

Stock Market Development under Globalization: Whither the Gains from Reforms?

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Abstract

Over the past decades, many countries have implemented significant reforms (including financial liberalization, privatization, and regulatory and supervisory improvements) to foster domestic capital market development. Despite these policies, the performance of capital markets in several countries has been disappointing. To understand the effects of reforms, we study the impact of six capital market reforms on domestic stock market development and internationalization. We find that reforms tend to be followed by increases in domestic market capitalization and trading. But reforms are also followed by an increase in the share of activity in international equity markets, with potential negative spillover effects.

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1. Introduction

Over the last two decades, a large number of countries, both developed and developing, have implemented significant capital market reforms, including stock market liberalization, improvements in securities clearance and settlements systems, and the development of regulatory and supervisory frameworks. These reforms, together with improved macroeconomic fundamentals and related reforms, such as the privatization of state-owned enterprises and the shift to privately managed defined contribution pension systems, were expected to foster domestic financial development.¹ These expectations were supported by the growing cross-sectional empirical evidence on the determinants of stock market development, which shows that countries with sounder macroeconomic policies, better institutional environments, and more efficient legal systems, especially regarding the protection of minority investors, have more developed domestic markets.²

Capital market reforms were also expected to foster domestic market development through their impact on the stock market internationalization process. According to this argument, poor domestic environments prompt firms and investors to use international markets more intensively. A poor domestic environment has long been considered one of the main reasons for capital flight and greater use by domestic residents of financial services offered abroad (see, for example, Collier, Hoeffler, and Pattillo, 2000). Over the last decades, there has been an increasing migration of securities market activities to major international

¹ This has been deemed an important goal, as financial development is linked to economic growth. See Levine (2005) for a comprehensive review of the literature on the finance-growth nexus.

² The literature on domestic stock market development has found that more developed countries tend to have deeper stock markets (see, for example, Rajan and Zingales, 2003 and La Porta, Lopez-de-Silanes, and Shleifer, 2006) and that the laws and enforcement mechanisms that protect the rights of minority investors foster equity market development (La Porta et al., 1997, 1998). Macroeconomic stability has also been found to promote financial development (IADB, 1995; Boyd, Levine, and Smith, 2001).

financial centers, such as New York and London. As part of this globalization process, Depository Receipts (DRs) have become increasingly popular instruments.³ For many developing countries, activity in international markets now exceeds domestic stock market activity. A number of papers argue that this internationalization process is the result of firms trying to escape from poor domestic environments with weak institutions and poorly functioning markets.⁴ This view implies that capital market reforms will reduce incentives for firms to internationalize and will result in a lower share of equity market activities taking place abroad. This may have significant implications for domestic market development, as the migration of trading to international financial centers can have negative spillover effects on local markets.⁵

Despite the intense reform efforts, the performance of local capital markets in many developing countries has been disappointing. Although some countries experienced growth of their stock markets, this growth was not as significant as the one witnessed by the most advanced nations. Other countries experienced an actual deterioration of their domestic capital markets.⁶ Stock markets in many developing countries remain illiquid and segmented, with trading and capitalization concentrated on few stocks. The large number of policy

³ There are different alternatives to cross-list domestic stocks in international financial markets. A very popular way to do so is through depository receipts, called American Depository Receipts (ADRs) or Global Depository Receipts (GDRs). These are foreign currency denominated derivative instruments issued by international banks, representing home securities held with a local custodian.

⁴ Karolyi (2004), for example, argues that the growth of ADR programs in emerging economies is the result of poorly functioning stock markets, resulting from economic, political, legal, or other institutional forces that generate incentives for firms to leave. This view is also behind the recent literature on “bonding,” which argues that cross-listing in an exchange with better investor protection is a form of bonding, creating a credible and binding commitment by the issuer to protect the interests of minority shareholders. See Benos and Weisbach (2004) for a review of this literature.

⁵ Levine and Schmukler (2006a,b) analyze the impact of migration to international markets on domestic stock market trading and liquidity. Moel (2001) and Karolyi (2004) also present evidence on how the use of ADRs is related to stock market development in emerging economies.

⁶ See de la Torre and Schmukler (2006) for the evolution of emerging capital markets over the last decades.

initiatives and the dismal performance of capital markets have raised several questions. Is it possible that capital markets do not respond to reforms and that the policy prescriptions were based just on cross-country evidence? Is more time needed to see the full fruits of reforms? Does the reform agenda need to be rethought?

In this paper we try to shed light into this issue, by analyzing how capital market-specific and related reforms have impacted both the development of domestic stock markets and the internationalization of stock market activities. We focus our analysis on six reforms that can potentially contribute to the development of stock markets, for which we were able to collect data on implementation dates for a large number of countries. These reforms are: stock market liberalization, enforcement of insider trading laws, introduction of electronic trading systems, privatization programs, structural pension reform (i.e., shifting from a public defined benefit pay-as-you-go system to a privately managed funded defined contribution system), and institutional reform.⁷

From an academic perspective, the value added of this paper is to analyze the impact of different capital market reforms using the same framework and extend the analysis beyond domestic stock markets, including activity in international markets. There are a number of papers that analyze the impact of some of these reforms on certain aspects of local stock markets. We discuss these papers below, when describing in detail each reform covered by our study. However, these papers tend focus only on one reform. We instead study the impact of six reforms on domestic markets, using two indicators of stock market development:

⁷ Some of these reforms were specifically directed to improving the functioning of domestic stock markets. Others, such as privatization, pension reform, and institutional reform, were implemented due to other reasons, including reducing public expenditure and improving the business environment, but were part of an overall strategy to foster market activity and were expected to support capital market development.

capitalization and trading activity.⁸ Furthermore, none of these papers include international activity in their analyses. This represents an important limitation, given the significant participation of many countries in international equity markets.

From an academic and policy perspective, our study allows policymakers to go beyond cross-country evidence and understand the within-country impact of reforms. Although the cross-country analysis of the determinants of stock market development is very informative, it presents some shortcomings from the standpoint of each country. The relevant policy question is how capital market reforms and improvements in the enabling environment will affect a country's stock market. Cross-country evidence might not be very helpful in this respect, as some variables are completely exogenous and beyond the control of policymakers.⁹ And even when the government can manipulate some variables, it may be very difficult and might take a very long time for a developing country to replicate the environment existent in rich countries, which is the one thought to be optimal for finance to flourish. Even panel data analysis may be of limited assistance, as there may be little time variation in the macroeconomic and institutional environment and panel results might thus be driven by cross-country differences. In this paper, we shift the attention away from estimating the cross-sectional relation between fundamentals and stock market development, and focus instead on event studies, which show the within-country changes in stock market development and internationalization around capital market reforms. We view this approach as complementary to the panel and cross-country analysis documented so far in the literature.

⁸ We also conducted all our empirical analyses using measures of equity capital raised, both domestically and abroad, and found similar results. See the working paper version of this paper, de la Torre de la Torre, Gozzi, and Schmukler (2006a) for details.

We find that reforms are associated with increases in domestic stock market capitalization and trading, contrary to the claim that they are not effective. However, we also find that reforms are associated with increased internationalization, and that some of the reforms seem to have been followed by a higher share of activity in international markets. This runs contrary to the view that a poor domestic environment prompts firms to access international markets and that reforms reduce internationalization.

Most of the results are robust to controlling for domestic and international macroeconomic variables. These controls are important because capital market reforms can be contemporaneous to other policy changes (such as macroeconomic stabilization programs, trade liberalization, and the easing of exchange rate controls) or may occur at high points in the domestic and/or international business cycle. Since many countries implemented several capital market reforms in a short period of time, when analyzing each reform we also control for other reforms clustered around that time. We find that our results remain mostly unchanged when including this control, suggesting that the reforms under analysis tend to have a positive marginal effect on domestic stock market development and internationalization.

The rest of the paper is structured as follows. Section 2 describes the data and the reforms under analysis. Section 3 presents the empirical results. Section 4 discusses some potential interpretation problems and presents robustness tests. Section 5 concludes.

⁹ The inclusion of clearly exogenous variables, such as legal origin, religion, or geographical endowments, while informative from an analytical perspective, provides no guidance to policymakers about which course of action to take.

2. Data

This section presents the data used in the paper. We first describe the data on stock market activity, both in domestic markets and abroad, and then discuss in detail the reforms we analyze.

2.1. Stock market activity data

As measures of stock market activity, we use two variables: market capitalization and value traded. For both variables, we need data on domestic and international activity. While there are several sources on domestic stock market capitalization and value traded that comprise a large number of countries, there is no comprehensive database on the extent of the internationalization of stock market activities. Therefore, we need to combine a number of sources.¹⁰

On domestic activity, the data on market capitalization and value traded on the major local stock exchanges come from the Standard & Poor's Emerging Markets Database and Global Stock Markets Factbook and cover the period 1975-2004 for 117 countries.

On international activity, we use data from Claessens, Klingebiel, and Schmukler (2006), who collect firm-level information from several sources and aggregate it to obtain country-level variables. Here, we only present a brief description of these data. In terms of trading in international markets, the data come from the Bank of New York and cover trading in ADRs for the period 1989-2000. Data from the Bank of New York, Euromoney, the London Stock Exchange (LSE), NASDAQ, and the New York Stock Exchange (NYSE) are used to identify the "international" firms in each country. International firms are those that are listed in international markets, directly or via DRs, or have raised capital in international

equity markets. This classification is used to determine the market capitalization of all international firms in each country.¹¹

We use six variables for our analysis, two for the development of local stock markets, two for the internationalization of stock exchange activities, and two for the relative degree of internationalization. The first two are: market capitalization over gross domestic product (GDP) and value traded domestically over GDP. The next two are: market capitalization of international firms over GDP and value traded abroad over GDP. The last two are: market capitalization of international firms over total domestic market capitalization and value traded abroad over value traded domestically.

2.2. Capital market reforms

As mentioned above, we analyze the impact of six capital market-specific and related reforms: stock market liberalization, enforcement of insider trading laws, introduction of fully automated electronic trading systems, privatization programs, structural pension reform, and institutional reform.¹² While these reforms were a significant part of the capital market reform programs implemented by most countries, this list is not exhaustive and does not attempt to cover all the policy initiatives oriented towards fostering stock market development that were implemented over the last decades. The focus on these reforms is driven by their relevance, as many imply significant policy changes, and by data availability on their implementation dates for a large enough number of countries. Although we believe that we cover some of the most significant capital market related reforms, some policies not included in our analysis may be

¹⁰ Details on the data sources are provided in de la Torre, Gozzi, and Schmukler (2006a).

¹¹ For all the internationalization variables observations are assigned a zero when no activity in international equity markets is identified.

¹² See de la Torre, Gozzi, and Schmukler (2006a) for the list of countries covered and the dates of the different reforms analyzed.

as relevant, if not more, for stock market development. We now turn to the description of each reform.

Stock market liberalization is the decision by a government to allow foreign investors to purchase shares in the local stock market and domestic investors to purchase shares abroad. International asset pricing models predict that the integration with world financial markets should lead to a reduction in the cost of capital.¹³ A number of papers assess the impact of stock market liberalization on the cost of equity capital, finding evidence of an increase in share prices around the liberalization date and a reduction in the cost of capital afterwards.¹⁴ Regarding stock market development, liberalization increases the pool of capital available to local firms and broadens the investor base. This is likely to lead to increased liquidity and larger amounts of research. Furthermore, the scrutiny of foreign investors may increase transparency and promote the adoption of better corporate governance practices (Stulz, 1999; Errunza, 2001). Consistent with these arguments, a number of papers find evidence of increases in domestic stock market depth and efficiency following liberalization.¹⁵

Our data for dating the liberalization of stock markets come from three sources: Bekaert, Harvey, and Lundblad (2005), who present official liberalization dates, mostly for developing countries; Kaminsky and Schmukler (2003), who construct an index of the extent of stock market liberalization which also includes developed economies; and Vinhas de Souza

¹³ See, for example, Stapleton and Subrahmanyam (1977), Stulz (1981, 1999), Errunza and Losq (1985), Eun and Janakiramanan (1986), and Alexander, Eun, and Janakiramanan (1987).

¹⁴ See, for example, Bekaert and Harvey (2000), Henry (2000a, 2003), Kim and Singal (2000), and Edison and Warnock (2003). A related literature analyzes the impact of stock market liberalization on real variables, reporting significant increases in investment and economic growth following liberalization (see, for example, Henry, 2000b, 2003 and Bekaert, Harvey, and Lundblad, 2005).

¹⁵ See, for example, Jain-Chandra (2002) and Bae, Bailey, and Mao (2006).

(2005), who extends this index to Eastern European countries. We combine these three sources to get the widest possible coverage.

As part of the capital market reform programs, governments approved new laws and regulations aimed at creating the proper legal and regulatory framework for capital markets to flourish. Many countries tried to improve corporate governance practices, by introducing new standards in a number of different areas, including voting ratings, tender procedures, and the structure of the board of directors. Some countries also enacted new insider trading regulations and improved accounting and disclosure standards. To account for improvements in the legal framework for investors, we focus on the enforcement of insider trading regulations. The date of insider trading laws enforcement is the date of the first prosecution under these laws. These data come from Bhattacharya and Daouk (2002), who carry out a comprehensive survey of insider trading laws, finding that these laws existed in 87 countries by 1998 but had been enforced, as evidenced by prosecutions, in only 38 of them.

Policymakers also took important strides towards establishing and improving the basic environment for capital market operations, including new policies related to securities clearance and settlement systems, trading platforms, and custody arrangements. These reforms were expected to improve market performance, by increasing liquidity, enhancing efficiency, and reducing trading costs. We focus our analysis on the replacement of traditional trading floors, on which brokers manually match orders using an open outcry system, by fully automated electronic trading systems. Electronic trading systems may increase liquidity and improve efficiency by reducing transaction costs and increasing information availability. These trading systems may also attract new pools of liquidity, by providing affordable remote access to investors. The dates of the introduction of electronic trading systems come from Jain

(2005), who collects data on stock exchanges in 120 countries and finds that the leading exchanges in 101 of those countries have introduced electronic trading over the last 25 years.

In the last twenty years, governments from all over the world have undertaken significant privatization programs. This privatization process was motivated by the desire to increase government revenues, promote economic efficiency, and reduce government interference in the economy. Domestic capital market development was also an explicit objective of privatization programs in many countries. Privatizations had a direct impact on domestic stock markets, as many governments carried out privatization sales through share offerings on local exchanges. These share issues were expected to foster stock market development by increasing the diversification opportunities available to investors and therefore encouraging trading activity and new listings by private firms.¹⁶ Privatization programs, even without share offerings on local exchanges, may also foster stock market development by reducing political risk (Perotti and van Oijen, 2001). Privatizations also had a direct impact on stock market internationalization, as many privatization sales involved offerings in international financial markets.

To date the start of privatization programs we use data from the World Bank privatization database, which records privatization transactions from developing countries between 1988 and 2003, and the Privatization Barometer database, which has data on privatization transactions starting in 1977 for 23 European countries. For some countries not included in these databases, we collected data on privatization transactions from government sources. We define the starting date of a privatization process as the first year with at least two privatization transactions that is followed by further transactions in at least three of the

¹⁶ See Chiesa and Nicodano (2003) for a review on the impact of privatization on stock market development.

next four years.¹⁷ We require privatization activity to be maintained for at least some time because we want to capture the start of a privatization program and not isolated transactions. Also, note that we focus on transactions and not the announcement of a privatization program or the introduction of a privatization law, as we want to capture the actual implementation of a privatization program.

Another significant reform in many countries, especially in Latin America and Eastern Europe, was the shift from public pay-as-you-go pension systems to privately managed funded systems.¹⁸ Chile was the first country to implement this type of reform in 1981 and several countries adopted similar systems during the 1990s. Structural pension reforms were expected to improve macroeconomic stability, by reducing the demographic pressures of pay-as-you-go systems and inducing fiscal reform during the transition, reduce labor market distortions, increase savings, and reduce political interference in the system.¹⁹ Pension reform was also seen as conducive for capital market development. As reviewed by Walker and Lefort (2002), pension reform may foster the development of domestic capital markets through three main channels: by inducing authorities to improve the regulatory framework, increasing specialization in the investment decision-making process, and improving incentives for financial innovation.

¹⁷ For countries that record privatization transactions in 1988 or 1989 in the World Bank privatization database, we use the dates from Perotti and van Oijen (2001).

¹⁸ The nature of the reforms differed across countries, with some countries shifting to fully funded systems of privately managed individual accounts, while others created multipillar systems, in which part of the pension system is pay-as-you-go and there is also a distinct and separate privately managed funded component. See Rutkowski (1998, 2002) for a description of the reforms in transition economies. Queisser (1998) and Gill, Packard, and Yermo (2005), among many others, review the Latin American experience.

¹⁹ There is a large literature discussing the impact of structural pension reforms. See, for example, World Bank (1994), Feldstein (1998), Orszag and Stiglitz (2001), and Feldstein and Liebman (2002).

To date the implementation of pension reforms we combine data from several sources, including Palacios and Pallares-Millares (2000), the International Association of Pension Funds Supervisory Authorities (AIOS), the International Federation of Pension Funds Administrators (FIAP), and the International Center for Pension Reform.

As discussed above, cross-country evidence on the determinants of stock market development shows that countries with better institutional frameworks tend to have more active markets. However, for many developing countries it may be very difficult, if not impossible, to replicate the institutional environment existing in developed countries. Therefore, we focus our analysis on the impact of institutional changes on stock market development and internationalization, not on the absolute quality of institutions. To date institutional improvements we use data from the International Monetary Fund (2005), which analyzes changes in economic institutions for approximately 90 developing countries over the 1970-2004 period.

3. Reforms and stock market development and internationalization

In this section, we analyze the impact of reforms on domestic stock market development and internationalization using event studies. Since we are interested in the within-country effects of reforms (abstracting from cross-country variations), we estimate fixed-effects regressions of our six measures of domestic stock market development and internationalization on a dummy for each reform, defined by the reform dates described above.²⁰ We concentrate our analysis on a ten-year window around the reform dates (five

²⁰ The reform dummy equals one on and after the date of reform, and zero before.

years before and five years after, including the reform year) and include only those countries with at least two annual observations before and after each reform.²¹

Regression results are presented in Table 1. Each column reports the results for a specific reform. Note that the sample of countries and the period covered varies across columns, as only those countries that implemented the reform under analysis are included in each regression and the period analyzed changes according to the reform date for each country.

The estimations on domestic stock market development (top panel) show that reforms are followed by significant increases in local market activity. In the case of market capitalization over GDP, all the reform coefficients are positive and significant at the one percent level. Furthermore, the size of these coefficients is quite large. In the case of stock market liberalization, for example, the pre-reform average stock market capitalization over GDP is 19.3 percent and the within-country difference between the pre-liberalization and post-liberalization periods is 14.2 percentage points. Similar results are found for value traded domestically, with all reforms (except stock market liberalization) being followed by increased trading activity in the local market.

Reforms also seem to be associated with increases in stock market internationalization (middle panel). All the reforms under analysis are followed by significant increases in both the market capitalization of international firms and trading abroad as a share of GDP.

²¹ By focusing on a ten-year window around the reforms we may not be capturing their whole impact if they take more than five years to mature. However, while in traditional event studies the econometrician can be certain that the event under analysis is isolated, capital market reforms often coincide with other macroeconomic and institutional reforms. By focusing on a shorter event window we attempt to isolate from other changes that may also affect stock market development and internationalization. We discuss this issue in more detail in Section 4. We also tried the regressions without restricting the sample period to a preset window (i.e., including all available observations) and using a shorter six-year window, and obtained similar results in both cases.

These results show that reforms are followed by increased domestic stock market development and internationalization. This suggests that reforms may make local firms more attractive to foreign investors, who then grant them access to international markets at attractive terms. This evidence is consistent with the findings of Claessens, Klingebiel, and Schmukler (2006), who report that better fundamentals foster stock market development, but also increase internationalization. Some of the results may also reflect the direct impact of reforms on internationalization.

A relevant question is whether the reforms are followed by similar increases in domestic and international activity. The evidence described so far does not allow us to answer this question because the samples used for the regressions on domestic and international variables (relative to GDP) are different due to data availability. Therefore, we analyze the impact of reforms on the ratio of international to domestic activity, which constraints the sample to be the same. These results are presented in the bottom panel of Table 1.

The results for the ratio of the market capitalization of international firms to total domestic market capitalization, suggest that reforms are followed by an acceleration in the internationalization process. All the reform coefficients are positive and significant at the one percent level. Furthermore, the size of the coefficients is quite large. The regressions on value traded abroad over value traded domestically present similar results. All the reforms, with the exception of privatization and the introduction of electronic trading systems, seem to be followed by large increases in the share of trading that takes place in international markets.

In sum, our results show that capital market reforms are followed by significant increases in domestic stock market activity and internationalization. Furthermore, they seem to be associated with a larger share of activity abroad. Although our regressions show a

statistically significant correlation between reforms and stock market activity, both domestically and abroad, there are a number of arguments that suggest that these results should be interpreted with care and that it is difficult to show a causal link between reforms and market activity. We now turn to those arguments.

4. Robustness tests and alternative explanations

A possible explanation for the positive relation we find between reforms and stock market activity is that this relation is driven by some omitted variables that are correlated with reforms, but not by the reforms themselves. For instance, countries may time their reforms to coincide with high points in the world business cycle. In this case, our results may overstate the impact of reforms, since the reform dummies may be capturing the effect of the international business cycle on stock market activity. As another example of omitted factors, capital market reforms are often part of larger macroeconomic and institutional reform programs, including trade liberalization, macroeconomic stabilization programs, and the easing of exchange rate controls. These policies may have a significant impact on growth prospects and might lead to increased stock market activity, both domestically and abroad. Our reform dummies may thus be capturing the impact of the contemporaneous macroeconomic and institutional changes, and not that of the capital market reform analyzed in each case. Common global factors could also be driving our results.²²

To address these concerns, we reestimate the regressions from Table 1 controlling for additional variables. In particular, we include U.S. interest rates and GDP growth in high-

²² For example, Albuquerque, Loayza, and Servén (2005) find that common factors across countries are increasingly important in driving foreign direct investment.

income OECD countries to control for the world business cycle and common global factors.²³

To capture the impact of contemporaneous macroeconomic reforms, we do not use reform dummies, as we do not have sufficient information to date these reforms for all the countries in our dataset. Therefore, we follow an indirect approach, by controlling for domestic fundamentals that may capture the outcome of these reforms. Specifically, we control for GDP growth and the fiscal deficit.²⁴ Note that GDP growth may also be interpreted as a measure of the domestic business cycle, which may also affect the timing of capital market reforms.

Table 2 presents the results of the regressions controlling for the reform dummies and domestic macroeconomic variables only. Table 3 shows the results controlling also for those variables that proxy for the world business cycle.

The regressions on domestic stock market development (Tables 2 and 3, top panel) show that our results are robust to controlling for macroeconomic variables and the international business cycle. In the case of the domestic market capitalization over GDP all the reform coefficients are positive and statistically significant at the one percent level. The results for value traded domestically are similar, with all reform coefficients being positive and significant, except for those on stock market liberalization, consistent with the results

²³ We also estimated the regressions using, alternatively, U.S., world, and G-7 GDP growth and obtained similar results. As a measure of U.S. interest rates, we use the rate on three-year Treasury bonds. We also ran the regressions using the rates on five-year Treasury bonds and three-month Treasury bills, the federal funds rate, and the S&P 500 annual return. The results using these variables are similar to the ones reported below. We also included the change in the terms of trade in each country as an independent variable, to control for external shocks, and obtained similar results.

²⁴ We also estimated the regressions using other proxies for reforms, such as inflation, trade (exports plus imports) as a percentage of GDP, and the International Country Risk Guide composite index, which measures political, economic, and financial conditions in a country. Including these variables does not affect our main results. We also controlled for each country's growth prospects, as measured by the growth opportunities index developed by Bekaert et al. (2006), and obtained results similar to those reported here. Furthermore, we

reported in Table 1. Most of the reform coefficients are lower than those reported in Table 1, which suggests that in those regressions our reform dummies may be capturing part of the positive impact of macroeconomic reforms and the international business cycle on domestic market capitalization. Regarding the remaining variables, the coefficients on fiscal deficit over GDP are negative and statistically significant while those on GDP growth tend to be positive. We also find that the international business cycle affects domestic stock markets, with higher U.S. interest rates and lower OECD growth resulting in lower market capitalizations.

The results for stock market internationalization (Tables 2 and 3, middle panel) show that reforms tend to be followed by increased capitalization and trading in international markets, even when controlling for macroeconomic variables and the international business cycle. In the case of the market capitalization of international firms over GDP, all the reform coefficients are positive and statistically significant. The results for value traded abroad are similar. Only the introduction of electronic trading systems and pension reform are not statistically significant in the specifications that include all the control variables (Table 3, middle panel).

Finally, the bottom panels of Tables 2 and 3 show that reforms tend to be followed by an increased share of market capitalization and trading in international markets. In the case of the market capitalization of international firms over total domestic market capitalization, all the reform dummies are positive and statistically significant at the one percent level, except for institutional reform when controlling for the international business cycle. For the ratio of value traded abroad to value traded domestically, all the reform coefficients are positive and

controlled for GDP per capita since general economic and institutional development may affect the evolution of

statistically significant, with the exception of those on the introduction of electronic trading systems and privatization. However, when controlling for international growth and interest rates (Table 3) the enforcement of insider trading laws and institutional reform lose their significance.

The evidence presented in Tables 2 and 3 shows that the positive correlation between capital market reforms and stock market development and internationalization is robust to a number of potential omitted variables, but should still be interpreted with caution. Although in these regressions we attempt to control for a number of contemporaneous macroeconomic and institutional reforms, we may not be capturing all the reforms and their complete impact. We may also be omitting other relevant variables that drive the processes of domestic stock market development and internationalization. To the extent that our reform dummies inadvertently capture the effect of these variables, we may be overstating the impact of reforms.

All the analyses presented above have focused on measuring the impact of each reform, without taking into account other capital market reforms. However, countries tend to implement several capital market reforms in a relatively short period. Thus, the reform dummies in our regressions may not be capturing the marginal effect of each reform, but rather the impact of other capital market reforms implemented around the same date.

To measure the marginal effect of each reform, we reestimate our regressions controlling for the number of capital market reforms implemented by each country, other than the reform under analysis in each case.^{25,26} This variable captures the impact of additional

stock markets and the effect of reforms. The results remain mostly unchanged.

²⁵ This variable is calculated by adding up the different reform dummies, other than that for the reform under analysis in each case. This requires having information to determine whether countries implemented all of the six

capital market reforms clustered around the reform being analyzed (i.e., reforms implemented more than five years before or after the reform under study do not affect our results). Given that we control for country-level fixed effects, our results are not affected by differences across countries in the number of reforms implemented. To keep the number of tables at a manageable level, we only report the results without including additional control variables.²⁷

The results are presented in Table 4.

The top panel in Table 4 shows the regressions for the domestic stock market development variables. Most of our results are robust to controlling for the implementation of additional capital market reforms. All the reforms, except for the enforcement of insider trading laws, are followed by significant increases in market capitalization over GDP. Similar results are found for value traded domestically over GDP. All the reforms, with the exception of stock market liberalization and institutional reform, are followed by increased trading activity. Most of the coefficients are lower than those reported in Table 1, which suggests that in those regressions our reform dummies may be capturing part of the effect of other capital market reforms clustered around that time. The number of additional reforms tends to be positive and statistically significant.

Reforms also seem to be associated with increases in stock market internationalization, even when controlling for other capital market reforms (middle panel). All the reforms under analysis are followed by significant increases in the market capitalization of international

reforms analyzed. Therefore, the sample of countries included in these regressions is restricted to countries with data available on all reforms. As an alternative, we estimated the regressions assuming that those countries with missing data on a reform did not implement it and obtained similar results.

²⁶ We use the number of additional reforms to control for contemporaneous reforms and not one dummy for each reform because the different reform dummies tend to be highly correlated.

²⁷ In most cases, similar results are obtained when controlling for domestic macroeconomic variables.

firms over GDP. Trading abroad also increases after the implementation of reforms, only the introduction of electronic trading systems and pension reform are not statistically significant.

Finally, the results for the share of international activity (bottom panel) suggest that reforms are followed by an acceleration in the internationalization process. In the regressions of the ratio of the market capitalization of international firms to total domestic market capitalization, all the reform coefficients enter positively and significantly, except for that on institutional reform. The results also indicate that the enforcement of insider trading laws and pension reform are followed by significant increases in value traded abroad over value traded domestically.

In sum, the results reported in Table 4 suggest that the reform dummies in our regressions are not just capturing the effect of implementing several reforms in a short period of time, but rather that the reforms analyzed have a positive marginal impact on stock market development and internationalization.

A difficult question concerning our results is whether the reform dummies are estimating the effect of some underlying trend not captured by the controls included in the regressions. To the extent that there are some remaining omitted factors that drive the processes of stock market development and internationalization over time, the reform variables could be capturing the impact of those omitted factors. To try to address this issue, we reestimated our regressions, controlling for time effects to capture any omitted factors that vary with time. Since most of the reforms took place in the first half of the 1990s and the post-reform period coincides with strong global trends towards financial development and internationalization, it is very difficult to accurately separate the impact of a time trend from that of reforms. Nevertheless, we find that in the regressions of domestic stock market

development some of the reform dummies remain statistically significant and positive, suggesting that capital market reforms are associated with increases in domestic stock market activity beyond any underlying trend. In the case of internationalization, separating the impact of a common time trend from that of reforms would require longer time series of our dependent variables. These results and a detailed discussion appear in de la Torre, Gozzi, and Schmukler (2006a).

Finally, an important question is whether the reform decision is really exogenous or if countries implement reforms when they expect their stock markets to do well. We believe that endogeneity could potentially be relevant for some of the reforms analyzed, but in any case does not affect our results on internationalization. In other words, endogeneity arguments usually refer to domestic stock market development, as countries may implement reforms when they anticipate increased local market activity. It is less likely that reforms are implemented in response to expected increases in internationalization. Moreover, many of the reforms analyzed, such as privatization, institutional reform, and pension reform, constitute major policy initiatives and therefore it is unlikely that they were driven by (expected) changes in stock market activity. On the other hand, endogeneity could affect our results on the impact of capital market-specific reforms on domestic market development, as countries have incentives to invest in new trading platforms or enforce insider trading regulations when they expect increased local stock market activity. In sum, we think that even though endogeneity could be present, it would affect only a small part of our results and would not alter our main conclusions.

5. Conclusions

In this paper, we analyze the impact of capital market-specific and related reforms on stock market development and internationalization. Our empirical analysis shows that these reforms are followed by increases in capitalization and trading in the local market. The evidence thus suggests that reforms are positively related to domestic stock market development, contrary to the claim that they are not effective and that the variation in panel data studies comes only from cross-country differences. However, we also find that internationalization increases after reforms, relative to both GDP and domestic market activity. This runs contrary to the view that a poor domestic environment prompts firms to access international markets and that reforms reduce incentives to migrate abroad. Rather, it supports the hypothesis that reforms make local firms more attractive, allowing them to access international markets.

Our results come with some caveats. Reforms may be timed to coincide with high points in the domestic and/or international business cycles and with the implementation of other reforms. To address these issues, we control for domestic macroeconomic variables, U.S. interest rates, and output growth in OECD countries. We find our results to be robust to the inclusion of these variables. However, these controls may not capture the full impact of other reforms and/or the business cycle. Also, some prior macroeconomic and institutional reforms may be necessary for capital market reforms to be successful. Furthermore, our reform dummies could be capturing the impact of some underlying trend driving the processes of stock market development and internationalization, not captured by the controls included in the regressions. Our robustness tests show that, when controlling for time effects in the regressions of domestic stock market development, some of the reform dummies remain

statistically significant and positive, suggesting that capital market reforms are associated with increases in domestic stock market activity beyond any underlying trend. But accurately separating the impact of a common time trend from that of reforms would require longer time series of our dependent variables. Thus, more future research in this direction would be welcome.

Our conclusions should thus remain tentative. But they do suggest that reforms do not result in a lower level of activity abroad and a concentration of stock market activity in the domestic market, as some arguments predict. Our findings also suggest that financial globalization could pose a significant challenge to policymakers, as their efforts to foster domestic stock market development seem to translate into more activity abroad. The migration of trading to international markets may adversely affect the liquidity of those firms that remain in the local market and their ability to raise new equity capital. This could have a significant impact on medium sized firms, which are not able to directly access international markets. The unexpected impact of reforms on internationalization calls for a revision of the reform agenda and related expectations. Further research is necessary to understand whether the impact of reforms differs across countries and regions and if differences in the timing of specific reforms affect their impact on stock market development and internationalization.²⁸

²⁸ Some of the cross-regional differences are already studied in de la Torre and Schmukler (2006) and de la Torre, Gozzi, and Schmukler (2006b).

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Table 1
Reforms and Stock Market Development and Internationalization

This table shows least square regressions with robust standard errors estimated using fixed effects models for countries implementing reforms between 1975 and 2004. The regressions consider a ten-year event window around the reform dates (five years before and five years after, including the reform year). The sample includes only countries with at least two observations before the reform date and two afterwards. Absolute values of t-statistics are in brackets. *, **, and *** mean significance at ten, five, and one percent, respectively.

Domestic Stock Market Development												
	Market Capitalization / GDP						Value Traded Domestically / GDP					
Stock market liberalization	0.142 *** [10.050]						0.024 [0.830]					
Enforcement of insider trading laws	0.184 *** [5.465]						0.270 *** [5.447]					
Introduction of electronic trading systems	0.159 *** [5.305]						0.171 *** [6.127]					
Privatization	0.155 *** [7.608]						0.087 *** [5.623]					
Institutional reform	0.093 *** [6.773]						0.066 *** [3.853]					
Pension reform	0.153 *** [4.315]						0.072 *** [2.618]					
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	438	315	582	392	302	211	432	329	559	396	282	195
No. of countries	45	32	62	40	32	24	44	34	59	41	30	22
Pre-reform average of dependent variable	0.193	0.428	0.335	0.221	0.184	0.353	0.108	0.196	0.073	0.051	0.065	0.171

Stock Market Internationalization												
	Market Capitalization of International Firms / GDP						Value Traded Abroad / GDP					
Stock market liberalization	0.045 *** [5.059]						0.007 *** [3.933]					
Enforcement of insider trading laws	0.202 *** [7.747]						0.014 *** [4.748]					
Introduction of electronic trading systems	0.082 *** [5.685]						0.003 ** [2.522]					
Privatization	0.040 *** [5.034]						0.004 *** [3.452]					
Institutional reform	0.038 *** [4.955]						0.007 *** [3.804]					
Pension reform	0.062 *** [5.489]						0.006 * [1.797]					
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	242	236	475	312	279	96	299	244	530	345	293	106
No. of countries	31	26	56	40	32	11	36	26	61	43	33	12
Pre-reform average of dependent variable	0.022	0.097	0.032	0.035	0.023	0.049	0.001	0.009	0.005	0.002	0.002	0.012

Stock Market Internationalization Relative to Domestic Activity												
	Market Capitalization of International Firms / Total Market Capitalization						Value Traded Abroad / Value Traded Domestically					
Stock market liberalization	0.090 *** [5.704]						0.059 *** [2.887]					
Enforcement of insider trading laws	0.176 *** [12.196]						0.132 *** [3.090]					
Introduction of electronic trading systems	0.159 *** [10.848]						-0.070 [1.298]					
Privatization	0.105 *** [6.692]						0.001 [0.060]					
Institutional reform	0.133 *** [5.584]						0.135 *** [2.734]					
Pension reform	0.187 *** [6.498]						0.275 *** [2.671]					
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	166	226	304	131	123	87	206	231	338	155	119	88
No. of countries	22	25	38	17	16	11	25	25	41	20	15	11
Pre-reform average of dependent variable	0.02	0.205	0.118	0.126	0.127	0.219	0.011	0.076	0.138	0.044	0.038	0.125

Table 2

Reforms and Domestic Stock Market Development - Controlling for Domestic Fundamentals

This table shows least square regressions with robust standard errors estimated using fixed effects models for countries implementing reforms between 1975 and 2004. The regressions consider a ten-year event window around the reform dates (five years before and five years after, including the reform year). The sample includes only countries with at least two observations before the reform date and two afterwards. Absolute values of t-statistics are in brackets. *, **, and *** mean significance at ten, five, and one percent, respectively.

Domestic Stock Market Development												
	Market Capitalization / GDP						Value Traded Domestically / GDP					
	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform
Reform	0.126 *** [8.430]	0.210 *** [5.953]	0.149 *** [4.347]	0.136 *** [7.511]	0.094 *** [5.865]	0.142 *** [4.157]	0.021 [0.640]	0.308 *** [5.574]	0.188 *** [4.902]	0.083 *** [5.815]	0.085 *** [3.086]	0.106 *** [4.158]
GDP growth	0.524 ** [2.586]	1.323 ** [2.461]	1.234 ** [2.448]	0.732 *** [2.947]	0.573 *** [2.850]	1.524 ** [2.058]	-0.025 [0.062]	0.968 [1.316]	0.787 * [1.950]	0.283 * [1.855]	0.354 [0.871]	0.539 [1.338]
Fiscal deficit/GDP	-0.569 ** [2.025]	-1.774 *** [2.846]	-1.578 *** [2.771]	-1.845 *** [3.113]	-0.402 [1.397]	-0.203 [0.132]	0.249 [0.329]	-1.169 [0.782]	-0.102 [0.081]	-1.046 ** [1.993]	-0.185 [0.535]	-3.363 ** [2.132]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	376	284	490	348	213	174	370	290	487	346	204	167
No. of countries	40	29	53	36	24	20	39	30	53	36	23	19

Stock Market Internationalization												
	Market Capitalization of International Firms / GDP						Value Traded Abroad / GDP					
	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform
Reform	0.056 *** [4.793]	0.213 *** [7.427]	0.096 *** [5.715]	0.069 *** [4.903]	0.058 *** [4.536]	0.063 *** [5.753]	0.009 *** [3.945]	0.015 *** [4.480]	0.004 ** [2.386]	0.007 *** [3.394]	0.012 *** [3.311]	0.007 ** [2.199]
GDP growth	-0.070 [0.529]	-1.141 ** [2.588]	-0.773 ** [2.118]	-0.515 ** [2.129]	-0.091 [0.562]	-0.599 [1.033]	0.004 [0.199]	-0.059 [0.794]	-0.055 ** [2.177]	-0.007 [0.171]	-0.042 [1.159]	-0.042 [0.333]
Fiscal deficit/GDP	0.119 [0.980]	0.211 [0.869]	0.187 * [1.741]	-0.046 [0.517]	0.044 [0.416]	0.172 [1.409]	-0.011 [0.407]	0.014 [0.280]	-0.013 [0.834]	-0.013 [1.169]	-0.077 [1.535]	-0.046 [0.626]
Country fixed effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	180	212	361	178	162	95	231	218	415	205	171	104
No. of countries	23	23	44	24	19	11	28	23	50	27	20	12

Stock Market Internationalization Relative to Domestic Activity												
	Market Capitalization of International Firms / Total Market Capitalization						Value Traded Abroad / Value Traded Domestically					
	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform
Reform	0.109 *** [5.489]	0.184 *** [11.065]	0.150 *** [9.786]	0.106 *** [6.127]	0.143 *** [4.554]	0.182 *** [6.241]	0.077 *** [2.894]	0.144 *** [3.041]	-0.084 [1.326]	0.003 [0.255]	0.203 ** [2.270]	0.320 ** [2.634]
GDP growth	0.173 [0.924]	0.186 [0.750]	0.165 [0.944]	0.056 [0.350]	0.278 [0.801]	0.538 [1.134]	-0.211 [0.580]	-1.573 [1.422]	0.023 [0.039]	-0.044 [0.469]	-2.441 [1.336]	-2.441 [0.954]
Fiscal deficit/GDP	0.224 [0.806]	-0.190 [0.503]	-0.155 [0.718]	-0.079 [0.286]	-0.205 [0.422]	-1.260 [0.916]	0.310 [1.392]	0.443 [0.554]	-1.195 [1.340]	0.235 [1.516]	-1.009 [1.230]	-0.127 [0.043]
Country fixed effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	134	211	266	122	95	87	170	215	310	140	93	88
No. of countries	18	23	33	16	12	11	21	23	38	18	12	11

Table 3

Reforms and Domestic Stock Market Development - Controlling for Domestic Fundamentals and International Business Cycle

This table shows least square regressions with robust standard errors estimated using fixed effects models for countries implementing reforms between 1975 and 2004. The regressions consider a ten-year event window around the reform dates (five years before and five years after, including the reform year). The sample includes only countries with at least two observations before the reform date and two afterwards. Absolute values of t-statistics are in brackets. *, **, and *** mean significance at ten, five, and one percent, respectively.

Domestic Stock Market Development												
	Market Capitalization / GDP						Value Traded Domestically / GDP					
	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform
Reform	0.089 *** [4.777]	0.121 *** [3.133]	0.104 *** [2.767]	0.093 *** [3.050]	0.081 *** [3.648]	0.086 *** [2.934]	0.027 [0.838]	0.285 *** [4.753]	0.134 *** [5.450]	0.062 ** [2.395]	0.101 *** [2.649]	0.090 *** [3.771]
GDP growth	0.481 ** [2.320]	1.303 ** [2.343]	1.042 ** [2.202]	0.755 *** [2.684]	0.558 *** [2.803]	1.047 [1.431]	-0.067 [0.171]	0.866 [1.172]	0.594 * [1.767]	0.287 [1.611]	0.346 [0.851]	0.263 [0.631]
Fiscal deficit/GDP	-0.641 ** [2.287]	-1.653 ** [2.375]	-1.524 *** [2.681]	-2.044 *** [3.066]	-0.440 [1.531]	-0.419 [0.280]	0.248 [0.318]	-0.848 [0.505]	-0.072 [0.057]	-1.151 * [1.931]	-0.268 [0.784]	-3.465 ** [2.217]
OECD GDP growth	0.801 [1.175]	8.963 *** [3.851]	5.650 ** [2.452]	0.206 [0.215]	1.315 [1.488]	4.144 ** [2.166]	1.578 * [1.650]	5.503 ** [2.045]	5.799 * [1.919]	0.250 [0.309]	1.363 [1.300]	2.964 ** [2.459]
U.S. interest rate	-0.021 *** [3.290]	-0.092 *** [4.164]	-0.036 *** [2.987]	-0.021 [1.633]	-0.012 [1.360]	-0.046 ** [2.263]	-0.001 [0.113]	-0.023 [0.868]	-0.043 ** [2.144]	-0.011 [0.988]	0.007 [0.773]	-0.020 * [1.805]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	376	284	490	348	213	174	370	290	487	346	204	167
No. of countries	40	29	53	36	24	20	39	30	53	36	23	19

Stock Market Internationalization												
	Market Capitalization of International Firms / GDP						Value Traded Abroad / GDP					
	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform
Reform	0.033 ** [2.205]	0.141 *** [4.347]	0.054 *** [2.662]	0.065 *** [3.450]	0.033 ** [2.103]	0.044 *** [2.995]	0.006 *** [2.996]	0.008 * [1.945]	0.000 [0.197]	0.005 *** [2.717]	0.007 * [1.882]	0.002 [0.443]
GDP growth	-0.123 [0.956]	-1.124 ** [2.543]	-0.775 ** [2.181]	-0.527 ** [2.168]	-0.527 ** [0.560]	-0.778 [1.318]	-0.002 [0.083]	-0.064 [0.855]	-0.092 [2.166]	-0.054 ** [0.302]	-0.013 [1.243]	-0.065 [0.482]
Fiscal deficit/GDP	0.057 [0.502]	0.286 [1.048]	0.141 [1.407]	-0.106 [1.137]	0.043 [0.401]	0.074 [0.534]	-0.017 [0.606]	0.010 [0.200]	-0.018 [1.128]	-0.016 [1.457]	-0.084 [1.639]	-0.056 [0.753]
OECD GDP growth	3.243 ** [2.328]	6.464 ** [2.357]	5.047 ** [2.150]	2.753 ** [2.316]	2.740 [1.534]	1.858 [1.486]	0.388 ** [2.246]	0.659 ** [2.031]	0.500 *** [2.878]	0.258 [1.408]	0.364 [1.240]	0.609 * [1.905]
U.S. interest rate	-0.018 * [1.724]	-0.079 *** [3.322]	-0.032 * [1.846]	-0.009 [0.873]	-0.023 * [1.709]	-0.021 ** [2.420]	-0.002 ** [2.073]	-0.006 ** [2.426]	-0.003 ** [2.437]	-0.002 [1.311]	-0.005 ** [2.547]	-0.004 ** [1.996]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	180	212	361	178	162	95	231	218	415	205	171	104
No. of countries	23	23	44	24	19	11	28	23	50	27	20	12

Stock Market Internationalization Relative to Domestic Activity												
	Market Capitalization of International Firms / Total Market Capitalization						Value Traded Abroad / Value Traded Domestically					
	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform	Stock market liberalization	Enforcement of insider trading laws	Electronic trading systems	Privatization	Institutional reform	Pension reform
Reform	0.067 *** [3.073]	0.123 *** [5.643]	0.108 *** [5.609]	0.085 *** [3.874]	0.054 [1.293]	0.116 *** [3.298]	0.046 ** [2.169]	0.102 [1.650]	-0.116 [1.574]	-0.024 [1.450]	0.094 [1.166]	0.266 * [1.792]
GDP growth	0.071 [0.367]	0.245 [1.066]	0.192 [1.193]	0.062 [0.411]	0.222 [0.717]	0.242 [0.559]	-0.235 [0.615]	-1.589 [1.439]	-0.124 [0.214]	0.052 [0.673]	-2.638 [1.432]	-2.642 [1.046]
Fiscal deficit/GDP	0.121 [0.434]	-0.100 [0.287]	-0.133 [0.653]	-0.185 [0.650]	-0.243 [0.580]	-1.680 [0.566]	0.285 [1.266]	0.454 [1.168]	-0.947 [1.193]	0.130 [0.817]	-1.060 [1.143]	-0.344 [0.115]
OECD GDP growth	6.061 *** [3.484]	5.967 *** [3.701]	4.614 *** [2.922]	2.259 * [1.771]	9.577 ** [2.627]	6.556 ** [2.217]	3.062 [1.596]	3.962 [0.872]	9.911 * [1.802]	-0.438 [0.592]	10.922 * [1.689]	5.648 [0.581]
U.S. interest rate	-0.033 *** [2.725]	-0.057 *** [4.283]	-0.040 *** [3.009]	-0.018 * [1.800]	-0.018 *** [3.836]	-0.071 *** [3.023]	-0.023 ** [2.041]	-0.037 [0.925]	0.015 [0.322]	-0.014 * [1.809]	-0.127 *** [2.707]	-0.057 [0.854]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	134	211	266	122	95	87	170	215	310	140	93	88
No. of countries	18	23	33	16	12	11	21	23	38	18	12	11

Table 4

Reforms and Stock Market Development and Internationalization - Controlling for Additional Reforms

This table shows least square regressions with robust standard errors estimated using fixed effects models for countries implementing reforms between 1975 and 2004. The regressions consider a ten-year event window around the reform dates (five years before and five years after, including the reform year). The sample includes only countries with at least two observations before the reform date and two afterwards. Absolute values of t-statistics are in brackets. *, **, and *** mean significance at ten, five, and one percent, respectively.

	Domestic Stock Market Development						Value Traded Domestically / GDP					
	Market Capitalization / GDP											
Stock market liberalization	0.112 *** [6.774]						0.013 [1.587]					
Enforcement of insider trading laws		0.070 [1.617]						0.157 *** [3.589]				
Introduction of electronic trading systems			0.124 *** [4.665]						0.067 *** [3.457]			
Privatization				0.075 *** [4.030]						0.039 *** [2.627]		
Institutional reform					0.044 ** [2.531]						0.001 [0.108]	
Pension reform						0.051 ** [2.575]						0.048 ** [2.441]
Number of reforms (excl. reform under analysis)	0.037 ** [2.292]	0.084 *** [3.313]	0.055 ** [2.108]	0.086 *** [3.698]	0.053 *** [3.215]	0.032 *** [3.670]	0.031 *** [4.347]	0.024 [0.961]	0.052 *** [3.352]	0.052 *** [3.208]	0.038 *** [4.277]	0.009 [0.942]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	378	245	399	382	228	176	372	252	389	380	217	171
No. of countries	39	25	41	39	24	20	38	26	40	39	23	19

	Stock Market Internationalization						Value Traded Abroad / GDP					
	Market Capitalization of International Firms / GDP											
Stock market liberalization	0.027 ** [2.597]						0.007 ** [2.360]					
Enforcement of insider trading laws		0.115 *** [7.895]						0.011 *** [2.980]				
Introduction of electronic trading systems			0.020 *** [3.463]						0.000 [0.123]			
Privatization				0.035 *** [3.113]						0.006 *** [2.854]		
Institutional reform					0.022 * [1.964]						0.012 ** [2.249]	
Pension reform						0.042 *** [3.237]						0.003 [0.713]
Number of reforms (excl. reform under analysis)	0.023 ** [2.141]	0.020 [1.509]	0.048 *** [4.235]	0.032 *** [2.896]	0.038 *** [3.492]	0.022 *** [2.812]	-0.001 [0.341]	0.004 * [1.683]	0.004 *** [3.148]	0.001 [0.782]	0.000 [0.050]	0.003 ** [2.060]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	218	216	322	188	142	87	258	224	357	208	148	89
No. of countries	28	24	37	24	17	10	31	24	40	26	17	10

	Stock Market Internationalization Relative to Domestic Activity						Value Traded Abroad / Value Traded Domestically					
	Market Capitalization of International Firms / Total Market Capitalization											
Stock market liberalization	0.063 *** [2.707]						0.414 [1.261]					
Enforcement of insider trading laws		0.129 *** [7.403]						0.103 ** [2.355]				
Introduction of electronic trading systems			0.113 *** [6.666]						0.016 [1.312]			
Privatization				0.092 *** [5.026]						0.020 [1.160]		
Institutional reform					0.052 [1.637]						0.072 [0.832]	
Pension reform						0.122 *** [3.360]						0.199 ** [2.138]
Number of reforms (excl. reform under analysis)	0.033 * [1.936]	0.042 ** [2.553]	0.034 ** [2.323]	0.017 * [1.807]	0.071 *** [4.028]	0.066 *** [2.938]	-0.155 [1.141]	0.051 [1.580]	-0.002 [0.305]	-0.018 [1.474]	0.070 [0.884]	0.077 [1.420]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	149	206	234	124	107	81	179	212	259	142	103	83
No. of countries	20	23	28	16	14	10	22	23	30	18	13	10