Tunneling Through Trademarks

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Do business group controlling families
misuse group trademarks
to benefit themselves
at the expense of outside minority shareholders?

2017 Trademark Royalty Transactions
(Top 20 Groups)

Group Name	Types of Business Group	# of Licensor Firms	Types of Licensor Firms	# of Licensee Firms	# of Member Firms	Trademark Royalties (mil. KRW)
LG	F	1	P	16	63	276,373
SK	F	2	B, N	56	90	184,380
Doosan	F	3	B, N	9	25	137,515
CJ	F	1	P	18	70	92,075
Hanhwa	F	1	N	25	58	78,688
Hankook Tire	F	1	P	1	15	48,715
Halla	F	1	B	5	15	37,044
Kumho Asiana	F	1	N	12	27	36,422
Meritz Financial Group	F	1	P	7	8	29,986
Kolon	F	1	P	16	32	27,973
Hanjin	F	2	P, N	4	34	27,643
GS	F	1	B	23	59	24,686
LS	F	1	P	12	45	24,103
Lotte	F	1	P	49	95	24,047
Mirae Asset	F	1	N	7	31	19,527
Hansol	F	1	P	16	19	12,786
Samsung	F	12	N	39	62	9,791
POSCO	NF	1	N	12	37	9,307
Nexon	F	1	N	3	23	9,088
Dongwon	F	1	P	16	29	8,843

Tae-won Chey

23.2%

SK

Licensors of

33.0%   25.2%   39.1%   44.5%

₩ 38,388 m   ₩ 24,357 m   ₩ 10,136 m   ₩ 14,376 m

SK Innovation   SK Telecom   SK Networks   SK ecoplant

100%   20.1%

₩ 12,268 m   ₩ 34,004 m

SK Global Chemical   SK Hynix

6 largest licensees

Two Types of Trademark Tunneling

[1] Unfair transfer of trademark ownership

- Transfers are rare and detailed terms are not disclosed

[2] Unfair trademark royalty charges

- Trademark royalty data available from 2018 by Korea FTC

New Disclosure Rule of 2018

Old Disclosure Rule

- Applies to firms affiliated to business groups with assets above KRW 5 trillion
- Disclose only if the yearly amount with an individual licensee firm exceeds KRW 5 billion or 5% of licensee firm's sales
- This exempts 67.1% of licensee firms from disclosure (source: FTC)

New Disclosure Rule

- Applies to firms affiliated to business groups with assets above KRW 5 trillion
- Disclose regardless of the amount or the fraction of sales
- Disclose the licensor firm, licensee firm, licensee agreement period, amount of royalties, and method of calculating royalties
- Adopted in March 2018, implemented in May 2018, mandating the disclosure of 2017 royalties by business groups with book asset size above KRW 5 trillion as of 2018

Timeline
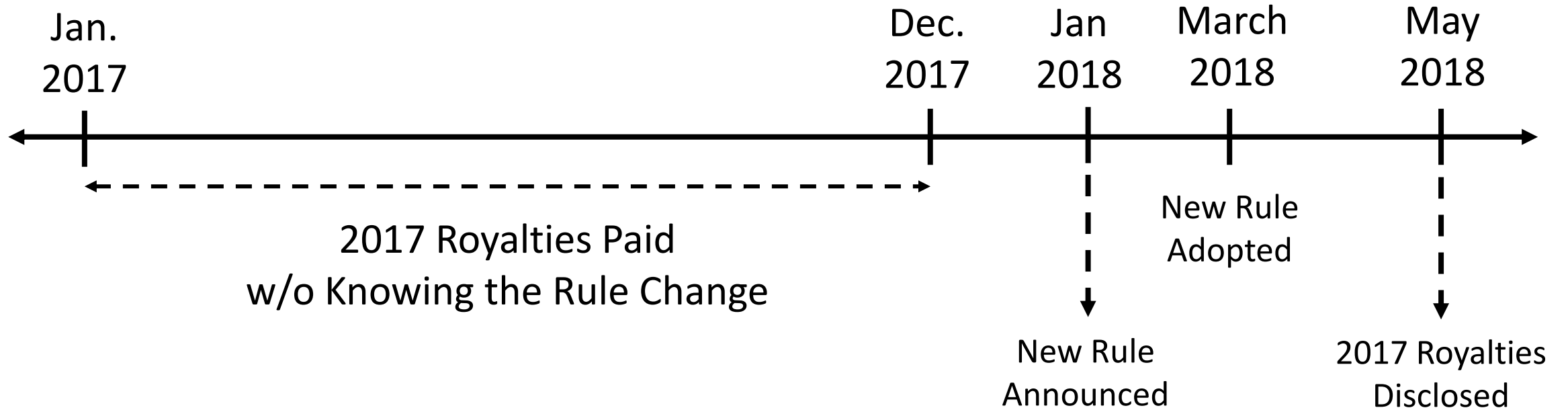
- Free from any confounding effect that would have taken place if the rule was introduced in 2017 or at least expected in 2017 to be introduced in the following year.
- In 2017, controlling families had no reason to disguise their tunneling activities by changing the pattern of trademark transactions.

Empirical Strategy

- Challenge of testing unfair trademark royalty charges

  - Impossible to estimate the fair level of charges

- We take an indirect approach like in many other tunneling studies

  - **Predict the pattern** of intragroup trademark transactions in the presence of tunneling

    - We make predictions by making use of the **cash flow rights** the controlling family holds in each member firm (i.e., their **economic incentives**)

  - **Find evidence that is consistent** with these predictions

Main Findings

[1] Firms with high family cash flow rights are more likely to be licensor firms

[2] Firms are more likely to be licensee firms and pay higher royalty payments if their controlling family's cash flow rights are further below ($CFR\ DIF > 0$) those in licensor firms and if their sales volumes are larger

[3] Elasticity of dividend payouts or share repurchases in respect to royalty payments is lower in firms with high cash flow rights differentials ($CFR\ DIF$)

[4] Firm value of licensee firms are negatively associated with their royalty payments in firms with high cash flow rights differentials ($CFR\ DIF$)

[5] Results in [2]~[4] are stronger if licensor firm is a pure holding company that has no alternative channel of tunneling

Contribution to the Literature

- Tunneling Literature: introduce a **new tunneling channel** that has not been documented in the literature

  - Acquisitions (Bae, Kang, and Kim, 2002), securities offerings (Baek, Kang, and Lee, 2006; Atanasov et al., 2010), related-party transactions (Cheung, Rau, and Stouraitis, 2006; Black et al., 2015; Hwang and Kim, 2016), and intercorporate loans (Jiang, Lee, and Yue, 2010)

- Dividend Literature: identify a new **governance-related determinant** of dividend

- Blockholding Literature: identify a new channel through which **publicly traded subsidiaries** can be expropriated by its parent company

Key Variables

Trademark Royalties (TMR)

- Annualized trademark royalty payments by a licensee firm
- Sample year: 2017
- Source: DART (originally KFTC)

Cash Flow Rights (CFR)

- Sample year: 2017 [May (>10 trillion) and September (b/w 5-10 trillion)]
- Source: egroup.go.kr

$CFR\ DIF$

- CFR of <u>licensor</u> firm $- CFR$ of <u>licensee</u> firm (0 if negative)
- Cannot be computed if there are multiple licensor firms within a group

(H1) Choice of Licensor Firms

- **Prediction**: firms with high family cash flow rights are more likely to be licensor firms

$$Pr(Licensor = 1|X) = \Phi(\beta_1 CFR + X'\gamma + \lambda_g)$$

$$\beta_1 > 0$$

(H1) Choice of Licensor Firms

Dependent Var. = *Licensor*	(1)	(2)	(3)
	Pure Holding Company Groups		
CFR (%)	0.001***	0.001***	0.001*
	[5.73]	[4.97]	[1.94]
Tax Bracket		-0.007	-0.004
		[-0.34]	[-0.19]
ln (Sales without TMR Rev)			-0.002
			[-0.81]
Age			0.001***
			[7.59]
Leverage (%)			-0.002**
			[-2.45]
ROE (%)			<0.001
			[0.31]
FCF (%)			>-0.001
			[-1.53]
Sales Growth (%)			<0.001
			[1.41]
Foreign Ownership (%)			0.004***
			[4.04]
Constant	Yes	Yes	Yes
Group FE	Yes	Yes	Yes
# observations	320	320	320
Pseudo R^2	0.107	0.109	0.735

- 10%p increase in CFR → 1%p increase in $Pr(Licensor = 1|X)$

- Given that only 6.2% of the member firms in our sample own the group's trademark, this is a very large jump in the likelihood (1/6.2 = 16.3%p)

- Sample: licensor firms, licensee firms, and firms outside the license agreement

- Coefficients are average marginal effects on probability; standard errors clustered at the group level

- We find similar results for other business groups

(H2) Choice of Licensee Firms

- **Prediction**: firms are more likely to be licensee firms if their controlling family's cash flow rights are further below ($CFR\ DIF > 0$) those in licensor firms and if their sales volumes are larger

$$Pr(Licensee = 1|X) = \beta_1 \ln(Sales) + \beta_2 \ln(Sales) \cdot CFR\ DIF + \beta_3 CFR\ DIF + X'\gamma + \lambda_g$$

$$\beta_2 > 0$$

(H2) Choice of Licensee Firms

Dependent Var. = *Licensee*	(1)	(2)	(3)
	Pure Holding Company Groups		
ln (Sales)	0.088***	0.063***	0.070***
	[5.16]	[3.22]	[3.33]
ln (Sales) × *CFR DIF (%)*		0.002***	0.002**
		[3.15]	[3.04]
ln (Sales) × *RPT Rev (%)*			>-0.001
			[-0.35]
ln (Sales) × *Tax Bracket DIF*			0.017
			[1.58]
CFR DIF (%)	-0.002	-0.022**	-0.020**
	[-1.12]	[-2.87]	[-2.63]
RPT Rev (%)	<0.001	<0.001	0.001
	[0.21]	[0.38]	[0.40]
Advertising (%)	-0.001	-0.002	-0.002
	[-0.72]	[-1.40]	[-1.19]
Tax Bracket DIF	-0.033	-0.029	-0.241
	[-1.17]	[-1.03]	[-1.76]
Constant	Yes	Yes	Yes
Other controls	Yes	Yes	Yes
Group FE	Yes	Yes	Yes
# observations	307	307	307
Adjusted R^2	0.302	0.309	0.310

- $CFR\ DIF = 0$
  - 1-SD increase in $ln(sales)$ → 13.8%p increase (= 0.063 × 2.19) in the $Pr(Licensee = 1|X)$

- $CFR\ DIF = 13.47\%$ (median value for pure holding company groups)
  - 1-SD increase in $ln(sales)$ → 19.7%p increase (= (0.068 × 2.19 + (0.002 × 13.47) × 2.19) in the $Pr(Licensee = 1|X)$

- Sample: licensee firms and firms outside the license agreement

- The amplifying effect of $CFR\ DIF$ does not exist for other business groups

(H3) Trademark Royalty Payments

- **Prediction**: firms are more likely to pay higher royalty payments if their controlling family's cash flow rights are further below ($CFR\ DIF > 0$) those in licensor firms and if their sales volumes are larger

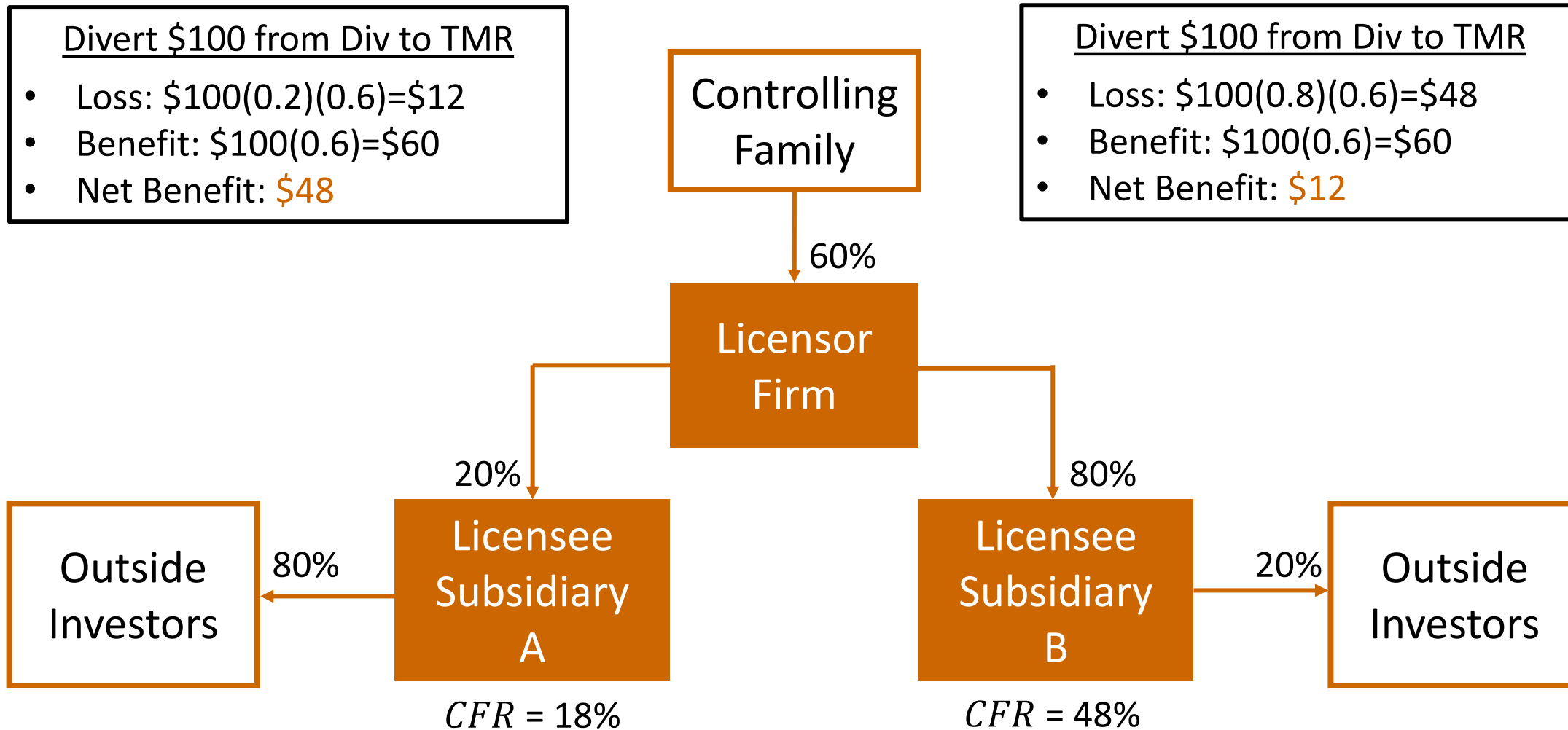$$ln(TMR + 1) = \beta_1 \ln(Sales) + \beta_2 \ln(Sales) \cdot CFR\ DIF + \beta_3 CFR\ DIF + X'\gamma + \lambda_g$$

$$\beta_2 > 0$$

(H3) Trademark Royalty Payments

Dependent Var. = $ln\,(TMR + 1)$	(1)	(2)	(3)
	Pure Holding Company Groups		
$ln\,(Sales)$	0.865***	0.640***	0.694***
	[6.53]	[3.67]	[5.19]
$ln\,(Sales) \times CFR\ DIF\ (\%)$		0.016**	0.013***
		[2.95]	[3.46]
$ln\,(Sales) \times RPT\ Rev\ (\%)$			>-0.001
			[-0.02]
$ln\,(Sales) \times Tax\ Bracket\ DIF$			0.205**
			[2.83]
$CFR\ DIF\ (\%)$	-0.004	-0.185**	-0.152***
	[-0.34]	[-2.91]	[-3.26]
$RPT\ Rev\ (\%)$	-0.003	-0.002	>-0.001
	[-1.48]	[-1.04]	[-0.01]
$Advertising\ (\%)$	0.025**	0.014	0.019**
	[2.81]	[1.34]	[2.64]
$Tax\ Bracket\ DIF$	0.060	0.088	-2.510**
	[0.33]	[0.49]	[-2.85]
Constant	Yes	Yes	Yes
Other controls	Yes	Yes	Yes
Group FE	Yes	Yes	Yes
# observations	307	307	307
Adjusted R^2	0.532	0.547	0.565

- $CFR\ DIF =$ 0
  - 1% increase in $Sales \rightarrow$ 0.64% increase in TMR
- $CFR\ DIF =$ 13.47% (median value for pure holding company groups)
  - 1% increase in $Sales \rightarrow$ 0.86% increase (= 0.64 + (0.016 × 13.47)) in TMR
- 34% (=0.22/0.64) increase in the elasticity of royalty payments in respect to sales

- Sample: licensee firms and firms outside the license agreement
- The amplifying effect of $CFR\ DIF$ does not exist for other business groups

(H4) Dividend Payouts and Stock Repurchase

Divert $100 from Div to TMR
- Loss: $100(0.2)(0.6)=$12
- Benefit: $100(0.6)=$60
- Net Benefit: $48

Divert $100 from Div to TMR
- Loss: $100(0.8)(0.6)=$48
- Benefit: $100(0.6)=$60
- Net Benefit: $12

Controlling Family

60%

Licensor Firm

20%

80%

Outside Investors

80%

Licensee Subsidiary A

CFR = 18%

Licensee Subsidiary B

CFR = 48%

20%

Outside Investors

(H4) Dividend Payouts and Stock Repurchase

- **Prediction:** elasticity of dividend payouts or share repurchases in respect to royalty payments is lower in firms with high cash flow rights differentials ($CFR\ DIF$)

$$\ln(Div + 1) = \beta_1 \ln(TMR + 1) + \beta_2 \ln(TMR + 1) \cdot CFR\ DIF + \beta_3 CFR\ DIF + X'\gamma + \lambda_g$$

$$\ln(Repurchase + 1) = \beta_1 \ln(TMR + 1) + \beta_2 \ln(TMR + 1) \cdot CFR\ DIF + \beta_3 CFR\ DIF + X'\gamma + \lambda_g$$

$$\beta_1 > 0 \qquad \beta_2 < 0$$

$$\beta_1 + \beta_2 \times CFR\ DIF^{High} < 0$$

(H4) Dividend Payouts and Stock Repurchase

Dependent Var.	(1)	(2)	(3)	(4)	(5)	(6)
	Industry-adjusted $ln\,(DIV + 1)$			Industry-adjusted $ln\,(Repurchase + 1)$		
$ln\,(TMR + 1)$	0.066	0.158**	0.139*	-0.039	0.068	0.068
	[0.91]	[2.80]	[1.97]	[-0.73]	[1.36]	[1.36]
$ln\,(TMR + 1) \times CFR\;DIF$		-0.006**	-0.005*		-0.007**	-0.007**
		[-2.38]	[-1.97]		[-2.32]	[-2.31]
$CFR\;DIF$	-0.023**	-0.008	-0.010	-0.002	0.015	0.015
	[-2.48]	[-0.62]	[-0.92]	[-0.33]	[1.77]	[1.78]
$ln\,(DIV_{t-1} + 1)$			0.592***			
			[19.58]			
$ln\,(Repurchase_{t-1} + 1)$						0.016
						[0.42]
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Group FE	Yes	Yes	Yes	Yes	Yes	Yes
# observations	307	307	307	307	307	307
Adjusted R^2	0.347	0.348	0.578	0.014	0.048	0.044

- $CFR\;DIF =$ 0 (1% increase in TMR increases dividend payout by 0.158%)
- $CFR\;DIF =$ 50% (1% increase in TMR decreases dividend payouts by 0.142%)
- $CFR\;DIF$ does not lower the elasticity for other business groups

(H5) Firm Value

- **Prediction**: firm value of licensee firms are negatively associated with their royalty payments in firms with high cash flow rights differentials ($CFR\ DIF$)

$$\text{Tobin's } Q = \beta_1 \ln(TMR + 1) + \beta_2 \ln(TMR + 1) \cdot CFR\ DIF + \beta_3 CFR\ DIF + X'\gamma + \lambda_g$$

$$\beta_2 < 0$$

$$\beta_1 + \beta_2 \times CFR\ DIF^{Median} < 0$$

(H5) Firm Value

Dependent Var.	(1)	(2)	(3)	(4)
	Industry-adjusted Tobin's q (2018.04.02)		Industry-adjusted Tobin's q (2018.06.01)	
ln (TMR+1)	-2.811	3.262	-2.978	7.583
	[-0.76]	[1.14]	[-0.55]	[1.00]
ln (TMR+1) $\times$ $CFR\ DIF$		-0.424*		-0.666**
		[-1.89]		[-2.51]
$CFR\ DIF$	-1.366	1.285	-1.777	2.425
	[-1.20]	[0.64]	[-1.29]	[1.41]
Constant	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes
Group FE	Yes	Yes	Yes	Yes
# observations	64	64	64	64
Adjusted R^2	0.420	0.434	0.356	0.390

- $CFR\ DIF$ = 13.47% (median value for pure holding company groups)

  - (After Disclosure) 10% increase in TMR decreases Tobin's Q (%) by 13.9% (= 7.583 x 10 − 0.666 x 13.47 x 10)

- $CFR\ DIF$ matters even before the disclosure, albeit weaker

Appendix

Composition of Sample Business Groups

Panel A. Composition of full sample

	TMR > 0			TMR = 0				Sum
	Single Licensor	Multiple Licensors	Missing Ownership in 2017	Single Licensor	Multiple Licensors	Missing Ownership in 2017	Disclosure Exempt	
Family-controlled	27	5	2	14	3	1	-	52
Not family-controlled	3	-	-	3	-	1	1	8
Sum	37			23				60

Panel B. Group-level analyses sample

	TMR > 0		TMR = 0		Sum
	Single Licensor	Missing Ownership in 2017	Single Licensor	Missing Ownership in 2017	
Family-controlled	27	2	14	1	44
Not family-controlled	3	-	3	1	7
Sum	32		19		51

Panel C. Firm-level analyses sample

	Single Licensor			Sum
	Pure holding company groups	Business-operating company groups	Non-holding company groups	
Family-controlled	13	4	10	27

Licensor Firm Sales (w/o Trademark Revenue) & Propensity to Collect Trademark Royalties

Panel A. Family-controlled business groups
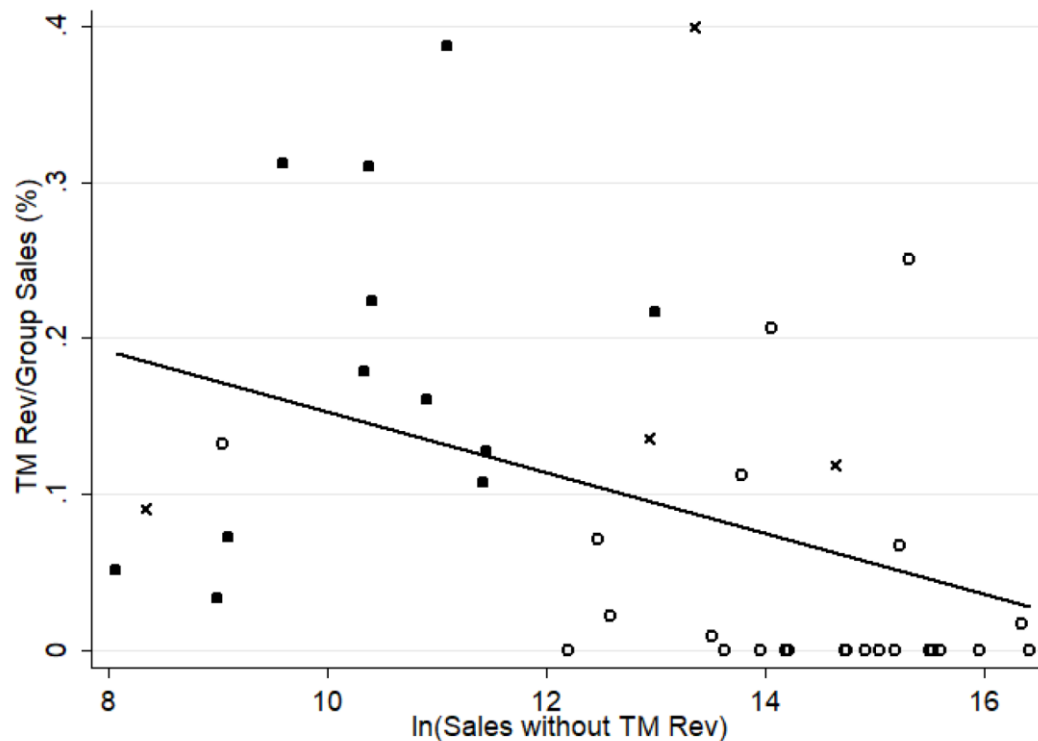
Panel B. Non-family business groups