Family Businesses, Nepotism, and Productivity[*]

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November, 2024

Abstract

This paper provides the first systematic evidence on kinship networks within and across businesses by linking comprehensive administrative data on family ties, firm ownership, firm-to-firm transactions, and employer-employee records for the universe of firms in Taiwan. The unique dataset enables us to document the importance of family connections both within and across firms. We find that 40% of firms employ a family member, and 32% have a family member who owns another firm. When two firms are owned by members of the same family, there is a 25% likelihood that they will trade, with transaction values higher than those between non-family trading partners. These patterns suggest that family ties contribute to shaping business networks, and raise questions about their impact on firm performance. Using a stacked event study design, we examine the effects of ownership transfers on firm performance, distinguishing between transfers to children or spouses, more distant family members, and unrelated individuals. Our findings show that while firms transferred within family experienced little change in sales, firms transferred to unrelated individuals increased sales by over 13%. The improvement can be attributed to the restructuring of employee and supply chain networks, as firms recruit more new employees and establish new supplier-buyer relationships.

1 Introduction

Do family ties in businesses enhance efficiency through trust and cohesion, or do they introduce inefficiencies through nepotism? The effect is theoretically ambiguous. On one hand, family connections can help firms fill job positions more quickly and easily (Corak and Piraino, 2011; Kramarz and Skans, 2014). They can also strengthen contract enforcement, as trading partners with family relationships may trust each other enough to offer flexible payment terms (McMillan and Woodruff, 1999; Boehm and Oberfield, 2020). On the other hand, family nepotism such as hiring employees, selecting suppliers or buyers, or passing down ownership within a restricted pool of family members can lead to resource misallocation and inefficiencies (Villalonga and Amit, 2006; Pérez-González, 2006; Bennedsen et al., 2007; Bloom and Van Reenen, 2007; Bandiera et al., 2009).

Family ties exist both within firms, such as when owners employ or promote family members, and across firms, where family members who own separate businesses engage as suppliers or buyers with each other. While these ties can influence business operations in various ways, empirical evidence on their broader economic impact remains scarce. Most existing studies focus on family connections in the workforce within firms (Corak and Piraino, 2011; Kramarz and Skans, 2014), leaving the broader reach of family ties across firms unexplored. For example, we still lack a clear understanding of how common it is for firm owners to have family members who also own other firms or whether these family-related firms tend to trade with each other. Answering these questions is essential, as family networks could significantly shape broader economic outcomes, from influencing market competition to affecting resource allocation.

In this paper, we aim to fill this gap by systematically documenting the prevalence of family ties within and across businesses in the universe of an entire economy. Using unique administrative data from Taiwan, we link full-population records through family relationships, firm-level shareholder structures, firm-to-firm transactions, and employer-employee connections. Specifically, we document family connections along two dimensions. First, building on existing studies, we analyze owner-employee family relationships *within* firms, where family ties exist between owners and their employees. Second, we break new ground by documenting owner-owner family relationships *across* firms, where family members who own separate firms engage as suppliers or buyers in each other's supply chains. To our knowledge, this is the first study to use administrative data to systematically link family ties through both ownership structures and supply chain networks.

The first part of the paper presents a descriptive analysis of family ties in these two dimensions. For owner-employee family ties within firms, we find that 40% of firms employ a family member. These firms tend to be older, have lower sales, costs, and wage bills, and a higher proportion of their transactions are with businesses owned by family members. Moreover, family employees within these firms often have longer tenures and receive slightly higher wages than non-family employees, after controlling for firm fixed effects.

For owner-owner family networks across firms, we document that 33% of firm owners

have a family member who owns another firm. Among these firms with family-related owners, there is around a 55% chance that the two firms operate within the same industry. This suggests that having a family member in an industry may facilitate entry into that market, possibly due to shared knowledge or resources. Furthermore, when two firms are connected by family ties through their owners, there is a 25% likelihood that they are part of each other's supply chain, either as suppliers or buyers. We also show that the values of family-linked transactions tend to be higher than those of non-family trading partners. These patterns highlight the role of owners' family ties in shaping business networks, both within and across firms.

Building on this, the second part of the paper investigates how ownership transfers impact firm performance, focusing on the relationship between the departing and incoming owners. Ownership transfers within the family might keep the firm's structure stable, as family members often maintain established practices and trusted networks. In contrast, transfers to unrelated individuals could lead to substantial operational changes, as new owners may bring in different strategies and reshape the firm's employee and supply chain networks. To investigate this, we employ a stacked event study design (Cengiz et al., 2019) to compare firms that experience an ownership transfer with those that have never experienced such a change. Among the firms that have transferred ownership, we categorize them into three groups: (i) transfers to children or spouses, (ii) transfers to other family members, and (iii) transfers to unrelated individuals. This approach allows us to analyze how different types of ownership changes affect firm performance and understand the mechanisms behind these changes.

Our findings reveal a contrast between firms transferred to unrelated individuals and those transferred within the family. Firms transferred to unrelated individuals demonstrate immediate and substantial improvements in key performance variables. Specifically, these firms experience an increase in assets of approximately 7% in the first year, growing to about 13% four years after the transfer. Sales follow a similar trajectory, with a 13% rise observed four years after the transfer. Moreover, these firms expand their workforce significantly, hiring more new employees and increasing their total number of employees by about 18% over four years. They also broaden their supplier and client networks, establishing new relationships and engaging more with new entrants in their supply chains.

In contrast, firms transferred to children or spouses show minimal changes in performance. Their assets, sales, and workforce composition remain relatively stable, with only a slight increase in workforce size compared to the substantial growth seen in firms transferred to unrelated individuals. Firms transferred to other family members show a modest increase in assets, but otherwise display similar patterns in sales and workforce size, with changes comparable to those seen in transfers to children or spouses. The observed differences in performance between firms transferred within the family and those transferred outside may stem from variations in the reshuffling of employees and supply chain networks. One explanation is that the restructuring of employee and supply chain networks during transfers outside of the family creates better matches, which enhance productivity

and performance.

Related Literature and Contributions.   This paper speaks to three strands of literature: (i) social ties and incentives in organizations, (ii) social ties and frictions in production networks, and (iii) the effect of inherited control on firm performance.

First, our research relates to the literature on social networks and incentives in organizations. Prior studies have investigated social connections among employees (Kramarz and Skans, 2014), in boardrooms (Kramarz and Thesmar, 2013), between managers and workers (Bandiera et al., 2009), and cases of kin nepotism in both the public (Riano, 2023) and private sectors (Pellegrino and Zingales, 2017; Gagliarducci and Manacorda, 2020). Unlike prior studies that often focus on specific sectors due to data limitations, our paper leverages comprehensive administrative data for an entire modern economy, allowing us to document family connections across all firms. Furthermore, our analysis goes beyond within-firm ties and explores across-firm family relationships, offering a more complete view of kinship's influence across business supply chain networks.

Second, our paper is related to the literature on social ties and friction in production networks. Previous studies have explored how factors like information asymmetries, geographic distance, and weak contract enforcement distort firms' choices of suppliers and buyers. For example, Rauch and Trindade (2002) show that ethnic networks facilitate trade by helping firms find trading partners, while Boehm and Oberfield (2020) demonstrate that weak contract enforcement can lead firms to rely on relationship-specific sourcing, potentially causing resource misallocation. To avoid contracting frictions, firms often source from relatives or maintain long-term relationships, though this may limit their ability to switch to more efficient suppliers and capitalize on new opportunities. We contribute to this literature by examining kinship ties as a unique factor in supply chains that can both reduce transaction costs and hinder firms' adaptability. By documenting the prevalence of kinship ties in production networks across an entire economy, we shed light on how family relationships shape firms' supplier and buyer choices, potentially affecting their ability to optimize operations and respond to market changes.

Third, we contribute to the literature on the impact of family control on firm performance. Previous research has yielded mixed findings on whether family ownership or management affects firm outcomes. Many studies suggest that inherited control negatively impacts performance due to issues such as nepotism and a lack of professional management (Faccio and Lang, 2002; Pérez-González, 2006; Bennedsen et al., 2007; Bertrand and Schoar, 2006; Bloom and Van Reenen, 2007), while some show that family-owned firms perform better (Anderson and Reeb, 2003). However, much of this literature relies on data from large and publicly listed firms or specific industries.

A notable exception is Bennedsen et al. (2007), which uses administrative data from Denmark to analyze the impact of family CEOs on firm performance. However, they do not investigate the mechanisms underlying these effects, leaving the sources of the negative impact unanswered. Moreover, contextual differences between Scandinavia and East

Asia may shape the role of informal ties in interfirm relationships. Family businesses are more prevalent in Asia (The Economist, 2015), and differences in social capital between the regions may shape family control and informal economic ties differently (Knack and Keefer, 1997). Our study fills these gaps by exploring the underlying mechanisms in an East Asian context. We find that firms transferred to unrelated individuals experience significant performance improvements due to restructuring in employee and supply chain networks, shedding light on the potential productivity gains from transferring ownership outside the family.

The rest of the paper proceeds as follows. Section 2 describes the data and the variable definitions. Section 3 presents the descriptive analysis of the prevalence of family ties within and across businesses. Section 4 examines the effect of ownership by type of relations on firm performance. Section 5 concludes.

2 Data & Definition

2.1 Data

Our administrative data come from five sources provided by the Taiwanese Fiscal Information Agency: (i) corporate income tax, (ii) dividend income tax, (iii) firm-to-firm value-added tax, (iv) personal income tax, and (v) population registry. All data are between 2008 and 2021.

Corporate income tax. This dataset includes publicly and privately held businesses subject to corporate income tax. Although the income threshold varies slightly by year, it is generally around 120,000 TWD (approximately 4,000 USD). The records contain detailed balance sheet items for each firm, as well as the chair of the board, who typically acts as the firm's representative.

Dividend income tax. This dataset provides information on the shareholder structures of all firms in the corporate income tax records, indicating who owns how many shares in what firms. The data are collected for the use of computing imputed tax credits under Taiwan's integrated corporate and dividend income tax system.

Valued-added tax (VAT) firm-to-firm transaction. The VAT dataset contains monthly transaction-level records of firm-to-firm sales. The income threshold for VAT liability varies by year but generally hovers around 80,000 TWD (approximately 2,670 USD). Each transaction record includes the supplier ID, buyer ID, and transaction value.

Individual income tax. This dataset provides a detailed breakdown of individual income sources on an annual basis, including salary, dividends, pension, profit, and rental income. It identifies the amount and type of income received by each individual, as well as the firms from which these payments originate.

Population registry. The population registry is a full-population dataset covering household structures and individual demographics, including gender, age, marital status, and birthplace. Crucially, it also records the IDs of each individual's parents and spouse, which is the key variable we use to identify family connections.

2.2 Sample Construction and Variable Definition

Firm sample construction. We begin with the corporate income tax data and apply the following filters to construct our firm samples: (i) firms must be limited liability companies; (ii) they must have an average monthly business revenue exceeding 1 million TWD (approximately 30,000 USD); (iii) they must be registered in the labor insurance data; (iv) owner demographic information must be available; and (v) firms must appear at least once in the VAT records between 2008 and 2021. In the final sample, we have 320,197 unique firms across all years.

Column (1) of Table 1 presents the descriptive characteristics of the firm samples. On average, firms are around 16 years old, have approximately 16 employees, with annual total wages around 8.7 million TWD. Sales and payments are roughly balanced, both averaging around 41 million TWD, indicating consistent revenue and expenditure patterns across firms. Firms typically maintain networks with around 73 suppliers and buyers, suggesting moderate interaction within supply chains. In terms of industry distribution, firms are most heavily concentrated in the retail sector, followed by manufacturing, construction, and finance.

[Table 1 here]

Definition of firm owners. Using the dividend income tax records, which provide the full shareholder structure of firms, we define a firm owner as any individual holding more than 25% of a firm's shares. For firms where no individual holds more than 25% (about 22% of the firm sample), we designate the individual with the largest shareholding as the owner. This results in 532,842 unique firm owners across the 320,197 unique firm observations.

Definition of family members of owners. To identify the family members of firm owners, we use the population registry, which records the IDs of each individual's parents and spouse. This allows us to construct a family tree for each firm owner, including the following relations (from closest to more distant): (i) children, (ii) spouse, (iii) parents, (iv) grandparents, (v) grandchildren, (vi) siblings, (vii) parents-in-law, (viii) siblings-in-law, and (ix) children-in-law. In total, we identify 5,492,075 unique family members of firm owners within the 320,197 unique firm observations.

Firm-to-firm transaction construction. Using the VAT records of our firm sample, we identify relationships between firms based on their transactions, capturing the network of suppliers and buyers. This yields 24,513,268 unique undirected dyads of firm-to-firm transactions.

3 The Pervasiveness of Family Ties Within and Across Firms

We start by presenting empirical facts regarding the pervasiveness of family ties and focus on the (i) owner-employee network within a firm and (ii) owner-owner network across firms.

3.1 Within Firms: Owner-Employee Network

To identify the relationship between firm owners and employees, we construct a year-firm-owner-employee level dataset and merge kinship information. For each year and firm, we determine if an owner and an employee within the firm are family-related. Next, we collapse the data to the year-firm level and create a binary indicator that signals whether a firm employs at least one family-related employee in a given year.

3.1.1 How Common Is Family Employment?

We begin by examining how common it is for firms to employ family members and the characteristics of these firms in Column (2) of Table 1. Out of 3,588,541 firm-year observations, 1,435,655 include a family connection between an owner and an employee, indicating that 40% of firms employ a family member. These firms tend to be older and have lower sales, costs, and wage bills than the average firm in the full sample. They also rely more on family-related business networks, as shown by a higher amount of sales and payments transacted to family trading partners. In addition, they have longer-term relationships with suppliers and clients, suggesting greater stability in the composition along their supply chains. Firms with family employees are also less likely to be publicly listed, more often operate in manufacturing, and are less common in retail and finance.

3.1.2 Do Family Employees Earn More or Stay Longer?

Given that firms employing family members tend to have smaller overall wage bills, we next examine whether family employees are paid differently or have longer tenures than non-family employees. By analyzing the wage and tenure dynamics, we can better understand the impact of family ties on employment conditions within these firms.

We estimate the following specification, distinguishing between family employees who are children or spouses of the owner and those who are other relatives:

$$Y_{ift} = \beta_0 + \beta_1 \text{ChildSpouse}_{ift} + \beta_2 \text{OthFam}_{ift} + \gamma' X_{it} + \alpha_f + \delta_t + \epsilon_{ift} \tag{1}$$

where Y_{ift} is the outcome of individual i who works in firm f in year t, which could be log wage or tenure. ChildSpouse_{ift} is 1 if individual i in firm f is the child or spouse of the owner of firm f in year t and 0 otherwise. OthFam_{ift} is 1 if individual i in firm f is other family members within the second degree of consanguinity but not a child nor spouse of the owner of firm f in year t and 0 otherwise.[1] X_{it} are control variables including i's age, age squared; α_f is firm FE and δ_t is year FE.

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[1]These are, for example, parents, grandparents, grandchildren, siblings, parents-in-law, siblings-in-law, and children-in-law. See Section 2.2.

Table 2 presents the effect of being a family employee, splitting by as a child or spouse, or other relative, on wages and tenure. Column (1) shows that, on average, an employee who is a child or spouse of the owner earns around 19% less than non-family employees, while an employee who is of other family relations earns about 21.3% less. However, with firm and time fixed effects added to Column (2), the coefficients turn positive: children or spouses earn 8.3% more than non-family employees, and other relatives earn 1.6% more. The flip of the signs of the coefficients suggests that firms hiring family members tend to pay lower wages overall, but within these firms, family employees may be paid slightly more than non-family employees.

Moving to the outcome of tenure. Column (3) shows that children or spouses tend to stay longer in a firm than non-family employees, while other relatives stay for shorter periods. With time and firm fixed effects to Column (4), both groups of family employees show positive tenure effects. Children or spouses of the owner stay about 0.82 year longer and other relatives stay about 0.11 year longer than non-family employees. The change between the two columns suggests two things: first, firms that employ family members tend to have longer employee tenures overall, which explains why adding firm fixed effects reduces the tenure coefficient for children or spouses and flips the tenure coefficient of other relatives to a positive sign. Second, children and spouses still have a longer tenure compared to other relatives, even within the same firm.

[Table 2 here]

3.2 Across Firms: Owner-Owner Network

To understand the prevalence of family relationships in owner-owner networks across firms, we examine the extent to which firm owners are connected to other firms through family ties. Specifically, we define "family-related firms" as those where the owners are family members. We analyze this in two steps. First, we document how common it is for a firm owner to have a family member who owns another firm, then determine whether these family-related firms are trade with each other.

3.2.1 How Common Is It for a Firm Owner's Family Member to Own Another Firm and Trade With Each Other?

We first identify if a firm owner has a family member who owns a different firm each year. Then, we create an indicator for each firm, specifying whether or not it has a family-related firm in that year. Table 3 shows the summary statistics. Column (1) is the number of firms and Column (2) presents the fraction of firms whose owners have a family member who owns another firm. On average, 33% of firms have a family-related firm, meaning their owners are connected through a family tie.

Next, we examine whether these family-related firms tend to operate within the same industry. On one hand, family members might operate in the same industry for the use of shared knowledge, resources, or networks to facilitate business entry and growth. On the other hand, families may deliberately diversify across industries as a way to hedge against

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industry-specific risks, such as market downturns or regulatory changes. Column (3) of Table 3 shows that, conditional on having a family member owning another firm, there is a 55% chance that the two firms operate within the same industry, as defined by the first two digits of the NAICS codes.

Column (4) further explores whether family-related firms trade with each other. It shows the likelihood that, conditional on having a family member owning another firm, the two firms engage in business transactions with each other, with a probability ranging from 25% to 27% across the years.

[Table 3 here]

Who are the firms that trade with family members? Are they smaller businesses that depend on family relationships for supply chain stability, or are they large, interconnected groups, such as chaebols, where families span multiple firms and use intra-family trade for strategic growth? We pool all year-firm observations across years and present their firm characteristics in Column (3) of Table 1. It shows that firms that trade with family members tend to be larger, with greater assets, more employees, higher wage bills, and higher sales and payments compared to the full sample in our data. These firms also engage with a higher number of suppliers and buyers, with transactions involving family-related firms accounting for approximately 6.6% of sales and 6.0% of costs. This pattern suggests that, at least descriptively, firms that trade with family members are more likely to be larger. However, it's important to note that engaging in family-related trade inherently conditions on having a family member who owns another firm, introducing a selection bias. To establish a causal link between family-related trade and firm performance, future analyses will need to account for this selection effect.

3.2.2 Does Family-Related Supplier-Buyer Relationship Trade More or Last Longer?

To explore the dynamics of family-related trade, we examine whether supplier-buyer relationships between family-related firms differ from those between non-family-related firms in terms of trade value and duration. We begin by constructing a year-level dataset that identifies whether a supplier's owner and a buyer's owner share a family tie. Pooling data across years yields 262,594,042 observations. For each supplier-buyer pair, we create "undirected" dyads, meaning we treat the pair as connected if a trade exists, without distinguishing which firm acts as supplier or buyer. This results in a total of 24,513,268 unique undirected dyads.

We estimate the following specification:

$$Y_{dt} = \alpha_0 + \alpha_1 \text{FamTrade}_{dt} + \gamma' X_{dt} + \mu_d + \delta_t + \epsilon_{dt} \tag{2}$$

where Y_{dt} represents either the trade value or the tenure of the dyad relationship d in year t. FamTrade$_{dt}$ is a binary indicator that equals 1 if the relationship is family-related, i.e., if the owners of firm i and j are family-related. The vector X_{dt} includes interactions such as the product of the firm age of the two firms or the product of the firm size of the two firms.

μ_d and δ_t are dyad and time fixed effects, respectively. Standard errors are clustered on the dyad level.

The regression results are presented in Table 4. Columns (1) and (2) focus on trade value, while Columns (3) and (4) on tenure. In Column (1), family-related relationships have a much higher trade value, with a coefficient of 3.68, suggesting that trade value is over 300% higher if the transaction is family-related. However, adding dyad and time fixed effects in Column (2) reduces this to 0.813, though it remains significantly high. In other words, on average, family-related transactions are 81% higher in value than non-family-related trades.

Moving to the outcomes of tenure in Column (3), it shows that family-related trades last about 137% longer than non-family-related trades. However, after controlling for dyad and time effects in Column (4), the effect drops to near zero and becomes insignificant. This suggests that the longer duration of family-related relationships can be mostly attributed to consistent characteristics of the trading pairs or overall trends over time, rather than the family connection itself.

[Table 4 here]

4   The Effect of Ownership Transfers on Firm Performance

Our findings thus far have highlighted the prevalent role of family ties in business operations, affecting both internal employee relationships and external trading partnerships. This close integration of family ties suggests that business decisions and performance are tightly connected to the owner's family relationships. This raises a question: how does a change in ownership affect firm performance and productivity? A priori, the effect might depend on the ownership recipient. If ownership transfers to close family members, business practices are likely to stay largely the same, whereas transfers to outsiders are more likely to bring significant changes to operations and strategy.

This section examines how different types of ownership transfers affect firm performance, focusing on the relationship between the departing owner and the new owner. We aim to determine whether firms that undergo ownership transfers to children, spouses, other family members, or unrelated individuals experience different effects on firm performance.

4.1   Empirical Strategy

Selection of Transfer Events.   Under our definition of firm owners, a firm could have multiple owners. To avoid complications when multiple owners change at the same time, making it hard to identify the departing and incoming owners, we limit the definition of a firm owner in this section to those registered as the chair of the board. This approach ensures that each firm has a single owner at any given time, allowing us to clearly identify the departing owner, the incoming owner, and their relationship.

We define a transfer event as a change in its owner (i.e., the chair of the board). If a firm experiences multiple transfers across years, we pick the earliest one. In addition, we apply the following restrictions: (i) the firm did not undergo another transfer within four years after the event, and (ii) the firm must have nonzero employment before the transfer. To construct our control group, we assign a placebo transfer year to firms that did not undergo any ownership transfers during our observation period. In the end, we identify 7,112 transfer events, with 4,293 involving a transfer to a child or spouse, 843 involving other family members, and 1,976 involving unrelated individuals. The control group consists of 170,412 firms that never experienced a transfer.

Firm Characteristics by Type of Transfers. Table 5 presents the summary statistics of firms, split by transfer types: never-transferred, transferred to a child or spouse, to other family members, or to unrelated individuals. Firms that transferred ownership to children or spouses tend to be associated with older departing owners, suggesting that transfers within close family are often part of generational transitions. These firms are generally smaller in terms of both assets and employees compared to firms transferred to unrelated individuals, which tend to be larger and have higher sales and payments.

In contrast, firms transferred to unrelated individuals engage with a higher number of suppliers and clients and have greater total wages and wage-per-worker averages, indicating that transfers to non-family members may correlate with larger firm size and more complex business networks. Firms transferred to other family members show characteristics in between those transferred to close family and those transferred to unrelated individuals, suggesting that the degree of family proximity may play a role in firm size and complexity post-transfer.

Stacked Event-study Design. To address issues related to negative weighting in recent dynamic difference-in-difference literature, we adopt the stacked event-study design proposed by Cengiz et al. (2019). We create event-datasets (event is the year of transfer). In each event-dataset h, the treated are the ones that underwent a transfer and the control are the ones that did not undergo a transfer throughout the studied period. We align events by relative time and stack all event datasets. The baseline regression specification is the following:

$$Y_{hik} = \sum_{k \neq -1} \beta_k \, I_{hik} + \Omega_{hik} + \mu_{hi} + \rho_{hk} + \epsilon_{hik} \tag{3}$$

where Y_{hik} is the outcome for firm i in event dataset h at relative time k. $I_{hik} = 1$ if firm i in event dataset h is transferred k years relative to the transfer year. Ω_{hik} includes firm age that varies within eventdata-firm over time. μ_{hi} is eventdata-firm fixed effect, ρ_{hk} is eventdata-time fixed effect. The control group is the firms that have never experienced an ownership transfer. We omit $k = -1$ and cluster the standard errors at the firm level.

As we are interested in the differential impact of the relation of transfer, we split the treated firms into samples based on the transfer type: (i) child or spouse, (ii) other family,

or (iii) unrelated transfers, and estimate the regression separately.

For balance-sheet outcomes that could be zero, we scale them with the average asset values before the transfer. For employee outcomes that could be zero, we scale them with the average number of employees before the transfer. For supplier-client outcomes that could be zero, we scale them with the average number of traders before the transfer.

4.2   Results

Assets, Liabilities, Sales, Purchases, Wage Bills.   We start presenting the event study results estimated from Equation 3. Figure 1 displays the outcomes for assets, liabilities, sales, and costs. The estimated coefficients indicate the evolution of each outcome variable compared to firms that never underwent a transfer. Results for transfers to children or spouses are shown in black, transfers to other family members in blue, and transfers to unrelated individuals in orange. The figure shows there is no pretrend between the three types of treated group and the control group, lending support to the parallel trend assumption.

Panel A illustrates the changes in assets after the transfers. Firms transferred to unrelated individuals experienced an immediate increase in assets of approximately 7%, which continued to grow to about 13% four years after the transfer. Firms transferred to other family members also saw an increase in assets, but the growth was smaller compared to transfers to unrelated individuals. By the end of the fourth year, the change in assets is around 6%. In contrast, firms transferred to children or spouses showed little to no change in assets following the transition.

To explore where the source of change in assets is from, Panel B plots the trend of liabilities. Firms transferred to unrelated individuals saw a rise in liabilities, increasing by around 10% a year after and reaching 18% by year four. For firms transferred to other family members, liabilities showed a modest, statistically insignificant increase. In contrast, firms transferred to children or spouses saw no liability increase initially, and by year three, liabilities had slightly decreased, averaging a 0.3% decrease by year four. This trend may suggest that family-transferred firms, particularly those given to children or spouses, are less likely to finance investments, possibly reflecting a more cautious approach to risk-taking after the transition.

In Panel C, we examine sales. Firms transferred to unrelated individuals increased their sales by around 8% a year after the transfer, with growth reaching around 13% four years after. Transfers to other family members also displayed an upward trend in sales, although the estimates are statistically insignificant. In contrast, firms transferred to children or spouses showed a slight, statistically insignificant downward trend in sales following the transition.

Panel D shows the trend in purchases. Firms transferred to unrelated individuals increased their purchases for production, averaging 12% more in the first year after the transition, with the increase stabilizing over the following four years. For firms transferred to other family members, the effect was statistically insignificant but showed slight growth starting in the second year after the transition. Firms transferred to children or spouses did

not exhibit significant changes in their payment bills.

Panel E illustrates that firms transferred to unrelated individuals increased their total wage bills by approximately 3% in the first year after the transfer, with growth continuing to more than 4% four years later. In contrast, firms transferred to other family members or to children or spouses did not exhibit any significant changes in their total wage bills.

Number of Employees and Entrant Employees.   Is the increase in total wage bills related to the change in the number of employees? Panel A of Figure 2 examines the evolution of employee numbers. To account for the issue of zeros, we scale the number of employees by the mean of the number of employees before the transfer. It shows that firms transferred to unrelated individuals began increasing their employee count after the transfer, with an 8% rise in the first year and growth reaching about 19% four years later. Firms transferred to other family members or to children or spouses also saw increases in employee numbers, but the growth was smaller and occurred more gradually. Four years after the transfer, the increases in employee numbers were 10% for firms transferred to other family members and 4% for those transferred to children or spouses.

Panel C shows the evolution of new employee hires. The results indicate that firms undergoing an unrelated transfer hired approximately 20% more new employees after the transition, with continued hiring in subsequent years. In contrast, firms transferred to other family members or to children or spouses mainly hired new employees during the year of the transition and the following year, but the magnitude was much lower compared to firms transferred to unrelated individuals.

Number of Suppliers, Buyers, and Entrants.   Are the increases in sales and costs linked to changes in suppliers and clients? Figure 3 uses the same empirical strategy to explore the number of suppliers, clients, and new entrants in the supply chain. Again, we detect no pretrends between the firms that are transferred versus never transferred.

Panel A presents the evolution in the number of suppliers. Similarly, to account for the issues of zeros, we scale the number of suppliers by the mean value of the number of suppliers before the transfer. Starting from the year of transition, all three types of transferred firms experienced an upward trend in supplier numbers. However, the differences in magnitude became notable one year after the transfer. Firms transferred to unrelated individuals saw a 7% increase in the number of suppliers compared to the base period, with continued growth reaching around 10% four years later. In contrast, firms transferred to family members increased their supplier numbers by approximately 3% one year after the transfer, with a smaller, slower growth trajectory that leveled off at under 5% after four years.

To investigate whether the increase in supplier numbers stems from new entrants to the supply chain, we analyze the number of entrant suppliers in Panel B. The definition of an entrant is it is the first time the supplier appears in the supply chain as a supplier. The results show that firms transferred to unrelated individuals saw an around 6% increase in the number of entrant suppliers in the first year after the transition, and the number

oscillated around 5% by the end of the fourth year, while firms transferred within the family resulted in an increase of only around 2%.

Moving to the buyers, we examine whether a similar pattern exists. Panel C shows the trend in the number of buyers over time. Firms transferred to unrelated individuals experienced a 3% increase in buyers one year after the transfer, with the trend continuing upward to reach 4% four years later. In contrast, the changes in buyer numbers for firms transferred to other family members are statistically insignificant, while those transferred to children or spouses show a slight, statistically insignificant upward trend.

Panel D examines whether the increase in buyer numbers following transfers to unrelated individuals can be attributed to new entrant buyers. Firms transferred to unrelated individuals saw an average increase of around 2% in new buyers one year after the transition, with this trend remaining stable over subsequent years. The trend for firms transferred within the family, however, is statistically insignificant.

These findings suggest that firms transferred to unrelated individuals not only increase their supplier and client bases but also are matched with more entrants within the supply chain, particularly on the supplier side. In contrast, firms transferred within the family exhibit more modest and generally insignificant changes in their supply and client networks.

Discussion. The results point to key differences in how firms react to ownership transfers based on the type of recipient. For firms transferred to unrelated individuals, we observe significant increases in assets, sales, costs, liabilities, and the expansion of employees and supplier and client networks. These changes suggest that unrelated recipients may adopt a growth-oriented approach, possibly by investing in new projects, increasing workforce, and forming connections with new suppliers and buyers. The hiring of new employees and engagement with new suppliers and buyers may indicate a drive for business expansion or diversification under new ownership.

In contrast, firms transferred within the family, especially to children or spouses, show more conservative patterns. The limited or statistically insignificant changes in assets, liabilities, and supplier or buyer networks suggest that these family-transferred firms may be less inclined to change the existing networks. This trend could reflect a preference among family members to maintain stability rather than pursue growth, potentially due to a desire to preserve legacy or minimize financial risks. The slight decrease in liabilities observed for firms transferred to children or spouses might further support the notion of conservative financial management.

5   Conclusion

This paper paints a comprehensive picture of family ties along two dimensions of firms: owner-employee family links within firms and owner-owner family links across firms. By documenting these relationships, we provide new insights into the widespread nature of family connections in firm operations and performance. Using a stacked event study to an-
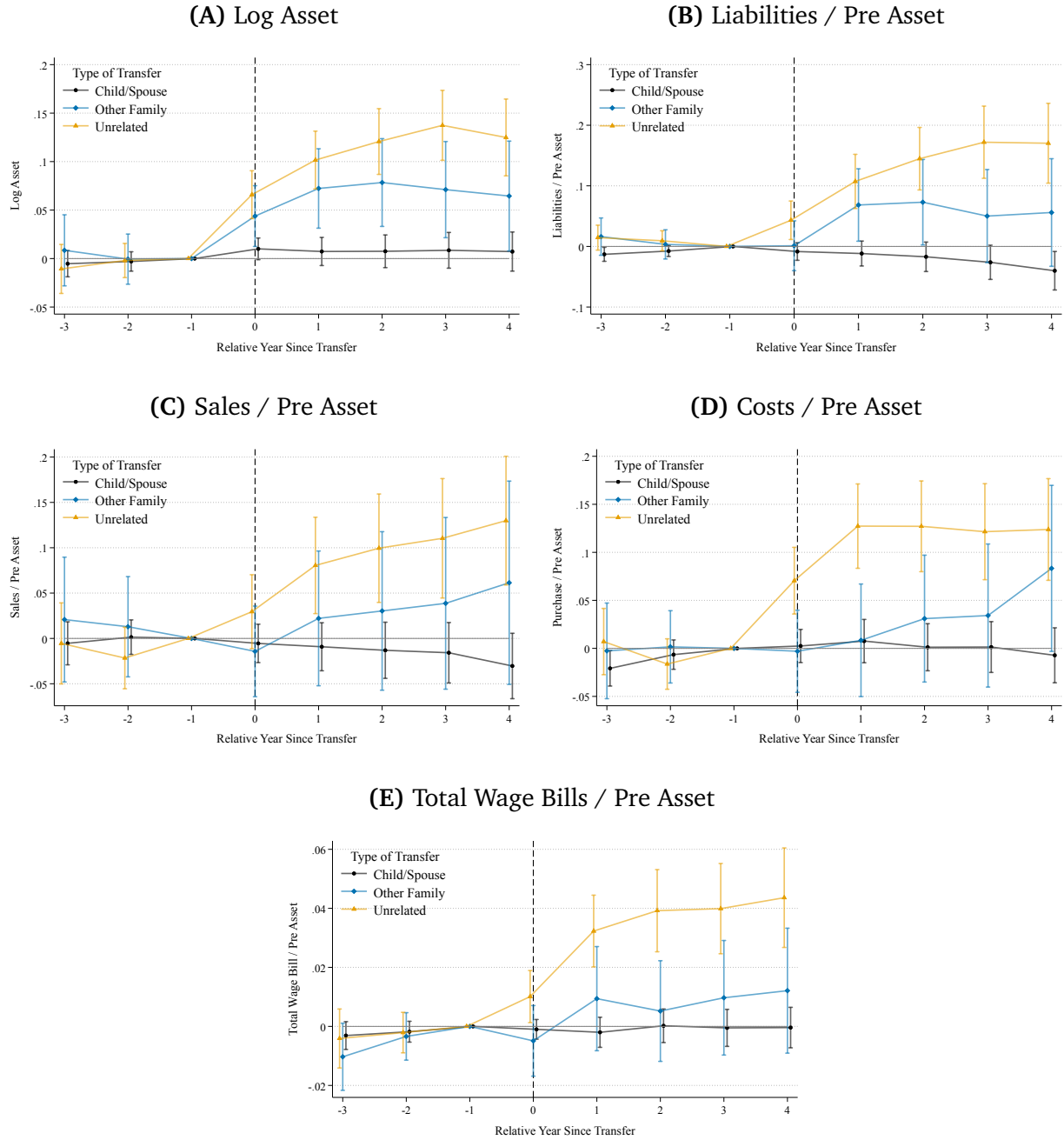
alyze the effect of ownership transfers on firm performance, we find that firms transferred to unrelated individuals experience significant improvements in performance compared to those transferred within the family. The improved performance could be driven by the restructuring of employee networks and supply chain relationships.

Our study highlights the broader economic effects of family networks within firms and in business transactions across firms. While family control can provide stability and preserve established relationships, our findings suggest that firms may perform better when ownership is transferred to unrelated individuals. These transfers may lead to changes that create better matches with employees, suppliers, and clients, which results in higher productivity.

These findings have important policy implications, for example, for estate and inheritance tax relief policies that encourage family business succession by offering lower tax rates for keeping businesses within families. While such policies aim to support family continuity and stability, they may unintentionally hold back firm growth and productivity.
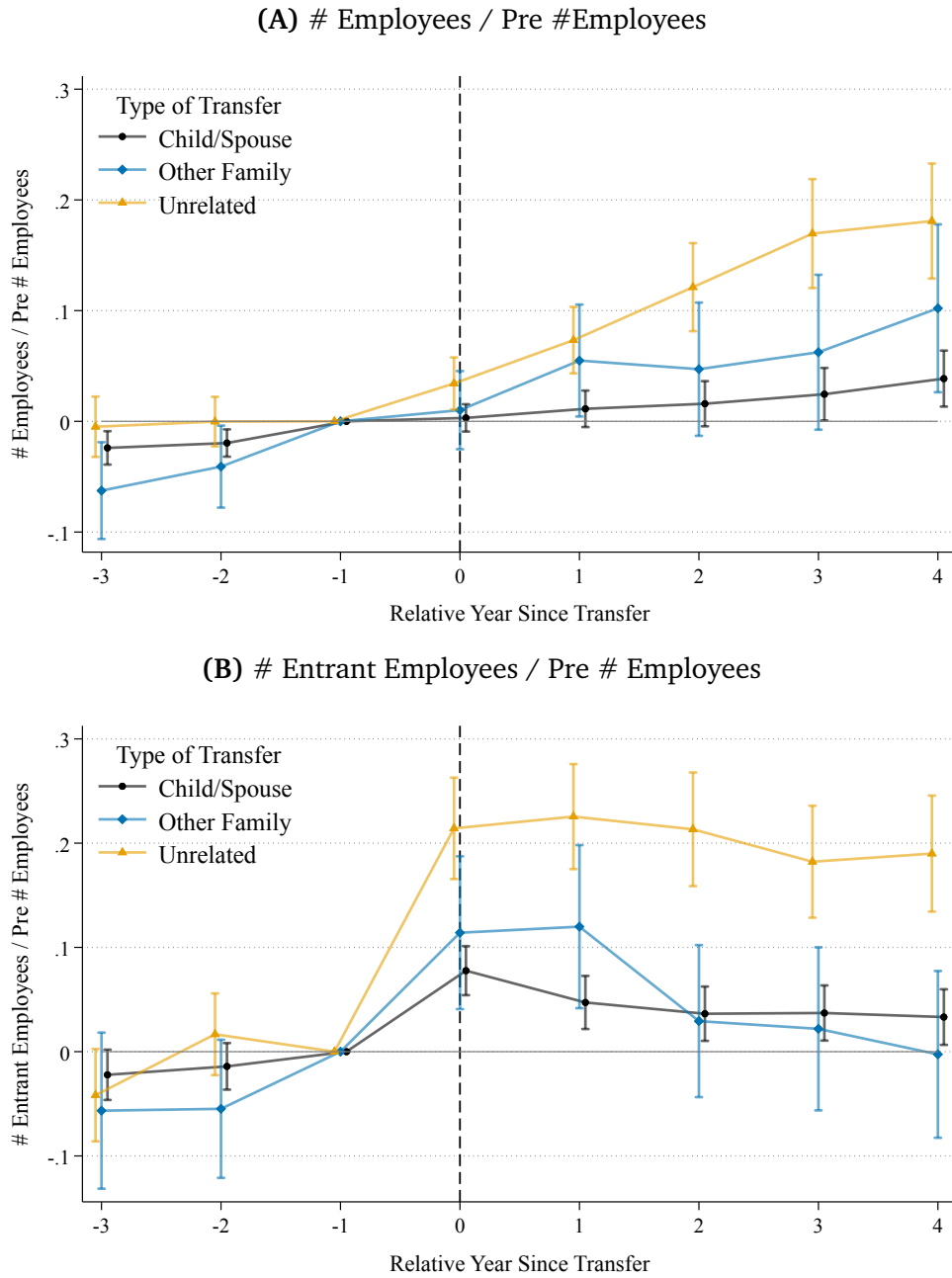
Figures

Figure 1: The Effect of Different Types of Transfers on Different Outcomes

(A) Log Asset

(B) Liabilities / Pre Asset

(C) Sales / Pre Asset

(D) Costs / Pre Asset

(E) Total Wage Bills / Pre Asset

Notes: This figure plots the estimated β_k coefficients, along with their 95% confidence intervals, from Equation (3). The black line represents the estimated coefficients for the regression where the treated group comprises firms transferred to children or spouses. The blue line corresponds to transfers to other family members. The orange line represents transfers to unrelated individuals. These coefficients capture the average differences in outcomes between each type of transfer and never-transferred cases. In Panel A, the dependent variable is the log of asset values. In Panel B, the dependent variable is liabilities scaled by the mean asset value before the transfer. In Panel C, the dependent variable is sales scaled by the mean asset value before the transfer. In Panel D, the dependent variable is purchases scaled by the mean asset value before the transfer. In Panel E, the dependent variable is the total wage bill scaled by the mean asset value before the transfer. Click here to return to the text.

Figure 2: The Effect of Different Types of Transfers on Different Outcomes

(A) # Employees / Pre #Employees
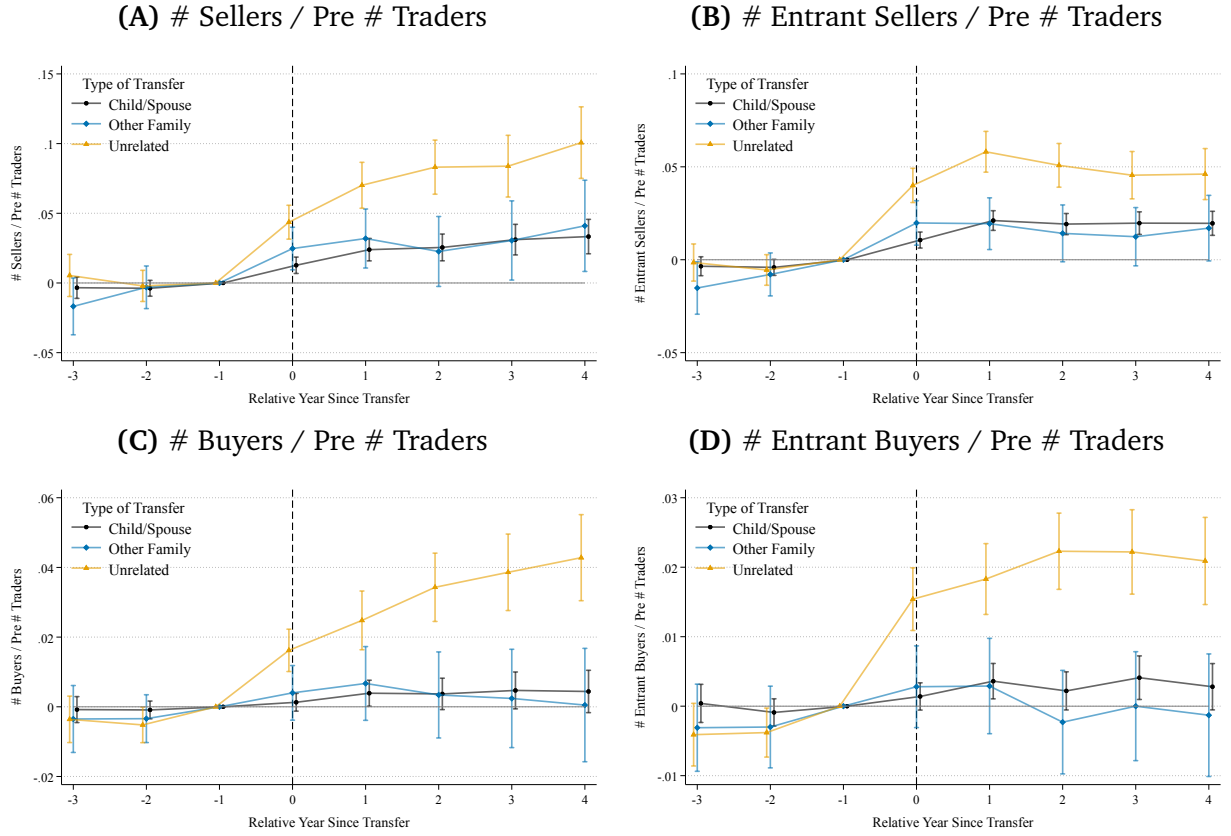

(B) # Entrant Employees / Pre # Employees

Notes: This figure plots the estimated β_k coefficients, along with their 95% confidence intervals, from Equation (3). The black line represents the estimated coefficients for the regression where the treated group comprises firms transferred to children or spouses. The blue line corresponds to transfers to other family members. The orange line represents transfers to unrelated individuals. These coefficients capture the average differences in outcomes between each type of transfer and never-transferred cases. In Panel A, the dependent variable is the number of employees, scaled by the mean number of employees before the transfer. In Panel B, the dependent variable is the number of entrant employees, defined as those who first appear in the wage bill, scaled by the mean number of employees before the transfer. Click here to return to the text.

Figure 3: The Effect of Different Types of Transfers on Different Outcomes

(A) # Sellers / Pre # Traders   **(B)** # Entrant Sellers / Pre # Traders

(C) # Buyers / Pre # Traders   **(D)** # Entrant Buyers / Pre # Traders

Notes: This figure plots the estimated β_k coefficients, along with their 95% confidence intervals, from Equation (3). The black line represents the estimated coefficients for the regression where the treated group comprises firms transferred to children or spouses. The blue line corresponds to transfers to other family members. The orange line represents transfers to unrelated individuals. These coefficients capture the average differences in outcomes between each type of transfer and never-transferred cases. In Panel A, the dependent variable is the number of sellers, scaled by the mean number of traders (i.e., sellers + buyers) before the transfer. In Panel B, the dependent variable is the number of entrant sellers, defined as those who first appear in the supply chain as a supplier, scaled by the mean number of traders before the transfer. In Panel C, the dependent variable is the number of buyers, scaled by the mean number of traders before the transfer. In Panel D, the dependent variable is the number of entrant buyers, defined as those who first appear in the supply chain as a buyer, scaled by the mean number of traders before the transfer. Click here to return to the text.

Tables

Table 1: Firm Characteristics by Whether Employ or Trade With a Family Member

	(1)	(2)	(3)
	All	Have Family	
		Employees	Suppliers/Buyers
Log Assets	16.450	16.693	17.105
	(0.001)	(0.001)	(0.003)
Firm age	15.899	17.971	16.884
	(0.006)	(0.008)	(0.020)
# Employees	16.071	16.601	22.571
	(0.073)	(0.063)	(0.215)
Total wage	8771286	8313458	12200000
	(62716.72)	(56429.28)	(261918)
Sales	41100000	38100000	60200000
	(574035.8)	(466743.8)	(983536.2)
Payments	41100000	38800000	66100000
	(428528.6)	(478004.3)	(1455795)
# Suppliers	73.176	84.176	97.063
	(0.052)	(0.065)	(0.198)
# Buyers	73.176	76.664	116.856
	(0.488)	(0.520)	(1.806)
Sales to Fam Buyers	394457.7	459592.1	3987547
	(7269.04)	(10528.58)	(73207.23)
Payments to Fam Suppliers	394457.7	495784.2	3987547
	(7130.86)	(11320.25)	(71804.97)
Seller tenure	3.3497	3.5217	3.3833
	(0.0009)	(0.0012)	(0.0029)
Buyer tenure	3.5753	3.8256	3.6517
	(0.0014)	(0.0018)	(0.0041)
% Publicly-listed	5.0	3.8	5.9
	(0.004)	(0.004)	(0.010)
% Agricultural	0.54	0.43	0.46
	(0.004)	(0.005)	(0.010)
% Manufacturing	22.48	28.05	26.27
	(0.020)	(0.030)	(0.070)
% Construct	12.97	12.09	10.69
	(0.020)	(0.020)	(0.050)
% Retail	46.90	46.50	49.13
	(0.030)	(0.040)	(0.080)
% Restaurants	6.09	4.62	5.23
	(0.010)	(0.020)	(0.040)
% Financial & Other	11.02	8.32	8.22
	(0.010)	(0.010)	(0.030)
N	3,588,541	1,435,655	309,673

Notes: The table presents the characteristics of firms in our sample. Column (1) represents the full sample of firms we constructed. Column (2) restricts the sample to firms that employ at least one family member. Column (3) includes firms that have a supplier or buyer relationship with another firm where the owners are family-related. Click here to return to the text.

Table 2: Wage and Tenure Outcomes of Family Employees

	(1) Log wage	(2) Log wage	(3) Tenure	(4) Tenure
ChildSpouse	-0.189***	0.083***	1.032***	0.815***
	(0.000)	(0.000)	(0.003)	(0.007)
OthFam	-0.213***	0.016***	-0.176***	0.107***
	(0.000)	(0.002)	(0.004)	(0.008)
Control	V	V	V	V
Time FE		V		V
Firm FE		V		V
N	45,823,562	45,823,562	42,966,650	42,966,650

Notes: This table presents the results from Equation (1). The first two columns use log wage as the dependent variable and the last two use tenure (unit is year). Click here to return to the text.

Table 3: Likelihood of Having Family Members Owning Another Firms

Year	(1) #Firm	(2) % Has family who owns another firm	(3) Among (2) within same industry	(4) Among (2) who trades with each other
2008	210474	33.6%	54.8%	25.7%
2009	214514	33.7%	54.8%	25.3%
2010	220307	33.7%	54.8%	25.5%
2011	226202	33.8%	54.6%	25.6%
2012	230995	33.8%	54.9%	25.6%
2013	235692	33.8%	54.8%	25.8%
2014	240276	33.6%	54.7%	25.8%
2015	244582	33.5%	54.8%	26.0%
2016	249298	33.5%	54.6%	25.8%
2017	252438	33.3%	54.6%	25.8%
2018	252953	33.0%	54.5%	26.1%
2019	255292	32.9%	54.4%	26.2%
2020	254544	32.5%	54.4%	26.4%
2021	252815	32.1%	54.2%	26.9%

Notes: This table presents summary statistics on the prevalence of owner-owner family ties across businesses over time. Column (1) shows the number of firms. Column (2) displays the fraction of firms whose owners have a family member that owns another firm. Column (3) indicates the likelihood, conditional on having a family-related firm, that the two firms operate in the same industry. Column (4) presents the likelihood, conditional on having a family-related firm, that the two firms first trade with each other (as a supplier or buyer). Click here to return to the text.

Table 4: The Relationship between Trade Values and Tenures of Family-Related Transactions

	(1) Log Trade Value	(2) Log Trade Value	(3) Tenure	(4) Tenure
famTrade	3.678***	0.813***	1.366***	0.001
	(0.007)	(0.011)	(0.010)	(0.007)
Control	V	V	V	V
Dyad FE		V		V
Time FE		V		V
N	67,675,249	67,675,249	67,675,249	67,675,249

Notes: This table presents the results of Equation (2). The dependent variable in Column (1) and (2) is the log of the trading amount and that of Column (3) and (4) is the tenure of the relationship (unit is year). Click here to return to the text.

Table 5: Firm Characteristics by Type of Ownership Transfer

	(1) Never-treated	(2) Child/Spouse	(3) Other Family	(4) Unrelated
Departing owner age	53.43	59.42	54.06	55.22
Incoming owner age	53.24	48.17	51.24	49.24
Log Assets	16.67	16.86	16.96	17.48
	(0.00)	(0.01)	(0.02)	(0.02)
Log Revenues	16.93	16.98	17.12	17.53
	(0.00)	(0.01)	(0.02)	(0.02)
Firm age	18.55	22.69	18.31	18.00
	(0.00)	(0.06)	(0.15)	(0.09)
# Employees	15.10	15.96	19.27	28.96
	(0.01)	(0.16)	(0.44)	(0.38)
Total wage	6684082.00	6802466.00	8439771.00	15300000.00
	(5061.85)	(79740.91)	(220093.10)	(212810.80)
Wage per worker	278113.00	274342.90	268087.90	320807.10
	(51.93)	(766.44)	(1795.50)	(1434.11)
# Suppliers	81.25	82.91	88.41	107.15
	(0.03)	(0.42)	(1.07)	(0.84)
# Clients	55.66	61.86	58.46	67.12
	(0.04)	(0.72)	(1.61)	(1.19)
Tenure seller	3.64	3.76	3.51	3.37
	(0.00)	(0.01)	(0.02)	(0.01)
Tenure client	3.90	4.18	3.83	3.59
	(0.00)	(0.01)	(0.03)	(0.02)
Sales	29800000.00	32200000.00	38500000.00	57500000.00
	(22735.03)	(391250.10)	(1034383.00)	(893989.80)
Payment	28300000.00	30500000.00	36500000.00	56500000.00
	(24040.19)	(418137.30)	(1063958.00)	(927794.30)
Self Sales	115049.10	118566.30	133305.20	166439.00
	(255.08)	(4249.41)	(10062.05)	(7303.18)
Family Sales	110567.90	105639.80	174547.30	153106.70
	(239.55)	(3739.27)	(10772.35)	(6956.54)
Self Payment	111834.90	110913.80	135985.20	157890.30
	(246.70)	(4014.14)	(9859.76)	(6936.96)
Family Payment	111779.30	113234.80	170348.80	151478.20
	(240.34)	(3941.77)	(10764.72)	(6788.97)
% Publicly-listed	0.67	0.46	1.05	5.04
	(0.00)	(0.00)	(0.00)	(0.00)
% Agricultural	0.38	0.42	0.62	0.74
	(0.00)	(0.00)	(0.00)	(0.00)
% Manufacturing	27.06	36.96	31.52	27.18
	(0.00)	(0.00)	(0.01)	(0.00)
% Construction	11.66	8.88	10.99	10.86
	(0.00)	(0.00)	(0.00)	(0.00)
% Retail	48.25	43.88	42.72	40.99
	(0.00)	(0.00)	(0.01)	(0.00)
% Restaurants	5.56	4.63	5.78	8.74
	(0.00)	(0.00)	(0.00)	(0.00)
% Financial Real Estate	2.14	2.16	4.08	4.81
	(0.00)	(0.00)	(0.00)	(0.00)
% Other	4.95	3.07	4.29	6.69
	(0.00)	(0.00)	(0.00)	(0.00)
Unique N	170412	4293	843	1976
N	8829338	34344	6744	15808

Notes: This table presents the firm characteristics of those that have never experienced a transfer (Column (1)), were transferred to children or spouses (Column (2)), were transferred to other family members (Column (3)), and were transferred to unrelated individuals (Column (4)). Click here to return to the text.

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