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Residual State Ownership, Foreign Ownership and Firms' Financing Patterns

Abstract

Would different types of ownerships affect each other's effect on firm behavior? We investigate the effect of residual state ownership, foreign ownership, and the interaction between the two on firms' financing patterns, employing the World Bank Enterprise Survey (WBES) dataset, which covers over 130 thousand firms in 139 economies from 2006 to 2017. We find that neither firms with residual state ownership only nor firms with foreign ownership only are positively related with external finance. In comparison, firms with both state and foreign ownerships are associated with higher external finance. The coefficient of the state-foreign interaction is both statistically and economically significant. The increased external finance for firms with both state and foreign ownerships mainly comes from private banks and new equity. Moreover, we explore the channels through which residual state ownership and/or foreign ownership affect firms' financing patterns. Firms with residual state ownership only or foreign ownership only do not actively expand in the market or innovate their products. While firms with both state and foreign ownerships are eagerly engaging in market expansion and product innovation.

Keywords: Residual State Ownership; Foreign Ownership; Financing Patterns; Small and Medium Enterprises (SMEs)

JEL Classification: (G21, G30, O16, K40)

1. Introduction

One crucial question in corporate finance is whether and how ownership structure affects corporate financing patterns. Two of the most important types of ownership, which have attracted substantial interests in the recent decade, are state ownership and foreign ownership. State owners and foreign owners have vastly different incentives and operating goals. State owned enterprises (SOEs) are well known for their focus on employment and economic stability (Fogel, Morck, and Yeung, 2008). Although SOEs tend to have worse corporate governance and insufficient monitoring, their external financing ability does not seem to suffer. For example, SOEs are associated with lower financing obstacles, higher government support, and lower debt costs (Kornai, 1979; Kornai, 1980; Harrison and McMillan, 2003; Laeven, 2003; Borisova and Megginson, 2011; Shailer and Wang, 2015). SOEs' financing ability is generally attributed to their connections to government officials and state-owned banks (Boubakri, Cosset, and Saffar, 2013; Fogel, Morck, and Yeung, 2008; Liao and Young, 2012).

Firms with foreign owners are normally profit maximizers with better corporate governance (Doidge et al., 2009; Leuz et al., 2008), fewer agency problems and more informative disclosures (Boycko et al., 1996; Dyck, 2001; Boubakri et al., 2007; Guedhami et al., 2009; Aggarwal et al., 2011). As a result, studies which focus on the relationship between foreign ownership and finance patterns indicate that foreign ownership is associated with lower financial constraints, lower bank lending, and higher equity finance (Barth et al., 2009; Beck et al., 2006; Dong and Men, 2014; D'Souza et al., 2017; Houston et al., 2011; Knack and Xu, 2017; Kwok and Tadesse, 2006; Liu et al., 2020; Mertzanis, 2017).

The importance of state and foreign ownerships on corporate finance has been well established by the current literature. However, state and foreign ownerships are examined separately in the majority of the ownership studies. Focusing on one ownership each time may lead to the omitted variable issue, when both state and foreign ownerships play an important role in sample firms. A few studies have examined the impacts of state and foreign ownerships simultaneously on firm decisions.¹

¹ See Ben-Nasr (2016), Boubakri, Cosset, and Saffar (2013), Chen, et al. (2017) and Guedhami, Pittman, and Saffar (2009).

The main issue remain unexplored is when state and foreign ownerships exist simultaneously in a firm, and each would like to carry out its own specific operational goals, how would state and foreign ownerships interact with each other and affect a firm's financing patterns? This question is especially important to developing countries since the privatization of SOEs (Megginson and Netter, 2001), the promotion of foreign direct investment, and the re-nationalization of private firms (Wooldridge, 2012) over the last 30 years created a large group of firms with both state and foreign ownerships.

The interaction effect between state and foreign ownerships could be triggered either by resource integration synergies, or by conflicting interests, which lead to higher coordinating costs, between the two types of owners. The synergies between state and foreign ownerships may come from two sources, complementary resources and mutual monitoring. Different owners cooperate when both have assets that are essential for collaboration (Grossman and Hart, 1986; Hart and Moore, 1990). SOEs with foreign direct investment are associated with higher innovative activities (Girma, Gong, and Görg, 2009). Synergies in innovation efficiency also exist between public and private ownerships in Chinese SOEs (Cao, Cumming, and Zhou, 2020). The mutual monitoring in joint ownership organizations reduces the possibility of value-destroying corporate decisions (Mantecon et al., 2012).

The costs between state and foreign ownerships may come from their conflict goals and complex decision processes. Different types of owners tend to have different preferences in strategic goals (Hoskisson et al., 2002). State and foreign owners are especially likely to have distinct goals, as we have discussed before, which lead to different preferences in capital management (Ben-Nasr, 2016), risk-taking behaviors (Boubakri, Cosset and Saffar, 2013), investment efficiencies (Chen et al., 2017), and auditing qualities (Guedhami, Pittman, and Saffar, 2009). Furthermore, mixed ownership constantly leads to a lengthy and complicated decision process (Wehrheim et al., 2020).

To the best of our knowledge, no study in previous literature has analyzed the interactive effect between state and foreign ownerships on firms' financing patterns. We examine this gap by analyzing the World Bank Enterprise Survey (WBES) database, which covers over 130,000 firms, from 139 countries, from 2006 to 2017. WBES

primarily focuses on small and medium enterprises (SMEs) in developing or emerging economies.

One fact especially relevant to our sample is the privatization of state-owned enterprises (SOEs) in developed, developing and emerging economies over the past 30 years. More than 100 countries have implemented different levels of privatization for SOEs (Megginson and Netter, 2001). Privatization has decreased the role of the state in the economies, as many previously state-controlled firms have reduced their state shares from majority to minority, or sometime to zero (Megginson, 2010). The remaining state ownership in these firms is defined as residual state ownership henceforth.

We try to answer three questions in this study:

1. How do residual state and foreign ownerships affect firms' financing patterns separately and interactively?
2. What are the possible channels that residual state and foreign ownerships affect firms' financing patterns?
3. Does institutional development affect the ownership-financing relationship?

To simplify our ownership descriptions, we define firms with residual state ownership as State firms, firms with foreign ownership as Foreign firms, firms with both residual state ownership and foreign ownership as State_Foreign firms, and firms with neither residual state ownership nor foreign ownership as Non_State_Foreign firms. Our basic regressions are ordinary least squares (OLS), which include our variables of interest (state and/or foreign ownerships), firm-level controls, country-industry dummies and year dummies.

We first include residual state and foreign ownerships separately in our regressions. Firms with residual state ownership tend to have higher external finance, while firms with foreign ownership tend to have lower external finance (Dong and Men, 2014; Knack and Xu, 2017; Liu et al., 2020).² Next, residual state ownership, foreign ownership and the interaction between the two are simultaneously included in the regression. State ownership's positive effect on external finance disappears while

² We alleviate the potential endogeneity issue between ownership and external finance by using two-stage least squares, propensity score matching, and Heckman selection model. The main results stated above generally hold in the endogeneity tests.

foreign ownership's negative effect on external finance remains. Meanwhile, the positive effect of the State_Foreign interaction on external finance is both statistically and economically significant. The increased external finance of State_Foreign firms mainly comes from private banks and new equity.

The results discussed above are not sensitive to the specific type of regressions performed. Replacing OLS with Tobit, or re-clustering standard errors both at the country and the year level do not affect our main results. These results are also robust to including firm-level finance, political and court obstacles, replacing country fixed effects with country-level macroeconomic variables, limiting the regression to the top 10 countries with the highest percent of State firms, limiting the regression to firms with 100 or more employees (large firms according to WBES), dropping the top 3 (10) countries with the highest number of observations in the sample, and using alternative measures of financing patterns.

Moreover, we explore two channels through which residual state and/or foreign ownerships affect firms' financing patterns. Firms with residual state ownership only or foreign ownership only do not show strong evidence that they are actively expanding or innovating. However, State_Foreign firms reveal strong evidence that they are eagerly engaging in market expansion and product innovation.

Last but not least, we document that institutional development affects the ownership-financing relationship. State_Foreign firms seek and obtain higher external finance in countries with higher creditor rights, higher property rights, lower corruption, or higher income, than in countries with lower creditor rights, lower property rights, higher corruption, or low to medium income, respectively. The results are consistent Rajan and Zingales (1998), who argue that financial development lowers firms' costs of external finance, hence disproportionally benefit firms with greater external finance needs.

Our study is closely related to several studies which examine the impacts of both state and foreign ownerships on firm decisions. These studies argue that state ownership is negatively related with a firm's risk-taking, working capital value, investment efficiency, and the usage of Big Four auditors, while foreign ownership is positively related with the above four activities (Ben-Nasr, 2016, Boubakri, Cosset and Saffar, 2013, Chen, et al., 2017). Our study is different from the above-mentioned studies in

the following two key perspectives. First, we explore the interacting effect between state and foreign ownerships on firm finance patterns, and we try to explain the possible channels through which the above effect work. Second, we focus on small and medium enterprises (SMEs) around the world, while prior studies focus on listed and/or large firms.

Our contributions to the literature are fourfold. First, we add to the corporate ownership literature. The impacts of residual state ownership, foreign ownership, and the interaction of the two, are analyzed simultaneously, while previous literature mainly focuses on one ownership each time. Our results indicate that contrasting and interacting different types of ownerships are meaningful, as residual state ownership is positively related with external finance by itself, but insignificantly related with external finance when foreign ownership and the interaction of the two are included in the regression.

Second, this study contributes to the literature of business collaborations. We are the first to examine the interacting effects between state and foreign ownerships. When synergies between the two types of owners outweigh their costs, firms with residual state ownership would benefit from foreign direct investment. The positive effects of State_Foreign firms on external finance, market expansion and product innovation provide support to the statement above.

Third, we propose an explanation to the positive effects of State_Foreign firms on external finance both from the demand side and the supply side. From the demand side, State_Foreign firms may have a higher demand for external finance due to their eagerness to expand and innovate. From the supply side, State_Foreign firms may tap into the financial resources from both types of owners, especially from their foreign owners. Our results further indicate that the increased external finance of State_Foreign firms mainly comes from private banks and new equity.

Last but not least, our results provide new ownership-financing evidence from a dataset with over 130 countries, which primarily focuses on small and medium enterprises (SMEs) in developing or emerging economies. SMEs are generally unlisted firms, and their contribution to employment is comparable to large firms (Ayyagari et al., 2014b). Previous literature mainly examines listed firms in developed countries (Rajan and Zingales, 1995; Borisova and Megginson, 2011; Lin et al., 2011), or listed

firms in a few developing countries, such as China and Vietnam (Maksimovic and Demirgüç-Kunt, 1999; Booth et al., 2001; Cull and Xu, 2005; Megginson et al., 2014). The results generated from developed countries, or a few leading developing countries may not generalize to other developing or emerging economies.

The rest of the paper is organized as follows. Section 2 reviews the literature and generates hypotheses. Section 3 briefly describes the data and variables used in this study. Sections 4 and 5 present empirical results of the ownership-financing relationship. Section 6 explores the channels through which residual state ownership or foreign ownership affect financing patterns. Section 7 analyzes institutions' influence on the ownership-financing relationship. Section 8 concludes.

2. Literature Review

2.1. Residual State Ownership and Finance Patterns

The relationship between state ownership and external finance is likely to be positive, considering that SOEs naturally enjoy the benefits of all kinds of government support. The soft budget constraint theory (Kornai, 1979; Kornai, 1980) states that governments can relax SOEs' financial constraints by offering them a favorable tax rate, easier access to credit, and other support. Consistent with the soft budget constraint, Harrison and McMillan (2003) and Laeven (2003) find that SOEs have lower financing obstacles since they receive direct subsidies from governments and funds with favorable terms from state-owned banks. Li and Xia (2008) document that SOEs tend to have easier access to government allocated resources such as bank loans. Borisova and Megginson (2011) identify a negative link between government ownership and the cost of debt using a sample of newly privatized firms. In the same vein, Shailer and Wang (2015) find that state-owned firms have a lower cost of debt when firms experience financial distress.

Moreover, SOEs tend to possess more political connections (Boubakri et al., 2008). Faccio et al. (2006) report that firms with political connections are more likely to get an implicit government bailout guarantee during financial distress. Boubakri et al. (2012) find that a government official on the board is associated with higher leverage. Chaney et al. (2011) identify that firms with political connections have a lower cost of borrowing even if their financial reports are of poor quality. Boubakri et al. (2012) find

that political connections reduce equity costs. Cull et al. (2015) argue that firms with government connections face fewer financial constraints, and investments in these firms are less sensitive to internal cash flows.

However, the relationship between state ownership and external finance can also be negative considering that SOEs are notorious for their low efficiency and higher agency cost (Shleifer and Vishny, 1997; Boycko et al., 1996; Fogel et al., 2008; Guedhami et al., 2009). They do not have easier access to loans from privately-owned banks as they do from state-owned banks (Liu et al., 2020). Dong et al. (2016) report that SOEs no longer have easier access to bank finance in China, which is different from the traditional prediction. Lin and Bo (2012) also indicate that state ownership does not equal lower financial constraints or more borrowing from banks in China. The soft budget constraint once enjoyed by SOEs or former SOEs may have gradually dissipated with a country's privatization process and its advancement of the market economy.

Firms with residual state ownership are likely to behave similarly to SOEs (Chen et al., 2011; Ben-Nasr et al., 2012; Boubakri et al., 2013; and Chen et al., 2017). These firms may also benefit from the soft budget constraint and suffer from the exacerbated agency issue. Following the discussion above, we make the following two hypotheses:

H1a: Residual state ownership is positively related with external finance.

H1b: Residual state ownership is negatively related with external finance.

2.2. Foreign Ownership and Financing Patterns

The relationship between foreign ownership and external finance is also ambiguous, according to previous literature. Foreign ownership is commonly associated with lower financial constraints (Beck et al., 2006; Dong and Men, 2014; D'Souza et al., 2017; Mertzanis, 2017), better corporate governance, fewer agency problems and more informative disclosures (Boycko et al., 1996; Dyck, 2001; Boubakri et al., 2007; Doidge et al., 2009; Guedhami et al., 2009; Leuz et al., 2008; Aggarwal et al., 2011). Equipped with low financial constraints and better governance, firms with foreign ownership are valuable loan applicants from banks' perspective and they may have easier access to external funding.

Moreover, Ayyagari et al. (2011) find that foreign ownership is related with a higher probability of innovation. Boubakri et al. (2013) present that foreign ownership is positively related with a firm's risk-taking behavior. With a higher incentive to innovate and take risks, firms with foreign ownership tend to have a higher demand for external finance.

Think from a different perspective, less financial obstacles indicate that firms with foreign owners do not need that much external finance. Beck et al. (2008) show that foreign-owned firms fund a large share of investment with equity finance. Kwok and Tadesse (2006), Barth et al. (2009), and Houston et al. (2011) argue that firms with foreign ownership have less bank lending since they obtain funds from parent companies and foreign capital markets.

Firms with foreign ownership may also suffer from fewer connections with domestic banks, be it state-owned or privately-owned. Hence there is no guarantee that the fund supply from domestic banks/suppliers to foreign firms are positive. Colombo (2001) find that foreign ownership has no significant effect on access to short-term debt finance for a sample of Hungary firms. Knack and Xu (2017) document a negative relationship between foreign ownership and external finance. Liu et al. (2020) find firms with foreign ownership receive less bank finance, either from state-owned banks or privately-owned banks.

Based on the discussion above, we hypothesize that:

H2a: Foreign ownership is positively related with external finance.

H2b: Foreign ownership is negatively related with external finance.

2.3. Coexistence of State-Foreign Ownerships and Financing Patterns

The coexistence of state and foreign ownerships in one firm may positively affect its external finance. Firms with (previous) state ownership tend to have built-up links with state-owned banks and suppliers (Liu et al., 2020). Firms with foreign ownership tend to have an easier access to equity funding from their foreign parent companies or foreign capital markets (Kwok and Tadesse, 2006; Barth et al., 2009; and Houston et al., 2011). Firms with both state and foreign ownerships may hence inherit the financing advantages from both sides of the owners. Related literature has reported that in

privatized firms, foreign ownership is associated with better firm performance and investment efficiency (Megginson and Netter, 2001; Denis and McConnell, 2003; Estrin et al., 2009; D'Souza et al., 2001; and Chen et al., 2017).

On the other hand, the coexistence of state and foreign ownerships in one firm may negatively affect its external finance. It is well documented that state owners and foreign owners have vastly different incentives when they are making business decisions (Ben-Nasr, 2016; Boubakri, Cosset, and Saffar, 2013; Chen et al., 2017; and Guedhami, Pittman and Saffar, 2009). The cost of coordinating activities is higher in joint ventures than wholly-owned affiliates (Desai et al., 2004). State_Foreign firms may be plagued by conflicting interests and coordinating costs, hence unable to take advantage of any type of financing resources from state/foreign owners.

H3a: The coexistence of state-foreign ownership is positively related with external finance.

H3b: The coexistence of state-foreign ownership is negatively related with external finance.

3. Data

3.1. The Sample

In this study, we employ the World Bank Enterprise Survey (WBES) database for our empirical analysis (<http://www.enterprisesurveys.org/>). World Bank uses standardized survey instruments to measure the business climate of each economy. The dataset surveys firms in manufacturing and service industries by asking about each firm's business environment, financing patterns, sales, employment, costs, technology adoption, and other firm characteristics. This dataset was collected through surveys between 2006 and 2017 across Sub-Saharan Africa, East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & North Africa, and South Asia.

WBES has its shortcomings. One shortcoming is that financial data are generally missing in this dataset. Many important financial measures, such as total assets, total equity, net profit, are not available. Another shortcoming is that the dataset is a pooled one, and we cannot perform panel regressions at the firm level. In terms of the

completeness of financial data, WBES is weaker than some other commonly used dataset, such as Compustat Global or Thomson Reuters Worldscope.

WBES also has its unique advantages that make it suitable to study the relationship between firm ownership and financing patterns. First, WBES contains in-depth firm-level financing and ownership information. Second, WBES covers (predominately) private firms, especially small-to medium enterprises (SMEs), over 130 developing and emerging countries around the world. The broad coverage of WBES has made it widely used in corporate finance studies (see, e.g., Beck et al., 2005; Beck et al., 2008; Ayyagari et al., 2008, 2011, 2014a; Barth et al., 2009; Houston et al., 2011; Akins et al., 2017).

To reduce the impact of outliers, all continuous variables are winsorized at the top and the bottom one percentile. Dependent variables (financing patterns, financing channel proxies for market expansion and innovation), key independent variables (residual state ownership and foreign ownership), and control variables are briefly described in Sections 3.2, 3.3, and 3.4.

3.2. Dependent Variables

3.2.1 Financing Patterns

A firm's financing pattern is measured by its answers to the question: "*Over fiscal year [insert last complete fiscal year], please estimate the proportion of this establishment's purchase of fixed assets that was financed from each of the following sources?*" The firms' purchase of fixed assets can be financed by internal funds/retained earnings (*Fixed_Internal*), funds borrowed from banks (*Fixed_Bank*), which equals the sum of funds from state-owned banks (*Fixed_StateBank*) and privately-owned banks (*Fixed_PrivateBank*), funds borrowed from non-bank financial institutions (*Fixed_NonBank*), purchases on credit from suppliers and advances from customers (*Fixed_Suppliers*), other informal sources, e.g., moneylenders, friends, relatives (*Fixed_Other*), and owners' contribution or issued new equity shares (*Fixed_NewEquity*). These funding channels add up to 100%. We further define *Fixed_External* as 100 minus *Fixed_Internal*.

Several supplementary measures of a firm's financing pattern are used in our robustness tests. Another question related to a firm's financing pattern is "*Over fiscal year [insert last complete fiscal year], please estimate the proportion of this establishment's working capital that was financed from each of the following sources?*" The firms' working capital can be financed by internal funds/retained earnings (*WC_Internal*), funds borrowed from banks (*WC_Bank*) and non-bank financial institutions (*WC_NonBank*), purchases on credit from suppliers and advances from customers (*WC_Suppliers*), and other informal sources, e.g., moneylenders, friends, relatives (*WC_Other*). The above-specified funding channels add up to 100%. Similarly, we define *WC_External* as 100 minus *WC_Internal*. We only employ *WC_External*, *WC_Bank* and *WC_Suppliers* in robustness tests since the main sources of *WC_External* are *WC_Bank* and *WC_Suppliers*.

We further include several different measures of firms' access to finance. *Finance_Obstacle* is a categorical variable used to measure "how much of an obstacle: access to finance?" (0-no obstacle, 1-minor obstacle, 2-moderate obstacle, 3-major obstacle, 4-very severe obstacle). *Finance_Obstacle_Dummy* is a dummy variable which equals one if *Finance_Obstacle* equals 3 (major obstacle) or 4 (very severe obstacle), zero otherwise. *Overdraft* is a dummy variable which equals one if the firm has an overdraft facility, zero otherwise. *Line_of_Credit* is a dummy variable that equals one if the firm has a line of credit or a loan from a financial institution, zero otherwise. *New_Loan* is a dummy variable that equals one if the firm has applied for a new loan or a line of credit in year t-1, zero otherwise.

Table 1, Panel A demonstrates that for firms with fixed assets purchase, 33.20% of the purchase is financed from external funds, among which 18.24% from bank borrowing, 1.82% from non-bank financial institutions, 5.17% from suppliers, 2.47% from other sources, and 4.20 % from new equity. A firm's working capital is 28.90% externally financed on average, among which 12.99% from bank borrowing and 11.72% from suppliers. In our sample, 25.3% of the firms rated their finance obstacle as major or very severe, 41.70% of the firms have an overdraft facility, 35.92% of the firms have an existing loan or a line of credit, 27.87% of the firms have applied for a new loan or a line of credit in year t-1.

3.2.2 Financing Channels Proxies

We also investigate the channels through which a firm may spend its externally acquired funds. One potential channel related to cash outflow is market expansion. We use three variables to proxy a firm's market expansion process, and they are: *Sales_Growth*, which is defined as $(\ln(\text{Sales}_{t-1}) - \ln(\text{Sales}_{t-3})) / 2$, *Employee_Growth*, which is defined as $(\ln(\text{Employee}_{t-1}) - \ln(\text{Employee}_{t-3})) / 2$, and *Investment_Dummy*, which is dummy variable that equals one if the firm has purchased any fixed assets in year $t-1$, zero otherwise.³

Another potential channel related to cash outflow is innovation. Following Mateut (2018), we use three variables to proxy a firm's innovation effort. *New_Product* is a dummy variable that equals one if the firm introduced new products/services over the last three years, zero otherwise. *Improved_Process* is a dummy variable that equals one if the firm introduced a new/significantly improved process during the last three years, zero otherwise. *R&D* is a dummy variable that equals one if the establishment spent on R&D in year $t-1$, zero otherwise.

The mean (median) of *Sales_Growth* is 0.14 (0.09), and the mean (median) of *Employee_Growth* is 0.05 (0). The mean-median gap indicates that both variables are right-skewed. 44.54% of the firms have invested in fixed assets in year $t-1$. As to innovation, 40.55%, 43.37%, and 22.54% of firms have launched new products/services, introduced new/significantly improved process, or invested on R&D, in year $t-1$, respectively. See Table 1, Panel B, for details.

3.3. State and Foreign Ownerships

We define *State* as a dummy variable that equals one if any governmental agency has at least partial ownership in the firm, zero otherwise, *Foreign* as a dummy variable that equals one if any private foreign individual/company has at least partial ownership in the firm, zero otherwise (Beck et al., 2005, Beck et al., 2008, Akins et al., 2017, and Ullah and Wei, 2017). We further define *State_Foreign* as an interaction dummy

³ We define *Sales_Growth* and *Employee_Growth* following D'Souza et al. (2017) and Ullah and Wei (2017).

between *State* and *Foreign*, which equals one if both state and foreign ownerships co-exist in the firm, zero otherwise.

Table 1, Panel C, shows that 2% (11%) of the sample firms have state (foreign) ownership. Among the 2% State firms, 66.17% of which are 50% or less state-owned, 36.25% of which are 20% or less state-owned. Hence in the world level, we are dealing with residual state ownership.

The distribution of state and foreign ownership varies significantly by firm size. WBES allocates firms into three categories according to their size: small firms have less than 20 employees, medium firms have 21-99 employees, and large firms have 100 or more employees. 4% (23%) of large firms have state (foreign) ownership, while only 1% (8%) of small/medium firms have state (foreign) ownership.

Figure 1 exhibits the state and foreign ownership distribution by regions. Firms in Europe & Central Asia are much more likely to have state ownership (2.64 %), while firms in Latin America & the Caribbean are least likely to have state ownership (0.39 %). 16.83% of firms in Sub-Saharan Africa have foreign ownership, which is the highest among regions, while 1.96% of firms in South Asia have foreign ownership, which is the lowest among regions.

Appendix 1 presents descriptive statistics for ownership by industry. Transportation and construction industries are more likely to have firms with state ownership, while electronics, transportation and IT industries are more likely to have firms with foreign ownership. Appendix 2 presents descriptive statistics for ownership by country. Uzbekistan, Belarus, and Central African Republic are the top 3 countries with State firms, while Papua New Guinea, Gabon, and Botswana are the top 3 countries with Foreign firms.

[Figure 1, Table1, Appendices 1 and 2 here]

3.4. Control Variables

Following the literature, we include a set of control variables in our regressions (Beck et al., 2005; Beck et al., 2008; Ullah and Wei, 2017; Allison et al., 2021). A top manager's working experience is proxied by the years he/she spent in the business-related sector (*Experience*). Firm size is measured by the natural logarithm of the

number of permanent full-time employees (*Ln_Employee*). Firm age is calculated as the natural logarithm of the survey year minus the founding year plus one (*Ln_FirmAge*). Ownership concentration is measured by the percentage of the firm owned by its largest shareholder (*Top_Owner_Pct*). The public listing status is proxied by a dummy variable called *Public*. The exporting status of a firm is proxied by a dummy variable called *Exporter*. A set of location variables are also included in our analysis. *City_Xlarge*, *City_Large*, *City_Medium*, and *City_Small* are dummy variables that equal one if the city that the firm located has a population of over 1 million, over 250,000 to 1 million, over 50,000 to 250,000, or less than 50,000, respectively. *City_Large*, *City_Medium*, and *City_Small* are directly included in the regression, while *City_Xlarge* is held as the default category.

Firm-level finance, political and court obstacles are controlled in some robustness tests. *Finance_Obstacle* measures "how much of an obstacle: access to finance?", *Political_Obstacle* measures "how much of an obstacle: political instability?", while *Court_Obstacle* measures "how much of an obstacle: courts?". For all three categorical obstacles measures, zero means no obstacle, one means a minor obstacle, two means a moderate obstacle, three means a major obstacle, and four means a very severe obstacle.

County-level macro-economic variables are used in some other robustness tests. We include the natural logarithm of a country's GDP (*Ln_GDP*), the growth rate of GDP (*GDP_Growth*), GDP per capita (*GDP_per_Capita*), and inflation rate (*Inflation*), following Beck et al. (2005) and Zheng et al. (2013).

We also study the impact of institutional development on the ownership-financing relationship. *Creditor_Rights* reflects a country's creditor protection level (Djankov et al., 2007). This variable ranges from 0 to 4; a higher value means higher creditor protection. *Property_Rights* measures the degree to which a country's laws protect private property rights. *Corruption* is measured as the Corruption Perception Index (Transparency International), which reflects the extent of corruption among public officials and politicians. *Income* is a dummy variable measured by GDP per capita. World Bank separates countries into high, medium and low income countries according to their GDP per capita.

In our sample, a firm's top manager has 17.35 years of working experience on average. The means of *Ln_Employee* and *Ln_FirmAge* are 3.25 and 2.69, respectively,

which indicates that an average firm has 25.79 employees and is 14.73 years old. The percent of the firm owned by the largest shareholder is 79.28%. 4.97% of firms are listed, and 21.27 % of firms are exporters. 38.34%, 27.96%, 19.7%, and 14% of the firms located in extra-large, large, medium, and small cities, accordingly. The means of *Finance_Obstacle*, *Political_Obstacle*, and *Court_Obstacle* are 1.49, 1.63, and 0.98, respectively. The means of a country's natural logarithm of GDP (*Ln_GDP*) and GDP per capita (*GDP_per_Capita*), are 25.27 and 8.00, respectively. An average country's growth rate of GDP is 4.65%, and the average inflation rate is 7.32%. With respect to institutions variables, a country's creditor rights range from 0 (weak creditor rights) to 4 (strong creditor rights), and the median is 2. The means of *Property_Rights* and *Corruption* are 36.35 and 33.51, respectively. See Table 1, Panel D for details.

3.5. Correlation Matrix

The correlation matrix among our main dependent and independent variables are presented in Table 2. *Fixed_External* is positively correlated with *State*, negatively correlated with *Foreign*. Among the independent variables, not any two variables have a correlation higher than 0.35. Multicollinearity is unlikely to be an issue in our regressions.

[Table 2 here]

4. Ownership and Financing Patterns

4.1. Main Regression and Results

In this section, we examine the effects of state and foreign ownership on financing patterns by using the following regression model:

$$\begin{aligned} \text{Financing Pattern} = & \alpha + \beta_1 \text{State} + \beta_2 \text{Foreign} + \beta_3 \text{State_Foreign} + \\ & \beta_4 \text{Firm Level Controls} + \beta_5 \text{Country_Industry Dummies} + \\ & \beta_6 \text{Year Dummies} + \varepsilon \end{aligned} \quad (1)$$

where *Financing Pattern* is proxied by *Fixed_External*, the percent of the firm's fixed assets funded by external financing. *State*, *Foreign*, *State_Foreign* are our key independent variables. *Firm-Level Controls* denote a set of firm-level control variables

(*Experience*, *Ln_Employee*, *Ln_FirmAge*, *Top_Owner_Pct*, *Public*, *Exporter*, *City_Large*, *City_Medium*, and *City_Small*). *Country_Industry Dummies* and *Year Dummies* represent country times industry and year fixed effects, respectively. All continuous variables are winsorized at the 1st and 99th percentiles to reduce the effect of outliers. In Equation (1), we focus on the coefficients β_1 , β_2 , and β_3 .

Table 3 reports the regression results of Equation (1). In Panel A, Table 3, we employ OLS regressions and cluster standard errors at the country-industry level to mitigate heteroscedasticity. We find that *State* is positively related with *Fixed_External* (Columns 1 and 3), which supports our Hypothesis 1a. Yet its positive effect becomes insignificant when *State_Foreign* is included (Column 4). *Foreign* is negatively related with *Fixed_External* (Columns 2, 3, and 4), which is consistent with Hypothesis 2b. The coefficients of *Foreign* remain relatively stable in different regressions (Dong and Men, 2014; Knack and Xu, 2017; Liu et al., 2020).

State_Foreign is positively related with *Fixed_External* (Column 4), confirming our Hypothesis 3a. The *State_Foreign* coefficient is economically significant as well. Firms with both state and foreign ownerships use 8.9% more external funds than firms without either ownership.⁴

Table 3, Panel A also presents which firm characteristics have consistent impacts on *Fixed_External*. Larger firms and/or exporting firms tend to use more external funds (Beck et al., 2008; Dong and Men, 2014; Knack and Xu, 2017). Older firms and/or ownership concentrated firms tend to use fewer external funds (Knack and Xu, 2017). Manager experience, public status, and locations have no significant impacts on external finance.

We re-run our main regressions in Table 3, Panel A using different model specifications, with results presented in Panels B and C. In Panel B, we repeat the main regression in Panel A, but cluster standard errors at the country-year level. In Panel C, we employ Tobit regression since our dependent variable *Fixed_External* is left truncated at zero. The results in Panels B and C are quantitatively similar to the results in Panel A.

⁴ Along the same line, Liu (2020) finds that directors with various backgrounds are not independent from each other. For example, directors with political backgrounds significantly affect the monitoring/advising effects of directors with academic backgrounds.

[Table 3 here]

4.2. Endogeneity Tests

The most important concern with the analysis above is endogeneity. Some unobserved/uncontrolled determinants of financing patterns may explain the existence of state/foreign ownership at the same time. Governments could either privatize better performed SOEs first in order to make an impression that the privatization process is successful, or privatize worse performed SOEs first in order to get rid of their historical burdens (Megginson and Netter, 2001; Boubakri et al., 2005; Boubakri et al., 2007). Foreign investors may prefer to invest in firms with more informative financial reporting (e.g., Barth et al., 1999; Guedhami et al., 2009), or firms located at better institutional environments (Boubakri et al., 2005; 2007; Guedhami et al., 2009). To address the above-specified issues, we employ three econometric methods: instrumental variable (IV) regression, propensity score matching (PSM), and Heckman selection model.

4.2.1. Instrumental Variable Regression

Two instrument variables (IVs) are employed in the section. First, we use the variable *Collectivism*, which equals 100 minuses Hofstede's (2001) individualism index, as an IV for *State*. Boubakri et al. (2016) and Chen et al. (2018) point out that the residual state ownership is higher in newly privatized firms that are located in less individualistic countries. Second, we calculate the average percent of *Foreign* for firms in the same country, industry, and year of the target firm as *Foreign_Expected*. Assuming that a firm's choice to bring in foreign investors is affected by the choices of firms similar to itself, we use *Foreign_Expected* as an IV for *Foreign* (Liu et al., 2014).

We report IV regression results regarding state ownership in Columns (1) and (2) of Table 4, Panel A. In the first-stage regression, we regress *State* on *Collectivism* along with the full set of control variables and country_industry, year fixed effects. Consistent with Boubakri et al. (2016) and Chen et al. (2018), *Collectivism* enters positively and significantly at the 1% level, indicating that the state ownership is more prevalent in collectivistic countries. The result of the second stage regression shows that state

ownership is positively and significantly correlated with *Fixed_External*. We report IV regression results regarding foreign ownership in Columns (1) and (2) of Table 4, Panel B. In the first-stage regression, *Foreign_Expected* is positively and significantly related with *Foreign*, suggesting the existence of a keeping up with the Joneses effect. The result of the second stage regression indicates that foreign ownership is negatively though insignificantly correlated with *Fixed_External*.

4.2.2. Propensity Score Matching (PSM)

The PSM method matches the treated firms with controlled firms according to the observable firm characteristics, in order to randomize the sample selection process (Rosenbaum and Rubin, 1983). Although it is impossible to control all of the unobservable variables, PSM is an effective endogeneity control method in both experimental and non-experimental studies (Dehejia and Wahba, 2002; Smith and Todd, 2001).

In this study, the treatment is residual state ownership and foreign ownership, respectively. We first use the same set of firm-level control variables and fixed effects in Equation (1) to estimate the propensity score of each firm having any state or foreign ownership. State (Foreign) firms are matched with firms without any state ownership (foreign ownership), according to their propensity scores. We then re-estimate Equation (1) using the matched sample. Results reported in Table 4, Panel A, Column (3) indicate that *State* is positively though insignificantly correlated with *Fixed_External*, and results reported in Table 4, Panel B, Column (3) indicates that *Foreign* is negatively and significantly correlated with *Fixed_External*.

4.2.3. Heckman Two-Stage Analysis

Following the literature (Hope et al., 2011; Chen et al., 2017; Chen et al., 2018; Boubakri and Saffar, 2019), we perform a Heckman two-stage analysis to address the sample selection concern.

In the first stage, we use a probit model to predict whether state/foreign owners choose to keep any stake in the firms. Specially, we regress *State/Foreign* on its corresponding instrument and the same set of firm-level control variables and fixed

effects in Equation (1) to estimate the inverse Mills ratio (Lambda). In the second stage, we include Lambda as an additional independent variable in Equation (1). The results in Columns (4) and (5) of Table 4, Panel A (B), indicate that state (foreign) ownership is positively (negatively) and significantly associated with the external finance, which is consistent with the baseline regression. Lambda loads negatively significant at the 1% level on *Fixed_External* in state ownership regression, suggesting the existence of selection issue and the Heckman analysis is needed.

[Table 4 here]

5. Ownership and Detailed Finance Patterns

5.1. Main Regression and Results

In this study, we find that the firms with State (Foreign) firms are more (less) likely to seek and acquire external finance. State firms' positive effect on external finance disappears when Foreign firms and the interaction of the two are taken into consideration. The positive effect of the state-foreign interaction on a firm's external finance is both statistically and economically significant. We examine the detailed relationship between ownership and financing patterns in this section.

$$\begin{aligned} \text{Detailed Financing Patterns} = & \alpha + \beta_1 \text{State} + \beta_2 \text{Foreign} + \\ & \beta_3 \text{State_Foreign} + \beta_4 \text{Firm Level Controls} + \\ & \beta_5 \text{Country_Industry Dummies} + \beta_6 \text{Year Dummies} + \varepsilon \end{aligned} \quad (2)$$

Where *Detailed Financing Patterns* are proxied by *Fixed_External*, *Fixed_Bank*, *Fixed_StateBank*, *Fixed_PrivateBank*, *Fixed_NonBank*, *Fixed_Suppliers*, *Fixed_Other*, *Fixed_NewEquity*. Similar firm-level controls, country-industry dummies, year dummies, as shown in Equation (1) are also included in Equation (2). We only report the coefficients of *State*, *Foreign*, and *State_Foreign* in Table 5, for the sake of brevity.

We find that State firms have similar financing patterns in terms of *Fixed_Bank*, and *Fixed_NonBank*, compared with Non_State_Foreign firms. Although no significant difference in *Fixed_Bank* is observed between State firms and Non_State_Foreign firms, State firms are more likely to borrow from state-owned banks and less likely

from privately-owned banks.⁵ State firms are also more likely to obtain supplier finance or other finance.

Foreign firms are less likely to finance their fixed assets from banks, especially privately-owned banks, compared with their Non_State_Foreign counterparts. The coefficient of *Foreign* on *Fixed_NewEquity* is positively significant, consistent with the findings from Beck et al. (2008).

The coefficient of *State_Foreign* on *Fixed_Bank* is positively significant. State_Foreign firms' increased finance from banks seems to come from privately-owned banks instead of state-owned banks. State_Foreign firms also increase their finance from non-bank financial institutions and new equity to purchase fixed assets. The relationship stated above is also economically significant. Compared with Non_State_Foreign firms, State_Foreign firms increased their external financing of fixed assets by approximately 8.9%. 70% of the increased external finance comes from banks, and 30% of the increased external finance comes from new equity, approximately.

In sum, we find that State_Foreign firms inherit some financing advantages, but not financing disadvantages, from their state owners and foreign owners. For example, State_Foreign firms acquire increased external finance through new equity, possibly from their foreign owners. Privately-owned banks are less likely to lend to State firms or Foreign firms, probably for different reasons, but much more likely to lend to State_Foreign firms.

[Table 5 here]

5.2. Robustness Tests

First, we try to further reduce the potential bias caused by firm-level omitted variables. Self-reported finance, political and court obstacles are included in Equation (2). These obstacles are not included in the main regression since they are partially the results of state/foreign ownership. Including them in the main regression can move us further away from finding a causal relationship. However, these obstacles may exist

⁵ The number of observations in *Fixed_StateBank* and *Fixed_PrivateBank* is much smaller than the number of observations in other financing patterns. The low observation number may be the reason that the coefficient of *State* on *Fixed_StateBank* is positive but insignificant.

beyond the influence of ownership. The results reported in Table 6, Panel A indicate that *State* remains insignificant, *Foreign* remains negatively significant, and *State-Foreign* remains positively significant.

Second, we replaced country dummies with country-level macro variables (*Ln_GDP*, *GDP Growth*, *GDP per Capita*, and *Inflation*). Country-level macroeconomic variables vary by time, instead of staying fixed. We can measure this change since many countries in our dataset are surveyed twice or more with a multiple-year gap. The four macroeconomic variables specified above are commonly used in the international corporate finance literature (e.g., Beck et al., 2005; Beck et al., 2008; D'Souza et al., 2017; Allison et al., 2021). The results are reported in Table 6, Panel B. The main results regarding ownership remain unchanged.

Third, we replicate Equation (2) using the top 10 countries with state ownership, as these countries are more likely to benefit from introducing foreign investment to their firms with state ownership. The results are reported in Table 6, Panel C, with main results regarding ownership basically unchanged.

Fourth, firms with residual state ownership or foreign ownership are likely to be larger than purely private firms. We limit our research to the large firm sample, which are firms with 100 or more employees, according to WBES, as state ownership is generally concentrated in large firms. The results are similar to the results in Table 5, and they are reported in Table 6, Panel D.

Fifth, the main results may be driven by the countries with large number of observations. We exclude observations from the top 3 (10) countries with the highest number of observations. The results are presented in Table 6, Panels E and F and consistent with our main results in Tables 3 and 5.

Sixth, we test alternative dependent variables using Equation (2). The alternative measures of financing patterns are *WC_External*, *WC_Bank*, *WC_Suppliers*, *Finance_Obstacle*, *Finance_Obstacle_Dummy*, *Overdraft*, *Line_of_Credit*, and *New_Loan*. As we have seen in Table 5, State (Foreign) firms are insignificantly (negatively significantly) related with *WC_External*. State-Foreign firms continue to have significant positive effects on *WC_External*. The results regarding *Finance-Obstacle* and *Finance_Obstacle_Dummy* further support our discussions about the financial constraint faced by each type of ownership in the literature review section.

State (Foreign) firms report financial obstacles no different (lower) than Non_State_Foreign firms, while State-Foreign firms generally report lower financial constraints compared to their Non_State_Foreign firms counterparts. The results regarding *Overdraft*, *Line_of_Credit* and *New_Loan* indicate that neither State firms nor Foreign firms are more likely to possess a overdraft facility, have a line of credit, or apply for a new loan. Yet State_Foreign firms are much more likely to have an overdraft facility, a line of credit or a loan from a financial institution. See Table 6, Panel G, for details.

[Table 6 here]

6. The Channels between Ownership and Financing Patterns

We explore two possible channels through which residual state ownership or foreign ownership could affect financing patterns. We choose three variables to proxy a firm's market expansion process: *Sales_Growth*, *Employee_Growth*, and *Fixed_Dummy*. Another three variables are used to proxy a firm's innovation effort: *New_Product*, *Improved_Process*, and *R&D*. Definitions of these variables are shown in Section 3.2.2. *State*, *Foreign*, and *State_Foreign* are all included in the regression, with *Non_State_Foreign* as the default category. The firm-level control variables, country-industry and year fixed effects, and the standard error clustering format are the same as in Equations (1) and (2).

We realize that ownership can affect financing patterns through other channels, such as corporate governance. Previous literature generally associates foreign ownership with better corporate governance (Coffee, 1999; Denis and McConnell, 2003; Boubakri et al., 2005), and state ownership with worse corporate governance (Boycko et al., 1996; Dyck, 2001; Boubakri et al., 2007; Doidge et al., 2009; Leuz et al., 2008). Firms with better corporate governance are more trustworthy borrowers in the eyes of both financial institutions and other potential lenders (Klock et al., 2005). Unluckily, we are not able to test this channel empirically due to data limitations.

State and foreign owners may have different visions on a firm's market expansion strategy. Table 7, Panel A, reports the ownership-market expansion results. *State* is negatively related with *Employee_Growth* and *Fixed_Dummy*. *Foreign* is negatively related with *Employee_Growth*. The results regarding *State* and *Foreign* are consistent

with the findings from Beck et al. (2005), D'Souza et al. (2017), and Ullah and Wei (2017). Nevertheless, *State-Foreign* is positively related with *Sales_Growth*, *Employee_Growth*, and *Fixed_Dummy*. Firms with state-foreign ownerships are actively pursuing market expansion, compared with their non-state-foreign counterparts.

State and foreign owners may also have vastly different incentives regarding a firm's innovation effort. Table 7, Panel B reports the ownership-innovation results. *State* is negatively related with *R&D*. *Foreign* is positively related with *New_Product*, but not the other two measures. The results are consistent with Ayyagari et al. (2011), which document a negative (positive) relationship between state (foreign) ownership and firm innovation. *State-Foreign* is positively related with *New_Product*, *Improved_Process*, and *R&D*, which indicates that firms with state-foreign ownerships are willing to take risks associated with innovation and engage in product research and development. Findings from Girma, Gong, and Görg (2009) are similar to ours.

[Table 7 here]

7. Institutions, Ownership and Financing Patterns

Previous literature establishes that a country's institution has an important effect on its firms' financing choices (Johnson et al., 2002; Cull and Xu, 2005; Beck et al., 2008; Knack and Xu, 2017; Boubakri and Saffar, 2019; Liu et al., 2020). How does institutional development affect the ownership-finance relationship? We try to answer the question in this section. We separate the sample into two subsamples according to the median of several institution development measures. We then re-run Equation (1) for each subsample. The coefficients of control variables are not reported to save space. The institution development measures we consider are creditor rights, property rights, and corruption.

The first institution development measure is Creditor Rights (Qi, Roth, and Wald, 2010; Borisova and Megginson, 2011; Lin et al., 2011; Boubakri and Saffar, 2019). Literature shows firms in countries with higher levels of creditor rights have less cost of debt (Qi, Roth, and Wald, 2010; Borisova and Megginson, 2011; Lin et al., 2011). Boubakri and Saffar (2019) document firms have more bank finance in higher creditor

rights countries.⁶ The subsample regression results of Creditor Rights are shown in Table 8, Panel A. The results indicate that the coefficients of *State_Foreign* are both positively significant on *Fixed_External* in low and high creditor rights countries, however, the effect of *State_Foreign* is larger in high creditor rights countries. What's more, we find that State firms have similar financing patterns in terms of *Fixed_External* compared with Non_State_Foreign firms in both high creditor rights countries and low creditor rights countries. Foreign firms are less likely to finance their fixed assets from external sources, compared with their Non_State_Foreign counterparts in both subsamples.

The second institution development measure is Property Rights (Beck et al., 2008; Bena and Xu, 2017), derived by the Heritage Foundation. Firms in countries with better property rights protection use more external finance, especially bank and equity finance (Beck et al., 2008). We divide the sample into two parts, low property rights countries vs. high property rights countries, according to the median of Property Rights. We find that firms with state-foreign ownership tend to use more external finance in high property rights countries than in low property rights countries (Table 8, Panel B). In low property rights countries, *State* and *Foreign* loads positively and negatively, respectively, which means the pure SOEs financed by higher external finance and Foreign firms have less external finance, compared with firms without any state or foreign ownership.

The third institution development measure is Corruption (Beck et al., 2005; Qi, Roth, and Wald, 2010; Boubakri and Saffar, 2019), collected from Transparency International. The scores of Corruption range between 0 and 100, with higher scores representing less corruption. We separate the full sample into low corruption countries, when Corruption scores are higher than 33 (median), and high corruption countries, when Corruption scores are less than 33, and re-estimate Equation (1) in each subsample. In free from corruption countries, *State_Foreign* is positively related with external finance, and the effect of *State_Foreign* on external finance is larger than that in corruption countries. In addition, pure state firms have easier access to external finance only in high

⁶ Following the same vein, Rajan and Zingales (1998) find that a country's financial development is negatively related with firms' costs of external finance.

corruption countries, and pure foreign firms (without any state ownership) use less external finance only in free from corruption countries.

Since GDP per capita is generally highly correlated with institutional development, we further separate the whole sample into high income countries, and low- or medium-income countries, according to World Bank's country classifications by income level. We then re-estimate Equation (1) in each subsample and present the results in Table 8, Panel D. *State_Foreign* loads positively significant in both subsamples, with a higher positive coefficient on external finance in high-income countries, which is consistent with our prior findings regarding institutional development.

[Table 8 here]

In sum, *State_Foreign* firms seek and obtain more external finance in countries with developed institutions than they do in countries with underdeveloped institutions. Our results are consistent with the previous literature which arguing that institutional development increases firms' reliance on external finance (Beck et al., 2008; Dong and Men, 2014; Rajan and Zingales, 1998) and bank finance (Boubakri and Saffar, 2019).

8. Conclusion

In this study, we investigate the ownership-finance relationship. Using a large dataset from over 130 countries, from 2006 and 2017, we find statistically and economically significant evidence that residual state (foreign) ownership is positively (negatively) related to external finance. More importantly, firms with both state and foreign ownerships have a higher usage of external finance, compared to firms without either ownership. The increased supply of external finance requested by dual ownership firms mainly comes from privately-owned banks and new equity.

Ownership may affect financing patterns through at least three channels, which are market expansion, innovation, and corporate governance. We find some support from the first two channels. Firms with both state and foreign ownerships tend to actively engage in market expansion and innovation, which results in an increased demand for external funds. Unluckily, we do not have relevant variables to test the corporate governance channel.

We conduct a set of endogeneity and robustness tests, and the main ownership-finance relationship remains stable. We admit that the endogeneity issue is only relieved but not totally solved in this study, as the instrument variables we find for state/foreign ownership may not be totally exogenous.

We also find that the positive effects of State_Foreign firms on external finance become stronger in countries with higher institutional development, weaker in countries with lower institutional development.

Our results have critical implications for policymakers. Firms with only state ownership tend to perform worse, invest less, and expand less. Many governments want to change the behavior pattern of these firms but are not willing to relinquish control of them. The results of this study indicate that introducing foreign investment into State firms could be a win-win solution. Firms with both state and foreign ownerships are financially supported by both owners, especially foreign owners, and (implicitly) politically supported by state owners. They become vigorous and start to expand in the market and engage in innovation. The resources-integration synergy between state and foreign ownerships seems to overweight the coordinating cost between the two types of ownerships.

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Figure 1A. Percentage of Firms with State Ownership by Region.

Figure 1B. Percentage of Firms with Foreign Ownership by Region.

Table 1. Summary of Descriptive Statistics.

Table 1 presents the descriptive statistics of dependent variables (Panel A), channel measures (Panel B), ownership variables (Panel C), firm-level and macro-level controls (Panel D).

	N	Mean	Std	Min	Median	Max
A. Financing Patterns						
Fixed_External	59250	33.20	40.54	0	0	100
Fixed_Bank	58666	18.24	32.97	0	0	100
Fixed_PrivateBank	16708	18.21	33.25	0	0	100
Fixed_StateBank	16692	2.16	12.20	0	0	100
Fixed_NonBank	52477	1.82	11.27	0	0	100
Fixed_Suppliers	58762	5.17	17.92	0	0	100
Fixed_Other	45281	2.47	12.92	0	0	100
Fixed_NewEquity	58923	4.20	16.62	0	0	100
WC_External	121703	28.90	34.17	0	12	100
WC_Bank	120193	12.99	24.25	0	0	100
WC_Suppliers	120266	11.72	22.23	0	0	100
Finance_Obstacle	131934	1.49	1.33	0	1	4
Finance_Obstacle_Dummy	131934	0.25	0.43	0	0	1
Overdraft	128054	0.42	0.49	0	0	1
Line_of_Credit	131498	0.36	0.48	0	0	1
New_Loan	130073	0.28	0.45	0	0	1
B. Channels						
Sales_Growth	100358	0.14	0.45	-1.07	0.09	2.57
Employee_Growth	122812	0.05	0.18	-0.48	0	0.75
Investment_Dummy	135102	0.45	0.50	0	0	1
New_Product	84887	0.41	0.49	0	0	1
Improved_Process	83247	0.43	0.50	0	0	1
R&D	83553	0.23	0.42	0	0	1
C. Ownership						
State	134248	0.02	0.13	0	0	1
Foreign	134203	0.11	0.31	0	0	1
State_Foreign	134167	0.01	0.07	0	0	1
D. Firm-level Control and Macro Variables						
Experience	132685	17.35	11.12	0	15	90
Ln_Employee	135616	3.25	1.36	1.10	3.00	7.17
Ln_FirmAge	134562	2.69	0.75	0	2.71	5.83
Top_Owner_Pct	129240	79.28	26.37	0.20	100	100
Public	135506	0.05	0.22	0	0	1
Exporter	135089	0.21	0.41	0	0	1

	N	Mean	Std	Min	Median	Max
City_Large	93395	0.28	0.45	0	0	1
City_Medium	93395	0.20	0.40	0	0	1
City_Small	93395	0.14	0.35	0	0	1
Political_Obstacle	132359	1.63	1.47	0	1	4
Court_Obstacle	124685	0.98	1.23	0	0	4
Ln_GDP	135172	25.27	2.01	19.48	25.26	29.53
GDP_Growth	135910	4.65	4.21	-26.05	5.25	29.32
GDP_per_Capita	135172	8.00	1.06	5.39	7.94	10.87
Inflation	134182	7.32	5.86	-35.84	6.97	59.22
Creditor_Rights	124209	1.80	1.09	0	2	4
Property_Rights	129399	36.35	16.11	5	30	90
Corruption	133714	33.51	11.91	8	33	89

Table 2. Pearson Correlation Matrix.

Table 2 reports the correlation matrix for variables used in our main regressions. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Fixed_External	(1)											
State	(2)	0.03***										
Foreign	(3)	-0.02***	0.09***									
Experience	(4)	0.05***	-0.01***	-0.02***								
Ln_Employee	(5)	0.08***	0.10***	0.21***	0.13***							
Ln_FirmAge	(6)	0.07***	0.06***	0.00	0.45***	0.28***						
Top_Owner_Pct	(7)	-0.07***	-0.07***	-0.10***	-0.14***	-0.26***	-0.15***					
Public	(8)	0.02***	0.14***	0.11***	0.02***	0.18***	0.10***	-0.12***				
Exporter	(9)	0.09***	0.06***	0.20***	0.10***	0.35***	0.14***	-0.14***	0.07***			
City_Large	(10)	-0.01**	-0.01***	0.00	-0.05***	-0.03***	-0.02***	0.01***	0.01***	-0.04***		
City_Medium	(11)	-0.01	0.00	0.01***	-0.02***	-0.02***	-0.03***	0.00	0.00	-0.01***	-0.31***	
City_Small	(12)	0.04***	0.01***	0.00	0.03***	-0.04***	0.01***	0.01***	0.00	0.06***	-0.25***	-0.20***

Table 3. State/foreign Ownership and Financing Patterns.

Table 3 presents regression results of state/foreign ownership on firm financing patterns. For definitions of dependent variables, ownership measures, and other firm controls, please refer to Sections 3.2, 3.3, and 3.4. Panel A employs OLS regression and clusters standard errors at the country-industry level; Panel B employs OLS regression and clusters standard errors at the country level and year level. Panel C employs Tobit regression and clusters standard errors at country-industry level. Firm controls are included in all three panels, though not displayed in Panels B and C to save space. Country-industry and year dummies are included in all regressions. *T*-statistics are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. OLS regression (standard errors clustered by country-industry level)				
	Fixed_External	Fixed_External	Fixed_External	Fixed_External
State	3.465** (2.04)		4.452*** (2.62)	1.051 (0.50)
Foreign		-5.339*** (-6.10)	-5.495*** (-6.34)	-5.977*** (-6.72)
State_Foreign				8.920*** (3.02)
Experience	-0.032 (-1.21)	-0.039 (-1.47)	-0.037 (-1.43)	-0.038 (-1.44)
Ln_Employee	1.509*** (6.51)	1.765*** (7.37)	1.749*** (7.35)	1.782*** (7.53)
Ln_FirmAge	-1.105*** (-3.04)	-1.199*** (-3.30)	-1.242*** (-3.44)	-1.237*** (-3.43)
Top_Owner_Pct	-0.051*** (-3.54)	-0.054*** (-3.81)	-0.052*** (-3.69)	-0.052*** (-3.64)
Public	-0.425 (-0.40)	0.344 (0.32)	-0.001 (-0.00)	0.030 (0.03)
Exporter	2.875*** (4.23)	3.540*** (5.32)	3.501*** (5.28)	3.456*** (5.21)
City_Large	0.519 (0.50)	0.473 (0.46)	0.471 (0.46)	0.469 (0.45)
City_Medium	1.267 (1.19)	1.272 (1.19)	1.257 (1.17)	1.245 (1.16)
City_Small	2.376 (1.64)	2.329 (1.60)	2.356 (1.62)	2.358 (1.62)
Observations	33912	33919	33910	33910
Adj. R-squared	0.14	0.14	0.14	0.14
Panel B. OLS regression (standard errors clustered by country-year level)				
	Fixed_External	Fixed_External	Fixed_External	Fixed_External
State	3.465 (1.54)		4.452* (1.84)	1.051 (0.46)
Foreign		-5.339***	-5.495***	-5.977***

		(-3.51)	(-3.81)	(-4.35)
State_Foreign				8.920***
				(4.30)
Firms Controls	Yes	Yes	Yes	Yes
Observations	33912	33919	33910	33910
Adj. R-squared	0.14	0.14	0.14	0.14
Panel C. Tobit regression (standard errors clustered by country-industry level)				
	<u>Fixed_External</u>	<u>Fixed_External</u>	<u>Fixed_External</u>	<u>Fixed_External</u>
State	5.534		8.876*	1.909
	(1.18)		(1.94)	(0.35)
Foreign		-16.836***	-17.183***	-18.242***
		(-6.36)	(-6.44)	(-6.49)
State_Foreign				17.847**
				(2.27)
Firms Controls	Yes	Yes	Yes	Yes
Observations	33954	33961	33952	33952
Pseudo R-squared	0.03	0.04	0.04	0.04

Table 4 Panel A. Endogeneity Test of State Ownership.

Table 4 Panel A reports regression results that address the endogeneity of state ownership using instrumental variables (IV) regressions, propensity score matching, and Heckman selection model. Column 1 reports the first-stage IV regression results. The instrument for State is Collectivism, which is calculated as 100 minuses Hofstede's (2001) individualism index. Column 2 reports the second-stage IV regression results. Propensity score matching analysis is presented in Column 3. Column 4 and Column 5 report the first and second stages of Heckman selection model, respectively. Country-industry and year fixed effects are included in all regressions. Variable definitions are provided in Sections 3.2, 3.3, and 3.4. Robust t-statistics based on standard errors clustered at the country-industry level are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	IV 1st	IV 2nd	PSM	Heckman 1st	Heckman 2nd
	State	Fixed_External	Fixed_External	State	Fixed_External
State		292.633*** (6.80)	3.832 (1.15)		9.624*** (4.94)
Collectivism	0.001*** (4.98)			0.027*** (8.37)	
Experience	-0.000 (-1.60)	0.028 (0.56)	0.016 (0.12)	-0.006** (-2.37)	0.057 (1.46)
Ln_Employee	0.004** (2.29)	0.072 (0.16)	1.998* (1.73)	0.118*** (5.65)	-0.513 (-0.85)
Ln_FirmAge	0.006*** (2.58)	-2.647*** (-3.30)	-3.057* (-1.66)	0.212*** (4.86)	-3.825*** (-4.30)
Top_Owner_Pct	-0.000*** (-3.97)	0.029 (0.75)	-0.141*** (-2.71)	-0.008*** (-7.49)	0.033 (1.03)
Public	0.062*** (6.00)	-19.235*** (-4.34)	-3.259 (-1.05)	0.663*** (11.04)	-10.449*** (-3.87)
Exporter	0.019* (1.90)	-1.585 (-0.53)	6.122** (2.22)	0.296*** (2.59)	-0.332 (-0.27)
City_Large	-0.005* (-1.77)	3.934** (2.49)	-2.159 (-0.58)	-0.035 (-0.67)	2.933** (2.22)
City_Medium	-0.004 (-0.84)	1.468 (0.67)	-7.104* (-1.92)	0.015 (0.18)	0.019 (0.01)
City_Small	-0.007* (-1.79)	3.748 (1.52)	-6.708 (-1.11)	0.058 (0.69)	0.966 (0.42)
LAMBDA					-15.359*** (-4.16)
Observations	23088	23088	1197	57447	23088
Adj. R-squared		-0.94	0.19		0.09
1 st stage F test statistics		24.83			
1 st stage F test p-value		0.00			

Table 4 Panel B. Endogeneity Test of Foreign Ownership.

Table 4 Panel B reports regression results that address the endogeneity of foreign ownership using instrumental variables (IV) regressions, propensity score matching, and Heckman selection model. Column 1 reports the first-stage IV regression results. The instrument for *Foreign* is *Foreign_Expected*, which is calculated as the average percent of *Foreign* for firms in the same country, industry, and year of the target firm. Column 2 reports the second-stage IV regression results. Propensity score matching analysis is presented in Column 3. Column 4 and Column 5 report the first and second stages of Heckman selection model, respectively. Country-industry and year fixed effects are included in all regressions. Variable definitions are provided in Sections 3.2, 3.3, and 3.4. Robust *t*-statistics based on standard errors clustered at the country-industry level are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	IV 1st	IV 2nd	PSM	Heckman 1st	Heckman 2nd
	Foreign	Fixed_External	Fixed_External	Foreign	Fixed_External
Foreign		-2.914 (-0.34)	-3.655*** (-3.30)		-5.751*** (-6.37)
Foreign_Expected	0.939*** (40.06)			4.270*** (22.95)	
Experience	-0.001*** (-5.50)	-0.046 (-1.51)	-0.022 (-0.54)	-0.006*** (-5.18)	-0.042 (-1.39)
Ln_Employee	0.040*** (12.94)	0.962 (1.46)	0.992** (2.27)	0.221*** (18.82)	0.823 (1.06)
Ln_FirmAge	-0.020*** (-5.82)	-0.147 (-0.26)	-0.143 (-0.21)	-0.124*** (-7.16)	-0.072 (-0.11)
Top_Owner_Pct	-0.000*** (-2.93)	-0.054*** (-3.27)	-0.049** (-2.38)	-0.005*** (-8.75)	-0.050** (-2.51)
Public	0.096*** (6.59)	0.338 (0.28)	1.095 (0.70)	0.350*** (9.14)	0.233 (0.20)
Exporter	0.111*** (11.91)	4.649*** (4.59)	2.162** (2.00)	0.593*** (17.54)	4.273*** (3.60)
City_Large	-0.007 (-1.27)	0.812 (0.69)	0.462 (0.28)	-0.075** (-2.39)	0.889 (0.79)
City_Medium	-0.003 (-0.42)	0.746 (0.57)	0.061 (0.03)	-0.096*** (-2.80)	0.881 (0.69)
City_Small	-0.014* (-1.85)	0.316 (0.18)	-1.842 (-0.77)	-0.143*** (-3.31)	0.501 (0.29)
LAMBDA					-1.365 (-0.54)
Observations	32935	32935	7534	79852	32935
Adj. R-squared		0.02	0.13		0.06
1 st stage F test statistics		1605.09			
1 st stage F test p-value		0.00			

Table 5. Ownership and Detailed Financing Patterns.

Table 5 presents regression results of state/foreign ownership on detailed firm financing patterns, which are *Fixed_External*, *Fixed_Bank*, *Fixed_StateBank*, *Fixed_PrivateBank*, *Fixed_NonBank*, *Fixed_Suppliers*, *Fixed_Other*, *Fixed_NewEquity*. Firm-level controls are included in all regressions, though not displayed in Table 5 to save space. Country-industry and year fixed effects are included in all regressions. Variable definitions are provided in Sections 3.2, 3.3, and 3.4. Robust *t*-statistics based on standard errors clustered at the country-industry level are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Fixed_External	Fixed_Bank	Fixed_PrivateBank	Fixed_StateBank	Fixed_NonBank	Fixed_Suppliers	Fixed_Other	Fixed_NewEquity
State	1.051 (0.50)	-1.737 (-1.02)	-9.290*** (-4.07)	3.472 (1.42)	0.429 (0.69)	1.598** (1.98)	1.817* (1.92)	0.644 (0.66)
Foreign	-5.977*** (-6.72)	-6.586*** (-9.29)	-4.173** (-2.38)	-1.242 (-1.45)	-0.320 (-1.28)	0.165 (0.46)	-0.371 (-1.64)	0.657* (1.80)
State_Foreign	8.920*** (3.02)	6.936*** (2.86)	12.848** (1.99)	-4.260 (-1.12)	1.769* (1.80)	1.056 (0.84)	-0.359 (-0.23)	2.868** (2.17)
Observations	33910	33399	4891	4890	29487	33632	30972	33630
Adj. R-squared	0.14	0.13	0.08	0.09	0.05	0.05	0.04	0.03

Table 6. Robustness Tests.

Panel A reports regression results of Equation 2 by including three additional controls, which are finance, political, and court obstacles. Panel B reports regression results of Equation 2 by replacing country-industry fixed effects with macro variables and industry fixed effects. Panel C reports regression results of Equation 2 using only the top 10 countries with the highest percentage of state ownership. Panel D reports regression results of Equation 2 using large firms only. Panels E and F report regression results of Equation 2 by dropping the top 3 and the top 10 countries with the highest number of observations, respectively. Panel G reports regression results of Equation 2 using alternative measures of financing patterns. Firm-level controls are included in all regressions, though not displayed in Table 6 to save space. Country-industry and year fixed effects are included in all regressions. Variable definitions are provided in Sections 3.2, 3.3, and 3.4. Robust *t*-statistics based on standard errors clustered at the country-industry level are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Fixed_External	Fixed_Bank	Fixed_PrivateBank	Fixed_StateBank	Fixed_NonBank	Fixed_Suppliers	Fixed_Other	Fixed_NewEquity
Panel A: Add finance, political, and court obstacles.								
State	1.482 (0.68)	-0.934 (-0.49)	-7.652*** (-3.25)	4.164 (1.36)	0.264 (0.46)	1.620* (1.88)	2.382** (2.26)	0.035 (0.03)
Foreign	-5.119*** (-5.63)	-6.406*** (-8.76)	-4.632** (-2.47)	-1.196 (-1.35)	-0.148 (-0.57)	0.343 (0.91)	-0.277 (-1.27)	0.903** (2.36)
State_Foreign	8.167*** (2.61)	6.270** (2.37)	11.667* (1.73)	-4.450 (-1.00)	2.119** (2.16)	1.155 (0.83)	-0.733 (-0.45)	3.206** (2.48)
Observations	31078	30619	4355	4354	27133	30807	28275	30804
Adj. R-squared	0.15	0.14	0.09	0.09	0.06	0.05	0.04	0.03
Panel B: Replace country fixed effects with macro variables.								
State	5.490** (2.37)	-2.676 (-1.48)	-11.475*** (-4.98)	5.939** (2.20)	-0.044 (-0.07)	1.879** (2.11)	2.443** (2.19)	1.101 (1.03)
Foreign	-6.694*** (-6.72)	-7.834*** (-10.83)	-4.655** (-2.60)	-1.586* (-1.69)	-0.317 (-1.32)	0.399 (1.13)	-0.288 (-1.33)	0.094 (0.26)
State_Foreign	14.914*** (4.38)	2.675 (1.01)	14.597** (2.27)	-6.192 (-1.59)	1.886** (1.99)	1.360 (1.04)	2.177 (1.37)	3.372** (2.44)
Observations	32926	32416	4691	4690	28592	32649	29991	32647

Adj. R-squared	0.07	0.07	0.04	0.03	0.01	0.02	0.01	0.01
Panel C: Top 10 State ownership countries.								
State	1.879 (0.64)	-2.257 (-0.92)	-6.952** (-2.18)	3.157 (0.74)	-0.256 (-0.47)	3.229** (2.04)	1.967 (1.06)	2.429* (1.90)
Foreign	-3.626 (-1.24)	-4.377** (-2.17)	8.665 (1.59)	-2.227 (-0.52)	0.446 (0.68)	-0.666 (-0.69)	-1.169 (-1.32)	1.208 (0.89)
State_Foreign	11.041** (2.14)	8.755** (2.41)	-15.495* (-1.96)	-11.040 (-1.43)	2.085** (2.15)	0.350 (0.17)	0.464 (0.13)	3.088 (1.12)
Observations	3525	3524	490	490	3029	3521	2760	3519
Adj. R-squared	0.17	0.14	0.10	0.04	0.02	0.05	0.05	0.03
Panel D: Large firm sample.								
State	-0.622 (-0.19)	-1.281 (-0.44)	-9.059** (-2.52)	5.972 (1.33)	-0.525 (-0.67)	1.462 (1.16)	1.498 (1.59)	-2.348*** (-2.83)
Foreign	-7.501*** (-5.90)	-8.492*** (-8.02)	-2.794 (-0.86)	-2.741** (-2.07)	-0.017 (-0.05)	0.555 (0.88)	-0.460 (-1.58)	0.273 (0.45)
State_Foreign	12.176*** (2.59)	8.562** (2.20)	4.682 (0.56)	-2.648 (-0.39)	0.072 (0.06)	0.660 (0.29)	-0.564 (-0.34)	5.208** (2.28)
Observations	8444	8271	1390	1389	7067	8326	7764	8330
Adj. R-squared	0.14	0.13	0.06	0.14	0.07	0.05	0.05	0.03
Panel E: Drop top 3 countries with the highest number of observations.								
State	0.178 (0.08)	-2.923* (-1.68)	-9.533*** (-3.67)	2.509 (0.96)	0.134 (0.23)	1.716* (1.95)	2.108** (2.00)	0.933 (0.94)
Foreign	-6.309*** (-6.85)	-6.917*** (-9.38)	-4.669** (-2.57)	-1.066 (-1.19)	-0.327 (-1.28)	0.249 (0.67)	-0.365 (-1.53)	0.717* (1.93)
State_Foreign	9.834*** (3.21)	8.793*** (3.67)	13.862** (1.98)	-3.171 (-0.77)	1.939** (2.05)	0.645 (0.49)	-0.642 (-0.38)	2.431* (1.87)

Observations	28996	28676	4408	4407	25351	28986	26359	28978
Adj. R-squared	0.15	0.14	0.08	0.10	0.06	0.05	0.04	0.03
Panel F: Drop top 10 countries with the highest number of observations.								
State	0.060 (0.02)	-3.277 (-1.53)	-9.533*** (-3.67)	2.509 (0.96)	0.219 (0.28)	1.554 (1.49)	1.529 (1.36)	-0.080 (-0.08)
Foreign	-6.384*** (-6.42)	-6.903*** (-8.95)	-4.669** (-2.57)	-1.066 (-1.19)	-0.423 (-1.46)	0.458 (1.18)	-0.304 (-1.14)	0.529 (1.37)
State_Foreign	7.745* (1.93)	7.173** (2.32)	13.862** (1.98)	-3.171 (-0.77)	-0.112 (-0.12)	-0.904 (-0.54)	-1.356 (-0.90)	2.436 (1.40)
Observations	23649	23330	4408	4407	20005	23642	21504	23633
Adj. R-squared	0.12	0.12	0.08	0.10	0.06	0.04	0.03	0.04
Panel G: Alternative measures of financing patterns.								
	WC_External	WC_Bank	WC_Suppliers	Finance_ Obstacle	Finance_ Obstacle_Dummy	Overdraft	Line_of_ Credit	New_Loan
State	3.114 (1.62)	-1.083 (-0.81)	0.396 (0.54)	-0.011 (-0.20)	0.013 (0.85)	-0.082*** (-4.56)	-0.069*** (-3.79)	-0.050*** (-2.68)
Foreign	-3.024*** (-4.20)	-3.932*** (-7.67)	0.601 (1.64)	-0.183*** (-9.70)	-0.041*** (-6.55)	-0.021** (-2.56)	-0.084*** (-9.04)	-0.067*** (-8.42)
State_Foreign	13.806*** (4.15)	7.424*** (4.33)	2.365* (1.66)	-0.013 (-0.18)	-0.057** (-2.37)	0.083** (2.45)	0.115*** (3.81)	0.083*** (2.92)
Observations	73401	72079	72587	80985	80985	78421	80549	79974
Adj. R-squared	0.15	0.16	0.13	0.15	0.13	0.28	0.19	0.15

Table 7. Ownership and Financing Patterns-Channel Analysis.

Table 7 presents regression results of state/foreign ownership on market expansion and innovation. Market expansion is proxied by *Sales_Growth*, *Employee_Growth*, and *Investment_Dummy*. Innovation is proxied by *New_Product*, *Improved_Process*, and *R&D*. Firm-level controls are included in all regressions, though not displayed in Table 7 to save space. Country-industry and year fixed effects are included in all regressions. Variable definitions are provided in Sections 3.2, 3.3, and 3.4. Robust *t*-statistics based on standard errors clustered at the country-industry level are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Market Expansion			
	Sales_ Growth	Employee_ Growth	Investment_ Dummy
State	0.001 (0.07)	-0.031*** (-4.63)	-0.097*** (-4.44)
Foreign	-0.006 (-0.92)	-0.011*** (-3.98)	-0.005 (-0.73)
State_Foreign	0.155** (2.02)	0.042*** (3.23)	0.150*** (5.22)
Observations	62597	76252	81700
Adj. R-squared	0.10	0.09	0.15
Panel B: Innovation			
	New_Product	Improved_ Process	R&D
State	-0.025 (-1.00)	-0.051 (-1.64)	-0.048** (-2.04)
Foreign	0.021** (2.33)	0.007 (0.86)	0.010 (1.17)
State_Foreign	0.077** (1.98)	0.129*** (3.32)	0.095*** (2.97)
Observations	60463	59183	59368
Adj. R-squared	0.15	0.21	0.17

Table 8. Institutions, Ownership and Financing Patterns.

Table 8 compares regression results of state/foreign ownership on firm financing patterns in countries with developed institution and countries with under-developed institution. Firm-level controls are included in all regressions, though not displayed in Table 8 to save space. Country-industry and year fixed effects are included in all regressions. Variable definitions are provided in Sections 3.2, 3.3, and 3.4. Robust *t*-statistics based on standard errors clustered at the country-industry level are presented in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Fixed_External	Fixed_External
	Creditor Rights (Low)	Creditor Rights (High)
State	2.176 (0.86)	0.363 (0.10)
Foreign	-7.059*** (-6.72)	-10.022*** (-4.71)
State_Foreign	7.718* (1.74)	13.497*** (3.18)
Observations	23727	5809
Adj. R-squared	0.08	0.13
	Property Rights (Low)	Property Rights (High)
State	5.889*** (2.65)	0.090 (0.02)
Foreign	-4.564*** (-4.03)	-8.511*** (-5.95)
State_Foreign	8.548*** (2.77)	15.381** (2.00)
Observations	17795	13717
Adj. R-squared	0.10	0.06
	Corruption (High)	Corruption (Low)
State	8.955*** (3.69)	-1.657 (-0.47)
Foreign	-2.136 (-1.62)	-10.278*** (-8.52)
State_Foreign	7.422** (2.16)	13.175** (2.23)
Observations	15527	16604
Adj. R-squared	0.08	0.08
	Income (Low and Middle)	Income (High)
State	2.819 (1.30)	-15.767*** (-4.32)
Foreign	-5.174*** (-5.42)	-11.886*** (-6.09)
State_Foreign	6.996** (2.27)	26.850*** (3.15)
Observations	29950	3577
Adj. R-squared	0.15	0.06

Appendix 1. The Distribution of External Finance, State Ownership, and Foreign Ownership by Industry.

Industry	Obs.	Fixed_External	State	Foreign
Food and textile	31668	36.12%	1.51%	10.45%
Manufacturing	33981	34.70%	1.62%	10.97%
Electronics	8656	32.24%	1.76%	12.09%
Construction	5954	31.99%	2.36%	7.56%
Wholesale and retail	38419	32.10%	1.39%	10.05%
Transportation	5135	35.92%	3.81%	12.35%
IT	2249	23.08%	1.42%	12.34%

Appendix 2. The Distribution of External Finance, State Ownership, and Foreign Ownership by Country.

Country	Obs.	Fixed_External	State	Foreign
Afghanistan	945	13.10%	0.00%	2.45%
Albania	664	20.48%	0.15%	11.93%
Angola	785	12.26%	2.72%	22.19%
Antigua and Barbuda	151	36.37%	1.35%	10.81%
Argentina	3108	36.26%	0.23%	10.63%
Armenia	734	49.98%	0.27%	9.48%
Azerbaijan	770	30.04%	5.32%	5.32%
Bahamas	150	21.79%	0.68%	22.97%
Bangladesh	2946	25.44%	0.41%	2.48%
Barbados	150	23.63%	2.03%	20.67%
Belarus	633	29.17%	15.56%	11.82%
Belize	150	31.28%	0.00%	12.67%
Benin	300	20.81%	2.03%	17.63%
Bhutan	503	38.79%	1.59%	5.59%
Bolivia	1339	34.38%	0.68%	12.68%
Bosnia Herzegovina	721	54.15%	4.72%	8.62%
Botswana	610	30.03%	0.99%	47.12%
Brazil	1802	50.21%	0.17%	6.04%
Bulgaria	1596	26.71%	0.56%	11.40%
Burkina Faso	394	23.80%	2.05%	13.85%
Burundi	427	33.74%	1.87%	18.27%
Cambodia	845	7.96%	0.59%	22.84%
Cameroon	724	33.07%	2.91%	13.30%
Cape Verde	156	45.44%	3.23%	17.42%
Central African Republic	150	24.75%	11.33%	44.67%
Chad	150	20.79%	3.33%	31.33%
Chile	2050	44.41%	0.15%	10.40%
China	2700	10.70%	4.12%	6.09%
Colombia	2935	55.33%	0.55%	7.53%
Congo	151	12.27%	2.78%	22.92%
Costa Rica	538	31.68%	0.19%	16.39%
Croatia	993	43.05%	5.34%	10.57%
Czech Republic	504	36.80%	0.20%	16.63%
DRC	1228	12.42%	1.88%	17.14%
Djibouti	266	21.76%	0.78%	12.89%
Dominica	150	29.55%	0.00%	23.33%
Dominican Republic	719	43.77%	0.28%	12.96%
Ecuador	1385	49.46%	0.58%	16.18%
Egypt	4711	14.40%	1.65%	8.00%
El Salvador	1772	45.40%	0.34%	14.54%

Country	Obs.	Fixed_External	State	Foreign
Eritrea	179	19.33%	0.00%	3.41%
Estonia	546	34.01%	0.00%	15.77%
Ethiopia	1492	16.20%	0.86%	9.27%
Fiji	164	48.15%	0.63%	16.46%
Fyr Macedonia	726	30.84%	2.76%	11.59%
Gabon	179	7.45%	9.50%	62.01%
Gambia	174	21.06%	1.72%	29.89%
Georgia	733	31.41%	3.02%	6.59%
Ghana	1214	20.24%	0.82%	11.54%
Grenada	153	37.88%	1.32%	17.22%
Guatemala	1457	40.24%	0.28%	12.88%
Guinea	373	6.36%	0.54%	11.29%
Guinea Bissau	159	14.65%	1.26%	9.43%
Guyana	165	44.70%	2.44%	28.66%
Honduras	1128	40.21%	0.18%	12.56%
Hungary	601	31.63%	2.20%	14.75%
India	9281	33.19%	0.42%	1.00%
Indonesia	2764	20.24%	0.73%	8.60%
Iraq	756	14.01%	0.66%	1.19%
Israel	483	34.69%	0.42%	7.05%
Ivory Coast	887	20.23%	1.02%	21.79%
Jamaica	376	25.58%	0.82%	15.38%
Jordan	573	24.25%	1.22%	11.54%
Kazakhstan	1144	25.99%	0.70%	5.17%
Kenya	1438	35.97%	1.75%	12.00%
Kosovo	472	24.74%	0.00%	0.21%
Kyrgyzstan	505	27.85%	2.58%	17.46%
Lao PDR	998	13.91%	1.91%	13.77%
Latvia	607	37.06%	0.50%	16.19%
Lebanon	561	35.12%	0.00%	3.59%
Lesotho	301	50.04%	2.40%	29.02%
Liberia	301	24.74%	1.33%	19.93%
Lithuania	546	43.30%	1.14%	9.32%
Madagascar	977	19.77%	1.04%	34.68%
Malawi	673	32.86%	1.98%	25.08%
Malaysia	1000	50.54%	4.20%	18.30%
Mali	1035	13.47%	1.86%	13.05%
Mauritania	387	23.24%	1.30%	13.51%
Mauritius	398	52.77%	0.00%	11.34%
Mexico	2960	34.32%	0.41%	9.20%
Micronesia	68	11.24%	0.00%	26.47%
Moldova	723	38.69%	3.47%	10.54%
Mongolia	722	27.84%	0.55%	6.79%

Country	Obs.	Fixed_External	State	Foreign
Montenegro	266	61.03%	0.00%	5.26%
Morocco	407	43.32%	0.50%	13.82%
Mozambique	479	12.11%	1.04%	19.83%
Myanmar	1239	12.45%	0.00%	4.12%
Namibia	909	43.57%	1.15%	13.25%
Nepal	850	28.21%	0.47%	2.94%
Nicaragua	1147	37.55%	0.70%	12.63%
Niger	301	19.57%	0.00%	17.36%
Nigeria	4567	47.74%	7.18%	8.05%
Pakistan	2182	18.44%	1.54%	2.85%
Panama	969	36.68%	0.62%	15.01%
Papua New Guinea	65	29.53%	0.00%	70.77%
Paraguay	1338	36.91%	0.30%	11.17%
Peru	2635	59.74%	0.27%	11.12%
Philippines	2661	25.16%	0.08%	23.24%
Poland	997	33.36%	1.55%	8.29%
Romania	1081	36.74%	1.33%	13.49%
Russia	5224	25.80%	1.31%	3.51%
Rwanda	453	28.19%	1.55%	19.03%
Samoa	109	50.00%	1.90%	21.90%
Senegal	1107	22.75%	1.09%	9.14%
Serbia	748	48.93%	5.75%	11.36%
Sierra Leone	302	13.40%	1.32%	13.25%
Slovak Republic	543	41.44%	2.24%	13.81%
Slovenia	546	37.66%	3.12%	16.51%
Solomon Islands	151	29.24%	0.00%	46.67%
South Africa	937	31.89%	0.43%	12.93%
South Sudan	738	12.58%	0.27%	40.00%
Sri Lanka	610	47.60%	0.66%	5.78%
St Kitts and Nevis	150	50.41%	0.00%	20.81%
St Lucia	150	27.15%	0.00%	19.33%
St Vincent and Grenadines	154	43.30%	2.03%	16.22%
Sudan	662	24.05%	0.15%	1.37%
Suriname	152	34.38%	0.00%	5.92%
Swaziland	457	28.17%	1.83%	32.10%
Sweden	600	26.74%	0.51%	27.82%
Tajikistan	719	35.01%	5.52%	7.21%
Tanzania	1232	22.60%	1.67%	8.02%
Thailand	1000	26.98%	0.10%	7.62%
Timor-Leste	276	11.50%	1.45%	10.14%
Togo	305	28.51%	0.66%	33.44%
Tonga	150	51.55%	1.33%	17.33%
Trinidad and Tobago	370	47.22%	0.00%	12.97%

Country	Obs.	Fixed_External	State	Foreign
Tunisia	592	49.51%	1.35%	15.91%
Turkey	2496	44.02%	0.93%	4.53%
Uganda	1325	21.49%	0.68%	15.54%
Ukraine	1853	33.69%	2.16%	5.99%
Uruguay	1575	29.82%	0.25%	12.69%
Uzbekistan	756	14.47%	18.54%	13.51%
Vanuatu	128	42.42%	0.00%	35.94%
Venezuela	820	37.68%	0.31%	12.58%
Vietnam	2049	33.00%	6.25%	11.64%
West Bank and Gaza	434	21.03%	0.47%	1.41%
Yemen	830	18.49%	2.19%	4.51%
Zambia	1204	19.83%	1.42%	26.84%
Zimbabwe	1199	20.46%	2.86%	18.41%