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Confidence Building in Emerging Stock Markets

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SUMMARY

Investor confidence is a necessary condition for the development of emerging markets. Investors recognize that since market-oriented reform policies may be reversed or hindered, they face the risk of ex post policy changes with redistributive impact on investment returns. We argue that a sustained privatization or liberalization program represents a major test of political commitment, and contributes to reduced policy risk. The evidence from our panel study suggests that progress in privatization gradually leads to increased confidence. Moreover, increased confidence has a strong effect on local market development and is a significant determinant of excess returns. We conclude that, just as financial liberalization, the resolution of policy risk resulting from successful privatization has been an important source for the broadening and deepening of emerging stock markets.

Keywords: International financial markets, privatisation, financial liberalization

JEL: G15, L33, F13

CONTENTS

Introduction

Stock markets in many emerging countries have developed rapidly during the last decade. Market capitalization in countries classified by the IFC as emerging markets has risen from $488 billion in 1988 to $2,439 billion by mid-1999, while annual trading on their exchanges has risen from $411 billion in 1988 to $2,486 billion by mid-1999 (IFC, 1999). Unquestionably, a major impulse to market development has come from financial integration (Stulz, 1999). There is now direct evidence that the onset of financial liberalization directly promotes market development and reduces the required cost of capital (Henry, 2000b; Bekaert and Harvey, 2000). Yet liberalization policy is a necessary rather than a sufficient condition for integration; in addition, it may be later reversed or undermined. There is some evidence that integration (and the associated market repricing) takes place gradually. Henry (2000b) reports that the one-month excess return in response to the announcement of liberalization is around 6 %; the cumulated excess is 26 % in a 8-month window. Moreover, excess returns seem to persist even longer in some countries.

What brings about the evolution of confidence that leads investors to invest progressively more in a liberalizing stock market ? Our view is that financial integration takes place only gradually after liberalization, and more generally after any major market-oriented reform policy, as investors respond with some diffidence to announced policies which may be reversed. Only as they observe stable policies over time they become progressively more confident about the political commitment to market reforms. Foreign capital inflows following liberalization tend to be gradual (Bekaert and Harvey, 2000); on the other hand, in the case of a crisis, outflows are much faster.

This paper seeks to explore the importance of confidence building through the resolution of perceived policy risk as a determinant of returns and capital market development. In particular, we offer a model of the effect of a sustained privatization policy on investor confidence, and empirical evidence on the effect of privatization in promoting such confidence building.[1]

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[1] In practice all major reform policy may be reversed, so our approach applies to all structural policies which reduce the influence of the state in favor of private investors, particularly foreigners who are outside the political process.

There is often a direct impact of privatization sales on capital markets: many countries sold shares through public offerings on the local stock exchange, leading to significant increases in market capitalization. However, the direct effect of privatization (total revenue of $154.5 billion in 1988-1996, including private sales) [2] represents only a small fraction of the increase in emerging market capitalization over that period.[3]

In this paper, we argue that the successful transfer of important enterprises from state to private control has strong implications for the general level of confidence in local equity investment through an accelerated resolution of policy risk, which may lead to a rapid regrading of country risk.

Our definition of policy risk is more specific as well as broader than the vague traditional term "political" or "country risk", which often concern political regime changes or macroeconomic policy changes.[4] While these risks were predominating in the past, in recent years it is more often microeconomic policy risks that concern investors.

Specifically, we define policy risk as any post-investment reduction in the scope of contractual and decision rights enjoyed by private individuals vis-à-vis the state, as well as any reallocation of such rights to other private individuals, which reduces the returns expected by the original investors. Such changes may be the outcome of revised regulations, new legislation, new administrative procedures, which may result in delays, uncertainty or reallocation of previously established rights, or of the failure of legal enforcement of private property and contractual rights. [5]

Privatization is a powerful test of policy risk because politicians were used to have broad discretionary control over a state-owned firm's activities; privatization sharply curtails their capacity to reallocate resources to their preferred constituencies. In this shift of control rights to private owners lies

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[2] In addition, many privatization transactions in this total were not carried out through public share issues; some of them took place in countries not classified as an emerging market by the IFC.

[3] Privatization sales may also produce indirect benefits for local stock markets if new listings have substantial impact on local liquidity, and offer opportunities for local investors to diversify their portfolios (Pagano, 1989 and 1993b). Yet such market deepening and broadening may result also from new private listings. In this paper we seek to understand the specific role of privatization sales.

[4] Macroeconomic risks concern the alteration, delay or reversal of previously stated fiscal, monetary or currency exchange policies.

the main cause of improved performance of firms under private ownership.[6] Yet no sovereign government can credibly commit not to alter its policy after a sale. While constitutionally protected private ownership does constrain public intervention to the degree that property rights are properly enforced, rules can change.[7] Therefore, only a sustained and consistent privatization policy is a credible signal of policy commitment, as it is politically costly to maintain; over time, it can credibly establish investors' confidence[8]. As a result, the full impact of financial liberalization and privatization policy may be achieved only as the program becomes credible over time. We describe this process as confidence building, namely the process of learning about the underlying political commitment for reform policies.

We first show that in a dynamic model of policy risk resolution, stock prices rise gradually with privatization progress, in parallel with investor confidence.[9] Shares enjoy excess returns as compensation for the risk of a large capital loss in case of a policy reversal.[10]

We next consider the empirical implications. First, steady privatization sale programs should improve the perceived policy risk of the country both in absolute terms and relatively to other comparable non-privatizing countries. Second, such progress should be gradual (and potentially subject to reversals in countries which soon interrupt the sale program). Third, changes in perceived policy risk would affect the attractiveness of equity investments (which bears most residual income risk) and therefore lead to stock market growth and deepening. Fourth, stock markets in countries which pursued consistent privatization policies would exhibit excess stock returns, earning an ex post “peso premium”

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5 This notion of policy risk includes the earlier notion of expropriation risk in Eaton and Gersowitz (1984), the notion of policy capture in the privatization and regulation literature, and the notion of protection of investor rights implicit in the work by LaPorta et al. (1997, 1998).

6 The constitutional guarantee of property rights makes them residual with respect to contractual and legal obligations; thus, legislation may chip away at the owner's entitlement, but it can never fully expropriate them (Perotti, 1995).

7 Moreover, "selective enforcement" of legal rights can favor some investors relative to others.

8 In fact, recent theoretical work suggests that a maintained privatization program may by itself help to strengthen the political forces in favor of market-oriented reforms (Biais and Perotti, 2001; Schmidt, 1997).

9 For a related model of foreign investment expropriation, see Cherian and Perotti (2000). The approach has strong implications for the time series of expected volatility, and thus for option pricing for assets subject to policy risk.

10 Note that this resolution of policy uncertainty may occur even if privatization sales do not take place through public share offerings.

during the confidence building process as a result of the favorable (i.e. better than expected) new information on policy commitment.

We document how policy risk has developed over the different stages of the privatization programs of 22 emerging economies which have privatized extensively over a number of years after 1987, and contrast the evolution of their stock markets with a control sample of non-privatizing countries. We find that privatization programs start often at a time of declining credibility, and most privatizing countries have gradually reduced their policy risks during the course of the sale program. In fact, much risk resolution seems to take place as privatization proceeds to its later stage; thus it appears that policy uncertainty is resolved upon actual implementation of privatization policy, as opposed to its announcement. This is consistent with the view that a sustained privatization policy represents a major political test; if maintained, it contributes to resolve investor uncertainty over the political commitment to a market-oriented policy.

We assess the importance of policy risk for stock market development by contrasting samples of privatizers and non-privatizers. In a sample in which around 40% of the observations are from years in which no substantial privatization took place, we find that policy risk improves more in privatizing countries. Additionally, these countries show a gradual pattern in stock market development during privatization. This is hard to explain in terms of indirect benefits of new listings. If market conditions were expected to improve as a direct result of announced liberalization sales, prices and trading volume should immediately anticipate these benefits.[11] These results are consistent with causality running from policy risk resolution associated with privatization and liberalization to stock market development.

We next analyse the annual evolution of various measures of market development in a panel of emerging markets in terms of liberalization and changes in policy risk. Changes in policy risk are strongly associated with growth in stock market capitalization, traded value and excess returns, even

[11] Trading and diversification gains may also be incorporated gradually if investors fear a halt in the listing of privatized firms; such a concern belongs to our definition of political and policy risk.

after controlling for the immediate impact of financial liberalization.[12] Their economic impact on market development appears to be large.[13]

Our results come to complete a rich set of evidence on liberalization and policy risk. Bekaert (1995) provides evidence that higher levels of policy risk are related to higher degrees of market segmentation. Henry (2000b) and Bekaert and Harvey (2001a, 2001b) find that stock market liberalizations have a positive impact on economic growth, while Henry (2001a) documents that stock market liberalizations lead to private investment booms.[14] Erb, Harvey and Viskanta (1996a) show that the lower the level of policy risk, the lower are required stock returns. Some papers have established an empirical link between the resolution of political risk and market integration and development (Bekaert and Harvey (1995), Perotti and van Oijen (2000)). All these results suggest that policy risk is a priced factor.

Our contribution is to show that confidence building is a gradual process, and that a maintained privatization program, just as financial liberalization, accelerates the resolution of policy risk. Even after controlling for the onset of financial liberalization, privatization contributes significantly to stock market development via reduced policy risk.

Our analysis is related to recent research on the link between the legal institutional framework and corporate finance. La Porta et al. (1997, 1998) find in a series of cross-country studies that countries with lower quality of legal rules and law enforcement have smaller and narrower capital markets.[15] By looking at the impact of policy risk on stock market development over time, we contribute a dynamic analysis of the role of the perceived reliability of policy and legal rules.

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[12] We control for any reverse causality problem by using instrumental variables with respect to the policy risk variable.

[13] Our result that policy risk resolves gradually is also consistent with the puzzling findings by Megginson et al. (1998) that privatization IPOs appear to outperform matched control groups. De Jong and Perotti (2000) attribute this result to a greater sensitivity to policy risk, combined with the overall improvement in these risk measures. This effect vanishes after the IPO, as policy uncertainly is gradually resolved.

[14] A growing literature indicates that financial market development supports economic growth. See Pagano (1993a) and Levine (1997) for an overview of the literature.

[15] Demirgüç-Kunt and Maksimovic (1998) show that firms in countries with high ratings for the effectiveness of their legal systems are able to grow faster by relying more on external finance. Related results for transition economies are offered by Gelfer, Pistor and Raiser (2000).

The outline of the paper is as follows. In Section I we present a simple intertemporal model of confidence building. While it is cast in terms of privatization policy, it describe generically a context in which a government gains some flow from confident investors (e.g. support for the currency and budget spending via foreign portfolio inflows) but some government types are tempted to capture the stock of accumulated investment. In Section II we present suggestive evidence that successful privatization gradually reduces policy risk. Section III documents the impact of policy risk on stock market development in emerging economies. We discuss some novel directions for research at the end, and offer some concluding remarks.

Section I Privatization and Policy Risk Resolution

We present a simple model of how a sustained privatization program can progressively establish the credibility of announced reform policy, and thus lead gradually to increasing confidence and higher share prices.[16] At time 0, a government announces a policy of selling its N state-owned firms; time is indexed by t = 0, 1,.. N, ..T. Sales increase state revenues, because of the enhanced value of the firms under private ownership. We assume that firms have value 1 under private ownership and 0 under state control, with all payoffs realized at time T. On the other hand, the government gains a political benefit of control c at time T from each firm under state control. In accordance with the facts, we assume a gradual progress of sales, which can be rationalized in our context.[17] Specifically, we assume that the government sells one firm per period.

Investors are risk neutral. They receive the final firm value (either 0 or 1) at time T; as the interest rate is zero, they are willing in each period to pay a price equal to their expected payoff at T. The government has a discount factor $\delta < 1$, reflecting a finite time in office.

In each period, after one more firm is sold, the government may reverse policy, undermining a full transition of control to the private sector to capture back some quasi rents. The policy reversal entails a credibility loss, with a political cost which depends on the true preferences of the government.

Specifically, interference allows to capture the full value generated by private ownership in privatized companies, but such a policy reversal carries a privately known political cost θ, distributed on $[0, \Theta]$. Investors are uncertain as to the government's reversal cost θ and learn over time observing policy decisions. Firms still in state hands have no value so they cannot be expropriated further.

We solve the model backwards. Intuitively, the more firms have been sold, the greater is the temptation to reverse policy, as the total capture of rents depends on the number of privatized firms.

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[16] The structure of the model is related to credibility models in macroeconomic stabilization, such as Barro (1986), and foreign investment, as in Cherian and Perotti (2001).

[17] In our framework, confidence increases endogenously over time as the government refrains from interference, so revenues are larger if sales are done gradually (Perotti, 1995). Perotti and Guney (1993) document that sale programs are initially gradual, suggesting gradual selling calibrated to build investors

The greatest temptation to reverse policy is thus to capture the full value of all N privatized firms at time N; any government will reverse its policy by this date if its reversal cost θ is below this gain. Thus the highest cost at which there is a reversal has a threshold $\theta^* \equiv N$. If its type a lower cost than θ^*, it will certainly choose to interfere; so we can rewrite P_t as the probability that the government's θ is above N at time t, i.e. $P_t \equiv \text{Prob}\ (\theta > N | \Omega_t)$, where Ω_t is the information set at t which contains all government choices until then. P_t is thus the confidence as of time t in the government's credibility. Investors have an initial prior belief $P_0 \equiv \text{Prob}\ (\theta > N | \Omega_o)$ that the government has a high cost of reversal, and will therefore resist the temptation to change its policy. Over time they observe its actions and update their beliefs according to Bayes' rule.

Because of discounting, there are no reasons for the government to skip a sale opportunity, as long as it can sell a firm for a price above the current value of its direct control benefits as a state-owned firm. Specifically, we assume that $P_0 > c$, which ensures that as long as the government does not lose credibility, it keeps selling a firm each period, and all firms which are sold will be sold as of t=N. Without loss of generality, we set T=N.

Investor will be willing to pay at time t a price equal to their expectation at that date on the final value of the firm, which equals:

π_t = 1(probability of no interference) + 0 (1- probability of no interference)

= P_t = probability of a commitment government. (1)

We now state a first, elementary result.

Proposition I

Following a policy reversal, the credibility is zero and the government stops selling firms to the private sector.

Proof: A reversal indicates that the government's cost of reversal θ is below the critical θ^*_N = N. Investors then recognize that the government will certainly choose to interfere in any privatized firm,

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confidence even when retained stakes are explicitly targeted to be sold over a few years. Proceeds increase over time; as credibility increases, larger initial sales become more common.

so the private sector will not buy any firm at a positive price. As the political benefit of control c on state-owned firms is positive, the government does not sell any more firms.

On the basis of these observations, we can now state the main result of the model on the time path of confidence as long as there is no policy reversal.

Proposition II

For $t > 1/(1-\delta)[\delta-\delta^{N-t}c+\delta\pi_o]$, c*onfidence in the government's commitment (and thus stock prices) is increasing over time as long as there is no policy reversal.*

Proof: We solve backwards. At time N, a government which did not reverse policy has some positive credibility p_N, and can sell its last state-owned firm for a price π_N. It will then reverse policy if its cost of reversal does not exceed the captured rents, thus $\theta < N$. We thus define the critical cost of reversal at time N as $\theta^*_N \equiv N$. As a result, $\pi_N = \text{prob}\,[\theta > \theta^*_N = N|\, \Omega_N]$.

At time N-1, after the sale of the $(N-1)^{th}$ firm, a policy reversal allows to capture the value of N-1 privatized firm. From Proposition I we know that thereafter no more firms are sold, so the last firm will be retained and will yield a control gain c at T. The net payoff of a reversal at N-1 is

$$N - 1 + \delta c - \theta$$

and generally, at time t it is

$$t + (N-t)\delta^{T-t}c - \theta \qquad (2)$$

which is the sum of the value captured from the t firms privatized so far plus the political benefit of control for the remaining state-owned firms, minus the reversal cost.

Instead of reversing policy, at N-1 the government may wait to interfere one more period to take advantage of one more privatized firm and receive the revenue from its sale; the payoff is then

$$\delta[\pi_N + N - \theta]$$

Thus a government will choose to interfere at N-1 if

$$N-1 - \delta c - \theta > \delta\,[\pi_N + N - \theta]$$

which is satisfied by

$$\theta < N - 1/(1-\delta)[1-\delta c+\delta\pi_N] \equiv \theta^*_{N-1} \quad (3)$$

where $\Omega_N=[\theta > \theta^*_{N-1}]$, so

$$\pi_N = P_N = \text{prob}[\theta > \theta^*_N = N | \theta > \theta^*_{N-1}] = \text{prob}[\theta > N]/\text{prob}[\theta > \theta^*_{N-1}] \quad (4)$$

Note that (3) defines θ^*_{N-1} implicitly, as π_N is also a function of θ^*_{N-1}. Note also that

$\theta^*_{N-1} < N-1/(1-\delta) < \theta^*_N$.

Thus only a government whose reversal cost between θ^*_{N-1} and θ^*_N will choose to reverse policy at time N-1. This defines the build up in confidence, and thus the increase in share prices, between time N-1 and N.

Repeating this process, the evolution of confidence and prices is given by:

$p_t = \pi_t = \text{prob}\,(\theta > \theta^*_N | \theta > \theta^*_{t-1})$, and specifically:

$$\pi_t = \frac{\text{prob}[\theta > \theta^*_N]}{\text{prob}[\theta > \theta^*_{t-1}]}. \quad (5)$$

To compute the critical values of θ^*_t such that all government types θ lower than this threshold reverse policy by time t, let s be the number of periods prior to the last, so that t=N-s. Then it is easy to show that:

$$\theta^*_{N-s} \equiv N-s - 1/(1-\delta)[\delta-\delta^s c+\delta\pi_{N-s+1}]$$

or equivalently[18]

$$\theta^*_t = t - 1/(1-\delta)[\delta-\delta^{N-t} c+\delta\pi_{t+1}] \quad (6)$$

which allows to solve recursively for π_t.

In other words, along the equilibrium path beliefs on government commitment reflect the progressive elimination of possible government types whose reversal cost would have made them already choose to shift policy.

Since reversal costs are nonnegative, the expression has to be positive; thus there may be some initial period in which no government type would choose to reverse policy, as too few firms have been privatized. In that case there will be no confidence building in these initial stages, and the initial price

[18] Note that this term is smaller than $t - 1/(1-\delta)$ for all s = 1, .., N.

will reflect prior beliefs on government's commitment π_o .[19] Specifically, enough firms must have been sold for the net gain to exceed the lowest reversal cost, which is zero. Thus the condition for the beginning of potential policy reversion is that $t > \tau$, where:

$$\theta^{*}\tau \equiv \tau - 1/(1-\delta)[\delta-\delta^{N-t}c+\delta\pi_{\tau+1}] >0$$

where $\pi_{\tau+1}$ is obtained solving backwards from π_N at time N.[20]

Thus at all dates t after τ, enough firms will have been sold (at a price π_o) such there will be some government type with reversal cost $\theta\tau > \theta > 0$ which will choose to reverse policy. As a result, after date τ there will be some updating to confidence in each period, and the posterior expected cost of expropriation for the government increases steadily. QED

It is easy to see that the time series of π_t is constant at π_o until τ and thereafter increasing in the absence of a reversal, as the perceived probability of a reversal declines.

For instance, if the distribution of reversal cost were uniform on [0, Θ], then the evolution of beliefs can be obtained by solving a second order equation, so that:

$$\pi_{t+1} = 1/(2\delta) [(\Theta-t)(1-\delta) -\delta+\delta^{N-t}c - \{[(\Theta-t)(1-\delta) +\delta-\delta^{N-t}c]^2-4\delta (\Theta-N)(1-\delta)\}^{1/2}$$

The dynamics of confidence (and therefore prices), and the associated perception of policy uncertainty over time, are illustrated in Figure 1. Figure 2 illustrates the evolution of hazard rates of policy reversal.

[Insert Figures 1 and 2 here]

Investors' confidence in the government commitment to its policy increase as they recognize that some uncommitted government types would find the policy too costly to maintain and would have revealed itself, so they correct upwards the probability of a committed government. Note how uncertainty at first climbs fast, then rises at a decreasing rate. In the long term, increasing confidence leads ultimately to a fall in uncertainty.

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19 It makes sense in this case to sell several firms at once.

20 More precisely, τ is obtained by computing the first date in which the π_τ associated with no reversal falls below π_o.

From this simple model we conclude that confidence building results from a steady policy vis-à-vis the transfer of control to the private sector and restrain from interference for privatized firms. Note that the model does not imply a mechanic dependence between sales and market development, only that confidence will be built up by (steady) privatization sales accompanied by a stable policy; confidence will be a summary statistics for market growth.

In the next section we outline our empirical approach to explain stock market development in a sample of emerging markets. We next test whether confidence building through sustained privatization or liberalization leads to a resolution of policy risk.

Section II The impact of privatization on policy risk

Sample construction and methodology

We create a panel sample of all countries classified by the IFC as having an emerging stock market, and for which there are data available in the Emerging Stock Markets Factbook from at least 1988 onwards. This leads to a sample of 31 countries. Our hypothesis is that sustained privatization influences the development of stock market via a progressive resolution of policy risk. There are serious issues of endogeneity to be taken into account, as countries with stronger market development may choose to privatize. We chose therefore to proceed in two steps.

The first step is to establish how policy risk is related to privatization over the medium term. From our sample of 31 countries, we select all those countries that have been engaged in substantial privatization sales for at least four years in the period 1988-1995. Using this criterion, there are 22 countries that can be classified as having a significant privatization policy.[21] Note that the requirement of a sufficient history of privatization sales leads to a sample of countries with a fairly sustained

[21] There are only a few countries for which inclusion in either of the samples is ambiguous. We neglected Costa Rica and Uruguay for our initial sample of emerging stock markets because of incomplete data for the market capitalization or traded value on the stock market. For Israel, the World reports 15 privatization transactions spread out over 1988 to 1995. We were unable to obtain privatization data for the years before 1988. Given the low number of transactions and the lack of data we excluded Israel as a privatizing country, but include it in our initial sample of emerging stock markets.

privatization program. Such countries are more likely to be successful privatizers. However, rather than judging subjectively the quality of each country's privatization policy, we use measured changes in their perceived policy risk. While on average the programs in the sample were deemed successful (as our data seem to confirm), the sample does include countries for which the privatization process was delayed or slowed down due to political backlash, in which policy risk has risen again after an initial fall.[22]

Our second step is to test to what extent changes in policy risk during the privatization contribute to local stock market development. To this goal we relate the stock market development in all 31 countries in our sample to changes in their perceived policy risks. We use growth in market capitalization, traded value, and excess stock returns as direct measures of stock market development. We control for stock market liberalization, shown by Henry (2000) amongst others to have a direct effect on stock market development.

In order to be able later to assess the timing of the resolution of policy risk, we also distinguish four different stages in the privatization process. (1) Pre-privatization period: This period is defined as the two years before the announcement period. It is used so as to measure announcement effects and as benchmark for the privatization period; (2) Announcement period: This period includes the 2 years preceding the first actual sales, to capture the announcement and preparation of privatization; (3) Early privatization period: We define this period as the years of actual start of sales up to the year before the peak in privatization sales takes place; and (4) Late privatization period: Includes the year of the peak in privatization revenues as well as all following years, as long as a significant volume of privatization sales continues.

The World Bank database only records privatization transactions that took place since 1988. Therefore, for all countries which privatized in 1988 or 1989 we use other sources to assign the

[22] Turkey and Venezuela are prime examples during the sample period.

beginning of the privatization program. All countries in our sample continue to privatize up to 1994. The list of countries and the timing of their privatization stages is given in Table 1 of Appendix 1.[23]

As proxy for policy risk we use the Country Credit Rating (CCR) risk indicator constructed by the *Institutional Investor*. The CCR indicator is based on information provided by leading international banks and is published twice a year. Bankers are surveyed to grade each country on a scale of zero to 100, where 100 represents the least chance of default. The survey is held every 6 months. Table 1 in Appendix 2 provides a list of the rankings of all factors for 1979 and 1994 for emerging countries. The CCR seems to provide a useful proxy for policy risk, as the factor "Political Outlook" is ranked high on the list factors. Since the ratings relate to chances of default we expect bankers to be forward looking. The survey results are published in March and September. The March survey is based on interviews gathered starting in November and thus reflects the general opinion prevailing around the end of the year preceding the publication.

Development of policy risk over the privatization programs

In this section we analyze how policy risk has developed over the privatization programs of the 22 privatizing countries in our sample. We are particularly interested in assessing the extent to which sustained privatization has resolved policy risk and the timing of the resolution. In doing this, we take the following approach. For our sample of emerging economies that we classified as having a significant privatization policy, we document the development of the CCR indicator (our proxy for policy risk) over the different privatization periods. We then perform simple means tests on whether or not the resolution of policy risk differs across privatization periods. Finally, to test whether the resolution in policy risk is indeed endogenous to the privatization process, we compare the development of the policy risk indicator of the countries that privatize with the improvements in policy risk in developing countries that did not engage in privatization.

[23] For two countries we deviate from the definition given above because the definition would lead to an inappropriate classification of privatization periods. See appendix 1 for a justification for these special cases and for the sources on which we base our additional classification choices.

Table 1 summarizes the behavior of policy risk over time. A positive growth rate for a risk indicator stands for a decrease in policy risk. The CCR on average decreased in value in the pre and announcement period, suggesting that countries often privatize in periods of declining credibility; in contrast, they strongly improve in early and late stages of privatization.

The evolution of the CCRs are consistent with a gradual resolution of policy risk over the privatization period. It appears that sales start on average in periods of declining political ratings, which improve only gradually thereafter. In other words, there is no gain in credibility merely by the establishment of a sale program. Note that there is on average increasing confidence during the process of privatization, suggesting that in the average sample country the privatization policy was not reversed.

Table 1: Yearly percentage improvements in policy risk over privatization periods.

The table presents average yearly percentage changes in the Country Credit Risk Rating produced by the Institutional Investor for different privatization periods. We divide each privatization process in four periods: pre-privatization, announcement of privatization, early privatization, and late privatization.

Privatization Period	Annual Change (%)	Standard Deviation	Minimum	Maximum
Pre	-2.35	10.68	-41.24	25.64
Announcement	-2.47	9.73	-37.95	19.42
Early	2.11	7.85	-21.15	25.90
Late	5.08	8.11	-15.43	35.43

We test whether this pattern is statistically significant by studying whether the improvements in the CCR indicator differ significantly across different privatization periods. The results are given in Table 2. The CCR indicator improves significantly in early and late privatization stages; there is no evidence of an improvement in the announcement stage, suggesting that it does not per se establish much credibility. Moreover, the improvements in the CCR in late stages of privatization are significantly larger than in earlier periods.[24]

[24] We also performed Mann-Whitney (non-parametric) tests on the medians with similar results.

Table 2: Difference tests on changes in CCR ratings over privatization periods.

The table presents difference tests of changes in the Country Credit Risk Rating produced by the Institutional Investor for different privatization periods. A description of this indicator is given in the text above. We break each privatization process in four periods: pre-privatization, announcement of privatization, early privatization, and late privatization, and perform paired t-tests to compare the percentage change in CCR between each sub-period. *** denotes significantly different from zero at the 1% level; and ** denotes significantly different from zero at the 5% level.

Privatization Period	Mean Difference	t-value
Pre minus Announcement	-0.18	0.83
Pre minus Early	***-2.40	-2.82
Pre minus Late	***-3.70	-5.33
Announcement minus Early	***-2.22	-2.83
Announcement minus Late	***-3.52	-5.53
Early minus Late	**-1.30	-2.08

Of course, the observed pattern in policy risk may be due to other factors than privatization. For example, there may have been a change in perceived policy risk over the last fifteen years shared by all non-OECD countries, independently of whether or not these countries engaged in substantial privatization.[25] To test this alternative hypothesis, we compare changes in policy risk of the countries in the sample with those of a sample of non privatizing countries. We selected all developing countries from the Global Development Finance CD ROM of the World Bank, removing all those for which the privatization database reported privatization transactions. This resulted in a sample of 24 countries from which we constructed a single non-privatized benchmark to compare each country's policy risk performance. Table 3 provides the results of a paired t-test on the difference in performance between privatizing and non privatizing countries in each privatization period.

Table 3: Difference in confidence building in privatizing and non-privatizing countries.

The table presents difference tests of changes in the Country Credit Risk Rating produced by the Institutional Investor for privatizing versus non-privatizing countries. A description of this indicator is given in the text above. We break each privatization process in four periods: pre-privatization, announcement of privatization, early privatization, and late privatization, and perform paired t-tests to compare the percentage change in CCR between privatizing and non-privatizing countries. We use privatizing countries as the benchmark. The paired t-tests are based on semi-annual percentage changes in Country Credit Ratings. ** denotes significantly different from zero at the 5% level.

Privatization period	Mean Difference (Privatizing-Benchmark)	t-value
Pre	0.57	0.94
Announcement	0.38	0.66
Early	**1.28	2.35

[25] This risk is reduced by the imperfect overlap of the various privatization periods. For example, the year 1986 is classified as a year of early privatization for Chile, Jamaica, Malaysia and Mexico while this year falls outside the privatization periods for all other countries. Nevertheless, 1993, 1994 and 1995 are classified as years in the late period of privatization for most countries.

Late	**1.71	2.48

The paired tests in the table offer strong evidence that the two samples of countries do not differ much prior to privatization. However, the evolution of the policy risk indicators diverges in the early and late privatization period[26]. In countries where privatization progresses, the CCR measure of perceived policy risk drops significantly more than for the average emerging country over the same period.

An alternative way of assessing whether there is a link between sustained privatization and changes in policy risk is to regress changes in a policy risk indicator on an indicator of the progress of privatization. We use the average amount of privatization sales scaled by GNP to date as such an indicator[27]. By averaging the privatization sales variable over recent years, we attempt to discount privatizations when they are infrequent, or, in other words, when reversals of the privatization process have occurred. If it really is confidence building through sustained privatization that matters for improvements in policy risk, then policy risk should react stronger to current privatization sales, if privatizations have occurred in recent years as well, in other words, when the government has shown commitment to privatization in the past.

This approach has the benefit of allowing to control for other country-specific factors that affect policy risk in order to isolate the effect of sustained privatization sales on policy risk from the effect of other economic reforms. Obvious candidates for such economic reforms are trade and interest rate liberalizations, exchange rate reforms, capital account liberalizations and capital market liberalizations. A practical problem is that measures for these types of economic reforms are not readily available for the large number of countries included in our analysis. Another complicating factor when constructing an index of economic liberalization is that many economic reforms (and their reversals) can typically not be traced to one single date.

[26] We also performed a nonparametric Wilcoxon test, which provided similar results.

[27] For time t, this indicator equals the average privatization sales to GNP over the sampled years up to time t.

Rather than using an index of economic liberalization we choose to include a number of control variables that indirectly measure the impact of these economic reforms. These control variables include growth in GNP per capita, growth in trade to GNP, growth in debt service to GNP, real depreciation, inflation (both in levels and changes), and inflow of foreign direct investment to GNP. The growth in trade (exports plus imports) to GNP variable is used as a proxy for trade reform; the real depreciation and inflation variables capture reform of monetary policy; the change in debt service to GNP variable is related to changes in sovereign debt management; foreign direct investment to GNP measures changes in the openness to direct investment from abroad; and the growth in GNP per capita variable captures indirectly the impact of general economic reform. Tables 1 and 2 in Appendix 2 show that these macro-economic control variables are used as inputs to construct the CCR indicator, and we therefore expect changes in these macro-economic variables to be strongly related to changes in policy risk. Table 1 in Appendix 3 shows the summary statistics of these macro control variables. The data are obtained from the International Financial Statistics of the IMF and the World Bank Global Development Finance database.

The exception to the above is stock market liberalization for which we do have data for all countries. As proxy for capital market reform we use two dummy variables related to the timing of stock market liberalization. The first liberalization dummy variable has a value of one if liberalization has taken place in the same year or in any of the previous years. Hence, this dummy should capture the medium term growth of emerging stock markets resulting from liberalization. The second liberalization dummy equals one around the liberalization date and tests for a pure announcement effect.[28] To construct these dummies, we use the stock market liberalization dates provided by Bekaert and Harvey (1999). For the eleven countries not reported in Bekaert and Harvey (1999), we use the IFC liberalization dates, given by the month after which the IFC considers the country's composite index as 'investable'. According to the IFC, most of these countries did not experience any liberalization.

[28] For those liberalizations that occur in the first three months (last three months) of the calendar year, the dummy equals one both the year of liberalization and the year before (after that). For liberalizations that fall within the other months, the dummy equals one only in the year of the liberalization.

The policy risk indicator is limited to values below or equal to 100. It is therefore possible that the growth of the policy risk indicator depends on the initial level of policy risk. In other words, it is more likely for countries with low credit ratings to show a large change in credit rating than for countries with high credit ratings. To allow for this relationship we also include the initial level of the policy risk index in the regressions.

Table 4 presents the results of regressing changes in policy risk on contemporaneous privatization sales plus the aforementioned control variables. The sample consists of a panel of 22 countries we classified as privatizing (see Appendix 1) and 9 additional developing countries.

The results in column 1 of Table 4 are based on regressing changes in the CCR indicator on average privatization sales scaled by GNP. The results indicate that countries that make substantial progress in privatization (as measured by average privatization sales) show a reduction of political uncertainty, as measured by an improvement in the CCR indicator. We also find some evidence that policy risk reduces around the time of the announcement and implementation of stock market liberalization.

To analyze whether current privatization sales are more or less related to improvements in policy risk than past privatization sales we also regress changes in policy risk on the current level of privatization sales to GNP and the lagged value of the average privatization sales to GNP (and control variables). The results are presented in column 2 of Table 4. We find that both current and lagged values of privatization are important in building confidence, although lagged values are economically more important, suggesting that confidence building takes time. Indeed, if we regress changes in policy risk on current values of privatization sales to GNP and average privatization sales to GNP (and control variables), we find that the current level of privatization sales to GNP is not significantly different from zero, suggesting that it does not contribute to confidence building beyond its effect through the average privatization sales to GNP variable (see column 3 in Table 4). In other words, the empirical results are consistent with our theory that privatization has a positive impact on policy risk only if the privatization is sustained.

The results in Table 4 may suffer from an endogeneity problem due to a reverse causality between the privatization sales and the policy risk variable; in that case, our results may be biased. It could be that governments initiate privatization sales immediately after a period of an improvement in the political climate to reap the benefits from such an improvement through and increase in the proceeds from the privatization sales. To control for a potential endogeneity problem we use instrumental variables (IV) with lagged values of the average privatization sales to GNP variables as instrument for current average privatization sales to GNP. The results are presented in column 4 of Table 4. The instrumental variables regression results are similar to those produced by the OLS regression: policy risk, when measured by the CCR, decreases after the implementation of privatization. We use the Durbin-Wu-Hausman statistic to test the null hypothesis that the use of instrumental variables does not change the estimation outcome. The Durbin-Wu-Hausman statistic for the regression in column 4 of Table 4 suggests that the OLS estimates in column 1 of Table 4 do not suffer from an endogeneity problem.

We conclude that there is evidence of an evolution in the perception of policy risk in countries engaging in sustained privatization programs relative to other developing countries, especially when policy risk is measured by the CCR, which also suggests a delayed effect. These results support the view that privatization leads to a resolution of political uncertainty. At the same time, it seems that only actual implementation of privatization (as opposed to its announcement) changes the perception of investors towards policy risk. In the next section, we document how this reduction in policy risk favors the development of equity investment in emerging countries.

Table 4: Link between privatization sales and policy risk.

'Liberalization' is a dummy that equals one in the year of stock market liberalization and in those years that follow. 'Liberalization Event' is a dummy that equals one in the year/years in which the liberalization actually took place. Policy risk is measured by the CCR rating. For each country, the initial level of policy risk is set equal to the policy risk rating in the country at the beginning of the country sample period. In model (1) to (3) we use OLS. In model (4) we use instrumental variables (IV) with lagged values of average privatization sales to GNP as an instrument for current values of privatization sales/GNP. The initial level of Country Credit Rating is the CCR index at the beginning of the sample period. Liberalization' is a dummy that equals one in the year of stock market liberalization and in those years that follow. 'Liberalization Event' is a dummy that equals one in the year/years in which the liberalization actually took place. The t-values are in parentheses. Standard errors are controlled for heteroskedasticity. The Durbin-Wu-Hausman statistic tests the null hypothesis that the use of instrumental variables does not change the estimation outcome.

	Dependent Variable: Improvement in Country Credit Rating (relative change)			
	OLS	OLS	OLS	IV
	(1)	(2)	(3)	(3)
Constant	***.032	***.040	***.032	***.040
	(2.57)	(3.01)	(2.60)	(2.79)
Initial level of Country Credit Rating	***-.141	***-.151	***-.140	***-.15
	(-4.22)	(-4.45)	(-4.25)	(-4.30)
Growth in GNP Per Capita	***.264	***.242	***.261	***.245
	(4.93)	(4.27)	(4.85)	(4.42)
Growth in Trade to GNP	.090	.094	.088	.096
	(1.50)	(1.51)	(1.49)	(1.48)
Growth in Debt Service to GNP	.030	.037	.032	.035
	(1.12)	(1.46)	(1.20)	(1.27)
Real Depreciation	.059	.057	.060	.056
	(1.46)	(1.36)	(1.48)	(1.50)
Inflation	.053	.099	.054	.09
	(.27)	(.59)	(.28)	(.75)
Growth in Inflation	-.023	-.97	-.021	-.96
	(-.10)	(-1.35)	(-.09)	(-1.25)
Foreign Direct Investment to GNP	.16	.18	.14	.27
	(.54)	(.57)	(.45)	(.76)
Liberalization	.010	.012	.012	.013
	(.96)	(1.14)	(1.11)	(1.14)
Liberalization Event	**.035	***.037	**.034	**.035
	(2.41)	(2.73)	(2.41)	(2.32)
Average Privatization Sales/GNP	***.074	-	**.054	***.058
	(3.96)		(2.43)	(2.68)
Lagged Average Privatization Sales/GNP	-	**.040	-	-
		(2.00)		
Current Privatization Sales/GNP	-	**.014	.008	-
		(2.23)	(1.08)	
Adjusted R-squared	.27	.30	.27	.30
F-test (p-value)	.000	.000	.000	-
Durbin-Wu-Hausman test (p-value)	-	-	-	.308
Number of observations	256	236	256	236

Section III Policy Risk and Stock Market Development

This section addresses directly the empirical relation between emerging stock market development and policy risk. We study the following indicators of stock market development: yearly growth in market capitalization over GNP, yearly growth in traded value over GNP, and the yearly average of monthly returns, where each monthly return is adjusted for the return of the Morgan Stanley Capital International-world index.[29] We obtain the data from the IFC's emerging markets database for our initial sample of 31 countries.

Before we relate stock market development to changes in policy risk, we first report how our measures of stock market development fare over the different privatization periods within our sample of 22 privatizing countries. Table 5 reports the summary statistics for these measures over the different privatization phases.[30] There is certainly enough variation in the sample to be accounted for.

Table 5: Descriptive statistics for market indicators over different privatization periods

	Privatization Period	Annual % Change	Standard deviation	Minimum	Maximum
Capitalization/ GNP	Pre	42.50	101.12	-74.74	458.74
	Announcement	51.50	131.22	-65.64	678.61
	Early	45.30	88.50	-66.01	402.83
	Late	24.61	58.85	-65.50	233.35
Traded Value/ GNP	Pre	87.61	222.30	-72.28	1,072.38
	Announcement	109.09	325.80	-68.87	1,928.48
	Early	106.63	265.21	-76.90	2,024.60
	Late	56.12	128.69	-71.45	552.29
MSCI Index Adj. Returns	Pre	-0.01	5.36	-12.43	10.02
	Announcement	0.74	4.31	-5.72	9.43
	Early	1.75	4.80	-9.65	17.74
	Late	-0.08	3.47	-5.96	8.40

The development of stock markets in the countries has been radical in all privatization periods. The average yearly growth in traded value over GNP always exceeds 50% in any privatization period, although it slows down in the late phase of privatization. The pattern over the different periods

[29] We also used residuals from an estimated ICAPM model as a measure of stock market development. The results are similar to the results reported for the MSCI-world index adjusted returns reported here.

confirms the impression that the direct effect of privatization share issues can only account for a small fraction of the growth of these markets.

It is striking that growth rates for traded value and capitalization both peak in the announcement period as opposed to the late period, which includes the year of highest privatization sales. There may be several reasons for the incidence of the peak. First, the countries selected by the IFC as emerging markets are those countries whose stock markets actually did emerge, so there may be an issue of sample selection. These markets often started growing from a very low initial level of market development; small absolute increases in capitalization or traded value then imply very high growth rates. Several countries which started privatizing later probably benefited from the positive experience of earlier privatization in other emerging markets. Second, the announcement of privatization may induce higher market capitalization and traded value from the anticipation of risk sharing and liquidity benefits that are expected to result from future privatizations. It may also coincide with the period of financial liberalization. Third, it is often the case that some governments list the shares of the state-owned enterprises on the stock exchange before actually selling them, inflating the capitalization growth numbers.

We now turn to the final part of our analysis. Are changes in policy risk important for stock market development in emerging economies? In order to assess this, we use our full sample of 31 emerging stock markets and link stock market development in these countries to changes in policy risk, adding data for the years 1988-1995 for our non-privatizing countries. We pool all yearly observations into one data set of about 300 observations.[31] We then regress our different measures of stock market development on the improvements in policy risk and a number of control variables. We use the same macro-economic control variables that were used for Table 4 in section 2. In addition, we control for the direct effect of firm entry and privatization sales on our indicators of stock market development by including the growth in the number of firms listed on the stock exchange and the yearly privatization

[30] For the traded value over GNP ratio, we removed the 1989 observations for Indonesia. In that year, the growth rate of the traded value over GNP equalled an 11700%, which is more than five times as large as the second largest growth rate in the sample.

sales, scaled by GNP, in the regressions. The privatization sales term should capture any direct effect of privatization share issues independent from its effect on policy risk, as well as any contemporaneous liquidity benefits from privatization listings. The summary statistics of the regression variables can be found in Table 1 of Appendix 3.

We also control again for stock market liberalization. Most of the stock markets in our sample were liberalized during our sample years. Henry (2000) and Bekaert and Harvey (1999) show that in the period around these liberalizations, markets experienced positive abnormal returns, and dividend yields dropped. This suggests that market capitalization, traded value and stock returns jump up during the implementation of market liberalization. Over the medium term, later stock market growth may also be affected by an earlier liberalization, if investors confidence builds up and more firms acquire listings to profit from the resulting lower cost of capital. We therefore include two dummies that capture whether or not the stock market is or has been liberalized. These dummies are identical to the ones used in the regressions presented in Table 4.

We perform regressions both with and without country dummies. In all cases the inclusion of country dummies worsens the fit of the regression, measured by the adjusted R-squared. This suggests that there are no significant country effects. Table 6 reports the results of all the regressions, where we exclude country dummies. The equations indicate that policy indicators (liberalization and policy risk) perform well at explaining the remarkable sample variation, particularly our measure of policy risk.[32] A simple F-test on the coefficients of the model with the growth in traded value to GNP as dependent variable rejects the validity of the model. We therefore do not interpret its results.

Note that the coefficient for the privatization sales over GNP term is insignificant in all regressions. This is consistent with the notion that policy risk perception is a summary statistics of the

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[31] In the regression on excess returns, the size of our sample is reduced to around 190 because we do not have return data for all years and countries.

[32] Exclusion of the liberalization dummies does not affect the significance of policy risk.

effect of privatization on confidence and thus on the required rate of return. In other words, there is no significant direct effect of privatization sales after controlling for changes in policy risk.[33]

In accordance with Henry (2000) and Bekaert and Harvey (1999), we find that stock returns jump around the date of financial liberalization, and that stock market liberalization dummies are also related to other measures of market development. The regressions also confirm that excess stock returns are strongly related to changes in the CCR indicator. The medium term effect of liberalization on stock returns is negative and significant. All in all, the results seem to suggest that risk premiums decline around and after liberalization, leading to somewhat lower returns, in accordance with Henry (2000) and Bekaert and Harvey (1999).

[33] This does not mean that current privatization sales have no impact on policy risk indicators; in section II we saw that when we regressed our policy risk measures on the simultaneous flow of privatization sales, there is a positive and significant effect.

Table 6: Stock market development, liberalization and policy risk.

The sample consists of the 22 privatizing and 9 non-privatizing countries (see Table 1 of Appendix 1). For the latter group, we use stock market development data from 1988 to 1995. For the countries included in our sample of privatizing, we use stock market development data for the years as reported in Table 1 of Appendix 1. All yearly data for the 31 countries are pooled into one sample after which we regress three different measures of stock market development on policy risk improvement and stock market liberalization. As dependent variables we use growth in market capitalization over GNP (panel A), growth in traded value over GNP (panel B), and local stock market returns adjusted for world stock market returns (panel C). As policy risk indicator we use relative changes in the Institutional Investor's country credit rating. Liberalization' is a dummy that equals one in the year of stock market liberalization and in those years that follow. 'Liberalization Event' is a dummy that equals one in the year/years in which the liberalization actually took place. As macro-economic control variables we use growth in GNP per capita, growth in trade to GNP, real depreciation, inflation (both in levels and changes), and inflow of foreign direct investment. We also control for privatization sales over GNP (in %) and the growth in the number of listed firms. Model (1) is estimated using OLS. Model (2) is estimated using instrumental variables. We use lagged values of changes in policy risk and lagged values of the level of policy risk as instruments for current changes in policy risk. The t-values are in parentheses. They are calculated using White heteroskedasticity-consistent standard errors. The Durbin-Wu-Hausman statistic tests the null hypothesis that the use of instrumental variables does not change the estimation outcome.

Panel A	Dependent Variable: Growth in Market Capitalization over GNP	
	OLS	IV
	(1)	(2)
Constant	***.16	***.16
	(2.72)	(3.13)
Growth in GNP Per Capita	***-1.32	**-1.18
	(-2.93)	(-2.35)
Growth in Trade to GNP	-.22	-.17
	(-.48)	(-.38)
Real Depreciation	***-1.19	***-1.14
	(-3.50)	(-4.26)
Growth in Debt Service to GNP	-.03	-.06
	(-.17)	(-.39)
Inflation	***-2.70	***-2.46
	(-3.12)	(-3.76)
Growth in Inflation	-.21	-.03
	(-.25)	(-.05)
Foreign Direct Investment/GNP	-1.71	-1.44
	(-.78)	(-1.03)
Growth in Number of Firms	**1.82	*1.63
	(2.09)	(1.81)
Privatization Sales/GNP	.012	.024
	(.38)	(.81)
Liberalization	-.043	-.055
	(-.38)	(-.52)
Liberalization Event	**.43	**.42
	(2.14)	(2.21)
Improvement in:		
Country Credit Rating (relative change)	***1.83	**1.41
	(3.15)	(2.01)
Adjusted R-squared	.21	.20
F-test (p-value)	.000	-
Durbin-Wu-Hausman test (p-value)	-	.546
Sargan test of overidentifying restrictions (p-value)	-	.305
Number of observations	243	180

Panel B	Dependent Variable: Growth in Traded Value over GNP
	OLS
	(1)
Constant	***.683
	(3.50)
Growth in GNP Per Capita	-.86
	(-.72)
Growth in Trade to GNP	.03
	(.03)
Real Depreciation	**-1.77
	(-2.29)
Growth in Debt Service to GNP	-.407
	(-.69)
Inflation	**-5.05
	(-1.98)
Growth in Inflation	1.170
	(.58)
Foreign Direct Investment/GNP	-.058
	(-1.03)
Growth in Number of Firms	**3.09
	(2.55)
Privatization Sales/GNP	-.002
	(-.02)
Liberalization	-.501
	(-1.48)
Liberalization Event	.503
	(.94)
Improvement in:	
Country Credit Rating (relative change)	***4.74
	(2.95)
Adjusted R-squared	.04
F-test (p-value)	**.055
Durbin-Wu-Hausman test (p-value)	-
Sargan test of overidentifying restrictions (p-value)	-
Number of observations	244

Panel C	Dependent Variable: MSCI-World Index Adjusted Returns	
	OLS	IV
	(1)	(2)
Constant	-.001	-.002
	(-.29)	(-.38)
Growth in GNP Per Capita	-.016	-.011
	(-.44)	(-.28)
Growth in Trade to GNP	-.022	-.022
	(-.60)	(-.70)
Real Depreciation	***-.093	***-.094
	(-4.02)	(-4.15)
Growth in Debt Service to GNP	-.002	-.002
	(-.21)	(-.20)
Inflation	-.14	*-.15
	(-1.22)	(-1.80)
Growth in Inflation	-.10	-.08
	(-.45)	(-.36)
Foreign Direct Investment/GNP	.055	.058
	(.39)	(.63)
Growth in Number of Firms	-.004	-.004
	(-.29)	(-.29)
Privatization Sales/GNP	-.001	.001
	(-.22)	(.21)
Liberalization	-.010	**-.010
	(-1.62)	(-2.19)
Liberalization Event	**.023	***.022
	(2.55)	(2.27)
Improvement in:		
Country Credit Rating (relative change)	***.141	*.092
	(2.92)	(1.69)
Adjusted R-squared	.26	.25
F-test (p-value)	.00	-
Durbin-Wu-Hausman test (p-value)	-	.294
Sargan test of overidentifying restrictions (p-value)	-	.377
Number of observations	161	161

We have analyzed whether liberalization makes markets more sensitive to changes in policy risk. However, the coefficients on interaction terms are not significant.

Surprisingly, including country dummies in the regressions generally worsens the overall fit, but increases the coefficients of the CCR indicators in the capitalization regression.

We also checked whether inclusion of the initial level of the CCR indicator as explanatory variable in the regressions affects the results. The argument would be that stock market development depends on the initial level of policy risk. However, we find that the coefficient is insignificant.

An additional concern on the results is the possible role of large outliers. We checked this possibility by excluding countries with extreme market development patterns (Portugal and Indonesia), obtaining similar results. We also excluded all observations where changes in market development measures were more than four standard deviations away from the mean. This reduces the size of the coefficients somewhat, without changing the pattern of significance across the different regressions. Again, the second model specification is rejected by a simple F-test.

Finally, we consider the possibility of reverse causality. The level of privatization may be influenced by the degree of market development, or perceived policy risk may be affected by the level of the domestic stock market. We therefore test for robustness by using instrumental variables (IV) with respect to the policy risk variable.

Since it is difficult to find additional instruments of improvements in policy risk index, we use lagged variables, both the lagged change in CCR and the lagged level of CCR. We use the Durbin-Wu-Hausman statistic to test the null hypothesis that the use of instrumental variables does not change the estimation outcome. We also use the Sargan test of overidentifying restrictions to test for the validity of these instruments. Column (2) in Table 6 present the IV results. We do not report the IV results for the model specification with growth in traded value to GNP as dependent variable because the model is rejected by a F-test.[34] for the three model specifications. These estimates control for heteroskedasticity.

The IV results are quite similar to the OLS results, although we find that the effect of an improvement in policy risk on the measures of stock market development is lower for the IV regressions. Also, the statistical significance of the IV estimates for the policy risk variable is lower than for the OLS results. The general conclusion is that the OLS results do not seem to suffer from a reverse causality problem where stock market development causes improvement in policy risk.

[34] We have estimated the second model specification using IV and found that the coefficient for the change in policy risk variable was significant at the 10% level, but that the Sargan test of overidentifying restrictions rejected the use of lagged values of the change and the level of CCR as instruments.

We conclude therefore that policy risk improvements, correlated with the existence of a sustained privatization and liberalization program, appear to be an important factor in the rapid development of emerging stock markets, and its impact is economically quite significant.

Conclusions

We have presented evidence that the resolution of policy risk through sustained privatization and liberalization policy has been an important source for the recent growth in emerging stock markets. Sustained privatization seems to gradually strengthen the institutional framework by forcing a resolution of policy and legal uncertainties which had till then hindered equity market development, leading to increase in investor confidence. On average, this process seems to take place gradually as privatization proceeds, with much of the resolution taking place during actual privatization, as opposed to the announcement and preparation period. We also confirm earlier results that the process of liberalization has a positive impact on return and market capitalization. The greater significance of policy risk measures is consistent with the notion that both privatization and liberalization initiate a process of confidence building which requires consistency in the announced policies.

There is a tradition of policy risk even in developed economies;[35] the temptation to reverse policy after privatization is particularly strong for many areas of traditional public ownership which used to be monopolies, such as telecommunications, utilities and infrastructure.[36] Yet policy risk represents a particular dilemma for investors in emerging economies, where contractual and institutional uncertainty is greater, due to less established market institutions, less political stability and more state interference leading to major discrete policy changes.

One interpretation of our approach is as an attempt to investigate the dynamics of required returns on investments. There is by now a general consensus in finance that required returns on equity evolve over time. We have indicated some evidence of such dynamics for country risk, particularly in

[35] See Jones et al, 1999, on NTT in Japan, and Grandy (1989) for the US.

[36] Such industries possess major fixed sunk investments, which produce a steady cash flow from users which represent large quasi rents; their allocation to private investors may arouse strong political opposition from insiders or users, producing a high risk of ex post expropriation.

emerging markets. The confidence building model also suggests that major reforms such as privatization and liberalization may have a delayed rather than immediate effect on market development, and can thus explain the so called "return to integration": in countries which liberalized and maintained their policy, investors have been able to capture excess returns during the process on all domestic assets, as their ultimate payoff and risk profile depends on the actual degree of protection of property rights. Other more direct benefits of privatization, such as improved risk sharing and liquidity as a result of new listings, would be immediately incorporated in market prices and volumes.

Market oriented policy reforms such as privatization require legislation to reduce regulatory and legal uncertainty, greater protection of investors, removing restrictions on foreign ownership and competitive entry, and a reduction in the bias historically favorable to public sector borrowing.[37]; the real test is of course the proper enforcement of such rules. While there may be resistance from established interests to improvements in such rules (Rajan and Zingales, 2001), the necessity to attract investors often leads to more reliable supervision, the promotion of better accounting standards and transparent disclosure rules, the support of procedures to contest managerial decisions.

A final but important point is that it is possible that privatization can by itself resolve policy risk by helping to overcome political resistance to market reforms and their effect, perhaps because it establishes a broader-based ownership. Biais and Perotti (2001) explain how a large privatization program may be designed so as to reduce policy risk of future policy reversals. A market-oriented party may increase the probability of being re-elected by implementing a series of underpriced sales, where excess demand is rationed so as to ensure a broad diffusion of shareholding and to reward long term holdings. A wide diffusion of shares may then shift the voting preferences of the middle class, creates political support for market reforms and reduces policy risk and the equity risk premium.[38]

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[37] A final benefit of privatization is that it makes regulatory policy more subject to public scrutiny, which allows a transparent public debate and increased reliance on legal, as opposed to administrative, recourse.

[38] Jones et al (1999) find significant empirical support for these conclusions by analysing the pricing and share allocations affiliated with privatization sales.

In our view there is much promise for research in the area of political economy and finance. Privatization, just as nationalization, has strong redistributive effects and tends to cause political conflict, whose outcome is both relevant and informative for investors.

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Appendix 1: Special cases in defining the privatization period and a list of the privatizating countries

For 6 countries, we deviate from the quantitative definitions of privatization periods given in the text.

Argentina: We put 1989 in the announcement period. In 1989 the newly-elected President Menem immediately announced a privatization plan which already led to sales in 1990 (Sader, 1993)

Brazil: In 1988, there was one large privatization transaction; however, in 1989 and 1990 there were no sales. In 1990 a privatization plan was announced, which took of in 1991 (Sader (1993)). Hence we regard 1990 as part of the announcement period.

Chile: This country has a long tradition of privatization, extending back to the early 70s. This period consists of two waves of privatization, according to Hachette and Luders (1993). We take the second wave of privatization as our focus of analysis. For privatization sales before 1988 we rely on Hachette and Luders and use 1985 as the start of privatization.

Jamaica: For Jamaica we were unable to obtain information about the precise sales before 1988. We rely here on Leeds (1991) ("Privatization Through Public Offerings: Lessons from Two Jamaican Cases" in R. Ramamurti and R. Vernon (eds.) Privatization and Control of State-Owned Enterprises, World Bank, Washington DC) who claims that privatization started off in 1986.

Malaysia: We rely on Sader (1993) and Galal, Jones and Vogelsang (1994) who claim that privatization started in 1985.

Mexico: For Mexico we use Rodriguez (1992) for obtaining privatization sales data before 1988. We neglect the revenues of privatization in 1983 and 1984. Privatization in that period mostly involved liquidation of assets. Revenues were around 40 million and 1 million respectively for those years. In 1985 sales were 113, and remained above 100 million afterwards. (See Rodriguez 1992).

The countries in our sample of privatizers, and the resulting classification of privatization periods are reported in Table 1.

Table 1: Sample of countries and their privatization periods

PRIVATIZERS:

	Privatization periods:			
	Pre	Announcement	Early	Late
ARGENTINA	87	89	90	92
BANGLADESH	85	87	89	93
BRAZIL	88	90	91	93
CHILE	81	83	85	88
COLOMBIA	87	89	91	93
COTE D'IVOIR	87	89	91	95
GREECE	86	88	90	90
INDIA	87	89	91	94
INDONESIA	87	89	91	95
JAMAICA	82	84	86	89
MALAYSIA	81	83	85	92
MEXICO	81	83	85	91
NIGERIA	85	87	89	93
PAKISTAN	86	88	90	94
PERU	87	89	91	94
PHILIPPINES	85	87	89	93
PORTUGAL	85	87	89	92
SRI LANKA	85	87	89	92
THAILAND	88	90	92	93
TUNESIA	84	86	88	92
TURKEY	84	86	88	90
VENEZUELA	86	88	90	91

NON-PRIVATIZERS:

EGYPT
ISRAEL
JORDAN
MOROCCO
SOUTH AFRICA
SOUTH KOREA
TAIWAN
TRINIDAD & TOBEGO
ZIMBABWE

Appendix 2: Overview of the Policy risk Indicators

Table 1: Rankings for the importance of factors in Country Credit Risk Ratings.

Factor	1979	1994
Debt Service	1	1
Political Outlook	3	2
Economic Outlook	2	3
Financial Reserves/Current Account	4	4
Trade Balance	5	5
Foreign Direct Investment	6	6
Fiscal Policy	9	7
Inflow of Portfolio Investment	8	8
Access to Capital Markets	7	9

Source: Erb, Harvey and Viskanta (1996b).

Appendix 3: Data

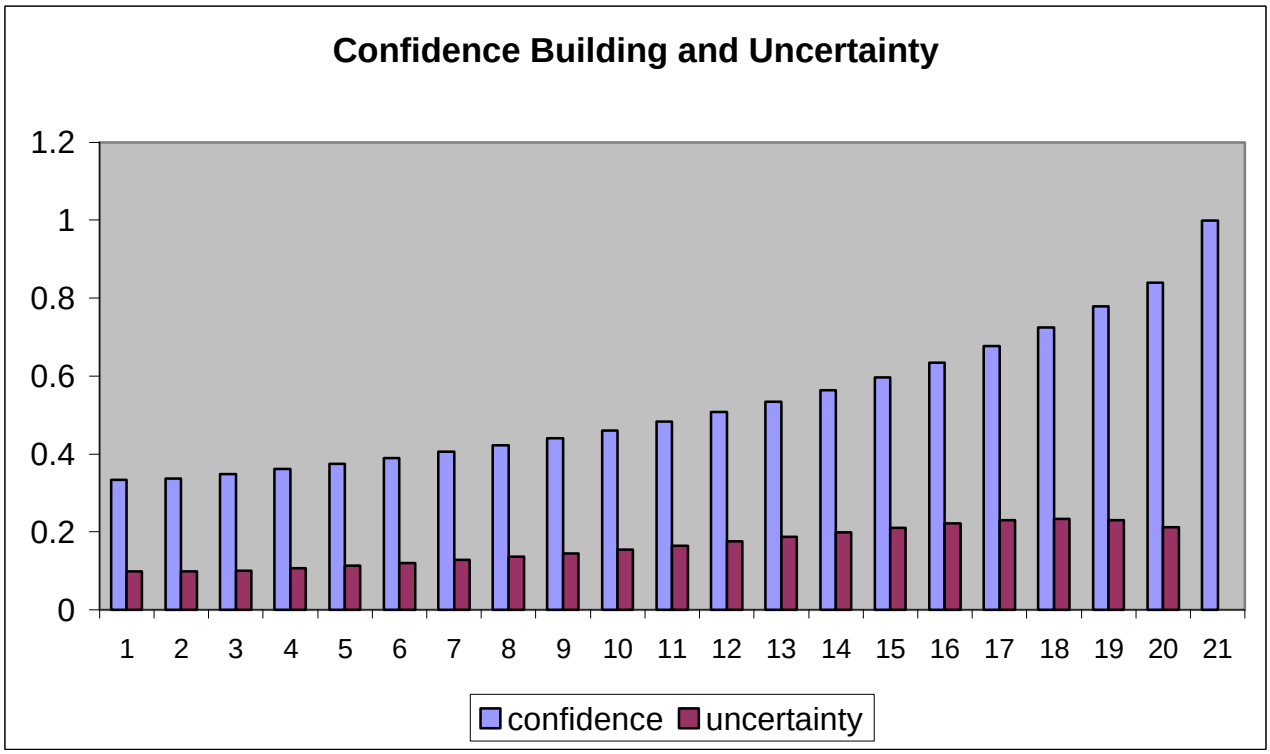
Table 1: Descriptive statistics for regression variables

Variables	Mean	Median	Maximum	Minimum	Standard deviation	Number of Observations
Percentage change in Country Credit Rating	1.8	1.9	35.4	-41.2	8.9	310
Growth in Capitalization/GNP (%)	34.7	14.9	678.6	-74.7	84.7	303
Growth in Traded Value/GNP (%)	84.3	25.5	2,279.8	-87.5	246.4	303
Stock market return in excess of MSCI World Index (%)	.63	.24	17.7	-12.4	4.2	189
Privatization Sales/GNP (%)	.46	.020	11.0	.00	1.1	309
Growth in Number of Firms (%)	6.9	3.2	162.5	-21.5	19.8	297
Growth in GNP per capita (%)	5.9	6.9	89.9	-51.0	15.3	309
Growth in Trade/GNP (%)	3.3	2.3	51.2	-23.7	10.3	299
Growth in Debt Service/GNP (%)	2.2	-.34	182.9	-66.1	29.0	263
Real depreciation (%)	-9.6	-6.0	60.7	-97.4	20.2	310
Inflation (%)	115.4	11.3	7,481.7	-1.0	578.0	310
Growth in Inflation (%)	12.0	-4.6	1,104.9	-3,406.8	235.3	293
Foreign Direct Investment Inflow /GNP (%)	1.4	0.9	10.4	-2.1	1.7	296
Liberalization dummy	.37	.0	1.0	.0	.5	310

Sources: International Financial Statistics (IMF), Global Development Finance (World Bank), Institutional Investor.

Figure 1: Credibility and uncertainty over time

Our simulation uses the following parameter values: the reversal cost is distributed on [0,30], the government discount factor is δ=0.90, the control benefit is 0.1, and the number of firms to be sold is N=20.



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