Residual state ownership, policy stability and financial performance following strategic decisions by privatizing telecoms

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Abstract
We question previous research assuming that privatizing firm performance generally benefits from decreasing state ownership and the passage of time, both of which purportedly align principal–agent incentives promoting organizational decision-making that increases shareholder value. When state ownership shifts from majority and controlling to minority and non-controlling, the performance impact may be positive in the short run, particularly where there is instability in the local investment policy environment. Consistent with this proposition, we develop and test hypotheses derived from a minority and non-controlling or "residual" state ownership framework, grounded in credible privatization and institutional theory. We propose that: (1) residual state ownership positively affects shareholder returns after strategic decisions by privatizing firms because it signals state support for managerial initiatives; (2) the passage of time since initial privatization negatively affects shareholder returns after strategic decisions by privatizing firms because initial undertakings in support of the privatizing firm are reversed; and (3) home-country investment policy stability moderates these two effects – greater stability obviates the need for residual state ownership, and slows policy reversals over time. We find empirical support for our residual state ownership framework in event study analyses of cumulative abnormal returns ("CARs") associated with 196 major investments announced from 1986 to 2001 by 15 privatizing telecoms from around the world. CARs are positive at 5–25% state ownership levels but turn negative at higher state ownership levels. CARs turn sharply negative within 1–2 years from initial privatization dates. Increasing policy stability diminishes positive ownership and negative time effects on CARs. Results confirm the potential supporting role that residual state ownership can play in enhancing strategic decision-making and financial performance by privatizing firms, particularly where there is instability in the home-country investment policy environment.
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INTRODUCTION

Our study develops and tests a novel theoretical framework for explaining the impact of non-controlling minority state ownership on financial performance following strategic decisions by privatizing firms. In this journal, interest in privatization's effect on firm strategies and performance reaches at least as far back as the

late 1980s, when Gillespie and Alden (1989) conjectured that less-developed countries were selling equity in state-owned enterprises to create private shareholders demanding greater organizational efficiency and competitiveness in domestic markets. In the early 1990s, Ramamurti (1992) investigated economic and ideological motivations for state divestment, particularly in developing countries, where institutions associated with private ownership and a market economy were less well established. Since then, research in *JIBS* has examined different aspects of privatized firm decision-making and performance, including: export and acquisition strategies in countries of the former Soviet Union (de Castro & Uhlenbruck, 1997; Filatotchev, Dyomina, Wright, & Buck, 2001); foreign direct investment (FDI) modes in Latin America (Del Sol & Kogan, 2007); and profitability and productivity trends after market liberalization in China (Park, Li, & Tse, 2006). Thus a recurring theme in *JIBS* privatization research over 20 years and five editors may be the importance of understanding not only how state divestment changes firm decision-making and performance, but also how the evolving institutional context of that divestment matters, particularly in developing countries.

This stream of research has often equated state divestiture with 100% private ownership. But as Guislain (1997), Steinfeld (1998), Ramamurti (2000) and Gupta (2005) have pointed out, firms described as "partially privatized" or "public–private partnerships" have long represented a substantial percentage of all state divestments. Partial privatization has been especially popular in developing countries such as China (Steinfeld, 1998), India (Gupta, 2005) and Vietnam, where 2007 saw the announcement of plans to partially privatize over the next 3 years 71 major state-owned enterprises, including the national air carrier, Vietnam Airlines (CNN.com International, 2007). Even fully privatized firms may operate for a substantial time in a partially privatized status, either because states prefer to sell off enterprises gradually in tranches (Perotti & Guney, 1993) or because local capital market constraints require a gradual sell-off (Schipke, 2001). In any case, partially privatized firms have been and will continue to be ubiquitous. Current theoretical and empirical research gaps regarding the behavior and performance of these firms merit bridging, with due regard for both organizational and comparative institutional factors that have characterized previous cross-country research on privatization at *JIBS*.

We see gaps to bridge. Principal–agent-based theoretical models in management (e.g., AMR, 2000) and economics (e.g., Boycko, Shleifer, & Vishny, 1996) suggest, and the broad sweep of empirical research (Megginson & Netter, 2001; Gupta, 2005) records, that partially privatized firm performance improves with decreasing state ownership and greater principal–agent alignment of private shareholder and management interests over time. To our knowledge, however, this theoretical and empirical research has never examined the performance impact of state ownership when it becomes a non-controlling minority (<50%) tranche, which we define throughout this study as "residual state ownership".[1]

An important assumption in past privatization research has been that state ownership and its broader public welfare rather than private profit goals interfere with principal–agent incentive alignment, to the detriment of privatizing firm decision-making on behalf of private shareholders. But this assumption may be substantially undercut once the state is no longer a controlling majority owner. Indeed, an alternative "credible privatization" theory developed by Perotti (1995) suggests that, in the early years after privatization begins, residual state ownership may have positive rather than negative effects on shareholder returns following strategic decisions. A residual state ownership stake signals to private shareholders the state's willingness to intervene on their behalf and share in their economic fate. But such signals are credible only in the short term, after which initial commitments favorable to the privatizing firm and its private shareholders unravel with complete state divestment and eventual changes in politicians and policies.

We build on this credible privatization perspective to develop and test hypotheses derived from a novel theoretical framework for understanding financial performance by privatizing firms after taking strategic decisions such as mergers, acquisitions and alliances. Our framework incorporates Perotti's (1995) credible privatization assumptions, but then identifies and integrates additional assumptions related to institutional theory enunciated by North (1990) and applied by Henisz (2001) and others (e.g., Doh, Teegen, & Mudambi, 2004) to explain firm behavior in response to home-country investment policies. Greater stability in the public policy world of privatizing firms – fixed and predictably applied legislation,

regulation, administrative and judicial oversight of privatizing firm activities – implies less need for residual state ownership as an alternative signal of support for private shareholders. Greater home-country policy stability implies slower unraveling over time of initially favorable state undertakings for private shareholders. Our theoretical framework thus integrates credible privatization and institutional theory elements explaining residual state ownership effects on financial performance in the wake of strategic decisions taken by privatizing firms under differing conditions of home-country investment policies.

Our study also contributes to empirical research on privatization. Recent literature reviews (e.g., Megginson & Netter, 2001) note several empirical studies documenting long-term performance improvements linked to privatization. We take a different empirical tack. We investigate short-term financial returns associated with strategic decisions announced by privatizing firms. We think this alternative performance measure sheds light on the quality of strategic decision-making by top managers in privatizing firms from a shareholder perspective. We analyze 196 strategic decisions taken by privatizing telecommunications firms ("telecoms") from 15 countries over 16 years, 1986–2001. Using event-study methods and multivariate estimators familiar to researchers in finance (Brown & Warner, 1985; Doidge, 2004) and management (Eden, Juarez-Valdez, & Li, 2005; McWilliams & Siegel, 1997; Park, 2004), as well as non-parametric bivariate estimators less familiar to both fields, we document the first cross-country evidence of shareholder returns following strategic decisions that:

(1) increase as residual state ownership in privatizing telecoms increases;
(2) decrease as the time since initial privatization of privatizing telecoms increases; but
(3) both diminish in effect as home-country policy stability increases.

Overall, our findings support our theoretical framework proposing that residual state ownership may have short-term benefits for strategic decision-making and related financial performance in privatizing firms from countries lacking policy stability.

BACKGROUND LITERATURE, THEORETICAL FRAMEWORK AND DERIVED HYPOTHESES

Background Literature on Privatizing Firm Decision-Making and Performance
Our theoretical framework and derived empirical predictions differ in many ways from prevailing theory and empirical evidence about the impact of state ownership over time on privatizing firm decision-making and related performance. Intuition and anecdote in popular literature hold that state ownership undermines privatizing firm decision-making and performance. As Shleifer and Vishny (1994) and others (e.g., Nellis, 1999) have been telling scholars, policymakers and the investing public for more than a decade, politicians and firms are naturally at odds, with firms seeking profits, politicians seeking public welfare, and both doing so self-interestedly. State ownership in firms brings these two into conflict, leading to what principal–agent theorists such as Jensen and Meckling (1976) would term a "misalignment of incentives". According to a prominent theoretical model of privatization developed by Boycko et al. (1996), realignment follows from decrease in state ownership and greater managerial focus over time on serving private shareholders seeking profits.

Theoretical analyses of firm privatization, behavior and performance compiled in a special issue of the *Academy of Management Review* (*AMR*, 2000) elaborate on this principal–agent perspective. Cuervo and Villalonga (2000), for example, suggest that principal–agent issues affecting privatizing firm performance are exacerbated by second-order "public choice" issues. Privatizing firms exhibit poor performance because politicians are likely to use their ownership rights to impose objectives consistent with their own political goals (Buchanan, 1972). The threat of removing such politicians at election time provides at best only a partial response to the public choice issue, particularly if conniving politicians are supported by other firm stakeholders, such as trade unions, with their own rent-seeking designs and substantial electoral influence. A more effective response to the public choice issue is rapid reduction and elimination of all state ownership and attendant political influence, thus permitting development over time of firm oversight and incentives mechanisms consistent with the interests of wealth-maximizing private shareholders. Spicer, McDermott, and Kogut (2000) use similar reasoning to explain mass privatization policies, which from 1991 to 1996 saw more than

30,000 medium-sized and large enterprises in 14 emerging-market countries – many in Central and Eastern Europe – transferred in bloc to private owners.

The broad review of empirical research by Megginson and Netter (2001) as well as more focused telecoms privatization reviews by Bortolotti, D'Souza, Fantini, and Megginson (2002) and Comstock, Kish, and Vasconcellos (2003) chronicle evidence generally consistent with principal–agent claims that decreasing state ownership is associated with changes over time in firm structure and strategy, leading to operating and financial performance enhancement. Empirical research related specifically to partial privatization is less developed, but results to date exhibit the same pattern. In a sample of 40 firms from assorted industries sold off in five different countries during the 1980s and 1990s, Comstock et al. (2003) find that long-term (5-year) cumulative abnormal shareholder returns are negative for privatized firms, but less so as the size of the initial share offering increases, thus implying that reduced state ownership improves financial performance. With a sample of more than 300 manufacturing and services firms partially privatized in India during 1990–2002, Gupta (2005) finds that operating returns increase as the level of state ownership decreases from total to partial but still controlling blocs.

An Alternative Residual State Ownership Framework and Derived Hypotheses

Against this prevailing view, we offer an alternative theoretical grounding to understand and then empirically study a privatization context that previous researchers have left largely unnoticed. Rather than investigate yet again the behavior and performance of fully privatized firms, or partially privatized but still majority state-controlled firms, we focus attention on privatizing firm performance when the state has shifted from controlling majority to non-controlling minority equity holder. Rather than investigate yet again the long-term performance of privatizing firms, we focus attention on the impact such residual state ownership may have on shareholder returns in the immediate wake of strategic decisions taken by top managers. In this context, state ownership may positively rather than negatively affect the quality of privatizing firm decision-making and performance.

Our alternative theoretical framework is grounded in three assumptions. First, our framework eschews principal–agent theory, drawing instead on the credible privatization theory enunciated by Perotti (1995), and assumes that residual state ownership in privatizing firms signals support for (but not interference with) initiatives by privatizing firm top management. Second, and also consistent with credible privatization theory, our framework assumes that the passage of time since initial privatization decreases the effectiveness of residual state ownership as a signal of state support for those initiatives. Our third framework assumption is grounded in institutional theory enunciated by North (1990) and applied by Henisz (2001) and others (Acemoglu & Johnson, 2005; Djankov, Glaeser, LaPorta, Lopez-de-Silanes, Shleifer, & Vishny, 2003; Doh et al., 2004) to explain firm behavior and investment under different investment policy environments. Residual state ownership and policies governing relations between investors and the state are, in effect, substitutes. More (less) stable investment policies diminish (magnify) the need for state ownership as a signal. We elaborate on the basis for these three framework assumptions and derive hypotheses related to each below.

The alternative credible privatization theory that informs our first and second framework assumptions and related hypotheses dates back to Perotti and Guney (1993), who first noted the tendency of developing-country governments to privatize state-owned financial institutions in sequential tranches over time rather than in single block offerings. Perotti (1995) then developed a formal model of credible privatization to explain why states might implement privatization policies fostering gradual decrease in state ownership and maintenance of substantial though non-majority state ownership. From a credible privatization perspective, once the state cedes majority ownership and control to private shareholders, concerns of state meddling and principal–agent misalignment decrease. Residual state ownership serves a different and potentially beneficial purpose. It signals state support for privatizing firm strategies, a willingness to share its economic fate, and some commitment to firm success, all of which assure private shareholders. The signal applies across a broad range of privatizing firm activities. Indeed, a strategy of residual state ownership to assure private shareholders may arise because the state lacks information and expertise to give adequate assurances via other more specific controls, such as favorable regulatory treatment or lucrative government contracts (Sappington & Stiglitz, 1987). If this generalized

influence supports privatizing firms in the wake of strategic decisions by top management, then we expect more favorable shareholder response:

Hypothesis 1: Shareholder returns following strategic decisions are higher for privatizing firms with more residual state ownership.

Credible privatization also assumes that initial state undertakings in support of a privatizing firm are prone to reversal over time. This assumption leads to inferences about time trends in privatizing firm performance different from those based on principal–agent perspectives, where time since initial privatization permits better incentives alignment and improved performance. As Schmidt (1996) and Newberry (2001) note, privatization equity sales represent a particularly acute form of complex, and therefore incomplete, contractual arrangement. At the outset, states may confer several benefits on privatizing firms, including protection from competitive entry by rivals, and preferred supplier contracts with the state. Yet there is also substantial opportunity for states to renegotiate these initial terms as time passes and politicians implementing divestment are replaced in the next government cabinet reshuffle or election.

Research in international business and related fields concurs with this second assumption. Ramamurti (2001, 2003), for example, notes the tendency of initial privatization terms to evolve over time, and characterizes this as a contemporary form of the obsolescing bargain phenomenon originally developed by Vernon (1971) to explain fluctuations in FDI by multinational enterprises negotiating with host governments in the developing world. For Emmons (2000), tendencies to renegotiate initial terms are central to understanding an "evolving bargain" between states and privatizing firms. Tendencies to pull back from initial undertakings may be more acute where rule of law and respect for property rights are less well established (Lenway & Murtha, 1994), and changing voter preferences make renegotiation attractive to elected politicians (Schipke, 2001). In these and related contexts, state undertakings are less likely to be sustained, to the eventual detriment of shareholder confidence and firm asset values (Perotti & Laeven, 2001):

Hypothesis 2: Shareholder returns following strategic decisions are lower with more time since the initial privatization date.

Our third framework assumption and related hypothesis addresses institutional factors moderating the predicted impact of residual state ownership on cross-sectional performance predicted in Hypothesis 1 and longitudinal performance predicted in Hypothesis 2. Recall our first assumption about residual state ownership as a signal of state support for privatizing firm strategies. In industrialized democracies with well-developed and stable policies supporting rule of law, respect for property rights and other investor-friendly institutions, the value of residual state ownership as a signal of support for private shareholders diminishes. Such governments are also less likely to pull back from initial undertakings favorable to the newly privatizing firm and its private shareholders. Djankov et al., 2003 and Acemoglu and Johnson (2005) argue that institutional restraints on executive power decrease the likelihood of capricious change in public policies, early withdrawal from agreements with government suppliers, and other policy shifts that may upset the investment-backed expectations of privatizing firms. Consistent with our framework assumption, Bortolotti and Perotti (2007) opine that, when effective executive restraints are not in place, then state ownership in privatizing firms can serve as an important alternative signal of executive favor, or at least forbearance. Once those restraints are in place, residual state ownership is less important, perhaps even redundant.

Recent management research leads to similar conjectures. Doh et al. (2004), for example, investigate the level of host-country state ownership in telecoms infrastructure projects in emerging-market countries during the 1990s. They find that host-country state ownership levels increase as host-country "policy hazards" threatening private investors increase from average to higher (i.e., more risky) levels. Consistent with our framework, they suggest that partial state ownership in privatizing firms substitutes for state policies that could protect infrastructure investment and investors. Their findings concur with a growing stream of research by Henisz and colleagues (e.g., Delios, & Henisz, 2000; Henisz, 2001; Henisz & Delios 2001) demonstrating that host countries with institutions permitting greater investment policy variance experience lower overall investment levels and more investment projects using joint ventures, alliances and other modes indicative of elevated risk. Thus home-country policy stability is a substitute for residual ownership and the commitment it represents over time. More stability in the

privatizing firm's home-country investment policy environment should diminish the positive impact of residual state ownership on shareholder returns following strategic decisions:

> **Hypothesis 3**: Residual state ownership effects on shareholder returns following strategic decisions diminish with stronger home-country policy stability.

Similarly, greater home-country policy stability slows the evolution of initially favorable privatization deal terms, and diminishes the negative time trend in shareholder assessments of privatizing firm decisions. Stronger, perhaps even constitutionally enshrined, constraints on public policymakers mean that the next cabinet reorganization or election are less likely to prompt renegotiation or outright abandonment of initial privatization deal terms favorable to shareholders. Thus greater policy stability in the privatizing firms' home country diminishes the negative impact of time on shareholder returns following strategic decisions:

> **Hypothesis 4**: Negative time (since initial privatization date) effects on shareholder returns following strategic decisions diminish with stronger home-country policy stability.

We summarize the theoretical framework and four derived hypotheses in Figure 1. The left-hand side of Figure 1 comprises two elements drawn from credible privatization theory: Residual State Ownership and Time Since Privatization. Consistent with Hypotheses 1 and 2, both framework elements are theorized to affect shareholder returns following a privatizing firm's strategic decision such as an acquisition or entry into a joint venture: Residual State Ownership increases (+) and Time

Figure 1 Theoretical framework and hypotheses.

Since Privatization decreases (−) Financial Performance Associated with Strategic Decisions of Privatizing Firms. The middle of the figure includes the moderating element drawn from institutional theory: Stability of Policy Environment. Consistent with Hypotheses 3 and 4, this moderator indicates that home-country investment policy stability substitutes for and diminishes the effects of Residual State Ownership and Time Since Privatization on Financial Performance Associated with Strategic Decisions of Privatizing Firms.

METHODOLOGY

Empirical Context
To test these four hypotheses and evaluate broader support for our residual state ownership framework, we turn to privatizing telecoms and shareholder returns following strategic decisions by privatizing telecoms in the 1980s, 1990s and early 2000s. Boutchkova and Megginson (2000), Bortolotti et al. (2002) and others (e.g., Guislain, 1997) highlight the importance of telecoms in privatization policy, including their relative (to many other state-owned enterprises) operating inefficiency in public hands, and their tendency to generate substantial government revenues, deepen local equity markets, generate international trade in services, and promote international technology transfer early in a state privatization program. Their sheer size and transactional activity in international markets are also noteworthy. Adjusted for inflation, the world's largest share offering arose from the Japanese government's privatization of Nippon Telephone and Telegraph in the mid-1980s. The collective market value of 15 privatizing telecoms we sample approaches $500 billion at the end of 2001. And by almost any measure, these privatizing telecoms have also been busily engaged in major investments, such as Deutsche Telekom's 2000 $46 billion acquisition of US mobile telephone service provider VoiceStream (*Financial Times*, 2000). Thus we have a single industry research context comprising substantial enterprise value and investment activity of strategic importance to investors, states and related stakeholders since the 1980s.

To go with these practical advantages, there are also methodological advantages for researchers choosing telecoms as an empirical context for study. Previous empirical studies on telecom privatization noted in Bortolotti et al. (2002) provide guidance on how to evaluate and control for both privatization-related and non-privatization-related
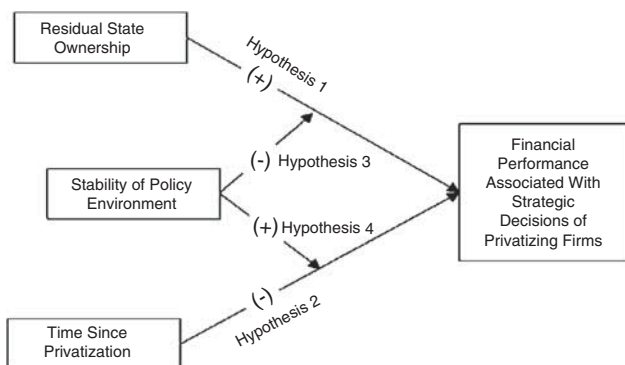
factors shaping telecoms' behavior and performance at country, industry and organizational levels.[2] Their study indicates broad evidentiary support for long-term improvement in financial and operating performance following telecom privatization. Yet their study and others have uncovered no significant links between telecom performance and specific levels of partial state ownership, nor has previous research uncovered whether and how performance improvements may be tied to specific strategic decisions by privatizing telecoms. Thus our proposed study of residual state ownership and financial returns following strategic decisions by privatizing telecoms is not only grounded in a novel theoretical framework, but also designed in empirical application to add important complementary insight into whether and how strategic decision-making enhances shareholder value creation.

Equation Terms

We use an event study methodology to assess the impact of residual state ownership, time since initial privatization, and home-country policy stability on shareholder returns following strategic decisions in the form of investment announcements by privatizing telecoms. Though more familiar in finance research, event studies are becoming more common in management (e.g., Eden et al., 2005), where the last decade has seen the development of general criteria for evaluating event study rigor in management research by McWilliams and Siegel (1997) and suggestions by Park (2004) tailored specifically to event studies in cross-country settings such as ours. Both studies guide our methodology and interpretation of results below.

We specify the following equation explaining shareholder returns:

$$
\begin{aligned}
Y_{ijt} = \alpha &+ \sum_{\gamma=1}^{\gamma=12} \gamma \text{Controls}_{ijt} + \sum_{\phi=1}^{\phi=14} \phi \text{Companies}_i \\
&+ \sum_{\lambda=1}^{\lambda=15} \lambda \text{Years}_t + \beta_1 \text{Residual State Ownership}_{it} \\
&+ \beta_2 \text{Residual State Ownership}_i^2 \\
&+ \beta_3 \ln(\text{Months Since Initial Privatization})_{it} \\
&+ \beta_4 \text{Policy Stability}_{it} \\
&+ \beta_5 (\text{Policy Stability} \times \text{Residual State Ownership})_{it} \\
&+ \beta_6 (\text{Policy Stability} \times \text{Residual State Ownership}^2)_{it} \\
&+ \beta_7 [\text{Policy Stability} \\
&\times \ln(\text{Months Since Initial Privatization})]_{it} + \mu_{ijt}
\end{aligned}
$$

(1)

In Eq. (1), subscript i indicates the privatizing telecom (and the telecom's home country, since we have only one telecom per country) involved in an announced investment event. Subscript j indicates the type of announced investment event. Subscript t indicates the year of the announced investment event.

The dependent variable, Y_{ijt}, denotes shareholder returns associated with a privatizing telecom's investment announcement, and is measured as cumulative abnormal returns ("CARs") and standardized cumulative abnormal returns ("SCARs"). CARs associated with announced investment events are calculated following standard event study methodology.[3] SCARs control for volatility in firm returns by standardizing CARs using their respective standard deviations (Brown & Warner, 1985; Eden et al., 2005). Standardization may also mute significant trends. Thus we rely primarily on results using CARs, and relegate SCARs-based results to a robustness check on coefficient signs estimated first with CARs. We use a 3-day window $(-1, +1)$, following Park's (2004) suggestion to use event windows in cross-country studies wide enough to capture event information diffusion rates that may vary owing to differences in time zones and media coverage.

The right-hand side of Eq. (1) includes seven terms related to four hypotheses derived from our framework (β_1–β_7). To test Hypothesis 1, we include two terms: Residual State Ownership (β_1), which measures the percentage of state-owned equity at the end of year t for telecom I; and its quadratic term, Residual State Ownership^2 (β_2). Hypothesis 1 predicts a positive relationship between residual state ownership and shareholder returns following strategic decisions by privatizing telecoms. This prediction and the framework from which it is derived are limited to events where the state is a non-controlling minority shareholder. When this shifts to controlling majority shareholder, we are back to principal–agent model predictions of a flat if not negative relationship between state ownership and shareholder returns following investment events announced by privatizing telecoms. Our sample includes events both when the state is a residual owner and when it is a controlling majority owner. As we describe below, the mean level of state ownership sample is 25.5%, and 160 of 196 events in our sample have state ownership less than 50%. Accordingly, an initial indicator of support for Hypothesis 1 in Eq. (1) will be a negative (inverted U-shaped) sign on the quadratic term Residual State

Ownership[2] (β_2): H1=β_2 <0. Other things being equal, there are higher shareholder returns with more residual state ownership. Given that our sample of events largely though not exclusively includes residual state ownership levels, an additional indicator of support for Hypothesis 1 will be a positive sign on the linear term Residual State Ownership (β_1): H1=β_1 >0.

To test Hypothesis 2, we next include ln(Months Since Privatization), which measures the natural log of the number of months since the date when the state first sold any equity in the telecom to private investors. Hypothesis 2 predicts a negative relationship between the passage of time since initial privatization and shareholder returns in the immediate aftermath of strategic decisions. In Eq. (1), an indication of support for Hypothesis 2 will be a negative sign on ln(Months Since Initial Privatization) (β_3): H2=β_3<0.

Hypotheses 3 and 4 predict moderating effects linked to the privatizing telecom's home-country policy stability. Accordingly, we next include Policy Stability (β_3), which measures at the end of year t for telecom i the extent to which a change in home-country government policy preferences may lead to a change in government policy. The extent of prospective policy change decreases with the number of veto points in executive and legislative branches and their respective partisan alignment. Thus polities with many veto points and partisan misalignments are more likely to exhibit policy stability over time than polities with few veto points and close partisan alignment. Also referred to as a political hazards, or political constraints, measure, Henisz's POLCONIII measure (Henisz, 2006) provides the basis for our Policy Stability measure, which runs continuously from 0 (low policy stability) to 1 (high policy stability). We make no explicit prediction about the individual impact of Policy Stability, though previous research by Henisz (2000, 2001) documents greater economic growth and MNE investment with greater policy stability. We then include three interaction terms including Policy Stability. An indicator of support for Hypothesis 3 and the diminishing impact of policy stability on residual state ownership effects will be a positive sign on the interaction term Policy Stability × Residual State Ownership[2] (β_6): H3=β_6>0. Given our sample properties, an additional indicator of support for Hypothesis 3 will be a negative sign on the interaction term Policy Stability × Residual State Ownership (β_5): H3=β_5<0. An indicator of support for Hypothesis

4 and the diminishing impact of time since initial privatization will be a positive sign on the interaction term Policy Stability × ln(Months Since Privatization) (β_7): H3=β_7>0.

In addition to these variables of central interest, we include in Eq. (1) a constant (α), several investment event-, telecom-, telecom industry- and country-specific controls (Controls γ_1–γ_{12}), and company dummies (Companies ϕ_1–ϕ_{14}) and year dummies (Years λ_1–λ_{15}) to control for unspecified effects tied to the privatizing telecom i and year t.[4] Twelve Controls γ_1–γ_{12} include three investment event dummies j representing three of four investment event types. We omit one event category, announcements of strategic alliances, and include the following event-related terms affecting CARs and SCARs:

- JV Event Dummy (γ_1): A 0–1 dummy equaling 1 when an investment event j in year t for telecom i is a transaction creating a third-party entity.
- M&A Event Dummy (γ_2): A 0–1 dummy equaling 1 when an investment event j in year t for telecom i is an acquisition of equity in another firm by telecom i.
- Target Event Dummy (γ_3): A 0–1 dummy equaling 1 when an investment event j in year t for telecom i is an acquisition of equity in telecom i by another firm.

We make no predictions regarding signs on these four dummies, as previous research has noted both positive and negative shareholder wealth effects related to joint venture announcements (Chung, Koford, & Lee, 1993; Crutchley, Guo, & Hansen, 1991) as well as positive and negative effects following mergers, acquisitions and secondary equity offerings (Denis, Denis, & Sarin, 1997; Fuller, Netter, & Stegemoller, 2002).

Next, we include two telecom-related controls affecting CARs and SCARs:

- ln(Sales) (γ_4): The natural log of $ millions of gross revenues of telecom i in year t.
- Return on Assets (γ_5): The operating income divided by net assets of telecom i in year t.

We predict negative signs on both ln(Sales) and Return on Assets, following Wilcox, Chang and Grover (2001) and Fuller et al. (2002), who note that executives in larger and more profitable firms are more likely to undertake investments to increase the size of the firm and their own individual compensation rather than to increase shareholder wealth.

Next, we include four industry-related controls affecting CARs and SCARs:

- Regulatory Agency Dummy (γ_6): A 0–1 dummy equaling 1 when telecom i in year t is subject to an independent regulatory agency in its home country.
- Third-Party Access Rules Dummy (γ_7): A 0–1 dummy equaling 1 when telecom i in year t is subject to third-party access/interconnection regulations in its home country.
- Pricing Regulation Dummy (γ_8): A 0–1 dummy equaling 1 when telecom i in year t is subject to price regulation.
- Number of Mobile Competitors (γ_9): The number of mobile telephone operators not owned by telecom i, but licensed to operate and allocated spectrum in year t.

Previous empirical research by Wallsten (2001) and Bortolotti et al. (2002) yields conflicting results regarding the impact on telecom performance of regulated pricing, regulated interconnection and independent regulatory agency oversight of incumbent telecoms. Thus we make no predictions regarding signs on these terms in Eq. (1). Both studies, however, document a negative relationship between the number of mobile telecom operators and incumbent telecom performance. Thus we predict a negative sign on Number of Mobile Competitors.

Finally, we include three country-related controls affecting CARs and SCARs:

- Change in Public Expenditures (γ_{10}): The change from year $t{-}1$ to t in percentage of GDP composed of public (government) expenditure in telecom i's home country.
- ln(GDP) (γ_{11}): The natural log of telecom i's home country GDP in year t.
- High Block Premium Dummy: A 0–1 dummy equaling 1 when telecom i's home country is at least one standard deviation above the sample mean of average premium paid to acquire control of firms. A high block premium indicates little protection from appropriation of firm wealth – what Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000) call "tunneling" – by firm insiders.

Ramamurti (2000) argues that shifts in public policy leading to less state involvement in the economy promote the development of market-oriented institutions favorable to private enterprise ownership generally. Faster institutional reform should be associated with greater telecom ability to complete investment transactions efficiently and effectively, thus raising returns to shareholders following strategic decisions. Accordingly, we expect Change in Public Expenditure to enter Eq. (1) negatively. Larger countries indicate larger domestic markets for incumbent telecoms to exploit. Thus ln(GDP) will have a positive impact on shareholder returns. Finally, we use a cross-country (but invariant to year t) measure of shareholder protection from wealth appropriation by firm insiders (dominant shareholders and managers) developed by Dyck and Zingales (2004). They compute the premium paid for control of firms across more than 30 countries during the 1990s. Larger control premia are associated with greater opportunity for firm insiders to appropriate firm wealth. Thus we expect that High Block Premium will enter Eq. (1) with a negative sign.[5]

Estimation Strategy

We first estimate Eq. (1) using a generalized least squares (GLS) estimator. This estimator permits the use of robust standard errors adjusted for cross-sectional (telecom) heteroskedasticity, and event clustering on telecoms. We also implement non-parametric bivariate analyses based on a smoothing algorithm. These "running" analyses create a smoothed line graphically illustrating the changing relationship between CARs and key residual state factors at high and low levels of policy stability. Smoothing is performed around each CARs observation in the sample, based on an unweighted mean with a specified portion of the sample (40% in this case) around each point. Park (2004) notes that cross-country institutional differences in information diffusion may frustrate precise estimation of CARs. In response, he suggests an alternative estimator based on a simpler 0–1 dependent variable related to shareholder returns. We therefore also employ an alternative probit estimation of the likelihood of 3-day positive CARs and SCARs. The GLS estimator ("reg") and smoothed running ("running") analyses of CARs and SCARs and the probit estimation ("probit") of positive CARs and SCARs are all implemented with Stata Version 9.0 (Stata Corp, 2005).

Data Sources and Sampling

We sample from several data sources. To obtain our sample of privatizing telecoms, we use data from the "Telecom/Data Networking" category of Bank of New York's Depository Directory (Bank of New York, 2003). This directory lists all firms that have

issued American Depository Receipts (ADRs) in the US. We sample from sponsored telecom ADRs traded on regulated exchanges or over-the-counter by broker-dealers. This strategy again follows Park (2004), and permits us to assess shareholder returns associated with investment events announced by privatizing telecoms from different countries with a common instrument (ADR), a common regulatory framework (US SEC), a common currency to compute returns ($), and a common share market index of returns, to ascertain CARs and SCARs (S&P 500).

From this data source, we sample telecoms operating in the fixed-line telecommunications services industry, with a history of state ownership or effective state control, and having experienced either the sale of former state-owned equity or the release from *de facto* control of such equity by the state since 1980. These sampling restrictions result in 18 privatizing telecoms, 15 of which were previously wholly owned by the state, and three of which had *de jure* private owners but were under *de facto* state control (i.e., Telecom Italia, Telefónica de España, and Philippine Long-Distance Telephone Company). We note the date of initial equity sale, either through private placement, public offering of shares, material asset sale, voucher distribution or related means as the date of initial privatization for the 15 previously state-owned telecoms. For the remaining three telecoms, we note their date of initial privatization as the date of fixed-line telecommunications operation deregulation, which in each case also shifted *de facto* control to private owners. From this group of 18 privatizing telecoms we eliminate non-operating (corporate holding company) firms and those for which there was no data on ADR prices from the Center for Research in Security Prices (CRSP) database (CRSP, 2002). Our final sample reduces to 15 privatizing telecoms initially privatized between 1984 and 1997.

For data on investment event types, we use the Securities Data Corporation Mergers and Acquisitions database (SDC, 2002) and SDC investment event designations (M&A acquirer, target, secondary offering, JV participant, alliance participant). We then screen these investment events for their strategic value to shareholders. If announcement of the investment event appears in subsequent US Securities & Exchange Commission (SEC) filings, or is reported in the American editions of the *Wall Street Journal*, the *Financial Times*, or the Reuters News Network, it is deemed strategic. Finally, we

screen remaining investment events to eliminate those occurring prior to the issuance of the privatizing telecom's ADR, or if two investment events for the same privatizing telecom are reported within an interval of five business days.

We also require additional data on telecoms and their respective home countries. 20-F filings from the US SEC provide information on year-to-year telecom state ownership percentages, and also permit confirmation of all initial privatization dates.[6] Using Compustat (2002) corporate-level data, we obtain information on telecom annual net assets, net sales and operating income. Wallsten (2001), Bortolotti et al. (2002) and the International Telecommunications Union (ITU, 2003) provide data on home-country telecom industry structure and regulation. The World Bank's World Development Indicators database (World Bank, 2006) provides data on home-country GDP and aggregate yearly government spending as a percentage of home-country GDP. Data on block premia paid for acquisition of control in the home country come from Dyck and Zingales (2004), and home-country policy stability data (POLCON III) come from Henisz (2006).

We have complete data for 207 investment events announced by 15 telecoms domiciled in as many countries from 1986 to 2001. The sample is well distributed on all dimensions relevant to our framework and derived hypotheses. The bulk of our telecoms and investment events come from established industrialized countries: British Telecom (initially privatized in 1984), Deutsche Telekom (1996), France Telecom (1997), Netherland's KPN (1994), New Zealand Telecom (1991), Nippon Telephone & Telegraph (1986), Denmark's TDK (1994), Telecom Italia (1986), and Telefónica de España (1989). But we also have substantial representation in telecoms and investment events from developing and transition economy countries of the 1980s, 1990s and 2000s, such as Greece's Hellenic Telecom (1996), Korea Telecom (1993), Portugal Telecom (1995), Russia's Rostelecom (1997), Philippine Long Distance Telephone Company (1995), and Teléfonos de Mexico (1991). Events are distributed across telecoms and within telecoms over time. Measures of home-country policy stability also vary across telecoms, with higher measures for telecoms from established industrialized countries, and within telecoms over time as home-country policymaking institutions evolve. Finally, we have substantial cross-telecom and within-telecom time variation for our various

controls. In sum, our sample is well distributed for estimation and testing purposes.

RESULTS

Preliminary Analyses and Descriptive Statistics

We first implement a preliminary OLS regression of Eq. (1), after which we obtain Cook's distance measures to identify potential outliers. We identify 11 events – about 5% of our base sample of 207 – with Cook's distance values exceeding 0.01 and greater by an order of 10 or more than other Cook's distance values. We also note that these events occur in 2000 or 2001, a period when share prices in many telecoms around the world increased in volatility as part of a broader telecoms–IT–Internet sector "crash". We exclude these observations, and work with a net sample of 196 observations.

Table 1 reports descriptive statistics and pairwise correlations for this net sample. Sample means and correlations generally conform to intuition. Mean 3-day CARs and SCARs are approximately 0 (0.001) with 99 positive and 97 negative CARs events, and Wilcoxon test results indicating no significant skewness.[7] We see a substantial spread across different event types. Approximately 35% of the events are joint venture announcements, 24% M&A transactions, 14% sales of equity, and 28% alliances. The telecoms in our sample average 4.2% ROA, and post annual revenues between $850 million and $97 billion, with an average of $35 billion. There is independent regulatory agency oversight for almost half of events (47.4%), and almost two thirds of the events involve telecoms subject to regulated pricing (63.3%) and third-party interconnection rates (64.3%). We observe a gradual decline in year-to-year change in expenditures by government as a percentage of GDP (−0.1%). Of the events, 24.4% are announced by telecoms domiciled in countries where investors pay a high premium to acquire control of firms and, presumably, to extract firm wealth for private benefit. Perhaps most importantly to our study, we observe a mean state ownership of 25.5% with a standard deviation of 23.08%. Of the 196 events in our sample, 160 involve residual state ownership. The average number of months since privatization is 111, and average policy stability is 0.43.

GLS Estimation Results

Table 2 reports results from six GLS and two probit estimations of Eq. (1) based on CARs and SCARs using 3-day windows. Columns 1 and 2 report GLS results based on a reduced form of Eq. (1) with controls only. With the country and year dummies, these controls alone explain 29% of variation in CARs associated with privatizing telecom investment events. The controls exhibit signs in Column 1 consistent with intuition. Recall that we made no prediction concerning the sign of the investment-type dummies. Compared with strategic alliance announcements, joint venture announcements (γ_1) yield CARs that are 2.3 percentage points higher, while M&A announcements (γ_2) are 3.7 percentage points higher but equity offering announcements (γ_1) yield CARs lower by 2.6 percentage points. All three coefficients are significant at 10% or higher levels. Both telecom sales (γ_4) and operating returns (γ_5) exhibit predicted negative signs, and in the case of operating returns are significant at the 5% level. An increase in ROA of one percentage point lowers investment event CARs by more than 28 percentage points. Financial returns in the wake of strategic decision-making by privatizing telecoms decrease substantially as operating performance increases. These results suggest that enhanced privatizing firm performance may follow more from improvements in mundane day-to-day routines than from improvements related to bigger changes reported to regulators and the media.

Of the four telecom industry controls, only the number of mobile competitors (γ_9) exhibits the predicted negative sign at commonly accepted levels of significance. Each new mobile telecom entrant decreases CARs by 2.5 percentage points. Two of three country-level controls enter with predicted signs at commonly acceptable levels of significance. Higher GDP is linked to higher shareholder returns (γ_{11}) at the 1% level. If a privatizing telecom's home country permits firm insiders to extract substantial private benefits, thus justifying high premia for firm control, then shareholder returns decrease by 7.2 percentage points, an estimate also significant at the 1% level (γ_{12}). Shareholder returns in the wake of strategic decisions improve for privatizing telecoms from countries with larger economies and stronger investor protections against firm insiders.

Re-estimation in Column 2 with controls only using 3-day SCARs yields estimates with the same sign as in Column 1 for nine of 12 terms. There are no instances where coefficients flip signs at commonly accepted levels of significance. Standardization can also mute significance, and we see that in several coefficients estimates. We see a similar pattern of signs and significance for controls using

Table 1 Descriptive statistics and pairwise correlations

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 Dependent variable: 3-day CARs	0.0009	0.0417																				
2 Dependent variable: 3-day SCARs	0.0009	0.0263	0.62																			
3 JV Event Dummy	0.3520	0.4788	0.16	0.05																		
4 M&A Event Dummy	0.2347	0.4249	0.11	0.10	−0.41																	
5 Target Dummy	0.1378	0.3455	0.00	0.08	−0.29	0.72																
6 ln(Sales)	10.1717	0.9655	−0.03	−0.11	0.20	−0.40	−0.33															
7 Return on Assets	0.0423	0.0379	−0.11	−0.15	0.01	−0.02	−0.03	−0.15														
8 Regulatory Agency Dummy	0.4745	0.5006	0.04	−0.02	0.03	−0.24	−0.23	0.03	0.39													
9 Third-Party Access Rules Dummy	0.6429	0.4804	−0.05	−0.08	−0.03	−0.27	−0.26	−0.20	0.28	0.64												
10 Pricing Regulation Dummy	0.6327	0.4833	0.00	−0.02	0.01	−0.25	−0.25	−0.09	0.28	0.72	0.85											
11 Number of Mobile Competitors	1.5051	0.8382	0.01	−0.03	0.07	−0.32	−0.26	0.12	0.22	0.61	0.73	0.66										
12 Change in Public Expenditures	−0.0013	0.0297	−0.13	−0.02	0.02	−0.03	0.00	−0.12	−0.05	−0.10	−0.15	−0.13	−0.33									
13 ln(GDP)	30.1600	2.9185	0.18	0.13	0.07	0.15	0.14	0.40	−0.35	−0.43	−0.70	−0.66	−0.25	−0.14								
14 High Block Premium Dummy	0.2449	0.4311	0.10	0.04	−0.12	0.27	0.25	−0.38	0.02	−0.23	0.13	0.09	0.18	−0.20	0.16							
15 Residual State Ownership	25.5510	23.8086	−0.02	0.02	0.16	−0.08	−0.06	0.33	−0.33	−0.49	−0.29	−0.27	−0.01	0.21	0.34	0.04						
16 Residual State Ownership^2	1216.8130	1436.6530	−0.06	−0.01	0.15	−0.11	−0.08	0.37	−0.27	−0.39	−0.21	−0.18	0.11	0.07	0.28	0.04	0.95					
17 ln(Months Since Privatization)	4.5043	0.7589	0.08	−0.03	0.06	−0.29	−0.21	0.40	0.05	0.24	−0.16	−0.07	−0.11	−0.18	0.16	−0.34	−0.53	−0.53				
18 Policy Stability	0.4334	0.0853	0.03	0.01	0.13	0.00	−0.01	0.54	−0.36	−0.68	−0.69	−0.70	−0.39	−0.07	0.74	−0.04	0.53	0.48	0.10			
19 Policy Stability × Residual State Ownership	12.1515	12.0092	−0.02	0.00	0.18	−0.12	−0.09	0.46	−0.35	−0.55	−0.41	−0.39	−0.09	0.15	0.45	0.00	0.97	0.92	−0.36	0.70		
20 Policy Stability × Residual State Ownership^2	585.4362	709.7501	−0.06	−0.03	0.16	−0.14	−0.10	0.47	−0.29	−0.45	−0.31	−0.28	0.03	0.05	0.38	0.01	0.93	0.97	−0.39	0.62	0.96	
21 Policy Stability × ln(Months Since Privatization)	1.9587	0.5412	0.08	0.00	0.14	−0.17	−0.11	0.63	−0.24	−0.38	−0.64	−0.59	−0.37	−0.14	0.67	−0.25	0.11	0.06	0.66	0.80	0.33	0.24

$N=196$.
Correlations greater than approximately 0.13 or less than −0.13 are significant at the 10% level ($p<0.10$) (one-tailed test).
Correlations greater than approximately 0.16 or less than −0.16 are significant at the 5% level ($p<0.05$) (one-tailed test).
Correlations greater than approximately 0.20 or less than −0.20 are significant at 1% level ($p<0.01$) (one-tailed test).

Table 2 Results from regression of shareholder returns following investment announcements by privatizing telecoms, 1986–2001: controls and residual state factors[a,b]

Equation independent variables and coefficients	Equation estimator and dependent variable							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GLS	GLS	GLS	GLS	GLS	GLS	Probit	Probit
	3-day CARs	3-day SCARs	3-day CARs	3-day SCARs	3-day CARs	3-day SCARs	Positive 3-day CARs	Positive 3-day SCARs
Constant	−0.1928	−0.4376†	−0.3641	−0.4828†	0.4876	0.0598	−786.400*	−747.375*
	(0.2250)	(0.2371)	(0.2246)	(0.2571)	(0.5101)	(0.3968)	(321.585)	(322.628)
JV Event Dummy (γ_1)	0.0225†	0.0049	0.0219†	0.0047	0.0220*	0.0046	0.690**	0.719**
	(0.0109)	(0.0080)	(0.0107)	(0.0082)	(0.0108)	(0.0084)	(0.228)	(0.229)
M&A Event Dummy (γ_2)	0.0374*	0.0083	0.0344*	0.0071	0.0363*	0.0086	0.958**	0.965**
	(0.0133)	(0.0049)	(0.0135)	(0.0054)	(0.0144)	(0.0054)	(0.238)	(0.241)
Target Dummy (γ_3)	−0.0256*	−0.0022	−0.0258*	−0.0020	−0.0317*	−0.0059	−0.916†	−0.901†
	(0.0099)	(0.0055)	(0.0106)	(0.0054)	(0.0128)	(0.0053)	(0.490)	(0.492)
ln(Sales) (γ_4)	−0.0247	0.0278	0.0033	0.0343	−0.0346	0.0132	−7.787**	−7.584**
	(0.0182)	(0.0201)	(0.0184)	(0.0212)	(0.0255)	(0.0246)	(1.492)	(1.566)
Return on Assets (γ_5)	−0.2774*	−0.1037	−0.3354*	−0.1208†	−0.3329*	−0.1032	−39.345**	−37.624**
	(0.1265)	(0.0767)	(0.1110)	(0.0662)	(0.1254)	(0.0708)	(12.029)	(12.557)
Regulatory Agency Dummy (γ_6)	−0.0599	−0.1211*	−0.0947	−0.1330*	−0.0458	−0.0439	−235.831**	−223.214**
	(0.0537)	(0.0492)	(0.0592)	(0.0570)	(0.0850)	(0.0865)	(60.322)	(60.769)
Third-Party Access Rules Dummy (γ_7)	0.0372	0.0053	0.0536**	0.0083	0.0146	−0.0186	−0.610	−0.633
	(0.0232)	(0.0149)	(0.0124)	(0.0126)	(0.0244)	(0.0194)	(1.734)	(1.679)
Pricing Regulation Dummy (γ_8)	0.1147	0.1643*	0.1866*	0.1821*	0.0367	0.0637	391.333**	370.256**
	(0.0724)	(0.0659)	(0.0674)	(0.0701)	(0.0850)	(0.0864)	(121.995)	(122.802)
Number of Mobile Competitors (γ_9)	−0.0250*	0.0036	−0.0293**	0.0038	−0.0170	0.0118	0.191	0.214
	(0.0103)	(0.0065)	(0.0079)	(0.0068)	(0.0105)	(0.0069)	(0.685)	(0.648)
Change in Public Expenditures (γ_{10})	−0.1946	0.0013	−0.1898†	0.0134	−0.3722†	−0.1721	−11.984	−11.791
	(0.1222)	(0.0625)	(0.1079)	(0.0722)	(0.1781)	(0.1190)	(13.779)	(13.541)
ln(GDP) (γ_{11})	0.0147**	0.0036*	0.0120**	0.0031*	0.0067†	0.0001	25.220**	23.889**
	(0.0029)	(0.0011)	(0.0016)	(0.0012)	(0.0037)	(0.0032)	(9.635)	(9.686)
High Block Premium Dummy (γ_{12})	−0.0722**	−0.0056	−0.0595**	−0.0043	−0.0552**	−0.0036	−200.477**	−190.022**
	(0.0218)	(0.0097)	(0.0143)	(0.0087)	(0.0129)	(0.0101)	(75.339)	(75.926)
Residual State Ownership (β_1)			0.0020**	0.0004	0.0098*	0.0094*	1.074**	1.060**
			(0.0006)	(0.0003)	(0.0034)	(0.0031)	(0.393)	(0.413)
Residual State Ownership² (β_2)			−0.0000**	−0.0000†	−0.0002*	−0.0002**	−0.012**	−0.011**
			(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.004)	(0.004)
ln(Months Since Privatization) (β_3)			−0.0168*	−0.0037	−0.0952†	−0.0546	1.304	2.067
			(0.0072)	(0.0084)	(0.0459)	(0.0336)	(7.004)	(7.903)
Policy Stability (β_4)					−0.5733	−0.2572	68.225	73.599
					(0.4559)	(0.3211)	(73.326)	(83.068)
Policy Stability × Residual State Ownership (β_5)					−0.0174*	−0.0205**	−2.344**	−2.307**
					(0.0069)	(0.0065)	(0.845)	(0.894)

Table 2 Continued

Equation independent variables and coefficients				Equation estimator and dependent variable				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GLS	GLS	GLS	GLS	GLS	GLS	Probit	Probit
	3-day CARs	3-day SCARs	3-day CARs	3-day SCARs	3-day CARs	3-day SCARs	Positive 3-day CARs	Positive 3-day SCARs
Policy Stability × Residual State Ownership² (β₆)					0.0003* (0.0001)	0.0003** (0.0001)	0.023** (0.009)	0.022* (0.009)
Policy Stability × ln(Months Since Privatization) (β₇)					0.1730† (0.0954)	0.0838 (0.0652)	−5.072 (16.114)	−6.242 (17.857)
Country Dummies (φ)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies (λ)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	196	196	196	196	196	196	192	192
R²	0.29	0.20	0.31	0.21	0.32	0.23	0.24ᶜ	0.24ᶜ

†Significant at 10%; *significant at 5%; **significant at 1% (two-tailed tests).
ᵃRobust standard errors clustered on telecoms/countries in parentheses.
ᵇResults for year and telecom dummies are not reported but are available from authors.
ᶜPseudo R².

3-day CARs and SCARs exhibited in Columns 3–8. Overall, we find no evidence of inconsistency in CARs and SCARs estimates.

Columns 3 and 4 add three terms linked to credible privatization elements of our framework: Residual State Ownership (β_1), Residual State Ownership² (β_2), and ln(Months Since Privatization) (β_3). Signs on these three terms are consistent with framework holdings. In Column 3, the quadratic form of residual state ownership (β_2) is negative and significant at the 1% level, consistent with Hypothesis 1. This result indicates an inverted U-shaped relationship between state equity holding and CARs related to strategic decisions, though the inverted U is virtually flat, given the −0.0000 estimate. The linear term for residual state ownership (β_1) is positive and significant at the 1% level. With approximately two thirds of our investment events involving the state as a minority equity holder, this positive sign on the linear term is also consistent with framework holdings about the potential benefits of residual state ownership.

Finally, we see that time since initial privatization (β_3) exhibits the predicted negative effect on CARs, consistent with Hypothesis 2. Investment events announced earlier (later) in the life of a privatized telecom are rewarded (punished) with higher (lower) CARs, consistent with the holding that initial privatization terms tend to unravel with change in home-country policies and politicians. Signs on these three terms are the same after re-estimation with 3-day SCARs, though significance levels again decrease. Were we to stop here, we might conclude that there is some support for the credible privatization elements of and hypotheses derived from our theoretical framework, but that such support is mixed and, at times, practically inconsequential.

Columns 5 and 6 report results from GLS estimation of Eq. (1) in full. We now have fixed country and year effects, controls, and terms linked to both credible privatization and institutional elements of our framework. These GLS estimations permit evaluation of all four hypotheses. Again, key terms relate to residual state factors shaping telecom decision-making and financial performance. They include residual state ownership, time since initial privatization, and interactions with home-country policy stability (β_1–β_7). In Column 5, we again observe both positive linear (β_1) and negative quadratic (β_2) effects on 3-day CARs, both significant at the 5% level. The negative coefficient for Residual State Ownership² (β_2) again supports Hypothesis 1, while the linear term, Residual State

Ownership (β_1) is also consistent with this prediction, given that approximately two thirds of the 196 observations involve the state as a minority equity holder. We again observe a negative sign on time since initial privatization (β_3), this time significant at the 10% level. Again, this result supports Hypothesis 2, though the lower level of statistical significance merits caution in our conclusion.

We can simulate different levels of residual state ownership and add the Residual State Ownership (β_1) linear and quadratic Residual State Ownership^2 (β_2) effects on CARs using the estimates given in Column 5. This exercise gives us a rough indicator of net residual state ownership effects on shareholder returns when other variables, including those related to home-country policy stability, are constrained to a value of zero. We obtain results consistent with our residual ownership framework. From 5 to 25% residual state ownership, CARs increase from 4.8 to 12.0 percentage points. From 25% to 45% residual state ownership CARs decrease, and turn negative at state ownership levels greater than 50%.

While Policy Stability (β_4) exhibits no statistically significant effects individually, we find in Column 5 that it interacts with residual state factors significantly, and consistently with Hypotheses 3 and 4. The positive sign and significance at the 5% level on the interaction term Policy Stability × Residual State Ownership^2 (β_6) indicates support for Hypothesis 3 and the moderating impact of home-country policy stability on residual state ownership effects. Similarly, the negative sign and significance at the 5% level on the interaction term Policy Stability × Residual State Ownership (β_5) provides additional support for Hypothesis 3, given the properties of our sample. As veto points and players increase the likelihood that today's privatization deal terms will also be tomorrow's, then privatizing telecoms benefit less from residual state ownership in the firm providing alternative assurances. The quality of strategic decision-making relies less on residual state ownership and more on the predictability of state institutions.

We can again simulate different levels of residual state ownership and compute effects on CARs, but this time add Residual State Ownership (β_1), Residual State Ownership^2 (β_2), and two interactions, Policy Stability × Residual State Ownership (β_5) and Policy Stability × Residual State Ownership^2 (β_6). If we set Policy Stability at its mean value (0.4434) and constrain all terms but the four to a value of zero, then we obtain insight into residual state ownership effects for telecoms from countries with mid-range policy stability. From 5 to 20% residual state ownership, CARs increase from 0.1 to 3.4 percentage points. From 20 to 30% residual state ownership CARs decrease, and turn negative at state ownership levels greater than 30%.

A positive sign and significance at the 10% level on the interaction term Policy Stability × ln(Months Since Privatization) (β_7) indicates support for Hypothesis 4 and the moderating impact of home-country policy stability on time and the durability of initial privatization terms. With greater policy stability, initial privatization terms unravel more slowly. Re-estimation in Column 6 with 3-day SCARs yields the same signs on all terms related to our four hypotheses, but significance drops below commonly accepted levels for both terms related to time since initial privatization (β_3 and β_7) and Hypotheses 2 and 4.

Smoothed Running Results

Bivariate smoothed running analyses in Figures 2 and 3 illustrate these key findings from GLS estimation of Eq. (1) in full. In Figure 2, we partition 3-day CARs based on whether they come from privatizing telecoms located in countries with above or below sample average Policy Stability. For telecoms from countries with below-average Policy Stability, we observe increasingly positive 3-day CARs as state ownership increases from 0% to approximately 12%, and then less positive effects as state ownership increases to about 30%, after which 3-day CARs turn negative. We find an illustration of this trend in the life of the Philippines Long Distance Telephone Company (PLDTC) (*Asia Wall Street Journal*, 1998). On 25 November 1998 Manuel Pangilinan announced the purchase of outstanding privately held shares in PLDTC, giving himself control over the telecom and the CEO's position. At the time of the announcement, residual state ownership in PLDTC stood at 24%, and 3-day CARs were roughly 0.01%. By contrast, telecoms from countries with above average Policy Stability, residual state ownership links to 3-day CARs are consistently negative from 0 to 30%. Indeed, there are no deviations from that trend until residual state ownership levels reach 40–50%, at which point 3-day CARs increase. We find in our sample numerous instances of investment events involving telecoms from countries with high policy stability, modest residual state ownership levels, and no significant movement in CARs.
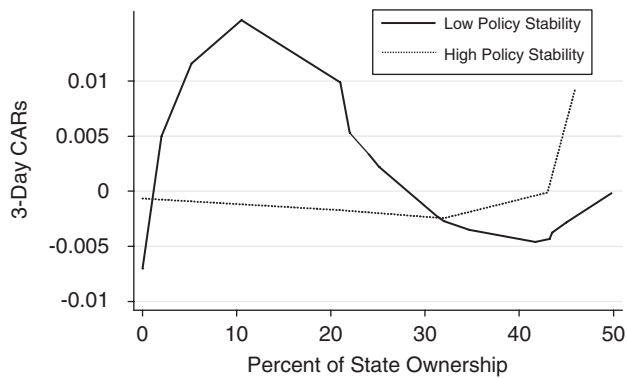
Figure 2 Residual state ownership and CARs at high and low policy stability levels.
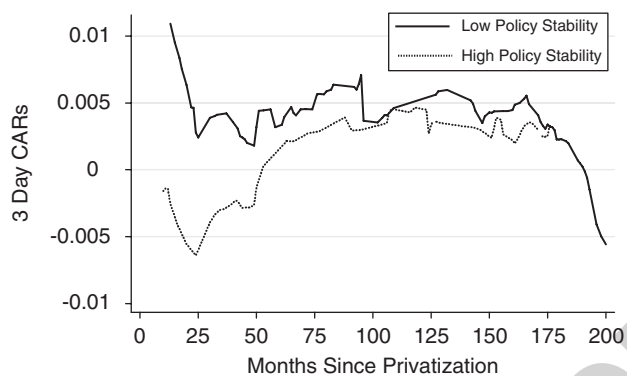
Figure 3 Time since initial privatization and CARs at high and low policy stability levels.

Running analyses in Figure 3 also illustrate trends observed in our GLS estimations of Eq. (1) in full. We again partition 3-day CARs into above- and below-average Policy Stability and then examine smoothed relationships with months since initial privatization of telecoms. We find that telecoms in both high and low policy stability groups exhibit a sharp decline in 3-day CARs during the first 24–25 months after the initial transfer of equity from the state. After that period, however, telecoms announcing investment events in countries with high policy stability exhibit increasingly positive 3-day CARs, whereas telecoms from countries with low policy stability exhibit no discernible trends. In our sample, Portugal Telecom has below-average home-country policy stability. Based on a review of US SEC filings, we find on 16 March 1997, about 2 years after initial privatization, that PT sold a 3.5% equity tranche to Telefónica de España. Residual state ownership in PT stood at 25.1%, and 3-day CARs were virtually zero. A year and half later, on 18 September 1998, PT offered a 15% stake in its cable television subsidiary, TV Cabo. Residual state

ownership remained at 25.1%, but this time CARs were down −0.0975. These graphical analyses and within-sample illustrations buttress earlier multivariate evidence that policy stability has important moderating effects on residual state factors. Home-country policy stability moderates the positive effects of residual state ownership and the negative effects of time since initial privatization.

Robustness Checks
Key results in Columns 5 and 6 exhibit varying robustness to reasonable changes in the way CARs and SCARs are calculated, and to reasonable changes in estimators. Though not reported here, we observe the same signs at virtually the same levels of significance when Eq. (1) is re-estimated in full with GLS and 5-day rather than 3-day CARs and SCARs. The negative sign on the 5-day CARs estimate for ln(Months Since Privatization) (β_3) is no longer significant at commonly accepted levels.[8] We do report in Columns 7 and 8 results from probit estimation of Eq. (1) in full, based on 3-day positive CARs and SCARs. Consistent with Hypothesis 1, we again observe a negative sign on Residual State Ownership^2 (β_2), significant at the 1% level. Consistent with Hypothesis 3 and the moderating impact of home-country policy stability, we observe a positive sign on Policy Stability × Residual State Ownership^2 (β_6), significant at the 1% level, and a negative sign on Policy Stability × Residual State Ownership (β_5), significant at the 5% level. We again observe no coefficient estimates at commonly acceptable levels of significance for ln(Months Since Privatization) (β_3) or Policy Stability × ln(Months Since Privatization) (β_7), and thus no additional support for Hypotheses 2 and 4.

Thus, while our key results from GLS estimation of 3-day CARs in Column 5 indicate support for all four hypotheses derived from our framework, various robustness checks suggest greater breadth of support for Hypotheses 1 and 3. Non-controlling, minority state equity holding in privatizing telecoms can have a beneficial impact on decision-making and performance, particularly when the privatizing telecom's home-country policy environment is less stable. Support for Hypotheses 2 and 4 has a narrower base, and should be interpreted with more caution. Yet there are both multivariate and non-parametric bivariate results suggesting that time does not necessarily improve strategic decision-making and performance for privatizing

telecoms in home-country settings where policy stability is lacking.

DISCUSSION AND CONCLUSION

Review of Key Study Aims and Results

Previous research has theorized and documented empirically that the shift from public to private ownership enhances firm performance over time. But theory and empirical evidence were scant regarding whether and how non-controlling minority state equity holding – residual state ownership – might affect privatizing firm behavior and performance. We responded with a novel framework grounded in credible privatization and institutional theory. Our framework proposed that residual state ownership acts as a signal of state support for privatizing firms, but that the passage of time erodes signal credibility as initial privatization deal terms evolve. While these two propositions are grounded directly in credible privatization theory proposed by Perotti (1995), we added an important moderating element grounded in institutional theory consistent with North (1990), Henisz (2001) and others (e.g., Doh et al., 2004). This additional framework element holds that residual state ownership in privatizing firms and investment policy factors guiding privatizing firms are substitutes. As home-country institutions strengthen and increase policy stability, benefits from residual state ownership should diminish. Private shareholders have less need for assurance in the form of residual state ownership if policies in place today are likely to remain in place tomorrow.

We documented support for predictions derived from our theoretical framework in an event study of shareholder returns immediately following 196 announcements by 15 privatizing telecoms with varying levels of state ownership, time since initial privatization, and home-country policy stability from 1986 to 2001. With telecoms from developing and transition countries with low to mid-range policy stability, we found that residual state ownership had positive effects, while time since privatization had negative effects on privatizing telecom CARs following announcements of mergers, acquisitions, equity offerings, alliances and joint ventures. Privatizing telecoms from home countries with extremely low policy stability may experience positive CARs all the way up to 50% residual state ownership. With low to mid-range policy stability, privatizing telecoms enjoy positive CARs from 0 to 25%. Higher state ownership levels turn post-event

CARs negative. With telecoms from industrialized countries with relatively high policy stability, these residual state ownership and time effects are no longer statistically significant nor financially substantial. Residual state ownership and home-country policy institutions are, in effect, substitute corporate governance tools valuable to shareholders in privatizing firms.

Implications for Research, Practice and Public Policy

We draw several implications from these findings. The broad sweep of privatization research in economics (e.g., Boycko et al., 1996) and in management (e.g., *AMR*, 2000) has drawn on principal–agent theory and assumed that divestment by the state and replacement with private shareholders enhances privatizing firm strategic decision-making and performance through closer alignment of principal–agent incentives and closer monitoring of managerial behavior over time. But these assumptions have largely overlooked the possibility that the role of state ownership in privatizing firms can change after private investors take a leading role as majority owners. Whatever misalignment in incentives may persist, owing to the continued involvement of the state as an investor, they may be compensated for by a valuable signal of support to privatizing investors and managers. We uncover evidence consistent with this credible privatization dynamic in shareholder responses to strategic decisions by privatizing firm managers – in our case privatizing telecoms. Privatization researchers may need to change theoretical lenses when they shift from studying privatizing firms with controlling majority to non-controlling minority state equity holders.

A second implication of our study is that residual state ownership and home-country policy stability appear to be close corporate governance substitutes (Bortolotti & Perotti, 2007; Doh et al., 2004). We saw that residual state ownership could have positive effects on shareholder returns following investment announcements in home-country environments with low policy stability, such as the Philippines. Residual state ownership has relatively little impact in countries with high policy stability, such as France. For privatization research this contrast suggests that predictions about the positive or negative impact of state support for privatizing firms are contingent on home-country institutions. If not properly accounted for, those

background factors can skew assessments of privatizing firm performance and lead to spurious relationships, ultimately misdirecting research on partial privatization and the impact of residual state factors. When privatization researchers replace theoretical lenses to study firms with residual state owners, they must do so carefully and with due regard for institutional factors affecting their field of vision.

Though more sensitive to changes in equation specification and estimation, we find value in exploring a third implication of our results related to time since initial privatization. In both low and high policy stability contexts we noted a steep decrease in 3-day CARs during the first 2 years after the initial transfer of state equity to private investors. If some unraveling of initial privatization deal terms is unavoidable within 2 years, then managerial practices and telecom public policies might be sequenced with this trend in mind. Telecom managers and policymakers might speed up programs for major investment in and modernization of core assets during the early days of privatization, when share prices are higher and capital easier to acquire. Hesitation is likely to be punished by shareholders with increasingly negative responses to investment initiatives proposed by privatizing firm management, particularly in emerging-market institutional settings, where the initial privatization terms are especially prone to obsolescence (Ramamurti, 2001, 2003).

Limitations and Future Research
We think our study makes important contributions to theoretical and empirical research on privatization and strategic decision-making in different policy environments. It also has limitations. Our theoretical framework for understanding privatizing firm decision-making and performance applies to privatizing firms where the state is a non-controlling, minority equity holder. In this limited context, all framework elements come into play only when privatizing firms are domiciled in countries that lack stability in the investment policy environment. Our framework is therefore more at home in the world of substantially – though not fully – privatized firms of the developing world. In the 2000s we should find many instances where this specialized framework fits, but we should not expect it to fit well everywhere.

A second limitation related to the empirics of this study concerns the focus on privatizing telecoms. The market capitalization of these telecoms approached \$500 billion at the close of our study period in 2001. Yet it is still a single-industry study that awaits future studies confirming or challenging its findings in other industry settings (e.g., transportation, energy) touched by privatization policies since the 1980s.[9]

A third limitation of this study concerns how we operationalize key terms of our theoretical framework. We measure short-term returns to shareholders and find a long-term negative (positive) trend for telecoms from countries lacking (enjoying) policy stability, as illustrated in Figure 3. Future research should reconcile these mixed results with previous research noting long-term positive trends in the financial performance of privatized firms. We measure residual state ownership by noting the percentage of state equity, but equity is not homogeneous. Different types of equity entail different control rights. Equity owners of record are not always owners in fact. Faccio and Lang (2002) survey "ultimate" ownership structures in firms from throughout Europe, and uncover substantial differences between owners of record and those who effectively control such shares when key decisions are taken. The diffuseness or concentration of private shareholding may also matter for whether and when state influence on firm strategy wanes. Future research will benefit from closer understanding of different shares, the state agencies controlling them, and the nature of public–private shareholding partnerships. We see similar opportunities to investigate the robustness of our results with alternative measures of time since privatization and policy stability.[10]

We began by noting the 20-year history of privatization research in *JIBS* and its focus on understanding effects of state divestment in developing country settings with just the kind of institutional policy factors we found important in this study. This focus and our framework suggest future avenues to move research forward on the role of residual state ownership in privatizing firms. One avenue leads to India. Gupta's (2005) study of partially privatized firms in India during the 1990s was limited to firms with controlling majority state ownership. The march of divestment since the mid-1990s almost certainly means that many of Gupta's firms have non-controlling minority state ownership tranches with, perhaps, quite different effects on privatizing firm decision-making and performance.

Another avenue leads to China. Morck, Yeung, and Zhao (2008) analyze motivations for small but fast-growing outward FDI by Chinese firms

currently under the control of state agencies and managers but with increasing numbers of private, often foreign, investors seeking a greater voice in day-to-day corporate decision-making. As this outward FDI gains steam, so too will pressure to cede responsibility to professional managers overseen by restive private shareholders willing to pay for majority control. We may soon have an opportunity to use our framework to investigate a wave of partially privatized Chinese firms on a global FDI spending spree, where residual ownership by a one-party, "socialist" state seeks to signal credible support for private shareholder aims. In India, China, and other developing-country contexts, the gradual transition from state to completely private ownership should provide researchers in international business and related fields with a substantial opportunity to elaborate on the theoretical grounding and empirical evidence related to the proposition that residual state ownership can enhance rather than impair firm decision-making and performance.

NOTES
[1]Our concept of non-controlling, minority "residual state ownership" contrasts with other similarly worded concepts in management researching, including "residual control", commonly defined as rights to use firm assets not covered by contracts (Foss & Foss, 1999).

[2]Bortolotti et al. (2002) cite 13 empirical studies on telecom privatization and performance since 1990. Only one published study, by Ramamurti (1992), examines links between privatization and enterprise (rather than industry- or economy-wide) performance measures. He concludes that there are positive links between telecom privatization and subsequent telecom enterprise performance.

[3]We identify an investment announcement event j for privatizing telecom i, and record its date as $T=0$. Share returns during the estimation window $T=-200$ to $T=-10$ are observed, and expected to follow the trend defined by $E(r_{iT})=\alpha_i + r_{mT}$. $E(r_{iT})$ is the expected

shareholder return of privatizing telecom i on day T, r_{mT} is the corresponding daily market return on the equal-weighted Standard & Poor's (S&P) 500 index, and α_i is an intercept. For the privatizing telecom, abnormal returns on day T are calculated as $AR_{iT} = r_{iT} - E(r_{iT})$. AR_{iT} is the difference between the actual shareholder returns, and r_{iT} is expected shareholder returns, $E(r_{iT})$, on the same day. CAR sums these daily abnormal returns over a 3-day ($T=0$–2) event window: $CAR = \Sigma AR_{iT}$.

[4]We omit one telecom i, British Telecom, and 1 year t, 2001.

[5]Dyck and Zingales (2004: 551) compute the block premium for publicly listed firms from a given country based on the difference between the price per share paid for a control block and the price on the domestic share exchange 2 days after the announcement of the control transaction, divided by the price on the same exchange after the announcement and multiplied by the proportion of cash flow rights represented in the controlling block. For each country represented in our sample we use the median country block premium computed by Dyck and Zingales. Median country block premia in our sample range from −0.01 (Japan) to 0.47 (Mexico) with an overall sample average of 0.04. To create our high block premium variable, we collapse this range to a 0-1 dummy, γ_{12}, taking the value of 1 when the median country block premium is more than one standard deviation above 0.04.

[6]20-F filings are required annually for the registration of securities by foreign private issuers, pursuant to Section 12(b) or (g) of the US Securities Exchange Act of 1934.

[7]Wilcoxon test results are available from the authors.

[8]These results are available from the authors.

[9]Indeed, generalization may be further impaired owing to sampling being limited to privatizing telecoms with ADR listings in the US. This requirement almost certainly entails some sampling bias toward larger and better-governed firms, able to meet US corporate governance standards associated with cross-listing. On the other hand, such sampling requirements applied to other infrastructure industries would be likely to yield similarly situated privatizing firms and investment events. Thus future researchers have avenues to advance this work with practical implications for firms and states.

[10]We re-estimate Eq. (1) with GLS and 3-day CARs and SCARs using time since privatization based on weeks quarters and years. Results are consistent with those reported in Columns 1–2 of Table 2. They are available from the authors.

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