



Controlling shareholders' tax incentives and related party transactions[☆]



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ABSTRACT

This study examines whether the tax incentive of controlling shareholders affects firms' engagement in related party transactions (RPTs) by using the introduction of a tax law in Korea that imposes gift taxes on the controlling shareholders of firms generating profits from excessive related party sales. As the amount of new taxes is calculated based on firms' related party sales, firms face incentives to reduce related party sales to decrease the tax burden of controlling shareholders. We use a difference-in-differences approach to examine the change in firms' related party sales around the introduction of the tax law between firms whose controlling shareholders are likely to be subject to the gift tax (i.e., treatment firms) and those without such controlling shareholders (i.e., control firms). We find that the treatment firms exhibit a significant decrease in related party sales in the post-tax law period, while there is no significant change in related party sales for the control firms. Test results suggest that the new tax law seems to be effective in deterring abnormal parts of RPTs (e.g., potentially related to opportunistic RPTs) without a significant loss of efficiency gains from RPTs.

1. Introduction

Related party transactions (RPTs) can be value destroying if they are used opportunistically by managers or by controlling shareholders, such as for transferring resources across firms for their own private benefits (i.e., “tunneling”) (Bertrand et al., 2002; Johnson et al., 2000). Previous studies provide evidence that controlling shareholders use loan guarantees (Berkman et al., 2009), intercorporate loans (Jiang et al., 2010), and acquisitions and sales of assets (Cheung et al., 2009) for opportunistic reasons. While regulators have long attempted to curb this practice by prohibiting certain types of RPTs (e.g., providing loans to related parties), there is little regulation to directly restrict recurring and operating-related transactions with related parties (OECD, 2012). This is because RPTs can improve economic efficiency by reducing the transaction costs incurred in an imperfect market (Khanna and Palepu, 2000; Williamson, 1975; Wong et al., 2015). As a result, RPTs are still prevalent in many countries. This study aims to provide answers for the following questions: (1) What if an economy introduces a regulation that limits recurring related party transactions? Will it reduce firms' engagement in RPTs? (2) Will the regulation be effective in deterring RPTs for opportunistic reasons (hereafter

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“opportunistic RPTs”) or will it also reduce RPTs for economic efficiency (hereafter “efficient RPTs”)?

To address these questions, we use the introduction of a tax law in South Korea (hereafter “Korea”) that imposes gift taxes on the controlling shareholders of firms generating profits from excessive related party sales. In 2012, the Korean government enacted a tax law that requires individual ultimate controlling shareholders of a firm to pay gift taxes if the firm generates profits from excessive related party sales. Korea is the first and only country that has introduced *taxation* to deter excessive related party sales, which provides us with a unique setting for examining the effect of regulatory intervention on recurring and operating-related RPTs.

The Korean market offers several advantages for examining this issue. First, many Korean firms belong to business groups (or *chaebols*), in which controlling families have de facto control over all affiliates through a complex pyramid ownership structure and cross-holdings among affiliated firms (Almeida et al., 2011; La Porta et al., 1999). Second, RPTs are very common among chaebol-affiliated firms.¹ The country's weak legal institutions imply that RPTs are commonly used for opportunistic reasons in Korea (Bae et al., 2002; Kang et al., 2014). However, the fact that chaebols were historically developed to overcome a lack of business infrastructure after the Korean War suggests that RPTs can also promote economic efficiency (Chang and Hong, 2000). Third, several regulations are already in place in Korea to limit the use of opportunistic RPTs, including prohibiting loans to directors or controlling shareholders and requiring the approval of the board for significant RPTs. As a result, while opportunistic RPTs through *non-recurring* transactions (e.g., related loans, transfer of assets) are largely blocked for chaebols, these regulations have had limited success in deterring opportunistic RPTs through *recurring* transactions (e.g., related party sales). Finally, the Korean market allows us to access to information about unlisted firms, which is usually not available in other countries. This data issue is important because privately held firms owned by controlling shareholders are often those that directly benefit from opportunistic RPTs, and thus omitting them from the sample could lead to incorrect inferences.

The new gift tax law in Korea requires individual ultimate controlling shareholders of a firm to pay gift taxes if the firm's percentage of related party sales to total sales exceeds 30% and their ownership is above 3% (Article 45(3) of the Inheritance and Gift Tax Act). The enactment of this law was a response to the widespread criticism that families controlling chaebols grant the exclusive rights to sell products or services to affiliated firms, which are often privately owned by the family themselves, at the expense of minority shareholders of buyer firms. The regulators view that when a firm benefits from excessive related party sales above the normal level (i.e., 30%), the profits arising from them are deemed to have been donated to the controlling shareholders of the firm and thus are subject to gift taxes. As the gift tax base is calculated in proportion to the ratio of related party sales to total sales, firms with significant sales to related parties (i.e., those subject to the gift tax on RPTs) have incentives to reduce the level of related party sales to decrease the tax burdens of controlling shareholders. A natural question arises as to whether the reduction in related party sales, if any, mainly reflects a reduction in opportunistic RPTs or a reduction in efficient RPTs. This is an important question because policymakers around the world have been trying to curb opportunistic RPTs while sustaining the positive economic role of RPTs.

We use a difference-in-differences approach to examine the change in related party sales around the introduction of the tax between firms whose controlling shareholders are likely to be subject to the gift tax (i.e., beneficiary firms) and those without such controlling shareholders (i.e., non-beneficiary firms). Specifically, we classify a firm as a beneficiary firm if (i) its sales to related parties exceed 30% of total sales in the year *prior* to the introduction of the tax, and (ii) the ownership of its individual controlling shareholders is above 3%. The beneficiary firms, anticipating the taxation to their controlling shareholders, are likely to reduce related party sales so that they can reduce the tax burden of their controlling shareholders.

To examine which components of RPTs (i.e., opportunistic or efficient RPTs) are affected by the gift tax law, we follow Jian and Wong (2010) and divide total related party sales into normal and abnormal components, where the normal component represents efficient RPTs and the abnormal component represents opportunistic RPTs. We then examine how beneficiary firms adjust these two components after the introduction of the tax on RPTs, compared with the control firms.

Using 1456 firm-years affiliated with chaebols in Korea over the 2010–2013 period, we find that beneficiary firms reduce the overall level of related party sales after the introduction of the gift tax, while control firms do not exhibit a significant change in related party sales during the same period. This finding suggests that the tax law is effective in reducing related party sales within business groups. More importantly, when we divide total related party sales into normal (i.e., potentially related to a firm's efficient RPTs) and abnormal (i.e., potentially related to opportunistic RPTs) components (Jian and Wong, 2010), we find that the decrease in related party sales of beneficiary firms is observed only for the abnormal component. This result suggests that the introduction of the gift tax reduces opportunistic RPTs while not significantly affecting efficient RPTs, presumably because it is very costly to replace the latter with transactions with unrelated parties and thus efficiency losses potentially outweigh the tax saving.

We further examine cross-sectional variations in beneficiary firms' behavior in adjusting opportunistic related party sales. First, we find that firms with a greater level of controlling shareholder ownership are more likely to reduce opportunistic RPTs. This finding suggests that firms with greater incentives for opportunistic behaviors in the pre-tax law period are more affected by the new taxation (Bertrand et al., 2002). Second, we find that the reduction in opportunistic RPTs is more pronounced for firms operating in competitive product markets, as the competition acts as an external governance mechanism (Baggs and De Bettignies, 2007; Giroud and Mueller, 2011). This finding is consistent with the view that the gift tax and product market competition complement each other and thus the marginal effect of the introduction of the tax is greater when other disciplinary forces are already in place.

We conduct a number of additional tests. First, we use the propensity score matching (PSM) method to check whether our main

¹ Firms affiliated with a business group whose total assets exceed KRW5 trillion are required to disclose information about related party sales transactions (Monopoly Regulation and Fair Trade Act, Article 11-4). In 2012, 1392 firms from 49 business groups had this obligation (Korean Fair Trade Commission, 2013). More than 80% of these group-affiliated firms ($N = 1183$) engage in related party sales.

inferences are affected by differences in the characteristics of beneficiary and non-beneficiary firms. We find that the main results are unchanged. Second, we examine whether total sales of beneficiary firms decreased around the introduction of the gift tax, which would indicate that the tax adversely affects overall business activities and thus incurs social costs. We find no significant changes in total sales of beneficiary firms, suggesting that the gift tax is not detrimental to the overall economy. Finally, we find that the results are robust to the alternative measurements of abnormal level of related party sales. Overall, our empirical findings are consistent with the argument that the gift tax is effective in deterring opportunistic RPTs but does not suppress efficient RPTs.

This study makes several contributions to the literature. First, we contribute to the growing literature on RPTs by providing evidence that firms change their use of RPTs in response to the introduction of the taxes on RPTs. While many studies document the value-destroying effect of non-operating RPTs, such as intercorporate loans and the sale and acquisition of assets (e.g., Berkman et al., 2009; Cheung et al., 2009; Jiang et al., 2010), we focus on related party sales as a type of recurring transaction with related parties. Our results therefore suggest that the economic implications of RPTs depend on their specific types.

Second, we also contribute to the literature on the role of taxation in changing corporate practices. While previous studies suggest that taxation plays an external monitoring role in corporate decisions (Desai et al., 2007; Guedhami and Pittman, 2008),² some are skeptical about its efficacy (Noked, 2017). We extend this line of literature by providing evidence for the effectiveness of corrective taxes in changing corporate practices. We also extend the literature on the trade-off between tax and non-tax considerations (Auerbach, 2002; Brown and Krull, 2008; Guenther, 1992). This setting's trade-off is different from other tradeoffs because the tax is not imposed on the firms but imposed on their controlling shareholders. This study thus provides empirical evidence that firms adjust their economic activities in response to the tax incentive of controlling shareholders.

Our findings also have policy implications for many economies by suggesting potential methods of curbing opportunistic RPTs while sustaining the positive economic role of RPTs. Policymakers have tried to mitigate the negative consequences of RPTs by prohibiting some types of RPTs. For example, Section 402 of the Sarbanes-Oxley Act (SOX) in the U.S. bans loans to directors or officers (Kohlbeck and Mayhew, 2010), and the Chinese Securities Regulatory Commission (CSRC) prohibits Chinese listed firms from issuing new loan guarantees to related parties (Berkman et al., 2010). Korea is the only country that has introduced shareholder-level taxation on the profit from excessive related party sales, and thus the evidence from this unique setting provides useful insights into the effect of policy interventions on RPTs. Our study is thus closely related to the research on the effect of regulatory changes or corporate governance on RPTs (Berkman et al., 2010; Jiang et al., 2010; Lo et al., 2010). We also extend prior studies by separately examining the effect of regulatory intervention on opportunistic RPTs and efficient RPTs (Jian and Wong, 2010).

The remainder of this paper proceeds as follows. Section 2 provides the institutional background and a review of the literature and develops the hypotheses. Section 3 describes the sample selection and research design. Section 4 reports the descriptive statistics, and Section 5 provides the results from the main and additional analyses. Section 6 concludes the paper.

2. Institutional background, literature review, and hypothesis development

2.1. Institutional background

Korean regulators have long been concerned about RPTs among chaebol-affiliated firms, as RPTs can be used to transfer wealth from minority shareholders to controlling shareholders. A common practice for wealth transfer among chaebol firms is to grant affiliated firms exclusive rights to business, particularly when the benefited affiliated firms are privately owned by the controlling families. One notable example for this type of wealth transfer is the case of Hyundai Glovis. In 2001, the chairman of Hyundai Motor Group, Mong-Koo Chung, and his son, Eui-Sun Chung (the heir of the Group), founded Hyundai Glovis. This company provides exclusive logistics services to the Group's global car makers, Hyundai Motor Company and Kia Motors, which are listed companies with the Chung family's ownership of only 5.2% and 1.9%, respectively. Its rapid growth in sales from businesses with affiliated firms with the percentage of related party sales reaching up to 80% helped Glovis list on the Korea Exchange in 2005. At the time of the initial public offering (IPO), the shares owned by Eui-Sun Chung were worth KRW600 billion (i.e., \$545 million), a 100-fold increase from his initial investment. The stock price of Glovis further increased subsequently and Eui-Sun Chung cashed out KRW743 billion (\$675 million) by selling 27% of his shares in 2015.

Several regulations aimed at deterring RPTs are already in place in Korea, including those requiring firms to disclose information about RPTs, imposing fines for unfair RPTs, and requiring the approval of the board for significant RPTs. In particular, providing any types of loans to controlling shareholders is strictly prohibited. However, these regulations have had limited success in curbing related party sales. For example, the extent of related party sales within 46 large business groups in Korea reached KRW186.3 trillion in 2011, accounting for 13.2% of their total sales (Korean Fair Trade Commission, 2013). Accordingly, the Ministry of Strategy and Finance (MSF) decided to introduce a new tax law that requires the controlling shareholders of firms with significant related party sales to pay gift taxes from 2012.³ The rationale for imposing gift taxes to controlling shareholders is that when a firm benefits from excessive related party sales, the resulting profits are deemed to have been donated to the controlling shareholders of the firm. This tax law focuses on related party sales among various types of RPTs, as related party sales are used as the main channel for transferring wealth to benefit firms that are owned by controlling families. For example, in major groups, it is common practices to designate

² Desai et al. (2007) find that Russian firms reduced related party trades after the stronger tax enforcement that followed the election of Vladimir Putin in 2000. Guedhami and Pittman (2008) also find that strengthened IRS monitoring decreases the cost of debt for private firms in the U.S.

³ Article 45-3 (deeming profits to have been donated through transactions with related corporations) of the Inheritance and Gift Tax Act.

affiliated firms to provide IT or logistics services to other affiliated firms, thus allowing them to enjoy exclusive business opportunities. According to the new RPT gift tax introduced in Korea, the tax base (i.e., profit deemed donated) is calculated as follows:

$$\begin{aligned} &\text{Gift tax base} \\ &= \text{After-tax operating income} \times (\text{related party sales/total sales} - 30\%) \times (\text{Ownership of controlling shareholders} - 3\%) \end{aligned} \quad (1)$$

Two conditions must therefore be met for a controlling shareholder to be liable for gift taxes under this law. First, the proportion of related party sales to total sales should exceed 30%. The threshold of 30% is used because the purpose of the gift tax is to limit “excessive” related party sales, rather than restrict them altogether. Second, the ownership percentage of individual controlling shareholders and their relatives (including direct and indirect ownership) should exceed 3%.⁴ Therefore, controlling shareholders are not subject to the gift tax if any of these two conditions is not met. The amount of gift tax payable by controlling shareholders is calculated by applying the progressive tax rate to the gift tax base, which includes other types of gifts/donations during the tax year, if any.^{5,6}

2.2. Related literature

RPTs are value destroying if they are used opportunistically by managers or by controlling shareholders. For example, [Aharony et al. \(2010\)](#) and [Jian and Wong \(2010\)](#) find that Chinese firms use related party sales to their controlling owners to manage reported earnings. Both studies find evidence that resources transferred to the firms from related party sales (i.e., propping) are subsequently shifted back to their controlling owners, suggesting that propping activities are motivated by the prospect of tunneling opportunities afterward. Other studies document that RPTs are used for tunneling resources from minority shareholders to controlling shareholders. For example, RPTs can be used to transfer wealth from listed companies to firms privately held by controlling shareholders at the expense of minority shareholders ([Cheung et al., 2009](#)). [Jiang et al. \(2010\)](#) document that controlling shareholders use intercorporate loans to siphon substantial funds from publicly listed companies in China. [Cheung et al. \(2009\)](#) find that listed firms in Hong Kong enter into deals with related parties at unfavorable prices by buying assets at higher prices and selling them at lower prices than in similar arm's-length deals. Such RPTs have negative economic consequences ([Berkman et al., 2009](#); [Fisman and Wang, 2010](#); [Peng et al., 2011](#)). For example, [Cheung et al. \(2006\)](#) report that firms in Hong Kong that announce RPTs experience negative market reactions, while [Jiang et al. \(2010\)](#) find that firms with large intercorporate loans to controlling shareholders exhibit low future firm performance.

A few studies examine whether regulations or firms' corporate governance mechanisms can mitigate the use of opportunistic RPTs. [Lo et al. \(2010\)](#) use unique data of Chinese firms about gross profit ratios on related party sales and find that a set of corporate governance mechanisms (e.g., independent boards, financial expertise of audit committees) are effective in deterring the manipulation of transfer prices in related party sales. To test the perceived effectiveness of regulations, [Berkman et al. \(2010\)](#) examine the stock price reactions around the regulatory changes that are designed to improve the protection of minority shareholders in China. They find that the stock market reacts positively to the introduction of the regulations for firms that are more likely to be subject to expropriation from minority shareholders (i.e., firms with significant RPTs). However, no positive market reactions to the regulations are found for firms with strong ties to the government, suggesting that investors perceive the regulations as ineffective for these firms.⁷ [Jiang et al. \(2010\)](#) report that regulatory reforms intended to curb insider abuse were largely ignored for several years in China because security regulators had limited jurisdiction over the controlling owners. They also find that institutional ownership and auditors in China do not effectively curb the value-destroying practice of extending intercorporate loans to controlling owners. In summary, the literature provides mixed evidence on the effectiveness of regulations and corporate governance in curbing opportunistic RPTs.

Despite the suggested negative economic implications of RPTs, the fact that no countries prohibit RPTs altogether suggests that in many cases they occur for legitimate business purposes ([Djankov et al., 2008](#)). [Williamson \(1975\)](#) argues that RPTs can reduce the transaction costs incurred in an imperfect market because of greater coordination and lower information asymmetry among related parties.⁸ Such RPTs can be more beneficial in emerging markets because access to internal capital, labor, and product markets helps

⁴ Those subject to the new gift tax on RPTs are the individual ultimate controlling shareholders of a beneficiary firm. Therefore, if a controlling shareholder of a beneficiary firm is a corporation, we check the ownership structure of the corporation to identify if the controlling shareholder is an individual.

⁵ The progressive tax rates for gift taxes are between 10% and 50%.

⁶ While proponents of this taxation assumed it would reduce the practice of excessive related party sales, others raised concerns about its legitimacy and effectiveness. The gift tax is imposed on unrealized gains because the profit to the controlling shareholders is not realized until they receive dividends from the firm or sell their shares. Regarding its effectiveness, controlling shareholders can find ways to avoid the gift tax, for example, by merging seller and buyer firms or by reducing the proportion of sales to related parties below 30%. More importantly, some critics argue that the gift tax may suppress normal parts of RPTs and thus negatively affect the efficiency of the overall economy.

⁷ An alternative interpretation of the lack of significant reactions for the firms with strong ties to the government is that expropriation of minority shareholders is less likely in state-owned firms compared to privately owned firms ([Jiang et al., 2010](#)).

⁸ Transaction costs include search and information costs, bargaining and decision costs, and policing and enforcement costs ([Coase, 1960](#); [Dahlman, 1979](#)). Search and information costs arise from a transaction between two parties as they search each other out and inform each other about available business opportunities. Bargaining and decision costs are needed to reach an acceptable agreement with the other party in the transaction, and policing and enforcement costs are incurred to confirm that the other party follows the terms of the contract. All of these transaction

overcome institutional voids (i.e., a lack of intermediaries) (Khanna and Palepu, 2000). Wong et al. (2015) find that related party sales increase firm value. Chang and Hong (2000) find that business-group-affiliated firms achieve higher firm performance because of their access to group-wide resource sharing and internal business transactions. In addition, Buysschaert et al. (2004) report a positive market reaction to the announcement of intragroup equity sales in Belgian firms.

2.3. Hypothesis development

Because the new tax law in Korea imposes gift taxes based on the ratio of related party sales to total sales, firms with significant related party sales have incentives to reduce the overall level of related party sales to decrease the tax burdens of controlling shareholders. However, given that RPTs can be used either for opportunistic reasons or for economic efficiency, what is not clear is whether firms would reduce opportunistic RPTs, efficient RPTs, or both. We predict that firms are more likely to reduce RPTs by adjusting opportunistic RPTs rather than efficient RPTs for the following reasons.

First, the gift tax law reduces controlling shareholders' private benefits from opportunistic RPTs by imposing several types of incremental costs to them. While tax costs, which are calculated based on the progressive tax rates up to 50%, are direct costs of engaging in RPTs, the increased public and regulatory scrutiny around the enactment of the gift tax also imposes significant reputational and regulatory costs on opportunistic RPTs. Dyreng et al. (2016) provide evidence on the role of public pressure in disciplining firms' behaviors. To the extent that these incremental costs resulting from the gift tax law reduces controlling owners' net benefit from opportunistic RPTs, we expect that firms whose controlling shareholders are likely to be subject to the gift tax (i.e., beneficiary firms) will reduce the level of opportunistic related party sales.

Second, although the gift tax also reduces the net efficiency gain from efficient RPTs, it is likely to be costly for firms to replace efficient RPTs with alternative business transactions with unrelated parties. Sellers may lose business opportunities if they reduce sales to related parties. Even if they find independent counter-parties, their terms and conditions may not be as favorable as those with related parties. From a buyer's perspective, it may also be costly to find alternative suppliers because additional transaction costs will be incurred because of information asymmetry and difficulties in coordination. Furthermore, if transactions between related parties involve unique assets or services, it is impractical to substitute RPTs with independent alternatives. Taken together, from the group's perspective, the additional costs arising from changes in the business structure may thus outweigh the gift tax savings accrued to the controlling shareholders. We therefore expect that firms will not significantly reduce their efficient RPTs because the costs incurred by arranging alternative transactions with unrelated parties outweigh the tax savings. Based on the preceding discussions, we formulate our first set of hypotheses as follows.

H1a. After the introduction of the gift tax on RPTs, there is no significant difference in changes in efficient related party sales between firms whose controlling shareholders are likely to be subject to the tax and those without such shareholders.

H1b. After the introduction of the gift tax on RPTs, firms whose controlling shareholders are likely to be subject to the tax are more likely to reduce opportunistic related party sales than those without such shareholders.

Next, we examine whether firms with high controlling shareholder ownership reduce related party sales more than those with low ownership. Controlling shareholder ownership is positively related to firms' incentives to engage in opportunistic RPTs in the pre-tax law period. Bertrand et al. (2002) suggest that controlling shareholders have incentives to tunnel resources from firms where they have low cash flow rights to firms where they have high cash flow rights, but not the other way around. Therefore, we expect that firms with high controlling shareholder ownership engage in more opportunistic related party sales in the pre-tax law period to provide maximum benefit to controlling shareholders. To the extent that firms engage in more opportunistic RPTs in the pre-tax law period, the level of the reduction resulting from the introduction of the tax will be greater for firms with high controlling shareholder ownership than for those with low ownership. Therefore, we state our second hypothesis as follows.

H2. After the introduction of the gift tax on RPTs, the reduction in opportunistic RPTs will be more pronounced for firms with greater controlling shareholder ownership than for those with lower controlling shareholder ownership.

We do not expect a significant relation between efficient RPTs and controlling ownership, and we therefore provide no specific predictions about efficient RPTs.

Next, we discuss the expected effect of product market competition on firms' decisions in adjusting opportunistic RPTs. Firms in more competitive markets are less likely to engage in opportunistic RPTs in the pre-tax law period, as competition in product markets can work as an effective external governance mechanism (Baggs and De Bettignies, 2007; Giroud and Mueller, 2011).⁹

We provide two competing views about the *incremental* effect of the tax on opportunistic RPTs for firms in competitive markets. First, the new tax may discipline managers independent of existing product market competition, thus acting as a substitute. The marginal effect of the tax on RPTs can thus be smaller for firms in competitive product markets because these firms have already been disciplined by competitive pressure from the market. Alternatively, there may be a complementarity between the gift tax law and product market competition, so that the marginal effect of the tax on RPTs will be greater for firms in competitive markets, as these

(footnote continued)

costs can be reduced through RPTs.

⁹ However, it is still possible that opportunistic RPTs exist for firms in competitive markets because group-affiliated firms, which have access to internal markets, could be less subject to the disciplining role of product market competition.

two influences reinforce each other. For example, the new tax on RPTs can trigger additional pressure for firms in competitive markets and thus induce them to further reduce opportunistic RPTs, while firms in non-competitive markets are less affected by the disciplining role of the tax. The relation between product market competition and the effect of the tax on RPTs can thus be regarded as an empirical question. We formulate our third hypothesis in the null form as follows.

H3. After the introduction of the gift tax on RPTs, the reduction in opportunistic RPTs is not different between firms in competitive markets and firms in non-competitive markets.

With respect to efficient RPTs, firms in more competitive markets are more likely to engage in RPTs to reduce transaction costs because the potential threat that inefficient firms go bankrupt in the competitive market increases firms' incentives to improve economic efficiency (Schmidt, 1997). Consistent with this argument, Chen et al. (2012) find that product market competition is positively associated with efficient RPTs. Firms in competitive markets are likely to maintain such efficient RPTs so that they can remain competitive in the market, even after the introduction of the tax on RPTs. Therefore, we do not expect significant changes in efficient RPTs around the introduction of the tax.

3. Research design

3.1. Measuring normal and abnormal related party transactions

As recurring related party transactions such as sales or purchases can have some components driven by opportunistic reasons and some by economic reasons, it is empirically challenging to partition total RPTs into opportunistic and efficient RPTs. Jian and Wong (2010) hypothesize and find that when firms have incentive to inflate earnings, they have abnormally high levels of related party sales. It is because affiliated firms in the group are willing to purchase more from the firm to boost the seller's revenues, which in turn increases its earnings. To measure the abnormal levels of related party sales, Jian and Wong (2010) suggest a model to remove any normal components of RPTs that are associated with firm characteristics and industry membership. Then they use the residual from the model as a measure of abnormal levels of related party sales (Chen et al., 2012; Wong et al., 2015). We follow Jian and Wong (2010) and partition total related party sales into normal and abnormal components using the following model:

$$RPS_{it} = \alpha_0 + \alpha_1 TA_{it} + \alpha_2 DEBT_{it} + \alpha_3 GROWTH_{it} + \text{Industry fixed effects} + \varepsilon_{it}, \quad (2)$$

where, for firm i in year t , RPS is the ratio of related party sales to total sales. Following Jian and Wong (2010), we include firm size, leverage, and growth, which are likely to be associated with the magnitude of related party sales, as control variables in the model. TA is the natural logarithm of total assets; $DEBT$ is total debts divided by total assets; and $GROWTH$ is the change in total assets from the previous year to the current year divided by lagged total assets.¹⁰ We provide detailed variable definitions in Appendix. The predicted value from the annual estimation of Eq. (2) is our measure of normal related party sales, whereas the residual value is the measure of abnormal related party sales.¹¹

3.2. Regression models

To test our hypotheses, we use the difference-in-differences methodology. As we discuss in Section 2, we expect that firms that are likely to be subject to the gift tax on RPTs (i.e., beneficiary firms) have incentives to reduce opportunistic related party sales after the introduction of the tax in 2012, while non-beneficiary firms do not have such incentives. Therefore, the difference-in-differences design using non-beneficiary firms as a control group effectively controls for changes in related party sales that are unrelated to the introduction of the gift tax in 2012. Specifically, we estimate the following model:

$$\begin{aligned} RPS_{it} \text{ (NRPS}_{it} \text{ or ABRPS}_{it}) \\ = \beta_0 + \beta_1 BF_{it} + \beta_2 POST_{it} + \beta_3 BF_{it} \times POST_{it} + \beta_4 TA_{it} + \beta_5 DEBT_{it} + \beta_6 GROWTH_{it} + \beta_7 PROS_{it} + \beta_8 LISTED_{it} + \beta_9 AGE_{it} + \beta_{10} \\ CSH_{it} + \beta_{11} TOP10_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

where, for firm i and year t , RPS_{it} is the ratio of related party sales to total sales; $NRPS_{it}$ ($ABRPS_{it}$) is the predicted (residual) value from Eq. (2), representing efficient (opportunistic) related party sales; BF_{it} is an indicator variable that equals one if the firm satisfies the following three conditions in 2011 (i.e., the year prior to the introduction of the gift tax in 2012), and zero otherwise: i) the firm's ratio of related party sales to total sales exceeds 30%, ii) the ownership of any individual controlling shareholders is above 3%, and iii) the firm reports at least one non-negative after-tax operating profits in 2010 and 2011;¹² $POST_{it}$ is an indicator variable that equals one if the year is either 2012 or 2013, and zero if the year is either 2010 or 2011; $PROS_{it}$ is the return on sales of the previous year;

¹⁰ We use alternative models to estimate the normal and abnormal components of related party sales. See Section 5.4.3.

¹¹ While we expect that abnormally high levels of related party sales are likely to benefit the sellers, we acknowledge the possibility that related party sales can be arranged to benefit the buyers (i.e., when sale prices are below fair value).

¹² We require the third condition because firms incurring operating losses are not likely to be subject to the gift tax, because the amount of tax is calculated based on after-tax operating income. When we re-estimate the regressions after re-classifying them as beneficiary firms if they meet the other two conditions (i.e., related party sales exceeding 30% and ownership of controlling shareholders above 3%), the results are similar to those reported in the tables.

$LISTED_{it}$ is an indicator variable that equals one if the firm is listed on the Korea Exchange or on the Korea Securities Dealers Automated Quotation (KOSDAQ), and zero otherwise; AGE_{it} is the natural logarithm of firm age; CSH_{it} is an ownership interest of controlling shareholders (i.e., cash flow rights); $TOP10_{it}$ is an indicator variable that equals one if the firm belongs to the largest 10 business groups based on total assets of the group, and zero otherwise; and all other variables are as previously defined.

In Eq. (3), our variable of interest is the interaction term, $BF_{it} \times POST_{it}$, which captures the change in related party sales of beneficiary firms after 2012, relative to the corresponding change in related party sales of non-beneficiary firms. H1a predicts an insignificant coefficient on $BF_{it} \times POST_{it}$ (β_3) when the dependent variable is normal related party sales ($NRPS_{it}$), indicating that beneficiary firms do not significantly change efficient related party sales after the introduction of the tax on RPTs. H1b, however, predicts a negative coefficient on $BF \times POST$ (β_3) when the dependent variable is abnormal related party sales ($ABRPS_{it}$), suggesting that beneficiary firms reduce opportunistic related party sales after the introduction of the tax on RPTs in 2012.

In the model, we include the previous year's return on sales ($PROS_{it}$) to control for profitability (Chen et al., 2012; Jian and Wong, 2010). We also include a firm's listing status ($LISTED_{it}$) and firm age (AGE_{it}) because business groups commonly grant exclusive business opportunities to firms in the early stages of their business operations, which are often privately owned by the family members of the controlling shareholders. Similarly, firms with greater controlling shareholder ownership (CSH_{it}) are more likely to engage in related party sales, as they can then enjoy the benefits of these sales to affiliated firms. Finally, an indicator variable for top 10 business groups ($TOP10_{it}$) is included as a proxy for political costs or political connections. Politically sensitive firms are less likely to engage in abnormal RPTs in order to alleviate public criticism or government interventions in their business affairs (Raffournier, 1995). However, large business groups are also likely to be well connected to politicians and thus can utilize these political connections to arrange RPTs without interventions from regulators (Depoers, 2000). Appendix provides the variable definitions.

Next, to examine the second hypothesis on whether the ownership of individual ultimate controlling shareholders affects the decision to reduce opportunistic related party sales after the introduction of the tax on RPTs, we use the following model for the beneficiary firm sample¹³:

$$\begin{aligned} ABRPS_{it} &= \beta_0 + \beta_1 HICSH_{it} + \beta_2 POST_{it} + \beta_3 HICSH_{it} \times POST_{it} + \beta_4 TA_{it} + \beta_5 DEBT_{it} + \beta_6 GROWTH_{it} + \beta_7 PROS_{it} + \beta_8 LISTED_{it} + \beta_9 \\ &AGE_{it} + \beta_{10} CSH_{it} + \beta_{11} TOP10_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

where, for firm i and year t , $HICSH_{it}$ is an indicator variable that equals one if the ownership of individual controlling shareholders is above the sample median, and zero otherwise, and all other variables are as previously defined. In Eq. (4), the variable of interest is the interaction term, $HICSH_{it} \times POST_{it}$, which captures the change in abnormal related party sales in beneficiary firms with the above-median ownership of controlling shareholders, relative to the corresponding change in those with the below-median ownership interest of controlling shareholders. A negative coefficient on $HICSH_{it} \times POST_{it}$ indicates that beneficiary firms tend to reduce abnormal related party sales to a greater extent when the individual controlling shareholders have a higher percentage of ownership.

To examine whether beneficiary firms in competitive product markets reduce opportunistic related party sales more than those in non-competitive markets (H3), we estimate the following equation (Aghion et al., 2006):

$$\begin{aligned} ABRPS_{it} &= \gamma_0 + \gamma_1 BF_{it} + \gamma_2 HPMC_{it} + \gamma_3 POST_{it} + \gamma_4 BF_{it} \times HPMC_{it} + \gamma_5 HPMC_{it} \times POST_{it} + \gamma_6 BF_{it} \times POST_{it} + \gamma_7 \\ &BF_{it} \times POST_{it} \times HPMC_{it} + \gamma_8 TA_{it} + \gamma_9 DEBT_{it} + \gamma_{10} GROWTH_{it} + \gamma_{11} PROS_{it} + \gamma_{12} LISTED_{it} + \gamma_{13} AGE_{it} + \gamma_{14} CSH_{it} + \gamma_{15} TOP10_{it} \\ &+ \varepsilon_{it} \end{aligned} \quad (5)$$

where, for firm i and year t , $HPMC_{it}$ is an indicator variable that equals one if the industry Herfindahl index of the firm is below the sample median (i.e., high product market competition), and zero otherwise, and all other variables are as previously defined. A higher value of the industry Herfindahl index implies a low level of industry competition.¹⁴ A negative coefficient on $BF_{it} \times POST_{it} \times HPMC_{it}$ (γ_7) would suggest that the beneficiary firms in competitive product markets are more likely to reduce abnormal related party sales than those in non-competitive markets after the introduction of the tax on RPTs in 2012.

4. Sample and descriptive statistics

4.1. Sample selection

Our initial sample comprises firms affiliated with business groups (i.e., chaebols) in Korea from 2010 to 2013. We obtain a list of firms affiliated with chaebols from the website (<http://groupopni.ftc.go.kr>) operated by the Korean Fair Trade Commission. We

¹³ As the gift tax on RPTs is levied to individuals who ultimately control the firm, this test requires us to check the layers of ownership to track the individual ultimate controlling owners. Due to the complicated ownership structure of Korean business groups, we limit the manual collection of the ownership information to firms likely to be subject to the gift tax on RPTs (i.e., firms whose related party sales exceeds 30% of total sales). Accordingly, we have data on the ownership of individual ultimate controlling shareholders only for the beneficiary firm sample, which reduces the test sample size for H2.

¹⁴ In an untabulated test, we use the natural logarithm of the number of firms in the industry as an alternative measure of product market competition (Chen et al., 2012) and find similar results.

choose chaebol firms as a sample because these large conglomerates are known to use opportunistic RPTs (Johnson et al., 2000).

We manually collect information about chaebol firms' related party sales and ownership structure from their footnotes to financial statements and from the Reports on Information on Ownership and Related Party Transactions for Business Groups, through the website of the Data Analysis, Retrieval and Transfer System (DART) provided by the Korean Financial Supervisory Service. Financial information data are obtained from the KIS-Value database, which is operated by the Korean Information Service (KIS).¹⁵ KIS-Value provides data for listed firms and also for unlisted firms whose assets are over KRW12 billion (\$11 million), for which external auditing is mandatory according to the Act on External Audit of Corporations. As the difference-in-differences methodology requires two consecutive years' observations before and after the introduction of the tax in 2012, we eliminate firms with missing data for any year in the four sample years (i.e., 2010–2013) and construct the balanced panel data. The final sample thus consists of 1456 firm-year observations for 364 unique firms over the 2010–2013 period.¹⁶ The full sample includes four years' data for 118 listed firms and 246 unlisted firms, of which 16 listed firms (14% of the listed firm sample) and 60 unlisted firms (24% of unlisted firm sample) are classified as beneficiary firms, suggesting that unlisted firms are more likely to be subject to the gift tax on RPTs than listed firms. All continuous variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers.

4.2. Descriptive statistics

Table 1 presents descriptive statistics for the variables used in the regressions. The mean value of *BF* is 0.209, indicating that 21% of the sample firms are classified as beneficiary firms. The ratio of related party sales to total sales (*RPS*) has a mean value of 0.28, and *NRPS* (*ABRPS*) has a mean value of 0.28 (0.00).¹⁷ The mean firm size (*TA*) is 26.18, which is equivalent to KRW234 billion (\$195 million).

In Table 2, we report the mean values for the variables separately for beneficiary and non-beneficiary firms. The mean of *RPS* is significantly higher in the beneficiary sample (0.597) than in the non-beneficiary sample (0.196). In addition, the means of *NRPS* and *ABRPS* are also significantly higher in the beneficiary sample (0.333 and 0.263) than in the non-beneficiary sample (0.266 and –0.070). With respect to firm characteristics, beneficiary firms are likely to be unlisted firms (*LISTED*), smaller (*TA*), less leveraged (*DEBT*), less profitable (*PROS*), and younger (*AGE*) and to have higher asset growth (*GROWTH*) and higher ownership of controlling shareholders (*CSH*), than non-beneficiary firms.

Table 3 reports the correlation matrix for the selected variables used in the regressions. *BF* is positively associated with all three measures of related party sales (*RPS*, *NRPS*, and *ABRPS*). *POST* is not significantly correlated with most variables except for *GROWTH* and *AGE*, suggesting that firm characteristics do not significantly change around the introduction of the tax on RPTs in 2012.

5. Empirical results

5.1. Test of H1

Table 4 presents the regression results of Eq. (3). In Column (1), we use total related party sales as the dependent variable. The coefficient on *BF* is positive and significant, indicating that before 2012 beneficiary firms engaged in higher levels of related party sales than non-beneficiary firms. The coefficient *POST* is insignificant, suggesting that non-beneficiary firms do not significantly change their related party sales after 2012. More importantly, the coefficient on *BF* × *POST* is negative and significant (–0.062; *t* = –3.08), suggesting that beneficiary firms are more likely to reduce related party sales after 2012 than non-beneficiary firms. In terms of economic significance, the estimated coefficient on *BF* × *POST* (–0.062) in Column (1) indicates that a beneficiary firm exhibits a reduction in the ratio of related party sales to total sales equivalent to 22% of the mean *RPS*. This suggests that the economic impact of the tax on RPTs on the behavior of beneficiary firms is substantial.

We next examine the change in the abnormal and normal components of related party sales (*ABRPS* and *NRPS*) around 2012. In Column (2), we use the normal component of related party sales (*NRPS*) as the dependent variable and find that the coefficient on *BF* × *POST* becomes negative but insignificant while the coefficient on *POST* remains insignificant. These findings suggest that both beneficiary and non-beneficiary firms do not significantly change efficient RPTs after 2012, which is consistent with H1a. In Column (3), we use the abnormal component of related party sales (*ABRPS*) as the dependent variable. The coefficient on *BF* × *POST* is negative and significant, while the coefficient on *POST* is not significant. This result suggests that beneficiary firms are more likely to reduce opportunistic related party sales after 2012, while non-beneficiary firms do not significantly change their opportunistic related party sales during the same period.¹⁸

¹⁵ KIS is the largest credit rating agency in Korea and is affiliated with Moody's.

¹⁶ The final sample does not include firms that were merged with other affiliated firms after 2012, because the controlling shareholders of those firms are no longer subject to the gift tax on RPTs.

¹⁷ In an untabulated analysis, we estimate the amount of gift tax base for each beneficiary firm using Eq. (1) to gauge the economic impacts of the gift tax law. We find that the amount of gift tax base for an average beneficiary firm decreased from KRW3,925 million (i.e., 1.9% of total sales) in the pre-tax law period to KRW1,644 million (i.e., 0.3% of total sales) in the post-tax law period. This result suggests that the introduction of gift tax has substantially changed firms' behaviors.

¹⁸ In an untabulated analysis, we re-estimate Eq. (3) after replacing *RPS* (i.e., the dependent variable) with the gift tax base scaled by total sales using the beneficiary firm sample. We find that the coefficient on *POST* is negative and significant, indicating that the tax base is reduced after the introduction of the gift tax on RPTs.

Table 1
Descriptive statistics.

Variables	N	Mean	Stdev	Min	Q1	Median	Q3	Max
BF	1456	0.209	0.407	0.000	0.000	0.000	0.000	1.000
POST	1456	0.500	0.500	0.000	0.000	0.500	1.000	1.000
RPS	1456	0.280	0.319	0.000	0.019	0.124	0.487	1.000
NRPS	1456	0.280	0.130	0.054	0.174	0.261	0.372	0.615
ABRPS	1456	0.000	0.294	−0.487	−0.200	−0.093	0.148	0.740
TA	1456	26.180	1.530	22.802	24.970	26.192	27.711	28.140
DEBT	1456	0.195	0.208	0.000	0.000	0.147	0.324	0.879
GROWTH	1456	0.111	0.232	−0.324	−0.011	0.061	0.182	1.207
PROS	1456	0.053	0.163	−0.461	0.007	0.038	0.094	0.706
LISTED	1456	0.324	0.468	0.000	0.000	0.000	1.000	1.000
AGE	1456	2.876	0.716	1.386	2.398	2.890	3.434	4.263
CSH	1456	0.729	0.273	0.000	0.500	0.779	1.000	1.000
TOP10	1456	0.486	0.500	0.000	0.000	0.000	1.000	1.000
HPMC	1456	0.501	0.500	0.000	0.000	1.000	1.000	1.000
HICSH	304	0.501	0.500	0.000	0.000	1.000	1.000	1.000

This table reports descriptive statistics for the variables used in the regressions. Total sample consists of 1456 firm-year observations (four years' data for 118 listed firms and 246 unlisted firms) that belong to business groups under the Monopoly Regulation and Fair Trade Act over the period 2010–2013. Among these, 304 firm-year observations (four years' data for 16 listed firms and 60 unlisted firms) are classified as potential beneficiary firms whose individual controlling shareholders are likely to be subject to the gift tax on RPTs after 2012. All variables are winsorized at the 1st and 99th percentiles. See Appendix for variable definitions.

Table 2
Univariate tests between beneficiary and non-beneficiary firms.

	Beneficiary firms (N = 304)	Non-beneficiary firms (N = 1152)	Difference (A)-(B)	t-Statistics
Variables	Mean (A)	Mean (B)		
RPS	0.597	0.196	0.401	22.65***
NRPS	0.333	0.266	0.067	8.17***
ABRPS	0.263	−0.070	0.333	19.76***
TA	25.778	26.286	−0.508	−5.19***
DEBT	0.167	0.203	−0.036	−2.68***
GROWTH	0.141	0.103	0.038	2.56***
PROS	0.037	0.057	−0.020	−1.91*
LISTED	0.211	0.354	−0.144	−4.79***
AGE	2.703	2.921	−0.218	−4.75***
CSH	0.842	0.702	0.140	8.35***
TOP10	0.579	0.462	0.117	3.65***

This table reports the univariate test results for mean values between beneficiary and non-beneficiary firms for the variables used in the regressions. See Appendix for variable definitions. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Taken together, the results in Table 4 are consistent with the first set of hypotheses that the introduction of the tax on RPTs reduces opportunistic RPTs while it does not affect efficient RPTs.¹⁹

5.2. Test of H2

Table 5 presents the regression results to test whether the reduction in opportunistic RPTs after the introduction of the tax is more pronounced for firms with greater controlling shareholder ownership.

In Column (1), we use total related party sales (*RPS*) as the dependent variable for our benchmark model and find that the coefficient on *HICSH* × *POST* is negative and significant, indicating that beneficiary firms with greater controlling shareholder ownership reduce related party sales after 2012 to a greater extent than those with lower ownership. The coefficient on *HICSH* × *POST* is insignificant in Column (2) when *NRPS* is used as the dependent variable, indicating that controlling shareholder ownership does not affect the changes in efficient RPTs around 2012. More importantly, the coefficient on *HICSH* × *POST* is negative

¹⁹ In an untabulated analysis, we examine whether the effect of the gift tax on RPTs differs between listed and unlisted firms. Specifically, we include the term *BF* × *POST* × *LISTED* and other relevant interactions in Eq. (3) and re-estimate the regression. When we use the total related party sales (*RPS*) as the dependent variable, the coefficient on *BF* × *POST* is significantly negative but the coefficient on *BF* × *POST* × *LISTED* is insignificant, suggesting that the magnitude of the reduction in related party sales after the introduction of the gift tax does not significantly differ between listed and unlisted beneficiary firms. The three-way interaction term is also insignificant when we use the normal (*NRPS*) or abnormal (*ABRPS*) component of related party sales as the dependent variable.

Table 3
Correlation matrix (N = 1456).

Variables	BF	POST	RPS	NRPS	ABRPS	HPMC	TA	DEBT	GROWTH	PROS	LISTED	AGE	CSH
POST	0.00												
RPS	0.51***	-0.01											
NRPS	0.21***	0.00	0.38***										
ABRPS	0.46***	-0.01	0.91***	-0.03									
HPMC	0.09***	-0.01	-0.02	-0.12***	0.03								
TA	-0.14***	0.04	-0.21***	-0.57***	0.02	0.14***							
DEBT	-0.07**	0.03	-0.11***	-0.29***	0.01	0.02	0.18***						
GROWTH	0.07**	-0.20***	0.03	0.07**	0.01	0.00	-0.03	-0.03					
PROS	-0.04*	0.00	0.00	0.10***	-0.05*	0.07**	0.09***	-0.29***	0.09***				
LISTED	-0.12***	0.00	-0.19***	-0.22***	-0.11***	0.07**	0.55***	0.07**	-0.04	0.06**			
AGE	-0.12***	0.10***	-0.19***	-0.26***	-0.09***	0.06**	0.43***	-0.02	-0.12***	0.07**	0.44***		
CSH	0.21***	0.00	0.25***	0.27***	0.15***	0.10***	-0.46***	-0.04	0.07**	-0.01	-0.63***	-0.34***	
TOP10	0.11***	0.00	0.19***	-0.06***	0.22***	0.00	0.12***	-0.16***	0.03	-0.05**	-0.12***	-0.05*	0.00

This table reports the Pearson correlations for the variables used in the regressions. See Appendix for variable definitions. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 4

The effects of the introduction of the gift tax on related party sales (H1).

Dependent variable =	RPS	NRPS	ABRPS
Variables	(1)	(2)	(3)
BF	0.365*** (10.27)	0.005 (1.53)	0.360*** (10.24)
POST	0.015 (1.56)	−0.000 (−0.09)	0.015 (1.55)
BF × POST	−0.062*** (−3.08)	−0.008 (−1.39)	−0.054*** (−2.85)
TA	−0.016 (−1.37)	−0.037*** (−114.27)	0.021* (1.88)
DEBT	−0.027 (−0.35)	−0.092*** (−29.72)	0.064 (0.81)
GROWTH	−0.021 (−0.64)	0.024*** (6.39)	−0.045 (−1.39)
PROS	−0.005 (−0.06)	0.000 (0.05)	−0.006 (−0.07)
LISTED	−0.025 (−0.63)	−0.000 (−0.27)	−0.025 (−0.61)
AGE	−0.015 (−0.75)	−0.001 (−0.85)	−0.015 (−0.76)
CSH	0.078 (1.23)	0.001 (0.52)	0.079 (1.24)
TOP10	0.101*** (3.81)	0.001 (0.88)	0.100*** (3.77)
Intercept	0.354 (1.26)	0.967*** (127.29)	−0.610** (−2.17)
Year and industry fixed effects	Included	Included	Included
Observations	1456	1456	1456
Adjusted R ²	0.366	0.942	0.260

This table reports the regression results of estimating Eq. (3). See Appendix for variable definitions. We report *t*-statistics in parentheses based on standard errors clustered by firm. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively, in two-tailed tests.

and significant in Column (3) when *ABRPS* is used as the dependent variable. This result indicates that beneficiary firms with greater controlling shareholder ownership, which were more likely to engage in opportunistic RPTs in the pre-tax law period, are more likely to reduce opportunistic related party sales to decrease the amount of gift taxes levied to their controlling shareholders, consistent with our prediction in H2.

5.3. Test of H3

Table 6 reports the results of testing whether competition in product markets affects beneficiary firms' decisions in adjusting opportunistic related party sales after the introduction of the tax on RPTs. We first examine the effect of product market competition on the level of related party sales and its changes around the introduction of the tax on RPTs by using total related party sales as the dependent variable. In Column (1), the coefficient on *HPMC* is negative and significant, suggesting that firms in competitive markets are less likely to engage in related party transactions. The coefficient on *BF × POST × HPMC* is negative and significant, indicating that beneficiary firms in competitive markets decrease their related party sales more than those in non-competitive markets after the introduction of the tax on RPTs.

In contrast, the coefficient on *HPMC* is positive and significant when we use the normal component of related party sales (*NRPS*) as the dependent variable in Column (2). This result is consistent with Chen et al. (2012), who find a positive association between product market competition and efficient RPTs. The coefficients on *BF × POST × HPMC* and *POST × HPMC* are negative but insignificant, suggesting that product market competition does not affect the behavior of both beneficiary and non-beneficiary firms in efficient related party sales around the introduction of the tax on RPTs.

More importantly, the coefficient on *HPMC* is negative and significant in Column (3), in which *ABRPS* is used as the dependent variable, suggesting that before the introduction of the tax on RPTs in 2012, firms in more competitive markets were less likely to engage in opportunistic RPTs. This finding is consistent with the view that product market competition works as a type of external corporate governance (Baggs and De Bettignies, 2007; Giroud and Mueller, 2011) to discipline managers to refrain from using opportunistic RPTs. The coefficient on *BF × POST × HPMC* is negative and significant, whereas the coefficient on *BF × POST* is insignificant, suggesting that the reduction in opportunistic related party sales of beneficiary firms is concentrated in firms in competitive product markets. This result is consistent with the complementary relation between the gift tax on RPTs and product market competition, so that the incremental effect of the introduction of the tax on RPTs is greater for beneficiary firms in competitive markets.

Table 5

The effect of controlling-shareholder ownership on related party sales after the introduction of the gift tax on RPTs (H2).

Dependent variable =	RPS	NRPS	ABRPS
Variables	(1)	(2)	(3)
HICSH	0.093 (1.42)	0.006 (1.04)	0.089 (1.39)
POST	0.011 (0.52)	0.036*** (4.10)	−0.025 (−1.23)
HICSH × POST	−0.117** (−2.15)	−0.012 (−0.98)	−0.105** (−2.07)
TA	−0.023 (−1.02)	−0.038*** (−57.26)	0.016 (0.69)
DEBT	−0.046 (−0.35)	−0.098*** (−10.28)	0.046 (0.35)
GROWTH	−0.069 (−1.50)	0.028*** (3.42)	−0.097** (−2.15)
PROS	0.023 (0.17)	0.002 (0.10)	0.007 (0.05)
LISTED	0.013 (0.10)	−0.004* (−1.85)	0.016 (0.12)
AGE	−0.030 (−0.52)	0.002 (1.32)	−0.032 (−0.57)
CSH	0.181 (0.67)	−0.007 (−1.62)	0.180 (0.68)
TOP10	0.024 (0.36)	0.003 (1.39)	0.022 (0.34)
Intercept	0.871 (1.51)	1.133*** (68.24)	−0.260 (−0.45)
Year and industry fixed effects	Included	Included	Included
Observations	304	304	304
Adjusted R ²	0.169	0.928	0.228

This table reports the regression results of estimating Eq. (4). See Appendix for variable definitions. We report *t*-statistics in parentheses based on standard errors clustered by firm. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively, in two-tailed tests.

5.4. Additional analyses

5.4.1. Endogeneity

We acknowledge that the differences in firm characteristics between the treatment firms (i.e., beneficiary firms) and control firms (i.e., non-beneficiary firms) may affect the results. We thus perform a matched-sample analysis based on propensity score matching (PSM) following Lawrence et al. (2011). We first run a regression model that estimates the probability of a firm being classified as a beneficiary firm, using several firm characteristic variables extracted from the RPS model in Eq. (3).²⁰ We then match each treatment firm (i.e., a beneficiary firm) with a control firm (i.e., a non-beneficiary firm) that has the closest propensity score, without replacement within a maximum caliper distance of 0.05.²¹ We successfully match 281 treatment and control firms.

In untabulated tests, we find that the results using the PSM sample are largely consistent with those reported in Table 4. Specifically, the coefficient on $BF \times POST$ is negative and significant when the dependent variable is either *RPS* or *ABRPS*, whereas it is insignificant when the dependent variable is *NRPS*. The PSM results suggest that it is unlikely that our main inferences are significantly affected by differences in the firm characteristics of beneficiary and non-beneficiary firms.

5.4.2. Implications for social costs

In this section, we examine changes in *total* sales of beneficiary firms around the introduction of the gift tax on RPTs to test whether the new tax law might have reduced their overall business size, thereby incurring social costs. Specifically, we re-run Eq. (3) by replacing the dependent variable with the natural logarithm of total sales (*Total Sales*) and find that the coefficient on $BF \times POST$ is not significant, indicating that beneficiary firms do not exhibit any significant changes in total sales after 2012, compared to non-beneficiary firms. This finding is consistent with the view that the gift tax on RPTs does not adversely affect overall business activities.²²

²⁰ We estimate the probability of being classified as beneficiary firms by regressing *BF* on a set of firm characteristics that influence related party sales using the following model: $BF_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 DEBT_{it} + \beta_3 GROWTH_{it} + \beta_4 PROS_{it} + \beta_5 LISTED_{it} + \beta_6 AGE_{it} + \beta_7 CSH_{it} + \beta_8 TOP10_{it} + \text{Year and industry fixed effects} + \varepsilon_{it}$, where all variables are as previously defined.

²¹ Our results are robust to using alternative caliper widths of 0.01, 0.1, or 0.2. Also, the results are qualitatively similar when we replicate the analyses with replacement.

²² An alternative explanation for this result is that beneficiary firms might have offered discounts to non-related buyers to maintain their sales levels, in which case the profitability of their business is impaired even with the similar levels of sales. To test this possibility, we use the ratio of

Table 6

The effect of market competition on related party sales after the introduction of the gift tax on RPTs (H3).

Dependent variable =	RPS	NRPS	ABRPS
Variables	(1)	(2)	(3)
BF	0.318*** (6.44)	− 0.000 (− 0.01)	0.318*** (6.46)
HPMC	− 0.080** (− 2.51)	0.005* (1.66)	− 0.083*** (− 2.62)
POST	0.002 (0.22)	0.002 (0.48)	0.001 (0.09)
BF × HPMC	0.092 (1.42)	0.010 (1.58)	0.081 (1.27)
POST × HPMC	0.025 (1.43)	− 0.004 (− 0.84)	0.028 (1.57)
BF × POST	0.009 (0.44)	0.001 (0.09)	0.008 (0.42)
BF × POST × HPMC	− 0.137*** (− 3.15)	− 0.017 (− 1.52)	− 0.119*** (− 2.89)
TA	− 0.020* (− 1.72)	− 0.037*** (− 111.60)	0.017 (1.44)
DEBT	− 0.029 (− 0.36)	− 0.091*** (− 29.50)	0.062 (0.79)
GROWTH	− 0.020 (− 0.61)	0.024*** (6.43)	− 0.044 (− 1.35)
PROS	0.006 (0.07)	0.000 (0.03)	0.006 (0.07)
LISTED	− 0.027 (− 0.68)	− 0.000 (− 0.22)	− 0.026 (− 0.67)
AGE	− 0.014 (− 0.68)	− 0.001 (− 1.03)	− 0.014 (− 0.68)
CSH	0.082 (1.30)	0.001 (0.48)	0.082 (1.31)
TOP10	0.102*** (3.85)	0.001 (0.99)	0.101*** (3.80)
Intercept	0.465 (1.64)	0.953*** (112.28)	− 0.494* (− 1.75)
Year and industry fixed effects	Included	Included	Included
Observations	1456	1456	1456
Adjusted R ²	0.373	0.942	0.268

This table reports the regression results of estimating Eq. (5). See Appendix for variable definitions. We report *t*-statistics in parentheses based on standard errors clustered by firm. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively, in two-tailed tests.

5.4.3. Alternative measurement of NRPS and ABRPS

In untabulated tests, we alternatively measure *NRPS* and *ABRPS* based on different models to partition related party sales into the normal and abnormal components as follows: i) we include profitability (*PROS*), listing status (*LISTED*), and firm age (*AGE*) as additional control variables in Eq. (2); ii) we use the amount of related party sales (instead of the ratio of related party sales) or industry-adjusted ratios of related party sales as the dependent variable; and iii) we use the industry classification by 1-digit SIC code instead of 2-digit SIC code (Jian and Wong, 2010). We find that our results are not affected by these changes.

5.4.4. Firms with related-party-sales ratios close to the 30% threshold

To examine whether beneficiary firms with related-party-sales ratios close to the 30% threshold behave differently from other beneficiary firms, we divide beneficiary firms into two groups: (1) those with related-party-sales ratios of 30–40% (*BF_L*) and those with related-party-sales ratios over 40% (*BF_H*). When we re-estimate Eq. (3) after replacing *BF* with *BF_L* and *BF_H* in untabulated analyses, we find that the coefficients on *BF_L* × *POST* are all insignificant for the dependent variables of *RPS*, *NRPS* and *ABRPS*. The results suggest that the change in related party sales of beneficiary firms close to the 30% threshold is not significantly different from the change of non-beneficiary firms. On the other hand, the coefficients on *BF_H* × *POST* are negative and significant for *RPS* and *ABRPS*, which is consistent with the main findings. The results suggest that firms have greater incentive to reduce their related party sales when their related-party-sales ratios are greater.

(footnote continued)

gross profits to total sales (*Sales Margin*) as the dependent variable and find that the coefficient on *BF* × *POST* is insignificant, which is inconsistent with this alternative explanation.

6. Conclusions

We examine whether regulatory intervention on recurring RPTs (i.e., related party sales) affects opportunistic RPTs or efficient RPTs, an issue that has not been explored in the literature. As Korea is the first and only country that has introduced taxation to curb excessive related party sales, the Korean setting provides us with a unique opportunity for examining this issue. We divide total related party sales into normal and abnormal components, where the normal component represents efficient related party sales, while the abnormal component represents opportunistic related party sales (Jian and Wong, 2010). We find that firms that are likely to be subject to the gift tax reduce opportunistic RPTs to decrease the tax burdens of controlling shareholders. In contrast, the gift tax does not significantly affect efficient RPTs, perhaps because of the non-tax costs of losing economic efficiency from RPTs. We also find that the reduction in the abnormal component of related party sales is greater when the ownership of individual controlling shareholders is high and when the firm is in competitive product markets.

This paper contributes to the literature by highlighting two different roles of RPTs. The findings of this study have policy implications, as they suggest potential ways of curbing opportunistic RPTs while maintaining the positive role of efficient RPTs. The study also contributes to the literature on the role of taxation in corporate decisions. However, our study has some caveats. First, our inferences depend on the validity of the model for partitioning related party sales into normal and abnormal components. While we follow previous studies to empirically estimate these two components (Chen et al., 2012; Jian and Wong, 2010), our measurement may be subject to errors, so we caution that our results should be interpreted carefully. Second, although we conclude that the gift tax on RPTs is effective in curbing opportunistic RPTs, it is still possible that chaebol firms may continue their opportunistic activities through channels other than related party sales. If this is the case, the regulatory intervention may merely change the methods used by chaebol firms for opportunistic reasons. We leave this for future studies.

Appendix A. Variable definitions

Variables	Definitions
<i>BF</i>	An indicator variable that equals one if the firm satisfies the following three conditions in 2011 (i.e., the year prior to the introduction of the gift tax in 2012), and zero otherwise: i) the firm's ratio of related party sales to total sales exceeds 30%, ii) the ownership of any individual controlling shareholders is above 3%, and iii) the firm reports at least one non-negative after-tax operating profits in 2010 and 2011;
<i>POST</i>	An indicator variable that equals one if the year is either 2012 and 2013, and zero if the year is either 2010 and 2011;
<i>RPS</i>	Ratio of related party sales to total sales;
<i>NRPS (ABRP-S)</i>	The normal (abnormal) component of related party sales, which is the predicted (residual) value from the following annual regression: $RPS_{it} = \alpha_0 + \alpha_1 TA_{it} + \alpha_2 DEBT_{it} + \alpha_3 GROWTH_{it} + \text{Industry fixed effects} + \varepsilon_{it}$
<i>TA</i>	The natural logarithm of total assets;
<i>DEBT</i>	Total debts divided by total assets;
<i>GROWTH</i>	The change in total assets from the previous year to the current year divided by lagged total assets;
<i>PROS</i>	Return on sales of the previous year;
<i>LISTED</i>	An indicator variable that equals one if the firm is listed on the Korea Exchange or on the Korea Securities Dealers Automated Quotation (KOSDAQ), and zero otherwise;
<i>AGE</i>	The natural logarithm of firm age;
<i>CSH</i>	An ownership interest of controlling shareholders (i.e., cash flow rights);
<i>TOP10</i>	An indicator variable that equals one if the firm belongs to the largest 10 business groups based on total assets of the group, and zero otherwise;
<i>IHERF</i>	Industry Herfindahl index (<i>IHERF</i>) calculated as follows: $IHERF_{kt} = \sum_{i=1}^n [s_{ikt}/S_{kt}]^2$ where for firm <i>i</i> , industry <i>k</i> , and year <i>t</i> , <i>s</i> is a firm's sales; <i>S_{kt}</i> is the sum of sales for all firms in the industry for a given year, where the industry is defined by a two-digit Standard Industrial Classification (SIC) code; <i>s/S</i> is the firm's market share in the industry; and <i>n</i> is the number of firms in the industry. A higher value of <i>IHERF_{kt}</i> implies a low level of industry competition for industry <i>k</i> and year <i>t</i> ;
<i>HPMC</i>	An indicator variable that equals one if the industry Herfindahl index of the firm (<i>IHERF</i>) is below the sample median (i.e., high product market competition), and zero otherwise; and
<i>HICSH</i>	An indicator variable that equals one if the ownership interest of individual ultimate controlling shareholders is above the sample median, and zero otherwise.

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