to repatriate their capital gains.
India	92.11	Government announces that foreign portfolio investors will be able to invest directly in listed Indian securities.
Indonesia	89.09	Minister of finance allows foreigners to purchase up to 49% of all companies listing shares on the domestic exchange excluding financial firms.
Israel	93.11	Nonresidents allowed to deposit into nonresident accounts all incomes receive from Israel securities and real estate even if these were purchased from sources other than nonresident accounts.
Jamaica	91.09	All inward and outward capital transfers were permitted, except that financial institutions must match their Jamaica dollar facilities to their clients with Jamaica dollar assets.
Jordan	95.12	Foreign investment bylaws passed allowing foreign investors to purchase shares without government approval.
Kenya	95.01	Restrictions on investment by foreigners in shares and government securities were removed. The Capital Market Authority Act was amended to allow foreign equity participation of up to 40% of listed companies, while individuals are allowed to own up to 5% of listed companies.

(Continued)

TABLE 2. Continued.

Country	Official Liberalization Date	Regulatory Changes
Korea	92.01	Partial opening of the stock market to foreigners. Foreigners can now own up to 10% of domestically listed firms. 565 foreign investors registered with the Securities Supervisory Board.
Malaysia	88.12	Budget calls for liberalization of foreign ownership policies to attract more foreign investors.
Mexico	89.05	Restrictions on foreign capital participation in new direct foreign investments were liberalized substantially.
Morocco	88.08	Foreigners were permitted to subscribe to two Treasury bond issues of June 1988; the repatriation of capital and income from the investment was granted.
Nigeria	95.08	Nigerian market was open to foreign portfolio investment.
Pakistan	91.02	No restriction on foreigners or nonresident Pakistanis purchasing shares of a listed company or subscribing to public offerings of shares subject to some approvals.
Philippines	91.06	Foreign Investment Act is signed into law. The Act removes, over 3 years, all restrictions on foreign investments.
Portugal	86.07	All restrictions on foreign investment removed concept for arms sector investments.
South Africa	96	Restrictions on foreign membership in the JSE (Johannesburg Stock Exchange) lifted.
Sri Lanka	90.1	Companies incorporated abroad were permitted to invest in securities trades at the Colombo Stock Exchange, subject to the same terms and conditions as those applicable to such investments by approved national funds, approved regional funds, and nonresident individuals.
Taiwan	91.01	Implementation date of phase two of liberalization plan. Eligible foreign institutional investors may now invest directly in Taiwan securities subject to approval.
Thailand	87.09	Inauguration of the Allen Board on Thailand's Stock Exchange. The Allen Board allows foreigners to trade stocks of those companies which have reached their foreign investment limits.
Trinidad & Tobago	97.04	Companies Act came into force. Under the Companies Ordinance and the Foreign Investment Act a foreign investor may purchase shares in a local corporation. However, foreign investors currently must obtain a license before they can legally acquire more than 30 percent of a publicly hold company.
Tunisia	95.08	Inward portfolio investment was partially liberalized.
Turkey	89.08	Foreign investors were permitted to trade in listed securities with no restrictions at all and pay no withholding or capital gains tax provided they are registered with the Capital Markets Board and the Treasury.
Venezuela	90.01	Decree 727 opened foreign direct investment for all stocks except bank stocks.
Zimbabwe	93.06	Zimbabwe Stock Exchange was open to foreign portfolio investment subject to certain conditions.

Finance Corporation (IFC); however, there are other equity market liberalization dates provided in this literature that, employing different criteria, differ significantly from those provided by Bekaert and Harvey for certain countries (see Henry 2000a; Kim and Singal 2000; Levine and Zervos 1998b).

To illustrate the difficulty associated with dating market integration, Table 3 presents chronologies of major economic events for two countries, Brazil and Korea. For example, over the twenty-year period presented, Brazil, shown in Panel A, introduced insider trading laws, undertook macroeconomic reforms, employed several different exchange rate regimes, and gradually allowed increased foreign direct and portfolio investment. Additionally, these events were not unidirectional, as exchange rate and trade restrictions were reintroduced over the reform timeline. Taken together, this multifaceted reform effort makes the dating of economic and financial integration judgmental, particularly as this and previous work are interested in isolating the financial and economic effects of an equity market liberalization (see Bekaert, Harvey, and Lundblad 2001, 2002). Furthermore, Brazil is by no means unique or unusual; in Panel B, we display the comparable chronology for Korea, which exhibits the same challenging features. For example, Korea was admitted into the United Nations and initiated a political rapprochement with the Democratic People's Republic of Korea in 1991, the same year to which Bekaert and Harvey (2000) ascribe the equity market liberalization; this makes the analysis challenging.

Unfortunately, the simultaneity of macroeconomic, political, and financial reform is not the only factor potentially confounding an examination of a single reform's key economic effects. In practice, there are additional factors that may cloud the importance of the regulatory changes that Bekaert and Harvey (and others) document. First, it is possible that the investment restrictions were not binding before the reform. Second, the official regulatory changes permitting foreign investment are often implemented gradually. For instance, as can be observed in Table 3, the restrictions foreigners faced when investing in Korean securities were lifted only gradually throughout the 1990s. Hence, dating the official liberalization is not unambiguous. Third, although countries might undertake official regulatory reform efforts, foreign investors may still face significant liquidity costs; Chuhan (1992), for example, reports that market participants in many industrialized countries mentioned liquidity concerns as one of the major impediments to investing in emerging markets.

Alternative Entry: Country Funds and American Depositary Receipts

Another challenge one faces when dating an equity market liberalization is that many of these emerging markets were already indirectly open to foreign investment before official reform by way of country funds and American Depositary Receipts (ADRs). A closed-end country fund is an investment company that

TABLE 3.   **Most Important Events.**

Date	Event
Panel A. Brazil	
7600	The introduction of the Insider Trading Laws.
7800	The first prosecution under the Insider Trading Laws.
8602	Cruzado plan (price and wage controls).
8609	Fixed nominal exchange rate abandoned.
8701	Major provisions of Cruzado plan abandoned.
8703	CVM Resolution 1289 Anex II limits foreign direct investment though special conditions.
8900	Deposit rates were fully liberalized, *Mehrez and Kautmann Liberalization date*.
9003	Collor Plan Introduced: introduced a new currency and taxed stock market transactions heavily.
9100	Brazil eliminates exclusive broker system and moves to system such as the NYSE.
9105	Foreign investment law changed. Resolution 1832 Annex IV stipulates that foreign institutions can now own up to 49% of voting stock and 100% of nonvoting stock. Economy ministers approved rules allowing direct foreign investments: 19% tax on distributed earnings and dividends but no tax on capital gains. Foreign investment capital must remain in country for 6 years as opposed to 12 years under previous law. Bank debt restructuring agreement.
9105	Bekaert/Harvey official Liberalization date.
920630	Foreign investors were authorized to operate in the options and futures markets related to securities, exchange, and interest rates.
9400	Baking crises (1994–95).
9410	New 15% tax on all consumer loans and installment payments by banks and businesses.
950308	A new exchange rate system based on bands was introduced. The bond was set at R$0.88–R$0.90 per U.S. dollar until May 2 when it would be changed to R$0.88–R$0.98 per U.S. dollar.
9505	Trade policy turns inward as impart quotas are introduced and tariffs are increased.
9710	Brazil stock market suffered from the domino effect caused by Hong Kong market crash. $5 billion of reserves were used to defined the currency.
9711	The approval by Brazil's legislature of an austerity package.
Panel B. Korea	
8704	Trade liberalization measures announced.
870701	Certain tax privileges granted to attract FDI were reduced and after-investment controls relaxed to put foreign invested companies and local companies on the same basis.
871228	Overseas investments by Korean residents of less than US$1 million were to be automatically approved, and the upper limit on investment to be free from government screening was increased from US$3 million to US$5 million, regardless of purposes of investment.
8900	Foreign exchange controls phased out.
9011	First ADR is announced.
910103	Market opening to foreign investors. Notification System makes authorization of foreign investment subject to approval or notification. Foreign participation will be easier under new law. Repatriation of capital freely permitted.
9109	Korea admitted into the United Nations.
9109	Announcement that stock market will open to investors in January 1982.
9201	Partial opening of the stock market to foreigners. Foreigners can now own up to 10% of domestically listed firms, 585 foreign investors registered with the Securities Supervisory Board.
9201	Bekaert/Harvey Official Liberalization date.

(Continued)

TABLE 3.   Continued.

Date	Event
Panel B. Korea	
9412	Limit of foreign ownership of domestically listed firms raised from 10% to 12%. Government announces its intention to raise the overall limit from 12% to 15% sometime in 1995.
9505	International financial institutions were permitted to issue won-denominated bonds in the domestic financial market.
9507	Government raised foreign stock ownership limit from 12% to 15% and raised the limit for single investors from 3% to 5%. The registration period for foreign investment will decrease from 14 to 5 days.
9509	Government announced that foreign firms will be able to list on the Korean Stock Exchanges as of 1996.
960401	The ceilings on securities investments by residents were abolished.
9605	Limit of foreign ownership of domestically listed firms raised from 15% to 18%.
9609	Government relaxes foreign ownership restrictions from 18% to 20% and from 12% to 15% for state-owned enterprises.
9705	Government raised foreign ownership restriction from 20% to 23%.
9711	Government would raise the foreign shareholding limit to 26% from 23% while state-run firms' limits would be raised to 21% from 18%.
9712	The government announced a new 50% foreign investment ceiling
9805	Foreign investment limit on Korean securities was raised to 55%. Foreign Investment ceiling on state-run corporations was boosted to 30% from 25% cap.
980525	(Controls on capital and money market instruments) Foreigners are free to purchase domestic collective investment securities without restriction. (Controls on direct investment) Foreign investors were allowed to take over corporations, except defense-related companies, and the ceiling on the amount of stock foreigners may acquire in all companies without the approval of the board of directors was abolished.

invests in a portfolio of assets in a foreign country but issues a fixed number of shares domestically. Closed-end mutual funds were the original vehicles for foreign investment in emerging financial markets. For example, the Korea Fund partially opened the Korean equity market to foreign investors in 1984, long before the capital market liberalizations of 1991. In contrast, ADRs are rights to foreign shares that trade in dollars on a U.S. exchange or over the counter. Furthermore, because ADRs are treated as U.S. securities in most legal situations, they enable mutual funds, pension funds, and other U.S. institutions to hold securities that are fungible with foreign shares. Table 1 details the earliest country fund and ADR introduction for the emerging markets in our sample.

The Intensity of Liberalization

        Market integration is usually a gradual process, and the speed of the process is determined by the situation in each country. When one starts from the segmented state, the barriers to investment are often numerous. Bekaert (1995) details three categories of barriers to emerging market investment: (a) legal barriers; (b) indirect

barriers that arise because of information asymmetry, accounting standards, and investor protection; and (c) risks that are especially important in emerging markets such as liquidity, political, economic policy, and currency risk. These barriers discourage foreign investment, and it is unlikely that any or all of these barriers disappear at a single point. Because reform is usually a gradual process, the usual binary indicator variables are perhaps too coarse, failing to capture the intensity or comprehensiveness of the liberalization.

Empirical models have been developed that allow the degree of market integration to change through time (see Bekaert and Harvey 1995). This moves us away from the static segmented and integrated paradigm to a dynamic partial segmentation and partial integration setting. Whereas these models are indirect, relying on a model and econometric estimation to infer changes in the degree of integration, there are more direct measures available. Bekaert (1995) and Edison and Warnock (2002) propose a continuous measure of equity market openness designed to reflect the foreign investability of these markets. The measure is based on the ratio of the market capitalization of the constituent firms constituting the IFC Investable Index to those that constitute the IFC Global index for each country. The IFC Global index, subject to some exclusion restrictions,[2] is designed to represent the overall market portfolio for each country, whereas the IFC Investable index is designed to represent a portfolio of domestic equities that are available to foreign investors. Hence, a ratio of 1 means that all of the stocks are available to foreign investors.

We present the investability measure in Figure I for two of the markets we consider, Brazil and Korea. As can be seen, for these countries, this measure increases over time, potentially reflecting the intensity of the liberalization. Indeed, the investability measure for Korea begins at 0 in 1989 and increases to just below 1 by 2001. For comparison, we also note for each country the Bekaert-Harvey official liberalization date. In each case, the (first) major regulatory reform is indeed associated with a significant increase in the investability measure; however, the move is certainly not suggesting full foreign access after the official date. Rather, the official liberalization date is generally associated with the first big jump in this measure, but large moves in the investability index may follow. For instance, foreign access to the Korean equity market increased significantly in 1997 and 1998 (see Table 3), and is associated with large jumps in the investability index. The corresponding intensity measures for other countries are similar (see Edison and Warnock, 2002, for a more detailed analysis of this measure across a large collection of emerging markets).

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[2]For a more complete description of the methodology behind the construction of the SP/IFC indexes, see Standard & Poors (2000).
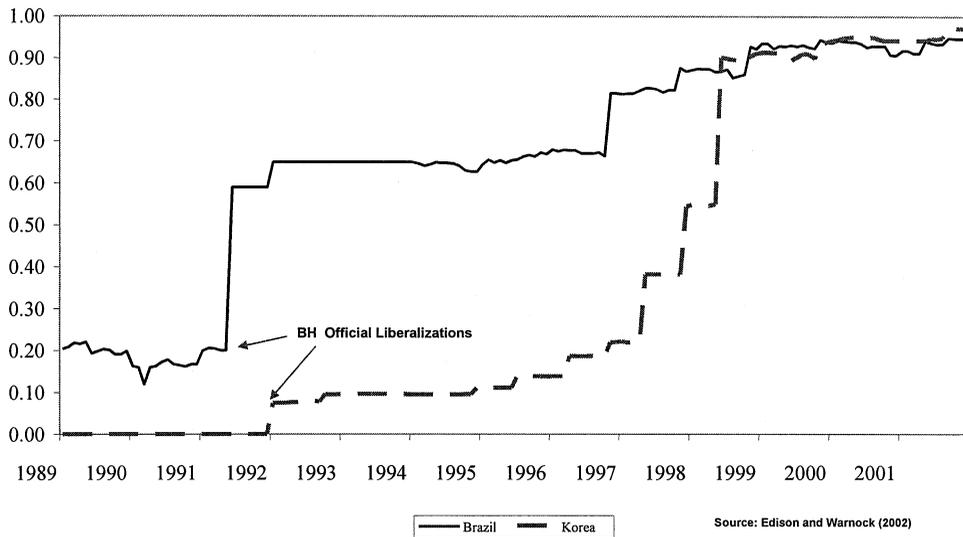
Figure I. Equity Market Liberalization Intensity.

Foreign Equity Portfolio Holdings

A second alternative designed to measure the intensity or quality of reforms is to investigate directly changes in the levels of foreign equity portfolio holdings in these countries. It makes sense that as barriers to entry decrease in emerging equity markets, foreign capital flows in. One would like to document the observable points at which foreign investors are significantly changing their portfolio holdings in these markets, but unfortunately, the data are limited along this dimension. The only high-frequency data available are net capital flows to emerging markets for the United States, published monthly in the U.S. Treasury Bulletin. If one is willing to take the U.S. transactions as a proxy for more general foreign equity market activity in these countries, an estimate of U.S. ownership can be obtained by cumulating the net equity flow data (adjusting for local equity market appreciation). The U.S. presence in these markets is likely to be highly correlated with the aggregate foreign presence.

Nevertheless, U.S. holdings estimates based on the net portfolio flow data are not without problems. First, foreign investors may not hold the precise equity portfolio employed to account for the value appreciation in the cumulation of the net flows. Second, the U.S. data on cross-border purchases and sales of securities indicate where U.S. investors are purchasing foreign securities but not the bona fide residences of the issuers of the foreign security. Hence, large observed net flows to financial centers may actually reflect emerging equity market investment through these intermediaries that one is unable to track, and estimates of U.S. portfolio holdings consequently may be understated.

The Bureau of Economic Analysis (BEA) conducted benchmark surveys of actual U.S. holdings of foreign securities in March 1994 and December 1997 (and 2000). Warnock and Cleaver (2002) show that estimated U.S. equity portfolio holdings based on the cumulated U.S. net equity flows starting in 1994 differ significantly in many cases from the benchmark survey amounts of 1997. They find that U.S. holdings of foreign securities are indeed substantially underestimated, suggesting many U.S. transactions in foreign securities are going through intermediaries in other countries, particularly the United Kingdom.

To deal with this shortcoming, Thomas and Warnock (2002) provide modified estimates of U.S. equity portfolio holdings that employ the monthly net equity flow data but are also anchored at the U.S. holdings amounts of the BEA survey in 1994 and 1997. This method exploits the high-frequency feature of U.S. net flow data but corrects for the documented underestimation by employing the infrequent, but high-quality, survey-based U.S. holdings data. Similar to Bekaert and Harvey (2000) and Bekaert, Harvey, and Lumsdaine (2002a, b), Thomas and Warnock form baseline holdings estimates, denoted $Own_{i,t}$, at the end of a month by adjusting the previous month's holdings for estimated price and exchange rate changes, and adding the current month's net purchases:

$$Own_{i,t} = Own_{i,t-1} * (1 + R_{i,t}) + Flow_{i,t}, \qquad (1)$$

where $Own_{i,t}$ is the estimated U.S. holdings of country i's securities at the end of month t, $Flow_{i,t}$ is the net U.S. purchases of country i's securities during month t, and $R_{i,t}$ is an appropriate equity return (with dividends) required to revalue last period's holdings. Thomas and Warnock also make a correction for transaction costs and stock swaps.

Recall, these unadjusted U.S. holdings amounts will be understated; by December 1997, for example, this method results in a holdings estimate $Own_{i,12/1997}$ that differs significantly from the benchmark survey. Thomas and Warnock (2002) also employ a grid search to adjust the net equity flows in each intersurvey month by an amount that will equate $Own_{i,12/1997}$ to its benchmark survey level.[3] For many countries, the estimates extend 1977, but some begin later as the equity price data necessary for the valuation adjustment are not uniformly available. In Figure II, we display the estimated U.S. holdings of Brazilian and Korean equities, along with the associated Bekaert-Harvey official equity market liberalization dates. As can be seen, the estimated holdings are effectively zero in dollar terms before the official liberalization, but subsequently explode, reaching US$24.3 billion and US$24.8 billion, respectively, by the end of 2001.

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[3] For sixteen of the emerging markets considered in this article, Thomas and Warnock were kind enough to share their adjusted estimates of U.S. equity holdings.
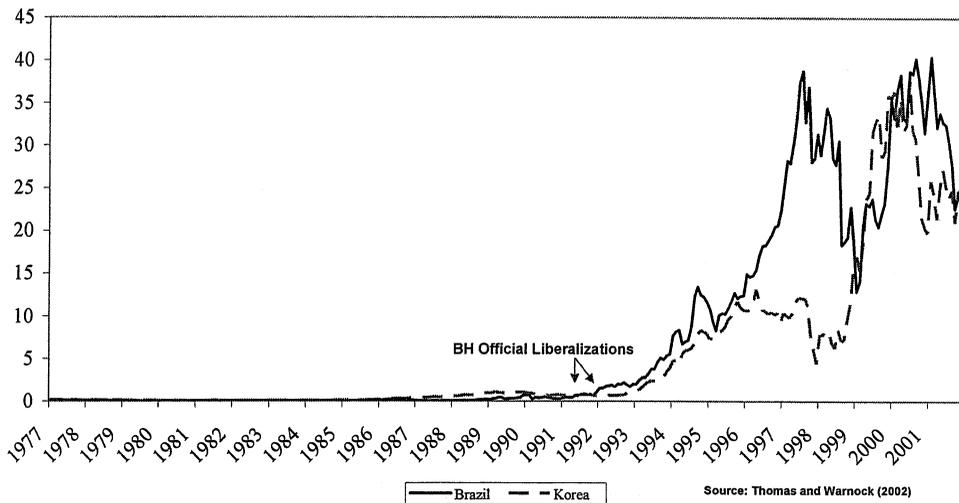
Figure II. Estimated U.S. Equity Portfolio Holdings (US$ billions).

Estimated Breaks in U.S. Equity Portfolio Holdings

      Bekaert and Harvey (2000) and Bekaert, Harvey, and Lumsdaine (2002a) employ similar estimates of U.S. equity portfolio holdings to test for a structural break in the ownership series to identify econometrically the point at which the foreign presence in these markets increases significantly. A structural shift in the foreign presence in the markets may be a better indicator of the quality of equity market liberalization; however, it should be noted that foreign capital will also be attracted by strong growth opportunities in addition to considerations such as the comprehensiveness, quality, and stability of capital market reforms. Note that the holdings data reflect both increased U.S. net transactions and the significant (and well-documented) equity appreciation observed for these markets over the post-liberalization period (see Bekaert and Harvey 2000; Henry 2000a). Consequently, to control for the valuation component, they divide these figures by the respective domestic equity market capitalization. Bekaert and Harvey (2000) and Bekaert, Harvey, and Lumsdaine (2002a) employ the endogenous break point tests detailed in Bai, Lumsdaine, and Stock (1998), which searches for a break in the mean within the context of an autoregressive model for the U.S. ownership series. Additionally, the procedure yields a break date with a 90% confidence interval. We report the Bekaert-Harvey estimated portfolio holdings break dates in the fourth column of Table 1. As can be seen, for several countries the official liberalization date and estimated break date are within a year or two of one another; for example, see Turkey, which has an official liberalization in August of 1989 and an estimate of the portfolio holding break date in December of that same year. In contrast, for several

countries the dates are different (e.g., see Argentina, Portugal, and Venezuela). Taken together, the lack of uniformity across these dates presents a challenge to researchers in this area. For this reason, it is important to evaluate the robustness of estimated liberalization effects to alternative dating schemes.

In Figure III (Panels a–p), we present the ratio of the estimated U.S. equity portfolio holdings (from Thomas and Warnock 2002) to the market capitalization of the Morgan Stanley Capital International (MSCI) indexes for each country (which they use to make valuation adjustments). Below each estimate, we provide the Bekaert-Harvey official liberalization date, the date associated with either the first country fund or ADR, and the estimated break date. Additionally, we highlight key macroeconomic, trade, legal, and financial reforms that may affect foreign interest or access. As can be seen, across almost all of the countries considered, estimated U.S. holdings of domestic equities in these countries constituted almost none of the domestic market capitalization; in contrast, by the end of 2001, the U.S. equity holdings exceeded 25%, on average, of the MSCI index capitalization across these markets, with several countries exceeding 50%.

It is important to realize that these holdings do not reflect the percentage of total market capitalization held by U.S. residents because the MSCI indexes only represent between 50% and 70% of total market capitalization. Hence, a 25% holding translates approximately into a $(0.25 \times 0.6 =)$ 15% U.S. holding. These figures, showing a strong upward trend in almost every case, demonstrate a dramatic change in the importance of foreign investors to the domestic equity markets in each of these countries over the last two decades. The more important question, however, is whether this increased foreign presence has significantly altered or improved: (a) the level of financial development and (b) real economic development through growth. These questions are the subject of our recent work (see Bekaert, Harvey, and Lundblad 2001, 2002).

III. Economic Effects of Financial Liberalization

There are several channels through which financial liberalization may affect the real economy. Once allowed access, foreign investors, exploiting the benefits of diversification, will drive up domestic equity market values; Bekaert and Harvey (2000) and Henry (2000a) demonstrate that the cost of capital falls after major regulatory reforms that permit foreign investors access to domestic equity markets. Also, Henry (2000b) and Bekaert, Harvey, and Lundblad (2002) document that aggregate domestic investment increases significantly after liberalization, potentially stimulating economic growth. There is also a booming literature (e.g., see Atje and Jovanovic 1989; King and Levine 1993; Levine and Zervos 1998a) that documents enhanced economic growth associated with deeper financial markets and banking sectors. Because equity market liberalization promotes financial development and
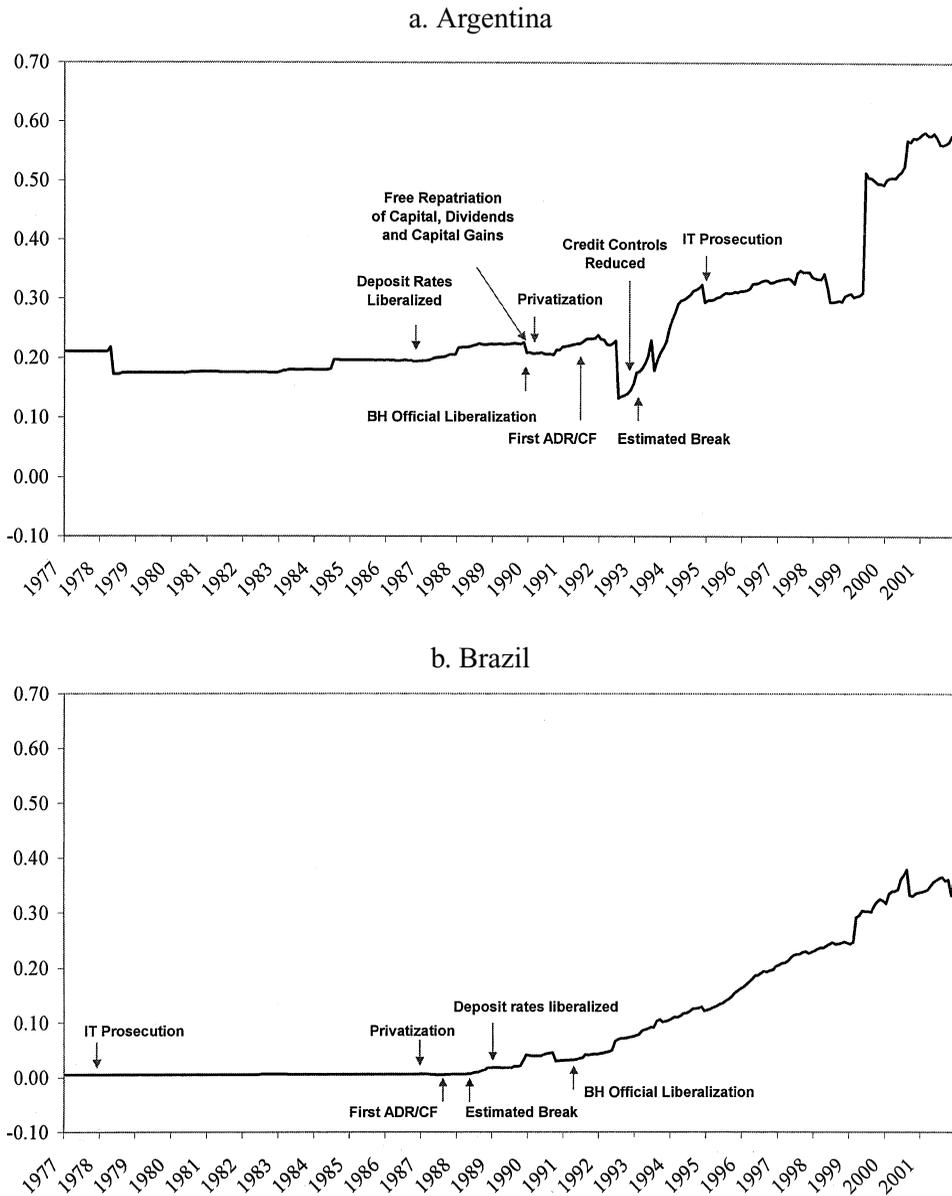
a. Argentina

b. Brazil

Figure III. U.S. Shares of MSCI Capitalization in Sixteen Countries.

liquidity (see Bekaert, Harvey, and Lundblad 2002), this may provide an additional channel through which liberalization stimulates growth. Finally, as foreign investors may demand improved corporate governance and transparency in these countries, liberalization may reduce the wedge between costs of external and internal financing at the firm level, stimulating corporate investment (see Love Forthcoming). We

c. Chile
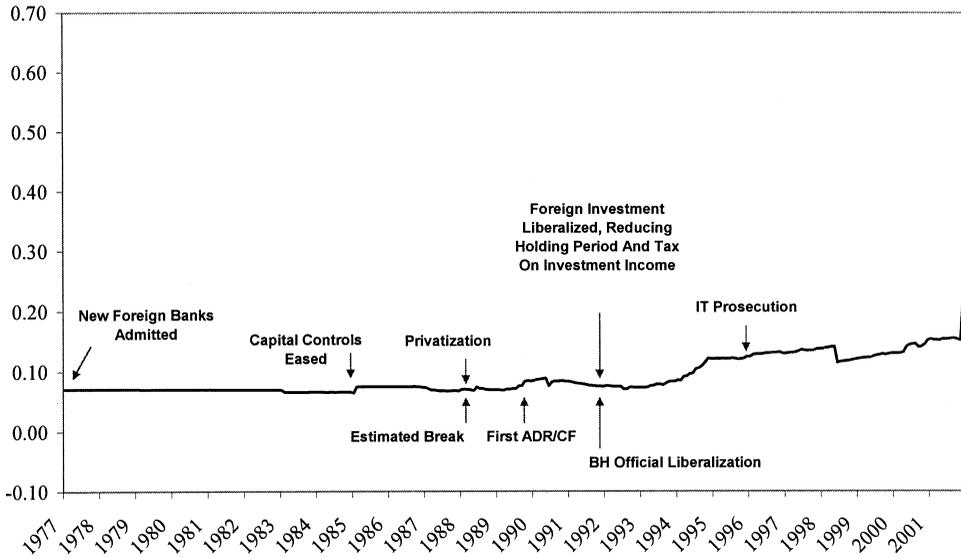
d. Colombia
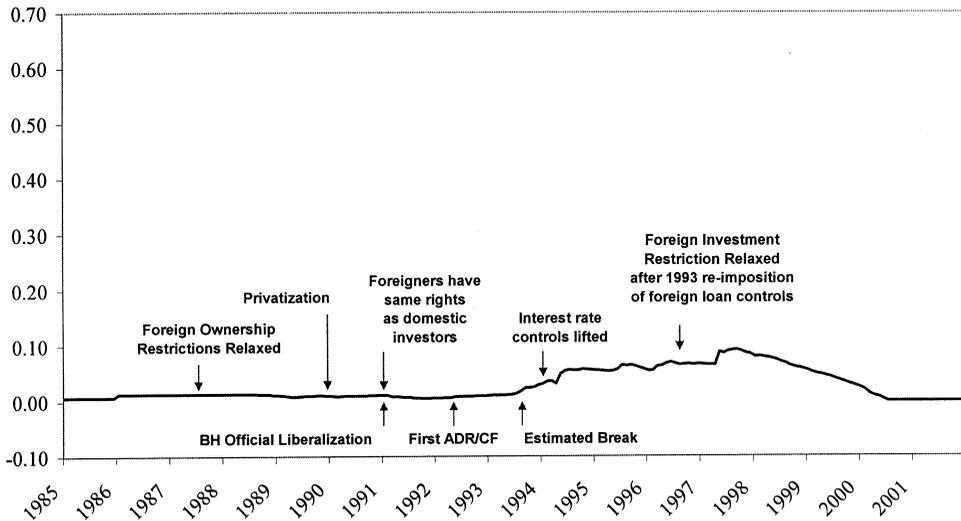
Figure III.   (Continued)

summarize some recent evidence on the liberalization effects on real gross domestic product (GDP) and investment growth for a collection of developing economies that house emerging equity markets.

For a collection of emerging and frontier markets from 1980 to 1997, Bekaert, Harvey, and Lundblad (2001) document that an "official equity market

e. Greece
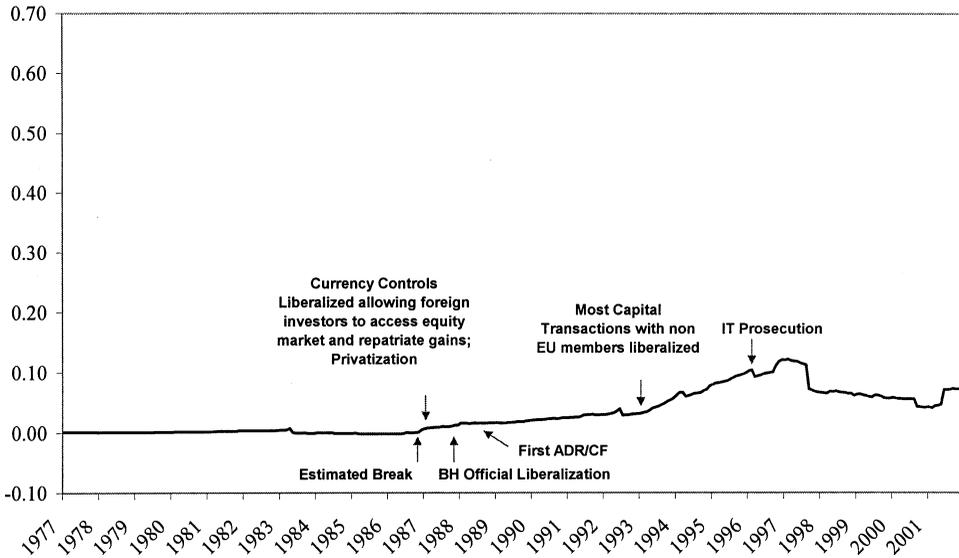
f. India
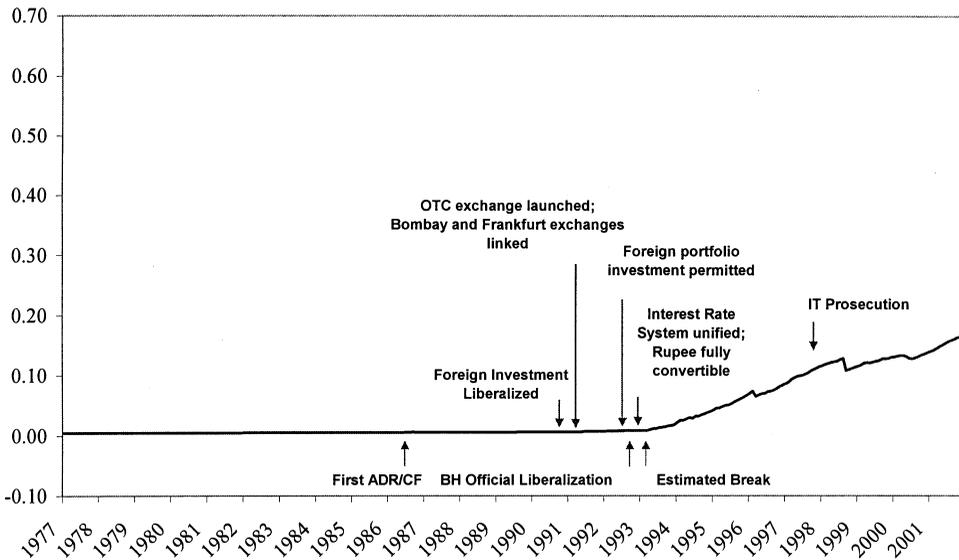
Figure III.   (Continued)

liberalization" leads to an increase in average annual per capita GDP of around 1% controlling for other macroeconomic, demographic, and financial factors that have been shown to predict cross-sectional variation in economic growth. We explore GDP and investment growth across a similar set of countries here, updating our data

g. Indonesia
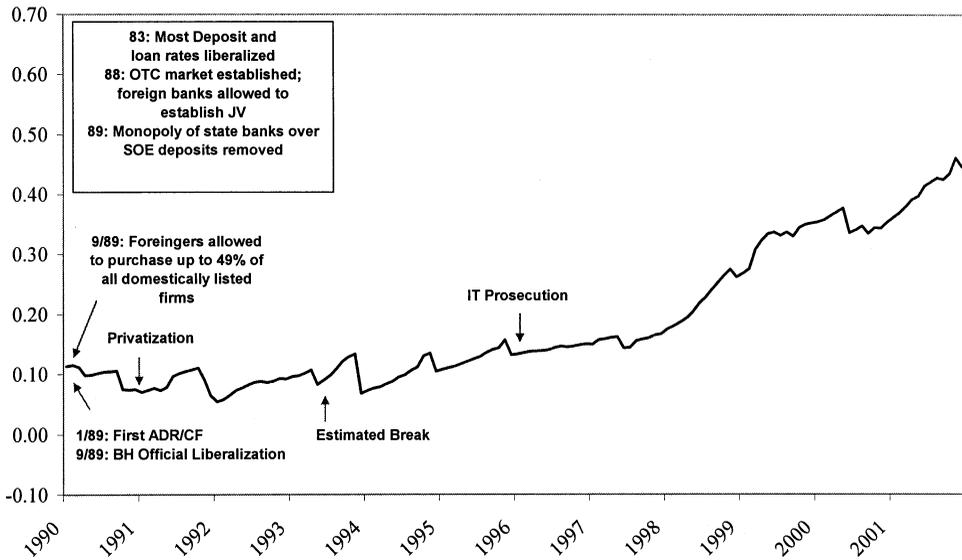
h. Korea
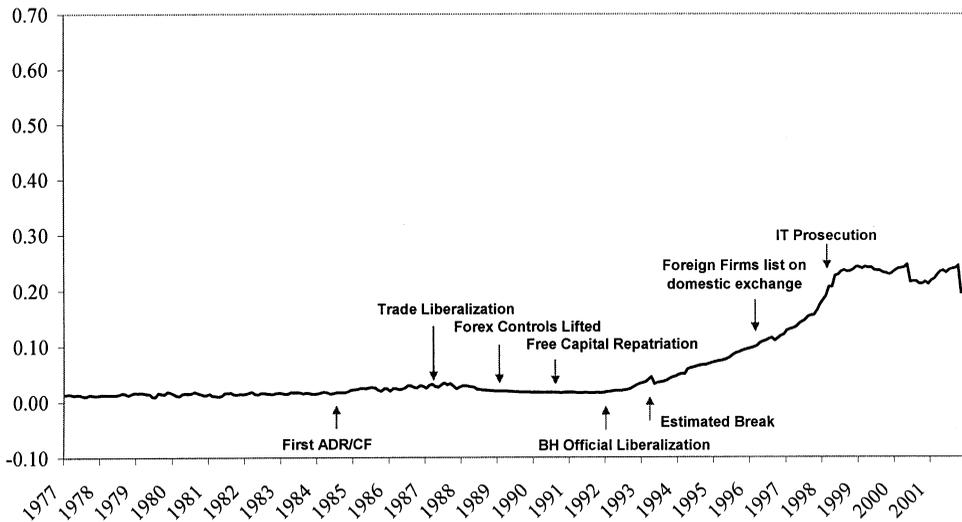
Figure III.   (Continued)

set to include the highly influential Southeast Asian crises, during which several countries in that region actually contracted by more than 10%. For example, in 1998, real per capita GDP growth was −12.1% in Thailand, −15.7% in Indonesia, and −7.8% in Korea according to the World Bank.
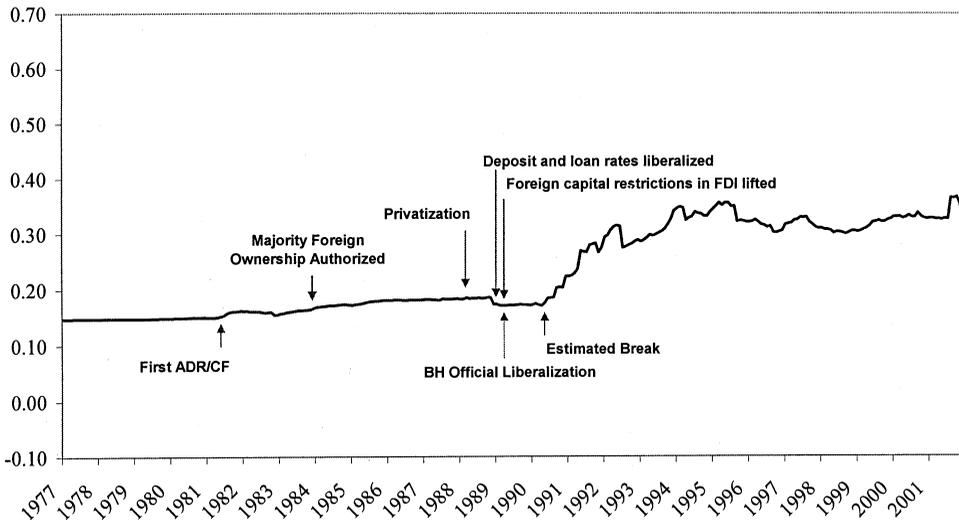
i. Malaysia
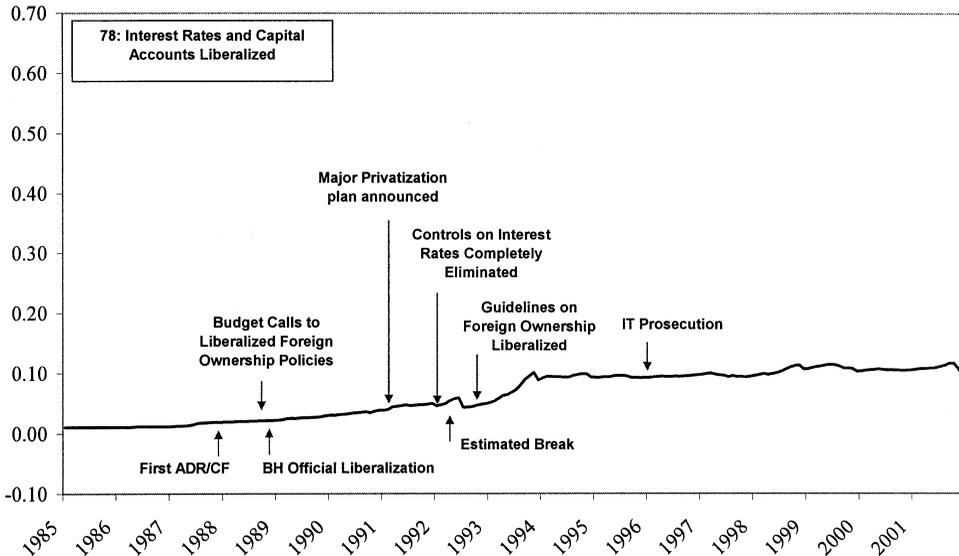
j. Mexico

Figure III.   (Continued)

Summary Statistics

For the thirty emerging markets (excluding Taiwan because of World Bank data limitations) we consider, we collect annual data on real per capita GDP and investment extending from 1980 to 2000 from the World Bank Development Indicators CD-ROM. Figures IV and V present evidence on annually observed rates of
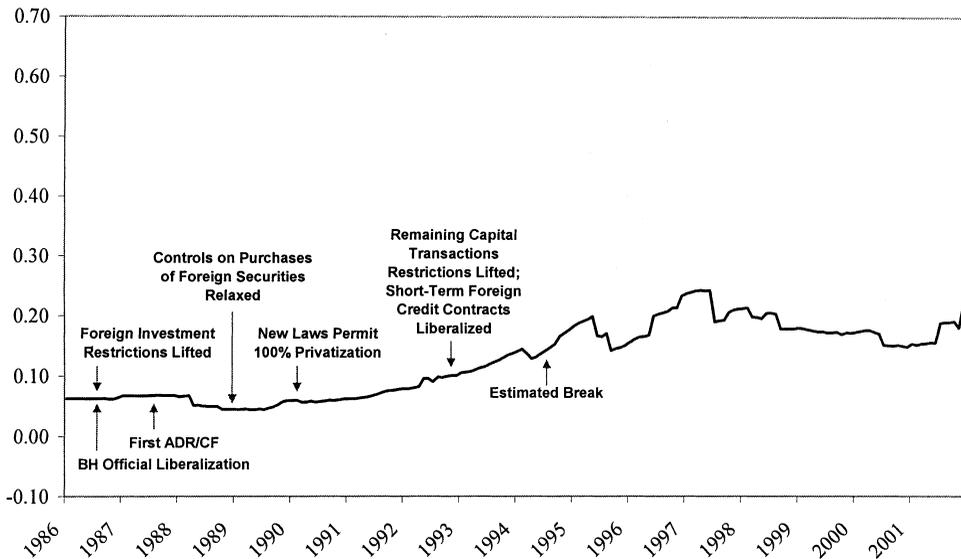
k. Philippines
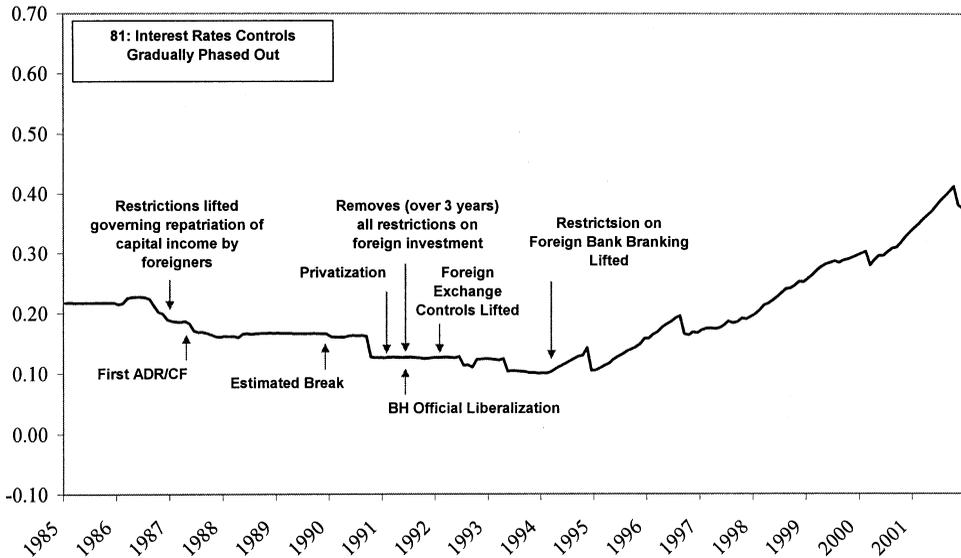
l. Portugal

Figure III. (Continued)

economic and investment growth, respectively, both before and after the Bekaert-Harvey official liberalization dates presented in Table 1.

As can be seen from the figures, most of these countries exhibit larger average economic growth after financial liberalization, even when the crisis years are included. With that in mind, the observed average difference across liberalization
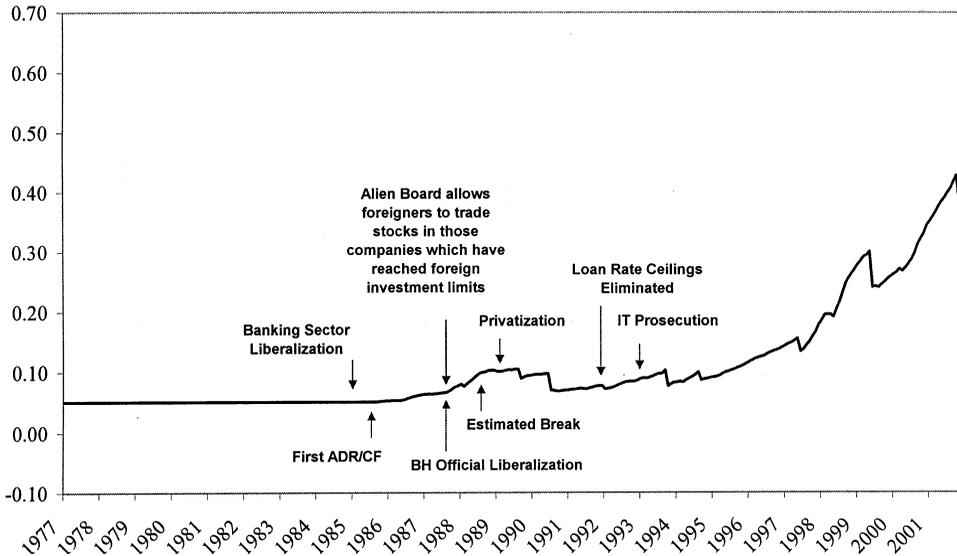
m. Taiwan
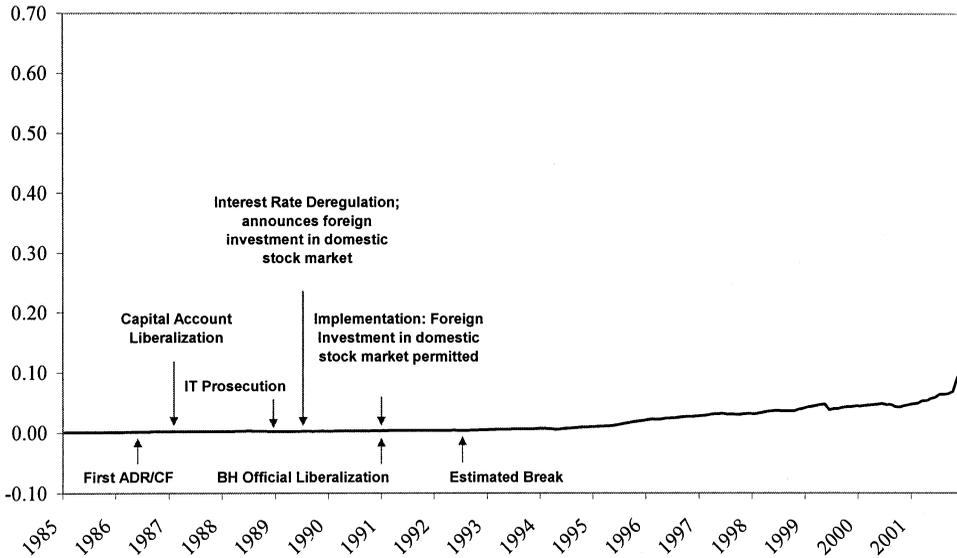
n. Thailand

Figure III.   (Continued)

regimes is a remarkably robust feature of the data. Investment growth is similarly larger, on average, for most countries; however, there is a large negative average investment rate post-liberalization for Zimbabwe. This is because of an extremely large investment contraction in 2000 (GDP also contracts but by a considerably smaller margin). This drop in investment is likely due to the extensive political
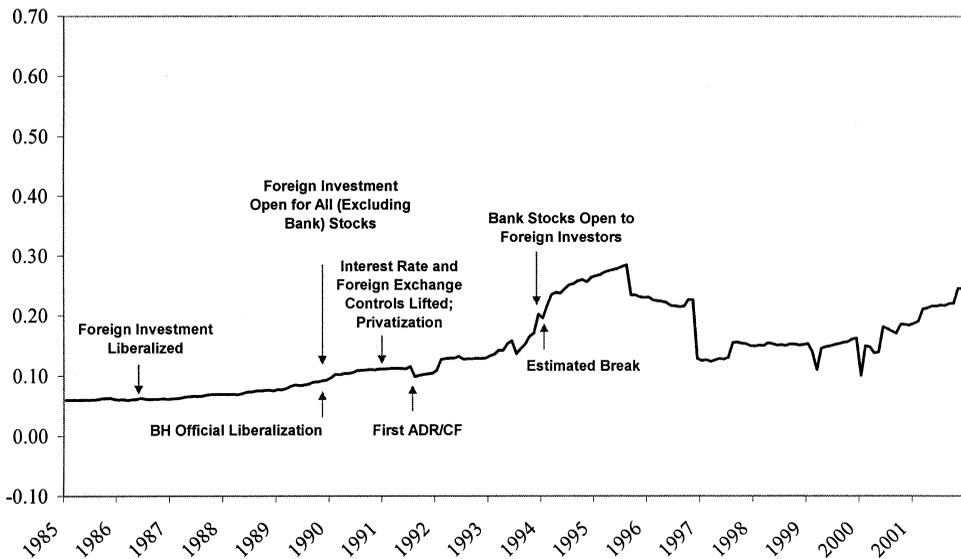
o. Turkey
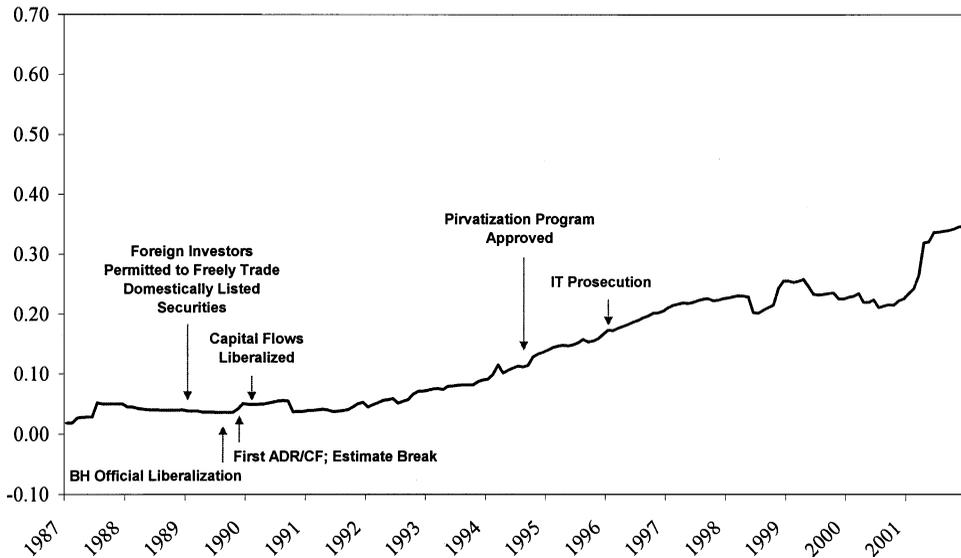
p. Venezuela

Figure III.   (Continued)

turbulence exhibited in that country at the end of our sample.[4] Nevertheless, investment growth is, on average, higher for liberalized countries.

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[4]Zimbabwe faced its worst economic crisis since independence with unemployment, interest rates, and inflation all soaring to record highs in 2000.
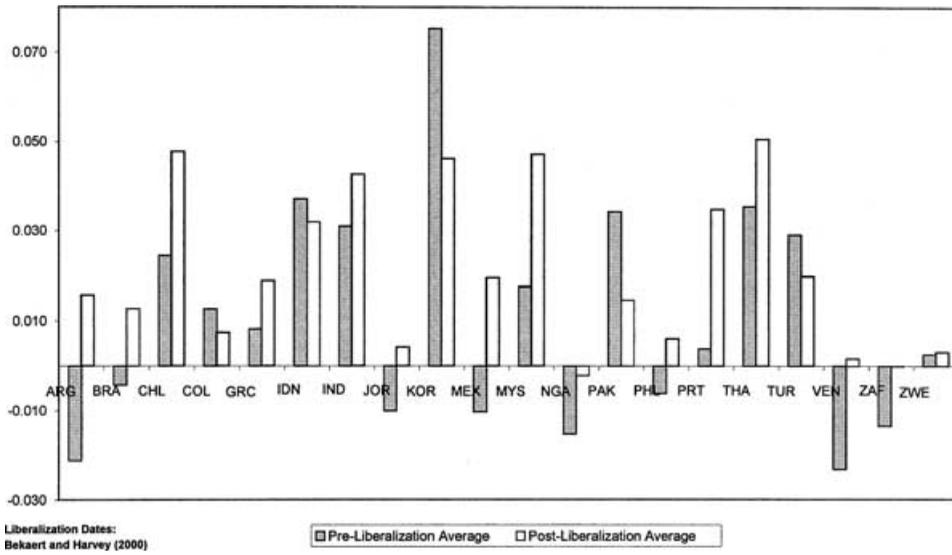
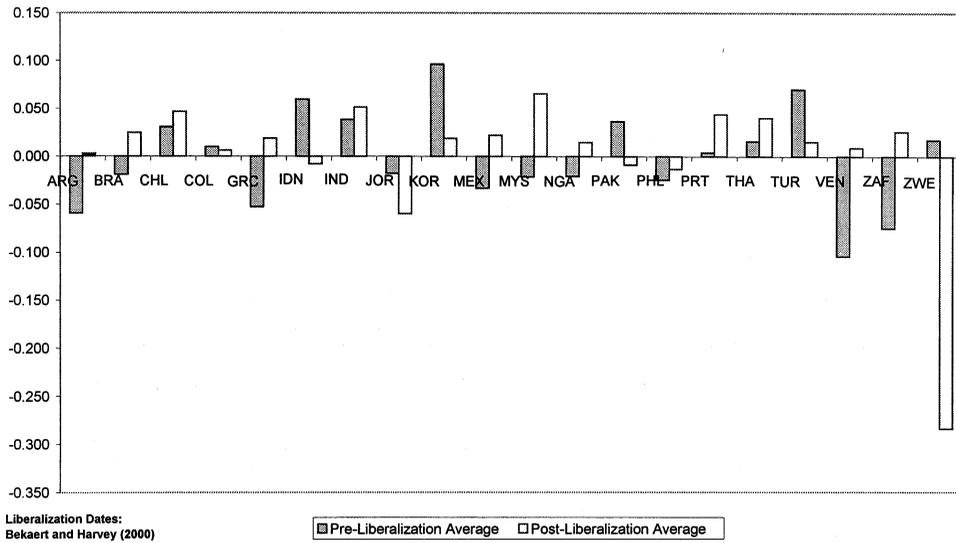**Figure IV. Real GDP Growth Before and After Financial Liberalization.**

Figure V. Real Investment Growth Before and After Financial Liberalization.

Emerging Economies and Liberalization

Following Bekaert, Harvey, and Lundblad (2001, 2002), we estimate the following regression specification:

$$y_{i,t+1} = \beta_{i,0} + \beta_1 \bullet Lib_{i,t} + \varepsilon_{i,t+1}, \tag{2}$$

TABLE 4.   Real Economy Effects of an Equity Market Liberalization (sample: 30 countries).

Panel A. One-Year GDP Growth Fixed Effects (not reported)			Panel B. One-Year Investment Growth Fixed Effects (not reported)		
	Estimate	Standard Error		Estimate	Standard Error
Official liberalization	0.0083	*0.0013*	Official liberalization	0.0232	*0.0057*
First sign	0.0082	*0.0014*	First sign	0.0264	*0.0057*
Investability	0.0108	*0.0022*	Investability	0.0325	*0.0111*

Note: The regressions we perform include observations on 30 countries from 1980 to 2000. The dependent variable is either the one-year average growth rate of real per capita gross domestic product (Panel A) or real per capita domestic investment (Panel B). We include in the regressions, but do not report, country specific intercepts (fixed effects). We report the coefficient on the official liberalization variable that takes a value of 1 when the equity market is liberalized, and 0 otherwise. The first sign liberalization indicator takes the value of 1 after the first of the following events: the officially liberalization data, the introduction of an American Depositary Receipt (ADR) of the introduction of a country fund. The intensity measure is the ratio of IFC Investables to global market capitalization from Edison and Warnock (2002). The weighting matrix we employ in our generalized method of moments estimation provides a correction for cross-sectional heteroskedasticity.

where $y_{i,t+1}$ is the one-year growth rate in either real per capita GDP or investment, and $Lib_{i,t}$ is a liberalization indicator variable that equals 1 when the equity market is officially liberalized, and 0 otherwise. Bekaert-Harvey official liberalization dates are presented in Table 1. We estimate the pooled time-series cross-sectional regression by generalized method of moments (see Hansen 1982), correcting for groupwise heteroskedasticity and seemingly unrelated regression effects. We also employ a simple fixed-effects estimator to account for other country-specific factors that might affect economic and investment growth. To conserve space, we do not present the fixed-effects estimates.

In Table 4, we present estimates of the relation between real economic growth rates and the Bekaert-Harvey official equity market liberalization indicator. Consistent with the evidence on the pre- and post-liberalization average growth rates presented in Figures IV and V, these estimates demonstrate a positive and statistically significant relation between the Bekaert-Harvey official equity market liberalization and both GDP and investment growth. Specifically, consistent with Bekaert, Harvey, and Lundblad (2001), the evidence implies that real GDP per capita growth rates increase following financial liberalization by 0.84% (standard error 0.16%), on average, across the countries considered here. Similarly, consistent with Henry (2000b), real investment growth increases by 2.2% (standard error 0.73%), on average. These differences suggest a significant economic effect associated with the introduction of foreign investors to domestic equity markets.

As emphasized earlier, the dating of an equity market liberalization is not a clear-cut empirical exercise. Hence, when exploring the economic effects associated with the official regulatory reform, an examination of the robustness of these effects to alternative dating schemes is required. For this reason, as in Bekaert,

Harvey, and Lundblad (2002), we reestimate the regression presented earlier using two alternative sets of equity market liberalizations. The first set of dates are what are referred to as first sign dates, that is, the earliest of the three dates presented in Table 1: official liberalizations, first ADR announcement, and first country fund launch. The second row of Table 4 suggests that the liberalization coefficients are robust to using the first sign dates, as the estimated effects for both GDP and investment growth are virtually identical.

Second, given the limitation of the binary liberalization indicator employed earlier, we reestimate the regression models employing the continuous investability measure from Edison and Warnock (2002). Recall that a ratio of 1 indicates that all domestic stocks are available to foreign investors. In Table 4, we call this the investability measure. The estimates reported in Table 4 can be interpreted as the liberalization effect for countries that are fully open. The effect is, not surprising, stronger than the coarse liberalization effect. For example, the GDP and investment growth effects of a full-equity market liberalization are 1.1% and 3.3%, respectively, and both are highly significant. For a more elaborate analysis, including the growth effects for various horizons, the effect of control variables, and an exploration of the channels of growth, see Bekaert, Harvey, and Lundblad (2002).

IV. Conclusion

The integration of emerging equity markets into world capital markets is best thought of as a structural change. Integration affects the functioning of the equity market, the cost of capital, the diversification ability of local participants, the level of prices, the business focus of local companies, and foreign capital flows. The financial changes spill over into the real economy. It makes sense that a lower cost of capital is associated with increased investment and better prospects for GDP growth.

In this article we begin by focusing on the different routes that a country can take to liberalize its equity market. We then explore the methods by which researchers can date the integration of world equity markets. The dating is a critical exercise. Only when dates are established can research begin to measure the impact of liberalizations. Given the considerable variation in liberalization initiatives, a closer analysis of the sequencing of liberalizations is an important focus of future research.

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