



## Journal of Finance and Accounting Research (JFAR)

Volume 2 Issue 2, August 2020

ISSN: (P) 2617-2232 ISSN: (E) 2663-838X

Journal DOI: <https://doi.org/10.32350/JFAR>

Issue DOI: <https://doi.org/10.32350/JFAR/0202>

Homepage: <https://ojs.umt.edu.pk/index.php/jfar>

Journal QR Code



Article:

### The Relation between Dividend and Financial Constraints to Firm Value

Author(s):

Adrian Teja, Wilson A, Kevin Chanry, John Iwan Kusno

Online

August 2020

Published:

Article DOI:

<https://doi.org/10.32350/JFAR/0202/03>

QR Code  
of Article:



Adrian Teja

To cite this  
Article:

Teja, A., Wilson A., Chanry, K., & Kusno, J. I. (2020). The relation between dividend and financial constraints to firm value. *Journal of Finance and Accounting Research*, 2(2), 32–62.

[Crossref](#)



Copyright  
Information:

This article is open access and is distributed under the terms of Creative Commons Attribution – 4.0 International License.

Indexing  
&  
Abstracting



RePEc



EconPapers



Estd. 1990

A publication of the  
Department of Finance, School of Business and Economics  
University of Management and Technology, Lahore, Pakistan.

# The Relation between Dividend and Financial Constraints to Firm Value

Adrian Teja<sup>1\*</sup>  
Wilson A<sup>1</sup>  
Kevin Chanry<sup>1</sup>  
John Iwan Kusno<sup>1</sup>

## Abstract

This study examines the relation between dividends and financial constraints to firm value using publicly traded firms in Indonesia from 2013 to 2017. The very exploration used a repeated cross section regression method to understand monotonic and non-monotonic alliance between dividends and financial constraints to firm value. The non-monotonic correlation measured by dummy variables for 6 dividends categories, i.e. 0 category is defined as firms that did not pay dividends and category 5 is defined as firms that pay dividends with the highest quintile. It is found that monotonic bond lowers the financial constraints that has more important and consistent positive effects on firm value relative to dividends. These findings imply investors to have higher preferences for a firm's ability to realize good investment projects and provide higher future profits, relative to current profit in the form of dividends. It also found that non-monotonic connection between dividends and firm value and dividends and financial constraints have relatively equal positive effect to firm value.

**Keywords:** dividend, financial constraints, firm value, information asymmetry, signal credibility

## Introduction

For a growing concern organization, firm profit should be distributed to investors or reinvested within the firm to maintain and create more future profit. Investors' value future profit higher than historical profit and current profit because future profit is what investor will experience in the future. However, estimating future profit is difficult. Future condition is vague and full with uncertainty. A routine investor practice is to invest and infer future

---

<sup>1</sup>Universitas Prasetiya Mulya, Indonesia

\*Corresponding author: [adrian.teja@pmbs.ac.id](mailto:adrian.teja@pmbs.ac.id)

yields based on historical profit trend and current profit, especially dividend paid out to investors, and assess the profitability of project taken by the firm. Thus, accumulated future profit or dividend is one of the major contributions to estimate firm value.

The theory on how dividend can change firm value starts with dividend irrelevant theorem (Miller & Modigliani, 1961). Dividend irrelevant theorem operates in the context of perfect capital market which information symmetry and frictionless market being the prominent feature. Information symmetry means (1) both firm and investor have the same information regarding the project profitability and (2) both firm and investor do not have information advantage relative to each other. Frictionless market enables either firm or investor to perform arbitrage activities when there is a difference in firm value for an identical firm. The meaning of an identical firm is a corporation that has the same stream of future profit but differs only that whether the firm which pays dividend and a firm which do not pay dividend.

The dividend irrelevant theorem holds when a firm financed solely by equity. The existence of other source of financing, i.e. debt financing, that receive special treatment in the form of tax subsidy, dividend irrelevant theorem does not hold (Galai & Wiener, 2018). Thereby, this special treatment to debt financing provides additional value to equity holder when they use more debt relative to equity (Modigliani & Miller, 1963).

As a matter of fact, as we do not live in a perfect capital market, so the dividend is always relevant to firm value (Jiang & Stark, 2013). There are at least 11 theories on dividend relevance to firm value (Brawn & Šević, 2018). Dividend relevance to firm value theories can be categorized based on investor perspectives, firm perspectives, and investor-firm information asymmetry perspectives. Theories on dividend relevance to firm value are based on investor perspectives (1) catering theory of dividend (Baker et al., 2002) that explains the dynamic investor difference over preference to dividend and firm cater to investor preference to dividend, (2) clientele theory (Allen, Bernardo, & Welch, 2000; Duygun, Guney, & Moin, 2018; Graham & Kumar, 2006) discusses different investors have stable different preferences for dividend, (3)

buyback substitution theory (Bonaimé, Hankins, & Jordan, 2016; Jiang, Kim, Lie, & Yang, 2013) which explains investors to have different preferences to firm payout mechanism, i.e. dividend or share repurchase, (4) payout distribution channel theory which explains the relative importance of net payout rather firm payout mechanism (Jain, Shekhar, & Torbey, 2009), (5) conservatism theory which explains how investor conservativeness induce investor to value current payout rather than future payout, also known as a bird in the hand is worth two in the bush theory (Baker & Weigand, 2015).

Theories on dividend relevance based on firm perspectives are (6) life cycle theory which explains various life cycles of organizations that affects how much dividend that will be distributed to investor (Jain et al., 2009), (7) agency cost theory (Firth, Gao, Shen, & Zhang, 2016) which explains firm management as an agent voluntarily reduced firm free cashflow, i.e. the source of agency conflict, in the form of higher dividend payout, (8) leverage trade-off theory discusses firm agrees to pay dividend, and special dividend if necessary, to maintain firm leverage level in order to maintain free cashflow in the firm at minimum level (Cooper & Lambertides, 2018), (9) defensive theory (Liu & Chen, 2015) which explains the input of a firm and its efforts to reduce their business risk by gradually returning cash to shareholders. In addition, returning cash will reduce firm management flexibility to choose solid investment. Hence, a company will be more careful when it chooses investment, (10) payout and initiation theory (Flavin & O'Connor, 2017) which explains firm change in stance when they shift from one phase of firm life cycle to the next one. When the organizations have large profits than their investment opportunities, so companies will pay higher dividend (Fama & French, 2002).

Theories on dividend relevance based on investor and firm information asymmetry is (11) signaling or prospective theory (Flavin & O'Connor, 2017). Moreover, those firms which uses dividend as a signaling mechanism to enhance investor confidence. Thereby, it increases dividend to signal firm increased business prospective. Off course, based on the opinion on prospects of the firm solely relies on a company's dividend signals which are not

enough. Firm dividend is a noisy signal. Firm signal needs to be interpreted by investor regarding signal credibility and plausibility.

Dividend signaling by the firm almost never comes in isolation. The signaling of dividends always comes with a smooth communication from the very organization which goes with dividend changes. Firm communication filling the missing information contains changes in dividends (Fairchild, 2010). There are different contexts to signal the credibility of a firm, from good economic prospect, life cycle of a firm, and firm manager proven capability to carry out successful projects. Hence, dividend reduction or dividend omission in the context of realizing good investment opportunities is not necessarily a bad news (Liang, Moreau, & Park, 2011). The dividend reduction and dividend omission more prevalent in weak economic condition, firm need to preserve their valuable financial resources to realized good investment opportunities regardless weak economic condition (Alstadsæter, Jacob, & Michaely, 2017; Hull, 2013).

However, despite a vast array of theories on the relation between dividend and firm value offered, empirical findings are relatively inconclusive (Araujo, Moreira, & Tsuchida, 2011). Inconclusive results may stem from firm deliberate action to smooth their dividend payment (Fliers, 2019). To smooth dividends creates an artificial positive relationships with future firm performance (Karpavičius, 2014). Regulation to make dividend is mandatory and also detaches dividend relation to future earnings and reduce the information content of dividend (Martins & Novaes, 2012). Those firms with poor growth opportunities chose to invest in their own stock through its share repurchase activities, in order to reduce outstanding shares and in the process increases firm earnings per share and maintain dividend streamlining payment mode (Almeida, Fos, & Kronlund, 2016).

The dividend relevance theory which was discussed above has also focused on historical dividend and profitability of the projects taken. This focus is not complete because it myopically focuses on current dividend. The investor needs to see from a broader perspective. To complete it, one must also consider large firm capabilities and massive investment opportunities. Even though

firm has enormous capabilities and investment opportunities, firm may not be able to realize all good investment opportunities due to firm financial constraints.

The source of financing may come from internally generated funds, i.e. Retained Earnings, and externally sourced fund, i.e. Bank Debt and Bond issuance. Investors that provide debt financing have greater concern to firm balance sheet. The weaker the balance sheet, investor will demand more compensation for higher risk taken in the form higher funding costs (Lerskullawat, 2018).

Other plausible sources of financing that do not weaken firm balance sheet but contribute to stronger firm balance sheet is equities financing. However, equities financing is not preferable to firm existing shareholder. Equities financing have dilution effect. The dilution effect will reduce firm existing shareholder controlling power and since controlling power is sometimes more important than realization of good investment opportunities, existing firm investor may reluctant to invite new investor (Majluf, 1984).

The theories of dividend have different relationship to firm value. Dividend theories from firm and investor perspectives have monotonic relationship with firm value. For example, agency cost theory of dividend explains dividend as a tool to reduce agency cost. Hence, the larger the dividend will increase so do the value of a firm. In addition, these theories from information asymmetry have both monotonic connection and non-monotonic relationship with firm value. Miller and Rock (1985) discussed when weak firm use dividend to misled investor regarding their firm future prospect. For example, in year 1990, Westinghouse increases dividend in order to mimic General Electric dividend and in the process Westinghouse sacrificing good investment project, fall into financial distress and eventually bankrupt (Grennan, 2019; Martins & Novaes, 2012). This Westinghouse dividend have adverse impact to firm value (Hanlon & Hoopes, 2014). While strong firm use dividend as a signal to increase investor confidence regarding their good future prospect. Different firm dividend, good and bad signal when seen as a continuum, will resemble a J-Shape relation between dividend and firm value (Kim, Park, & Suh, 2018).

Our understanding about how dividends affect firm value is hindered by (1) the lack of model that integrates two hypothesis, signaling or information asymmetry to firm value and financial constraints to firm value, and (2) whether the relationship between dividend and firm value in the context of firm financial constraints is monotonic or non-monotonic. Our paper extends Miller and Rock (1985) that discusses firms with high growth potential sacrifice firm growth potential by paying dividend, and Kim, Park, and Suh (2018) that discuss non-monotonic, i.e. J-Shape, relation between dividend and firm value. Integrating two hypothesis and simultaneously test monotonic and non-monotonic relations between dividend and firm value in the context of firm financial constraints become this paper novelty contribution to dividend theory literature. Our research questions are as follows:

1. Does dividend affect firm value?
2. Do the financial constraints affect firm value?
3. Does dividend and financial constraints affect firm value?
4. If dividend do affect firm value, do dividend affect firm value in a monotonic relation or a non-monotonic relation in the context of firm financial constraints?

We have chosen public companies of Indonesia from year 2013 to year 2017 as sample for our research. At first, we have used standard panel data regression. However, the data has become unbalanced because we eliminate data outliers. The unbalanced panel data failed to capture statistically significant relation between dividend and firm value. To overcome the unbalance panel data, we use repeated cross section regression method for year 2013 to year 2017.

Our findings from monotonic and non-monotonic relation between dividend and firm value are as follows. From monotonic relations perspectives, partial analysis shows dividend have positive effect to firm value and lower financial constraints have positive effect to firm value. However, simultaneous analysis shows dividend effect to firm value becoming statistically insignificant in the presence of financial constraints. From non-monotonic relations, descriptive statistics analysis based on dividend categorization from no dividend paying firm, low dividend paying firm to high dividend

paying firm reveal J-Shape relations between dividend and firm value. This finding consistent with Kim, Park, and Suh (2018) research regarding J-Shape relations between dividend and firm value. However, repeated cross section regression shows (1) dividend have negative relation to firm value and (2) dividend and firm value have relatively non-monotonic relations based on beta coefficient values.

This paper contributes to the literature on the relation between dividend and firm value along multiple dimensions. We contribute to the relation between dividend and firm value in a monotonic perspective literature by highlighting the role of financial constraints as a statistically significant mediating variable between dividend and firm value. The relation between dividend and firm value in a non-monotonic perspective have a relatively have J-Shape relation. While, the standard relations between dividend and firm value is better represented by monotonic relations, the relatively J-Shape relations between dividend and firm value exposes new interesting research opportunities.

## **2. Literature Review and Hypothesis Development**

In a perfect capital market, firm investment and source of financing is available without limitation. Both firm and investor, due to their information symmetry, have equal estimate of investment cashflow and investment risk. This equal estimate between firm and investor creates a symmetry of firm value.

Relaxing information symmetry into information asymmetry assumption creates different investment cashflow and investment risk estimate. A firm may have information advantage regarding investment cashflow and investment risk relative to investor. Thereby, firm information advantage relative to investor result in firm more accurate and higher firm valuation relative to investor valuation.

However, an investor that has a wider exposure to different industry and exposed to more diverse information may have information advantage relative to firm information. If this is the case, investor may evaluate whether firm investment due to good investment prospect or firm overconfidence. When the investor

agrees with the firm regarding investment cashflow and investment risk, investor and firm valuation will be equal. However, when investor have higher information advantage and decides that firm investment is due to firm management overconfidence, investor and firm valuation will be different. Firm management overconfidence, known as Hubris Hypothesis, will have detrimental effect to future firm cashflow and firm risk (F. Jiang, Stone, Sun, & Zhang, 2011). Hence, investor valuation will be more accurate and lower than firm valuation.

In this paper, we focus to firm information advantage relative to investor. This information advantage creates a wedge of firm valuation and investor valuation, which firm valuation is more accurate and higher than investor valuation. Undervalued stock have several negative consequences to firm activities. First, firm increasingly provide managers with stock-based compensation through ESOP (Employee Stock Ownership Plan) (reference). If stock price is undervalued, then the incentives effect will not reach the intended motivating effect to grow shareholder wealth and managerial may take action that have negative effect on firm value (Bonaimé et al., 2016).

Second, firm investment depends on project feasibility and available capital to fund the project. Project feasibility is calculated based on project cash flow and on discount rate applied to discount project cash flow. Project cash flows relatively fixed and beyond firm control because of market condition or market competition. Sensitivity analysis or scenario analysis only provides information how much project cash flow may deviate from expected cash flow. Project discount rate is not fixed and firm may reduce the discount rate for their advantage. Project discount rate usually calculated with Capital Asset Pricing Model (CAPM).

CAPM tenets is for higher risk must be compensated for higher return. This model acknowledges systematic risk and idiosyncratic risk. The systematic risk usually goes beyond firm control because systematic risk influenced and directly by market condition, industry specific risk, and so forth. However, idiosyncratic risk is within the firm control. Project idiosyncratic risk maybe reduced because firm and investor information asymmetry are reduced.

Furthermore, the firm information relative to investor needs to be complemented with firm ability to give signal to investor. Signal to induce investor to re-evaluate their information set and analysis. Investor re-evaluation will reduce firm and investor information asymmetry. Firm signal to investor through dividend initiation and dividend increase (Lee & Mauck, 2016). The source of funds for dividend initiation and dividend increase ideally sourced from firm profit and retained earnings. However, firm may increase their debt intentionally to fund dividend initiation or dividend increase. Even though the firm debt level increased, the post dividend initiation or dividend increase, firm idiosyncratic risk remain reduced (Fliers, 2019).

Firm idiosyncratic risk also can reduce through higher investor demand. Firm life cycle advance from one phase to next phase is signaled through dividend initiation or dividend increased (Flavin & O'Connor, 2017). When firm life cycle phase advanced, their reputation is increased too. Highly reputable firm have broader investor based, i.e. mutual fund (Firth et al., 2016). Broader investor provides a base to firm with four advantages. First, broader investor based will reduce firm information asymmetry and reduce firm cost of capital (He, Lepone, & Leung, 2013). Second, dividend initiation stock have higher stock movement with other dividend paying stock (Hameed & Xie, 2019). Higher stock movement means firm idiosyncratic risk is reduced and their stock movement largely influenced by stock systematic risk. Third, dividend paying stock usually have higher valuation than non-dividend paying stock (Karpavičius & Yu, 2018). And fourth, firm with higher investor based have lower financial constraints (Driver & Muñoz-Bugarin, 2019). Lower financial constraints enable firm to execute more good investment project than firm with higher financial constraints. Based on above argument, our first hypotheses are as follows:

**H1.** Dividend has positive effect to firm value.

Since dividend is desirable from the investor point of view, dividend becoming regulated and mandatory. Mandatory dividend is a kind of investor protection mechanism. Mandatory dividend reduced pool of cash available in the firm that effectively reduced agency problem (Martins & Novaes, 2012). However, mandatory

dividend for some firm, especially small firm or firm with high growth opportunities, have negative side effect (Fama & French, 2002). Pecking order theory explains how information asymmetry has detrimental effect to firm cost of capital. Information asymmetry force firm to rely on internally generated fund, i.e. retained earnings, as the lowest cost of capital before obtain more costly fund, i.e. bank loan and public capital markets.

Mandatory dividend has negative side effect. Mandatory dividend inhibit firm to invest in good project. First reason, mandatory dividend reduced retained earnings that force firm to rely more on external funding which may not be available. Unavailable fund forces firm to abandoned good investment project. Second reason, higher needs of external funding is coming with higher cost of capital. Higher cost of capital makes it more difficult for project to become feasible, i.e. zero or positive Net Present Value. Both reasons can be summarized as financial constraints.

Financial constraints are influenced by external factor and internal factor. External factor that influences firm financial constraints are financial development. Countries with higher financial development level, i.e. financial institution and capital market sophistication, reduce the negative impact of firm financial constraints to under-investment problem (Lerskullawat, 2018; Naeem & Li, 2019). Based on above argument, our second and third hypotheses are as follows:

**H2.** Lower financial constraints have positive effect to firm value.

**H3.** Dividend and financial constraints have effect to firm value.

As mentioned earlier in our first hypothesis developed regarding benefits that can be obtained from higher firm valuation induced by dividend initiation or dividend increased, firm have enough incentive to mislead investors. Firms have different financial constraints level. Firm with low financial constraints will have no trouble to pay dividend and realizing good investment project. This firm will be highly valued by investors because firm able to provide dividend and future profit altogether. Firm with high financial constraints usually have higher information asymmetry and at the same time, have higher investment opportunities (Fosu, Danso,

Ahmad, & Coffie, 2016). Firm with high information asymmetry tries to reduce their financial constraints by paying dividend. Firm hoped investors to be misled to see dividend payout as a credible signal that firm has moved to the next phase of firm life cycle. If investors are misled by firm dividend signal, firm may obtain capital needed with lower cost of capital to carry out their investment projects.

However, investors evaluate the credibility of firm signal with investors' previous information. In this paper, we have curtailed the information into dividend and financial constraints. Investor will consider whether firm financial constraints level enable firm to pay dividend without jeopardizing their ability to fund good investment projects. Firm with low financial constraints will be able to pay dividend and fund their good investment project. Firm with low financial constraints has higher signal credibility. The problem of underinvestment for firm with low financial constraints is low and investor will value the firm more highly. Firm with high financial constraints but pay dividend give rise to mismatch between good signal from dividend and bad signal from high financial constraints. Signal mismatch will reduce the signal credibility. Firm with high financial constraints but pay dividend will forego more good investment projects. Investors will punish the firm with financial constraints but pay dividend with lower firm value.

Above argument creates two distinct conditions. First, firm with low financial constraints and pay out dividend will experience positive monotonic relations between dividend and firm value. Second, firm with high financial constraints and payout dividend will experience negative monotonic relations. Combining the two conditions, the relations between dividend and firm value will be non-monotonic. Based on this argument, our fourth hypotheses are as follows:

**H4.** Dividend has non-monotonic relationship with firm value.

### 3. Data and Methodology

#### 3.1. Data

We obtain financial data from year 2013 to year 2017 to examine the relation between dividend and financial constraints to firm value

from Bloomberg Terminal. We exclude firms from financial sector and firm that have negative earnings. Financial data that we obtain have outliers that reduce statistical results. Data outliers eliminated using Winsorize method, i.e. exclude 2.5% of data on top and bottom. Total firm under consideration presented at table 3.1. below. When we exclude firm from financial sector, firm that have negative earnings, and excluding outliers, our balance panel data becoming unbalance panel data.

Tabel 1  
*Sample*

Year	2013	2014	2015	2016	2017
Registered Public Companies	486	509	525	539	565
Deduct: Financial and Negative Earnings Stocks	107	136	139	132	247
Deduct Outliers (5%)	19	19	19	20	16
Total Research Samples	360	354	367	387	302

Source: Bloomberg processed.

### 3.2. Methodology

We perform seven data processing procedure. First, we rank firms that do not pay dividend to firm that pay highest dividend. We categorize the firm into 6 categories from category 0 to category 1 to 5. Category 0 is defined as firm that do not pay dividend. Category 1 is defined as firm that pay dividend with lowest quintile. Category 5 is defined as firm that pay dividend with highest quintile. The number of firms that do not pay dividend i.e. category 0, is different with number of firm's quintile that pay dividend, i.e. category 1 to 5. Number of firm that pay dividend in each quintile is relatively the same. For category 0, we put value of 1 if they do not pay dividend and 0 if they pay dividend. For category 1 to 5, we put value of 1 for each category and 0 if they belong to other category. Second, we calculate Kaplan-Zingales financial constraints equation (Kaplan & Zingales, 1997) using firm financial data, i.e. cash flow to capital,

Tobin's Q, debt to total capital, dividend to K (Plant, Property & Equipment last year (PP&E<sub>t-1</sub>)), cash to K (Plant, Property & Equipment last year (PP&E<sub>t-1</sub>)). The first and second procedure results is presented in table 2.

Table 2  
*Proxies for Variable*

Variable	Proxy	Notation	Description	Data Source
Firm Value	Tobin's Q	Q	Tobin's Q = Total Market Value of Firm/Total Value of Firm	Bloomberg
Dividend Ratio	DIV/T A	Div	DIV/TA = (Dividen Per Share/Total Asset)x100.000	Bloomberg & Calculation
Financial Constraints	KZ Index	KZ	KZ Index = (-1.001909x((Cash Flows /K))+ (0.2826389xQ)+(3.139193x(Debt/Total Capital)))+(-39.3678x(Dividend/K))+ (1.314759x(Cash/K))	Bloomberg & Calculation

Note: We adjust dividend to total asset by multiplying with 100.000 to avoid dividend descriptive ratio and regression coefficient results 0.000.

KZ Index have negative value. More negative value means lower financial constraints.

Third, matching dividend categories and financial constraints to firm value. And fourth, we present the relation between dividend categories and firm value in figure. This figure enable us to identify whether the relation between dividend and firm value is monotonic or non-monotonic.

Fourth, we analyze whether dividend and financial constraints have effect to firm value using 4 empirical model. The monotonic relation between dividend and financial constraints to firm value will be analyzed using model 1, model 2, and model 3. The non-monotonic relation performed using model 4 to model 6. We regress 5 categories of dividend from category 0, i.e. firm that do not pay dividend, dividend category 1, i.e. firm that pay lowest quintile dividend to dividend category 4, i.e. firm that pay second highest quintile dividend. Since we using 6 categories, our dummy variable should be reduced into 5 category and we exclude dividend category 5. We analyze the non-monotonic relation between dividend and firm value using model 4. Each categories of dividend have their own financial constraints value. Performing two bundle of 3 regression model, for monotonic relation and non-monotonic relation, enable us to understand the role of dividend or financial constraints as an independent variable, a moderating variable, or a mediating variable to firm value. The empirical model from model 1 to model 6 presented below:

Model 1.

$$Q_{it} = \alpha + \beta_1 Div_{it} + \varepsilon_{it}$$

Model 2

$$Q_{it} = \alpha + \beta_1 KZ_{it} + \varepsilon_{it}$$

Model 3

$$Q_{it} = \alpha + \beta_1 Div_{it} + \beta_2 KZ_{it} + \varepsilon_{it}$$

Model 4

$$Q_{it} = \alpha + \beta_1 Div_{it} + \beta_2 Div_{it} + \beta_2 Div_{it} + \beta_3 Div_{it} + \beta_4 Div_{it} + \varepsilon_{it}$$

Model 5

$$Q_{it} = \alpha + \beta_1 KZ_{it} + \beta_2 KZ_{it} + \beta_2 KZ_{it} + \beta_3 KZ_{it} + \beta_4 KZ_{it} + \varepsilon_{it}$$

Model 6

$$Q_{it} = \alpha + \beta_1 Div_{it} + \beta_2 Div_{it} + \beta_2 Div_{it} + \beta_3 Div_{it} + \beta_4 Div_{it} + \beta_5 KZ_{it} + \beta_6 KZ_{it} + \beta_7 KZ_{it} + \beta_8 KZ_{it} + \beta_9 KZ_{it} + \beta_{10} KZ_{it} + \varepsilon_{it}$$

Fifth, the relation between dividend and financial constraints to firm value for period year 2013 to year 2017 normally analyzed by standard panel data regression. However, as mention earlier that our panel data becoming unbalance panel data because of our earlier

data filtering, i.e. firm from financial sector, firm that have negative earnings, and excluding outliers, statistical results from standard panel data regression is not statistically significant. Hence, we change our statistical method to repeated cross section regression. We choose this method to identify coefficient value change and their statistically significant change within the time period under considerations. We perform repeated cross section regression for year 2013 to year 2017 and gain 5 regression results for each year.

Sixth, we test for classical statistical assumptions for each year in repeated cross section regression. We find and correct heteroscedasticity by using White-Test and robust standard error respectively. We conduct multicollinearity test using the VIF method.

Seventh, we present the comparison between the firm value, i.e. Tobin's Q, from descriptive statistic and dividend coefficient obtained from repeated cross section for year 2013 to 2017.

#### **4. Results, Discussion, and Implication for Future Results**

In this section, we analyze the relation between dividend, firm financial constraints, and firm value using descriptive statistics, descriptive presentation, regression results, and presentation to compare the result on the relation between dividend and firm value using descriptive statistics and coefficient results from regression equation.

##### **4.1. Descriptive Statistics**

Table 3 presents the descriptive statistics of firm value, dividend, and financial constraints for year 2013 to year 2017. The table show firm valuation as proxied by Tobin's Q relatively stable with ratio above 1.8. However, two year after Indonesia President Election in year 2014, Tobin's Q decline considerably and reach lowest point in year 2015 with ratio 1.7 and then increase to 1.74 in year 2016.

Indonesia firm dividend relative to their asset show consistent positive trend. From monotonic perspective, positive dividend trend

Table 3  
*Descriptive Statistics*

Description	Year				
	2013	2014	2015	2016	2017
Tobin's Q	1.8244***	1.8625***	1.6988***	1.7429***	1.8662***
DIV/TA	0.8348***	0.8359***	0.7366***	0.8937***	1.0936***
KZ Index	-86573	-2.7683	-2.0730	-2.9858	-12.3478
DIV0	0.000	0.0000	0.0000	0.0000	0.0000
DIV1	0.0409***	0.0426***	0.0276***	0.0507***	0.0571***
DIV2	0.1512***	0.1591***	0.1199***	0.2029***	0.1792***
DIV3	0.4810***	0.4172***	0.3371***	0.6182***	0.5016***
DIV4	1.3152***	1.2917***	1.0844***	1.7194***	1.2678***
KZ0	-12,461	0.1703	0.2377	-0.0093	-0.5905
KZ1	-1,827	-0.7078	-1.3032	-1.0272	-1.4975**
KZ2	-1,061	-2.8089**	-3.7874**	-6.4102**	-4.6612**
KZ3	-821,41	-5.2828***	-2.0800**	-3.2043***	-8.1103**
KZ4	-5,136	-8.7029***	-6.7670***	-10.955***	-74.872
Obs	379	373	386	407	318

\*\*\*, \*\*, \* means statistically significant at 1%, 5%, and 10% respectively.

is statistically significant at alpha 1%. From non-monotonic perspective, positive dividend trend is visible and significant at alpha 1% for first to third quartile dividend category while fourth quartile dividend show negative dividend trend.

On the contrary to firm dividend, firm financial constraint is not statistically significant in monotonic perspectives because firm financial constraints have very large standard deviation. However, from non-monotonic perspective, firm financial constraint is mostly statistically different from zero for firm with dividend category second quartile and third quartile. This two quartile show most improvement in financial constraints reduction from year 2013 to year 2017. While first quartile and fourth quartile dividend category show firm financial constraints is not consistent and not statistically significant from zero. This inconsistency also happen because firm financial constraints have very large standard deviation.

## 4.2. Regression Results

### 4.2.1. Monotonic relation between dividend and firm value.

Table 4.2. shows the regression results from model 1 to model 3 on the monotonic relation between dividend and financial constraints to firm value. Regression results from model 1 show dividend growing importance to firm value. Dividend coefficient and explanatory power is increasing. Dividend coefficient growing from 0.0936 in year 2013 to 0.1080 in year 2017 with R-Square increasing from 1.92% to 2.19% respectively. Regression results from model 2 also show growing importance of financial constraints. Financial constraint coefficient and explanatory power is increasing. Financial constraints coefficient growing from -0.0327 in year 2014 and reach -0.0577 in year 2016 with R-Square increasing from 0.3% to 1.85% respectively. Partial analysis shows that both dividend and financial constraints have positive and growing explanatory power to firm value. However, regression results from model 3 shows financial constraints is a mediating variable between dividend and firm value. Regression results from model 3 show dividend do not have consistent relation with firm value in the present of financial constraints. Financial constraints, for the last three year from year 2015 to year 2017, is statistically significant but have inverted U-Shape coefficients.

Table 4

*The Monotonic Relation between Dividend and Financial Constraints to Firm Value*

Description	2013	2014	2015	2016	2017
	Model 1				
Div	0.09363***	0.0848***	0.0354	0.0867***	0.1080***
Constant	1.7463***	1.7916***	1.6467***	1.6655***	1.7480***
R-Square	0.0192	0.0173	0.0014	0.0189	0.0219
	Model 2				
KZ	0.000	-0.0327***	-0.0503	-0.0577***	-0.0023**
Constant	1.8265***	1.7720***	1.5945***	1.5705***	1.8377***
R-Square	0.0003	0.0176	0.0313	0.0857	0.0185
	Model 3				
Div	0.0936***	0.0470	0.0146	0.0182	0.1050***
KZ	0.000	-0.0192	-0.0486***	-0.0555***	-0.0022**
Constant	1.7484***	1.7699***	1.5872***	1.5608***	1.7238***
R-Square	0.0195	0.02	0.0315	0.0864	0.0392

\*\*\*, \*\*, \* means statistically significant at 1%, 5%, and 10% respectively.

**4.2.2. Non-monotonic relation between dividend and firm value.** Table 5 shows the regression results from model 4. Regression results from model 4 on the non-monotonic relation between dividend and firm value show slight explanatory power improvement relative to model 1 the monotonic relation between dividend and firm value. Model 4 tend to have higher R-Square relative to model 1. However, the relation between dividend and firm value in model 4 is not robust because no single categories have consistent statistical significance. The most consistent relation between dividend and firm value is found in category 1, the lowest quintile of dividend categories. In dividend category 1, dividend tend to have increasing coefficient which mean dividend tend to have higher effect to firm value. The higher dividend paid out, the lower firm value Dividend category 2, the second lowest dividend category, shows no statistical significance from year 2013 to year 2017. This dividend category 2 results need to be explored further.

Table 6 shows the regression results from model 5. Regression results from model 5 show relatively similar to model 4, financial constraints in the non-monotonic relation is not robust. Different dividend categories have no financial constraints pattern as shown from dividend coefficient trend and financial constraints coefficient trend. For instance, dividend category 1 show relatively volatile but growing regression coefficient and statistically significant for year 2013 to year 2017. While financial constraints for firm in dividend category 1 show relatively consistent no statistically significant relation between financial constraints and firm value.

Table 7 show regression results from model 6. Regression results from model 6 different results with model 3. In Monotonic relation, financial constraints is a mediating variable that diminish dividend relation to firm value. In Non-Monotonic relation, both dividend and financial constraints have independent relation to firm value as shown with R-Square that results from R-Square addition from model 4 and model 5.

Table 5  
*Non-monotonic Relation between Dividend and Firm Value*

Description	Model 4				
	2013	2014	2015	2016	2017
Div 0	-0.4699	-1.1818**	-0.4490	-1.9312***	-1.0140**
Div 1	-1.0354*	-1.5516**	-0.6256	-2.2216***	-1.2820**
Div 2	-0.4354	-0.8932	-0.3488	-1.4092**	-0.7720
Div 3	-0.4087	-1.1258*	-0.4041	-1.6922***	-1.1833**
Div 4	-0.2764	-0.9898	0.1096	-1.7928***	-1.0980**
Constant	2.277***	2.9214	2.031***	3.5242***	2.7937***
R-Square	0.0105	0.0202	0.0062	0.0507	0.0248

\*\*\*, \*\*, \* means statistically significant at 1%, 5%, and 10% respectively.

Table 6  
*Non-monotonic Relation between Financial Constraints and Firm Value*

Description	Model 5				
	2013	2014	2015	2016	2017
KZ 0	0.000	0.1451	0.1222**	0.0041	0.0067
KZ 1	0.000	-0.0356**	-0.0310	-0.0234	0.0249
KZ 2	0.000	-0.0472	-0.0065	-0.0839***	-0.1181***
KZ 3	0.000	-0.0536**	-0.0828	-0.1667***	-0.0148
KZ 4	0.000	-0.0232**	-0.1173***	-0.0265	-0.0020**



Description	Model 5				
	2013	2014	2015	2016	2017
Constant	1.8389***	1.7936***	1.5402***	1.6542***	1.7772
R-Square	0.0024	0.0396	0.0436	0.0510	0.0694

\*\*\*, \*\*, \* means statistically significant at 1%, 5%, and 10% respectively.

Table 7

*Non-monotonic Relation between Dividend and Financial Constraints to Firm Value*

Description	Model 6				
	2013	2014	2015	2016	2017
Div 0	-0.4681	-1.2038*	-0.5196	-1.931***	-1.0103**
Div 1	-1.0062*	1.5865**	-0.6659	-2.2642***	-1.2740**
Div 2	-0.4162	1.0047	-0.3513	-1.9628***	-1.3650**
Div 3	-0.3874	-1.6153**	-0.6842	-2.3421***	-1.3544**
Div 4	-0.2246	-1.2212*	-0.6333	-2.1577***	-1.2545**
KZ 0	0.000	0.1457	0.1238**	0.0040	0.0068
KZ 1	0.000	-0.0493***	-0.0368	-0.0414	0.0053
KZ 2	0.000	-0.0397	-0.0008	-0.0863***	-0.1272***
KZ 3	0.000	-0.0927***	-0.0991	-0.2088***	-0.0211
KZ 4	0.000	-0.0266**	-0.1232***	-0.0333*	-0.0021**
Constant	2.2770***	2.9214***	2.031***	3.5242***	2.7937***
R-Square	0.0123	0.0621	0.0478	0.1043	0.0990

\*\*\*, \*\*, \* means statistically significant at 1%, 5%, and 10% respectively.

### 4.3. Non-monotonic Comparison between Descriptive and Model 4 Regression Coefficient

Figure 1 to figure 5 shows the relation between firm value obtained from descriptive relation and dividend regression coefficient obtained from repeated cross section regression. From the figure below, we can see that the relation between firm value and dividend regression coefficient is relatively neat, dividend regression coefficient is almost always negative, and the regression coefficient is mostly most negative for firm that pay dividend in lowest quintile dividend category.

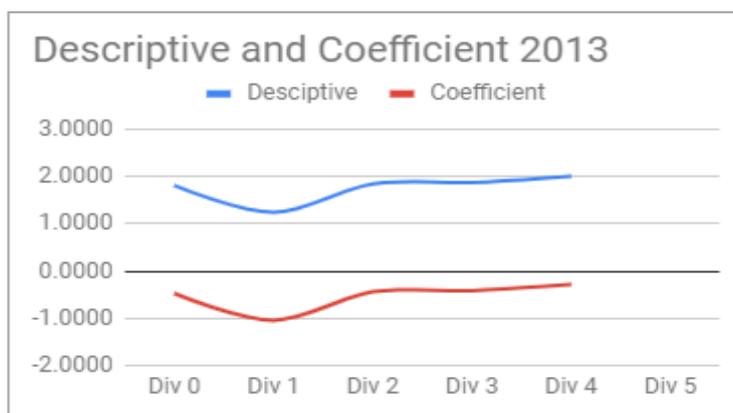


Figure 1. Comparison between descriptive and model 4 regression coefficient in year 2013

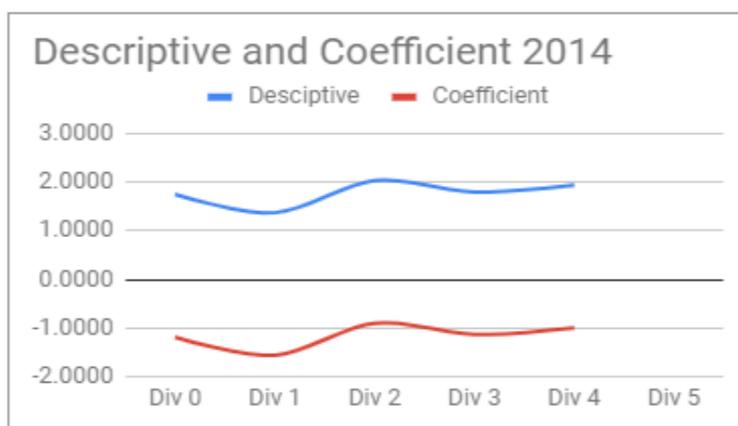


Figure 2. Comparison between descriptive and model 4 regression coefficient in year 2014

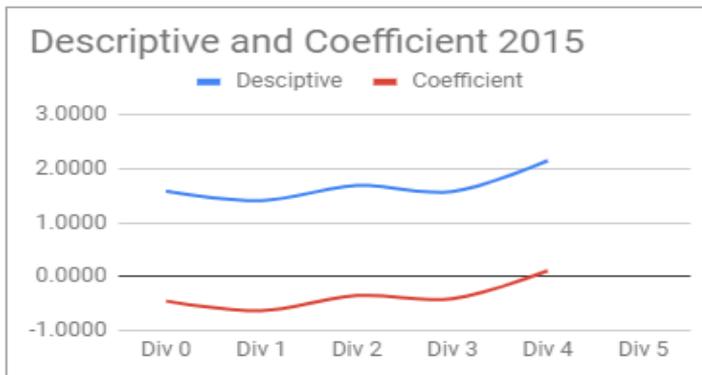


Figure 3. Comparison between descriptive and model 4 regression coefficient in year 2015

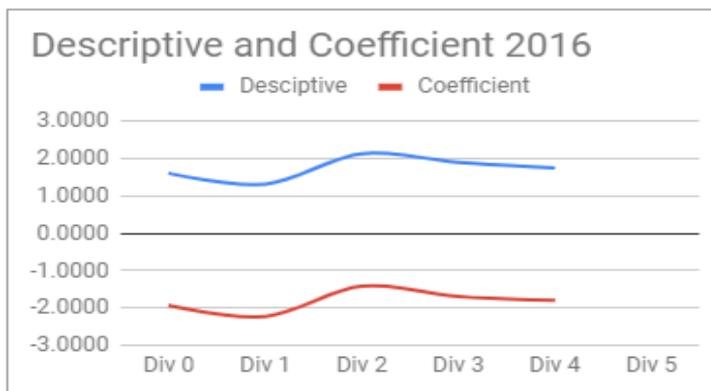


Figure 4. Comparison between descriptive and model 4 regression coefficient in year 2016

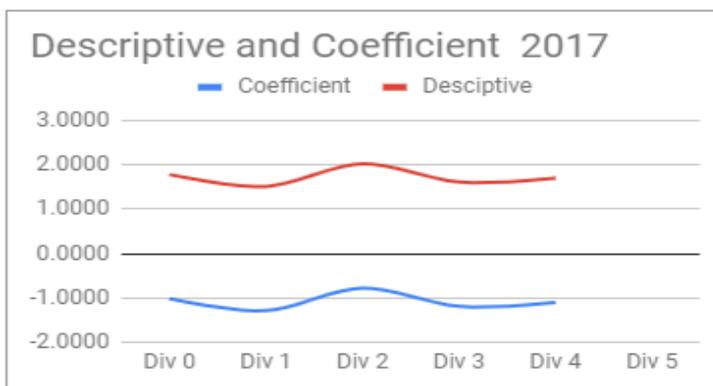


Figure 5. Comparison between descriptive and model 4 regression coefficient in year 2017

#### 4.4. Discussion

Relation between dividend and financial constraints and firm value in the context of monotonic relation is growing both on the effect and the explanatory power. This results depicts that investors have preference for higher dividend and lower financial constraints. However, when investor needs to choose between higher dividend or lower financial constraints, investor choose lower financial constraints. Investor preference for lower financial constraints indicate investor value future profit that can be obtained from realizing good investment project relative to current dividend.

Even though both dividend and financial constraints have independent effect to firm value in the non-monotonic relation context, dividend have significantly negative regression coefficient relative to financial constraints positive regression coefficient. This results shows within each dividend categories, investor show lower preferences for higher dividend relative lower financial constraints and dividend have more negative effect to firm value relative to positive effect of firm financial constraints to firm value. Higher dividend in each dividend categories have lower firm value. Lower financial constraints in each dividend categories is associated with higher firm value.

The findings contradict with monotonic and non-monotonic on the relation between dividend and firm value are as follows. First, in monotonic relation, dividend has positive relation to firm value, while in non-monotonic relation dividend in each dividend categories have negative relation to firm value. Second, in monotonic relation, financial constraints is a mediating variable while in non-monotonic relation both dividend and financial constraints have independent effect to firm value. The fundamental difference between monotonic and non-monotonic testing lies in the data differences. Monotonic relation use quantitative data. While non-monotonic relation use dummy variable.

The financial constraints results in consistent for both monotonic and non-monotonic relation and also interesting. The Indonesian stock market within year 2013 to year 2017 have higher number of IPO firms, higher market capitalization, and higher stock turnover. Moreover, the progress of Indonesian stock market indicates a more

developed stock market. Higher importance of financial constraints means more developed stock market which would not reduce firm difficulties to obtain external financing.

The relation between dividend and financial constraints to firm value in 2015 in non-monotonic relation shows that only non dividend paying and second highest quintile dividend categories have significant statistics results both on dividend and financial constraints. Investors have higher preference for firm that maintain their cash by not paying dividend and dividend paying firm that have lower financial constraints. Maintaining lower financial constraints is needed because higher regulation uncertainty by the new Indonesian President and business confidence reach their lowest level in 2015. See figure 4.6. below.



*Figure 6.* Indonesia business confidence Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

#### 4.5. Implication for Future Research

As discussed earlier, financial constraints do not diminish even though stock market is more developed. More research is needed to understand which variable which may explain high financial constraints in more developed stock markets. More research is needed to explain different shapes of non-monotonic relationship between dividend and firm value across time period under consideration.

### 5. Conclusion

The purpose of this paper is to examine the relationship between dividend and financial constraints to firm value in monotonic and

non-monotonic relation context. The results of this study indicates that lower financial constraints have more positive effect to firm value relative to dividend. These results are consistent both on monotonic and non-monotonic context. Thus, we can conclude that investor has higher preference for future profit relative to current profit, i.e. dividend.

The relation between dividend and firm value is better explained by monotonic relation. However, non-monotonic relation between dividend and firm provides a rich context. As shown in year 2015, investor gives good firm value for firm that choose not to pay dividend in order to protect cash as the valuable resources to realize good investment projects. The Investor also gives good firm value for firm that chooses to pay dividend if paying dividend do not have a negative effect to firm abilities to realize good investment projects.

### References

- Allen, F., Bernardo, A. E., & Welch, I. V. O. (2000). A Theory of Dividends Based on Tax Clienteles - Allen - 2000 - The Journal of Finance - Wiley Online Library. *The Journal of Finance*, 55(6), 2499–2536. <http://onlinelibrary.wiley.com/doi/10.1111/0022-1082.00298/full>
- Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchases. *Journal of Financial Economics*, 119(1), 168–185. <https://doi.org/10.1016/j.jfineco.2015.08.008>
- Alstadsæter, A., Jacob, M., & Michaely, R. (2017). Do dividend taxes affect corporate investment? *Journal of Public Economics*, 151, 74–83. <https://doi.org/10.1016/j.jpubeco.2015.05.001>
- Araujo, A., Moreira, H., & Tsuchida, M. (2011). Do dividend changes signal future earnings? *Journal of Financial Intermediation*, 20(1), 117–134. <https://doi.org/10.1016/j.jfi.2010.04.001>
- Baker, H. K., & Weigand, R. (2015). Corporate dividend policy revisited. *Managerial Finance*, 41(2), 126–144. <https://doi.org/10.1108/MF-03-2014-0077>
- Baker, M., & Wurgler, J. (2004). A catering theory of dividends. *The Journal of finance*, 59(3), 1125-1165.

<https://archive.nyu.edu/bitstream/2451/26448/2/02-12.pdf>

- Bonaimé, A. A., Hankins, K. W., & Jordan, B. D. (2016). The cost of financial flexibility: Evidence from share repurchases. *Journal of Corporate Finance*, 38, 345–362. <https://doi.org/10.1016/j.jcorpfin.2016.02.002>
- Brawn, D. A., & Šević, A. (2018). Firm size matters: Industry sector, firm age and volatility do too in determining which publicly-listed US firms pay a dividend. *International Review of Financial Analysis*, 58, 132-152. <https://doi.org/10.1016/j.irfa.2018.05.002>
- Cooper, I. A., & Lambertides, N. (2018). Large dividend increases and leverage. *Journal of Corporate Finance*, 48, 17–33. <https://doi.org/10.1016/j.jcorpfin.2017.10.011>
- Driver, C., & Muñoz-Bugarin, J. (2019). Financial constraints on investment: Effects of firm size and the financial crisis. *Research in International Business and Finance*, 47(October 2018), 441–457. <https://doi.org/10.1016/j.ribaf.2018.09.006>
- Duygun, M., Guney, Y., & Moin, A. (2018). Dividend policy of Indonesian listed firms: The role of families and the state. *Economic Modelling*, 75(July), 336–354. <https://doi.org/10.1016/j.econmod.2018.07.007>
- Fairchild, R. (2010). Dividend policy, signalling and free cash flow: an integrated approach. *Managerial Finance*, 36(5), 394–413. <https://doi.org/10.1108/03074351011039427>
- Fama, E. F., & French, K. R. (2002). Fama-2002-Testing Trade-Off an.pdf, 15(1), 1–33. <https://doi.org/10.2307/2696797>
- Firth, M., Gao, J., Shen, J., & Zhang, Y. (2016). Institutional stock ownership and firms' cash dividend policies: Evidence from China. *Journal of Banking and Finance*, 65, 91–107. <https://doi.org/10.1016/j.jbankfin.2016.01.009>
- Flavin, T., & O'Connor, T. (2017). Reputation building and the lifecycle model of dividends. *Pacific Basin Finance Journal*, 46(September), 177–190. <https://doi.org/10.1016/j.pacfin.2017.09.006>

- Fliers, P. T. (2019). What is the relation between financial flexibility and dividend smoothing? *Journal of International Money and Finance*, 92, 98–111. <https://doi.org/10.1016/j.jimonfin.2018.12.009>
- Fosu, S., Danso, A., Ahmad, W., & Coffie, W. (2016). Information asymmetry, leverage and firm value: Do crisis and growth matter? *International Review of Financial Analysis*, 46, 140–150. <https://doi.org/10.1016/j.irfa.2016.05.002>
- Galai, D., & Wiener, Z. (2018). Dividend policy relevance in a levered firm—The binomial case. *Economics Letters*, 172, 78–80. <https://doi.org/10.1016/j.econlet.2018.08.021>
- Graham, J. R., & Kumar, A. (2006). Do Dividend Clienteles Exist? Evidence on Dividend. *The Journal of Finance*, 61(3), 1305–1336.
- Grennan, J. (2019). Dividend payments as a response to peer influence. *Journal of Financial Economics*, 131(3), 549–570. <https://doi.org/10.1016/j.jfineco.2018.01.012>
- Hameed, A., & Xie, J. (2019). Preference for dividends and return comovement. *Journal of Financial Economics*, 132(1), 103–125. <https://doi.org/10.1016/j.jfineco.2018.09.012>
- Hanlon, M., & Hoopes, J. L. (2014). What do firms do when dividend tax rates change? An examination of alternative payout responses. *Journal of Financial Economics*, 114(1), 105–124. <https://doi.org/10.1016/j.jfineco.2014.06.004>
- He, W. P., Lepone, A., & Leung, H. (2013). Information asymmetry and the cost of equity capital. *International Review of Economics and Finance*, 27, 611–620. <https://doi.org/10.1016/j.iref.2013.03.001>
- Hull, T. J. (2013). Does the timing of dividend reductions signal value? Empirical evidence. *Journal of Corporate Finance*, 22(1), 193–208. <https://doi.org/10.1016/j.jcorpfin.2013.05.002>
- Jain, B. A., Shekhar, C., & Torbey, V. (2009). Payout initiation by IPO firms: The choice between dividends and share repurchases. *Quarterly Review of Economics and Finance*, 49(4), 1275–1297. <https://doi.org/10.1016/j.qref.2009.09.003>

- Jiang, F., Stone, G. R., Sun, J., & Zhang, M. (2011). Managerial hubris, firm expansion and firm performance: Evidence from China. *Social Science Journal*. <https://doi.org/10.1016/j.soscij.2011.05.007>
- Jiang, W., & Stark, A. W. (2013). Dividends, research and development expenditures, and the value relevance of book value for UK loss-making firms. *British Accounting Review*, 45(2), 112–124. <https://doi.org/10.1016/j.bar.2013.03.003>
- Jiang, Z., Kim, K. A., Lie, E., & Yang, S. (2013). Share repurchases, catering, and dividend substitution. *Journal of Corporate Finance*, 21(1), 36–50. <https://doi.org/10.1016/j.jcorpfin.2013.01.004>
- Kaplan, S. N., & Zingales, L. (1997). Do investment-cash flow sensitivities provide useful measures of financing constraints?. *The quarterly journal of economics*, 112(1), 169–215.
- Karpavičius, S. (2014). Dividends: Relevance, rigidity, and signaling. *Journal of Corporate Finance*, 25, 289–312. <https://doi.org/10.1016/j.jcorpfin.2013.12.014>
- Karpavičius, S., & Yu, F. (2018). Dividend premium: Are dividend-paying stocks worth more? *International Review of Financial Analysis*, 56(January), 112–126. <https://doi.org/10.1016/j.irfa.2018.01.004>
- Kim, S., Park, S. H., & Suh, J. (2018). A J-shaped cross-sectional relation between dividends and firm value. *Journal of Corporate Finance*, 48, 857–877. <https://doi.org/10.1016/j.jcorpfin.2016.09.010>
- Lee, B. S., & Mauck, N. (2016). Dividend initiations, increases and idiosyncratic volatility. *Journal of Corporate Finance*, 40, 47–60. <https://doi.org/10.1016/j.jcorpfin.2016.07.005>
- Lerskullawat, A. (2018). Financial development, financial constraint, and firm investment: Evidence from Thailand. *Kasetsart Journal of Social Sciences*. <https://doi.org/10.1016/j.kjss.2018.01.010>
- Liang, H., Moreau, L., & Park, J. C. (2011). Investment

- opportunities and dividend omissions. *Journal of Business Research*, 64(10), 1108–1115. <https://doi.org/10.1016/j.jbusres.2010.11.012>
- Liu, C., & Chen, A. S. (2015). Do firms use dividend changes to signal future profitability? A simultaneous equation analysis. *International Review of Financial Analysis*, 37, 194–207. <https://doi.org/10.1016/j.irfa.2014.12.001>
- Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of finance*, 40(4), 1031-1051.
- Myers, S. C., & Majluf, N. S. (1984). *Corporate financing and investment decisions when firms have information that investors do not have* (No. w1396). National Bureau of Economic Research.
- Martins, T. C., & Novaes, W. (2012). Mandatory dividend rules: Do they make it harder for firms to invest? *Journal of Corporate Finance*, 18(4), 953–967. <https://doi.org/10.1016/j.jcorpfin.2012.05.002>
- Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: a correction. *The American economic review*, 53(3), 433-443. <http://www.jstor.org/stable/1809167>
- Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34(4), 411-433. <https://econpapers.repec.org/RePEc:ucp:jnlbus:v:34:y:1961:p:411>
- Naem, K., & Li, M. C. (2019). Corporate investment efficiency: The role of financial development in firms with financing constraints and agency issues in OECD non-financial firms. *International Review of Financial Analysis*, 62(2018), 53–68. <https://doi.org/10.1016/j.irfa.2019.01.003>