

TRADE AND THE INTERNAL ORGANIZATION OF FIRMS[†]

Trading Favors within Chinese Business Groups

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A dominant aspect of ownership in the developing world is pyramidal structures, which allow shareholders to control corporations with relatively low investments. The uneasy relationship between these controlling investors and minority shareholders, and the potential impact on the broader macro economy, has been well studied by corporate governance scholars. On the one hand, the mismatch of cash flow and control rights leads to a range of agency problems and resultant resource misallocations, potentially impacting the macro economy (see Randall Morck, Daniel Wolfenzon, and Bernard Yeung 2005 for a comprehensive overview). Yet pyramids are one important mechanism that enables the formation of diversified business groups that, too, are a dominant feature of business organization in much of the world. The economics and management literature has taken a more ambivalent view of business groups, with their agency problems and rent seeking behaviors often counterbalanced by productive efficiencies from correcting market failures in weak institutional environments (see, in particular, a survey of the business groups literature by Tarun Khanna and Yishay Yafeh 2007 which emphasizes this tension).

Often, the channels that enable value extraction by controlling interests overlap with those required to overcome market failures. For example, consider a controlling shareholder of a publicly listed firm that has a separate, completely owned,

subsidiary. Related party transactions between the listed firm and the wholly owned subsidiary could serve to transfer value to the controller by, say, setting favorable transfer prices or selling off the listed firm's assets cheaply. Alternatively, in an economy without reliable sources of inputs, a trading relationship between the two firms could simply reduce hold-up problems and transactions costs. Or both. Similarly, lending between related parties has an ambiguous effect. On the one hand, in the absence of well-developed financial markets, internal capital markets can be an effective means of efficient resource allocation. But it may also be a method for propping up inefficient group forms, or yet another means of "tunneling" value by providing cheap loans from (in our example) listed to wholly owned firm.

While the prior literature—in particular Khanna and Yafeh (2005)—emphasizes heterogeneity of impact of pyramidal ownership *across* economies, in this paper we wish to highlight the importance of considering the heterogeneity of impact within a single firm. For example, the evidence on profit tunneling by Indian groups by Marianne Bertrand, Paras Mehta, and Sendhil Mullainathan (2002) needs to be balanced against potential benefits associated with the same group firms, described in, for example, Khanna and Krishna Palepu (2000).

Thus, in evaluating the overall impact of groups, we will argue that it will be important to take a holistic view of the relationship between a firm and its controller. In this paper, we provide an illustration of this within-firm tradeoff of costs and benefits in the context of publicly traded firms in China. While we do not present causal effects of pyramidal ownership in this paper, the between- and within-firm results in this paper are strongly suggestive of the need to account for the complex set of relationships that coexist within a set of group affiliated firms, which hints at some directions for potential future research.

In Chinese listed firms, the largest shareholder (the "controller") exercises considerable control

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over firm decisions, through its power to make board appointments. This is true even for controllers with significantly less than a majority stake (and the controller itself may have a controlling owner with a relatively small stake). By law, Chinese firms must report related party transactions (RPTs) between listed firms and related parties, which are most commonly firms held by controllers. These figures are further disaggregated by whether the transaction is loan based (usually a loan guarantee from the listed firm) or other. We note, first of all, that there exists a very high level of related party transactions for our sample: the median firm-year level of RPTs is ten percent of total assets. The median nonloan RPT is four percent of assets; loan RPTs are “lumpier”—the median is close to zero, while the seventy-fifth percentile is 8.5 percent of total assets.

In the cross-section, total RPTs are positively correlated with accounting profits, but (weakly) negatively correlated with Tobin's Q. This may result from controllers' tunneling profits, or well-connected firms' effectively targeting high profitability firms for rent extraction. These correlations result primarily from nonloan RPTs. Not surprisingly, listed firms with high leverage are also more likely to engage in loan based RPTs, since both are a function of the listed firm's ability to source outside capital.

Looking at within-firm variation, we observe patterns that are consistent with value—as measured by return on assets or return on equity—flowing *from* listed firms through listed firm loan RPTs, and *into* listed firms through nonloan RPTs. We observe similar results for Tobin's Q. Interestingly, loan-related RPTs have a negative impact on investment, consistent with these transactions' acting as a temporary credit constraint on the listed firm. Overall, our results may be explained by pyramidal structures serving a risk mitigation and insurance function for the controller (and also possibly reducing transactions costs on between-firm interactions), whereas looking at only one component of these transfers could lead to a very misleading view on the impact of pyramidal transactions.

I. Institutional Background: RPTs in Chinese Listed Firms

Related party transactions in Chinese listed firms are the natural result of the corporatization process in China. Most large Chinese firms

belonged to a business group prior to listing. To meet the listing requirements of the China Securities Regulatory Commission (or CSRC, China's SEC-equivalent), the business group will typically select one of its strongest firms and spin off bad assets from this firm (which are left as part of the business group). While the firm to be listed may thus satisfy CSRC's requirements, other group firms will be left bearing the burdens of this selective spinoff and restructuring.

After the firm goes public, it typically continues to do business with other (unlisted) group firms, as before, showing up as related party transactions in mandated disclosures.

These disclosure requirements were put in place on July 1, 1997 by a Ministry of Finance directive, according to which a firm A would be firm B's related party if (i) either A controls B or B controls A, or both are controlled by the same controller; (ii) B cannot control A because it is not a controller, but holds 20–50 percent stakes in firm A; (iii) firm A's senior management, or main shareholder, or any of their family members, is the main shareholder of firm B.

Every Chinese firm is required to disclose all related party transactions in financial statements. If several transactions belong to the same category/type, the listed firm may choose to provide the aggregated value rather than transaction level information. In this paper, we take advantage of the CSRC requirement that loan related RPTs be reported separately from others. Nonloan RPTs include purchases and sales of goods (including intermediate goods and services) or assets between related parties; leases, the formation of new joint venture firms; and others.

Other member firms within the business group are not publicly traded and have traditionally had difficulty accessing outside finance (see, for example, Deng Ke 2004). As a result of restructuring, the listed firm has more transparent financial statements and—by design—is the strongest firm in a group, and thus able to act as a guarantor on loans to other group firms. This type of loan guarantee is the most common form of loan based RPT (Deng 2004). However, defaults on these loans—typically with maturity of about a year—are common (see Deng 2004; Feng Genfu, Ma Yajun, and Shujie Yao 2005), leaving the listed firm with a liability as guarantor. In case of default, this guaranteed loan would be converted to an intercorporate loan between related parties. While we do not have direct data on the default

TABLE 1—THE IMPACT OF LOAN RPTs VERSUS NONLOAN RPTs: MEDIAN REGRESSION

Dependent variable	ROA (1)	ROE (2)	Log(1+Tobin's Q) (3)
Nonloan RPT ratio	0.015* (0.008)	0.038** (0.015)	0.042 (0.048)
Loan RPT ratio	0.029** (0.012)	0.034 (0.022)	-0.174*** (0.060)
Observations	1,568	1,568	1,515
R ²	0.35	0.18	0.34

Notes: Leverage, log(Assets), fraction of shares outstanding owned by the state included as controls in all specifications. Each column reports the result of a linear regression with robust standard errors clustering at the listed firm level in parentheses. All specifications include SIC-2 industry fixed effects.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

rate of guaranteed loans, the results in Jiang Guohua, Charles Lee, and Heng Yue (2008) suggest that defaults are not uncommon. The CSRC, concerned that these transactions would dilute the credibility of capital market reforms, issued regulations to reign in loan guarantees (GTA 2009). However, implementation of these policies has been ineffective (Guohua, Lee, and Yue 2008).

II. Data Sources

We obtain firm level disaggregated related party transaction data for all listed firms from 1998 to 2008 from GTA,¹ a Shenzhen based data vendor. We then categorize all RPTs into two types: loan based (typically guarantees from the listed firm) and other RPTs for each firm in each year. We also obtain firm level characteristics from GTA, including ROA, ROE, total assets, market value which is then used to calculate Tobin's Q, and also ownership information. We focus on two independent variables: *Loan RPT ratio*, total value of loan based RPTs divided by total assets; and *Nonloan RPT ratio*, total value of nonloan RPTs to total assets.

III. Empirical Results

We begin by examining the cross-sectional relationship between our RPT ratios and ROA,

ROE and Tobin's *Q* in Table 1, using firm-level medians for the years 1998–2008. All regressions control for leverage, government ownership, total assets and SIC-2 industry fixed effects.

The results indicate a positive correlation between *RPT ratio* and ROA/ROE; in addition, higher loan based RPTs lead to lower market valuation, suggesting that market investors negatively value loan guarantees. These results are collectively consistent with RPTs creating value in business groups (hence the increased operating performance), while also allowing controllers to extract this value back out through loan guarantees (hence the negative correlation with market valuation).

Recognizing the limits of these cross-sectional analyses, we turn to within-firm regressions in Table 2. We begin by looking at the aggregate effect of related party transactions, *Loan RPT ratio + Nonloan RPT ratio*. This total RPT ratio is positively correlated with ROA and ROE, and has no significant correlation with Log(1+Tobin's *Q*), after controlling for leverage, government ownership, total assets and firm and year fixed effects. In these within-firm analyses, we include two other outcome measures—leverage and investment. Interestingly, we find that a higher total RPT ratio leads to lower investment in the following year and is positively correlated with leverage. (In unreported results, we further control for the one period lag of the dependent variable and find that our results are qualitatively unchanged.) This is

¹GTA. 2009. Related Party Transaction Database, Shenzhen, China.

TABLE 2—THE IMPACT OF RELATED PARTY TRANSACTIONS: WITHIN ESTIMATION

Dependent variable	ROA (1)	ROE (2)	Log(1+Tobin's Q) (3)	Investment_F1 (4)	Leverage (5)
Loan RPT ratio + Non-loan RPT ratio	0.020*** (0.006)	0.042** (0.017)	0.008 (0.017)	-0.008* (0.004)	0.063*** (0.013)
Observations	12,510	12,432	12,113	9,588	12,510
R ²	0.48	0.25	0.78	0.49	0.73

Notes: Log(Assets) and fraction of shares outstanding owned by the state included as controls in all specifications. ROA is included as a control in columns 4 and 5. Leverage is included as a control in columns 1 to 4. All specifications include firm and year fixed effects. Each column reports the result of a linear regression with robust standard errors clustering at the listed firm level in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

TABLE 3—THE IMPACT OF RELATED PARTY TRANSACTIONS: LOAN RPTs VERSUS NONLOAN RPTs: WITHIN ESTIMATION

Dependent variable	ROA (1)	ROE (2)	Log(1+Tobin's Q) (3)	Investment_F1 (4)	Leverage (5)
Loan RPT ratio	-0.027** (0.011)	-0.079** (0.033)	-0.035 (0.027)	-0.020*** (0.008)	0.193*** (0.021)
Nonloan RPT ratio	0.038*** (0.006)	0.093*** (0.017)	0.039* (0.021)	-0.002 (0.005)	-0.013 (0.014)
Observations	12,541	12,465	12,141	9,615	12,541
R ²	0.48	0.25	0.78	0.49	0.74

Notes: Log(Assets) and fraction of shares outstanding owned by the state included as controls in all specifications. ROA is included as a control in columns 4 and 5. Leverage is included as a control in columns 1 to 4. Each column reports the result of a linear regression with robust standard errors clustering at the listed firm level in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

broadly consistent with related party transactions' generating value within business groups.

We again disaggregate the *RPT ratio* into its loan and nonloan parts in Table 3. *Nonloan RPT ratio* is positively correlated with ROE, ROA, and Log(1+Tobin's Q), while *Loan RPT ratio* is negatively correlated with these outcome measures. This suggests a "trading of favors" within the group—that is, the listed firm, which is better positioned to access finance, enables lending by nonlisted group firms (sometimes paying defaulted debt as a result); in exchange, the listed firm benefits from nonloan transactions, either because of favorable transfer pricing rules or simply because of reduced transactions costs. Consistent with this view, we find no within-firm correlation between loan and non-loan RPTs.

Turning to investment, we find that the negative impact of RPTs works mainly through the loan channel, suggesting that loan guarantees act as a financial constraint on the listed firm, or perhaps make managers more conservative in their investment policies.

Further, leverage is positively correlated with *Loan RPT ratio*, but not with *Nonloan RPT ratio*. This is likely a mechanical relationship—listed firms that have greater borrowing capacity have greater ability to provide loan guarantees.

Finally, we note that we did not find a significant difference in the effect of RPTs on firm performance between state controlled and privately controlled firms, i.e., state controllers are no more likely to expropriate minorities than private controllers.

IV. Conclusion

Our results, taken together, are difficult to reconcile with either pure tunneling or pure “propping up” explanations for the existence of business groups but are consistent with a more nuanced coinsurance relationship between the controller and listed firm. A pure tunneling story runs contrary to the positive correlation between firm performance and nonloan RPTs, while the negative effect of loan based RPTs is inconsistent with a propping up story. Rather, our correlations suggest a coinsurance relationship between the controller and the listed firm: the controller may help the listed firm out by paying a higher premium for services or goods provided by the listed firm to meet regulatory requirements (for example, to save the listed firm from negative profits, which may lead to delisting by the CSRC in China). At other times, when the controller is financially constrained or needs external financing but has some difficulty in obtaining external funds, the listed firm can provide loan guarantees (though the listed firm may bear all debts in case of default).

We conclude by re-emphasizing that our empirical exercise lacks clear causal identification but suggests that future work should fully account for the multidimensional relationships that exist among group firms in China and elsewhere. We hope that research in this area can better pin down the particular channels through

which related party transactions impact firms’ operating strategy and financial performance.

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