Profitability and Leverage as Determinants of Dividend Policy: Evidence of Turkish Financial Firms

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Abstract

The purposes of this study is to investigate the impact of profitability and leverage ratios on the determination of dividend policy for Turkish financial firms listed on Borsa Istanbul. In order to do so, secondary longitudinal data were collected for the listed financial firms from DataStream database over the period 2008-2020. The financial crisis 2007-2008 has affected the sector undoubtedly. Thus, it is important to investigate how dividend policy behaves with debt level and level of profitability in financial sector of developing country after the well-known financial crisis. The research expects that both profitability and leverage have significant correlation with dividend payout ratio. Consistent to the findings of the majority of the prior empirical studies, the results of this study found that both profitability and leverage are negatively associated with dividend payout ratio.

Keywords: *Dividend policy, Profitability, Leverage, financial firms, and Borsa Istanbul.*

1. Introduction

Dividend policy is yet one of the most controversial topics in finance and accounting fields. Since both managers and investors are concerned about a company's share price and value, scholars believe it is vital to look at the various aspects that could influence shareholder's wealth and firm value. Dividend policy is one of the elements that is expected to have a significant influence on the estimation of the value and performance of firms. Despite the long-term negotiation of the value relevance of dividend policy, which have been around for decades, the precise association between firm value and dividend policy has remained uncertain. Finance scholars have conducted theoretical and empirical studies to determine whether firms should pay dividends on a regular or irregular basis and if it is paid oud, what is the optimum amount of payment.

Furthermore, empirical studies used a variety of research approaches to try to understand dividend behaviour. Some studies have used cross-sectional primary data from institutional managers and investors to find out how they feel about dividend policy and how it affects firm value (Baker and Powell, 1999; Baker et. al. 2017; Mokaya et al., 2013; Ozuomba et al., 2016). Others, most likely the majority, employ secondary data from time-series or panel studies to investigate the association between firm value and dividend policy (Gul et al., 2012; Kajola et al., 2015a; Masum, 2014; Renneboog and Szilagyi, 2015). Despite a large body of research, the essential question of the association between firm value and dividend policy remains unsolved. According to Hamza and Hassan (2017), the relationship between firm value and dividend policy decisions is yet a mystery. *"The harder we look at the dividends picture, the more it seems like a puzzle, with pieces that just do not fit together"* (Black, 1976 cited in Amidu and Abor, 2006).

On the other hand, the determination of dividend payout ratio is also widely studies in the literature (see, for instance, Jabbouri, 2016; Jozwiak, 2015; Kajola at al., 2015b; Manneh and Naser, 2015; Musiega et al., 2013). Patra and Dhar (2017) define dividends to be ordinarily characterized as the dissemination of income (gained in past or present fiscal year) in genuine resources among the shareholders of the company in the extent of their possession. It is thought that the size and pattern of dividend payout ratio themselves are subject to be influenced by other factors in the organisations. Researchers examine explanatory variables such as profitability, firm size and leverage in the determination of dividend policy.

The objective of this paper is to examine whether the level of profitability and leverage ratios has ability to determine dividend policy decisions made by financial institutions quoted on Borsa Istanbul over the duration after 2007-2008 financial crisis. The reason to consider this industry is because it is rarely studied by researchers previously in spite of its vital importance on the economy of Turkey. Adopting an explanatory research design and consistent with the research objective, the study addresses two major questions. First, do profitability indicators determine dividend policy? Second, does leverage determine dividend policy? Therefore, the paper examines the predicted impact of both profitability and leverage ratios on dividend policy using annual data form a sample of financial firms listed in Turkey for the period 2008-2020.

Investigating this subject is significant to determine the nature of relationship between each profitability and leverage with dividend payout ratio, particularly after financial crisis of

2007-2008 in a developing country such as Turkey. In doing so, this study can considerably contribute in the literature of dividend policy, particularly in emerging economies. Identifying such relationships can significantly assist investors when making investment decisions and considering future cash flows in the form of dividends on the securities they are about to invest in it. Furthermore, the results of this study provide valuable insights to both managers and policy makers. Management of the financial sector in Turkey can consider these results in their financial decision making since profitability and leverage in their firm have potentials in formulating their dividend policy. Additionally, policy makers can use these results to better help the financial sector and in turn boost the overall finance and economy of the country.

The reminder of this study is organised as follows: section two is the literature review and hypothesis development, section three is the methodology, section four is data analysis, and the lasts section presents the conclusion with policy implications.

2. Literature review

Dividend policy is related to financial policies with respect to distributing cash dividend in the current or distributing an enlarged dividend in future. Once a corporation earns a profit, it is the responsibility of management to decide on what to do with those earnings. It can be either decided to retain the profit inside the corporation or they may disburse it fully or partially to the shareholders of the corporation in the form cash dividends. Once the firm's management decides on the payment of the profit to shareholders as dividends, they will establish a fairly permanent dividend policy (Jabbouri, 2016), which can successively affect the perceptions of investors in the financial markets about the corporation. This decision, Jozwiak (2015) argues, is made based on rational thinking with regard to the circumstance of the corporations currently and within the future. Therefore, the decision of dividend policy is considerably expected to be effected by various internal factors in corporations.

The question of what does influence the decision of the board of directors to either pay out earning as dividend or to retain it has puzzled researchers. The income earned by a corporation can be reinvested in the business or paid out to shareholders. The portion distributed to shareholders is dividend. Neither the payment process itself nor the proportion of the payment is an obligation on the corporation regarding common stocks. In other words,

companies can follow different dividend payout policy. There are three common types of dividend policies: constant dividend policy, residual dividend policy and constant dividend policy (Weygandt et al., 2015). According to the first two types of policies, investors may experience the volatility of earnings of the corporation, while under the third kind, companies pay steady and expected dividend payout ratio every fiscal year (Kimmel et al., 2010). The reason why certain corporation follow certain policy of dividend payout is a vital question. In other words, why some corporation pay high rate of dividend payout where as some other pay less or even payout nothing is the core question. Therefore, scholars have widely investigated possible factors that might have impact on setting the dividend policy. The present paper considers the probable impact of both profitability and leverage factors on setting dividend payout policy.

2.1. Profitability:

Profitability ratios are a category of monetary measures that are employed to evaluate the ability of a firm to make profit in comparison to its expenses and other relevant costs incurred throughout a particular period (Abdullah et al., 2021; Ahmed and Abdullah, 2016). Profitability of firms is one of the most common studied variables to determine dividend policy (see, for example, Aivazian et al., 2003; Gill et al., 2010; Kuzucu, 2015; Nizar Al-Malkawi, 2007) and see table 1 for an overview. It is widely thought that profitability significantly influences the dividend payout ratio. The argument could be formulated based on the pecking order theory. The theory explains the process of prioritising financing sources by companies (Abdullah and Tursoy, 2019). It confirms that firms prefer to capitalise internally available risk free assets rather than risky sources such as equity and debt (Myers, 1984). That means the priority is given to internal funds when it comes to financing capitalisation. The theory expects a negative relationship between leverage of a firms and its profitability (Abdullah and Tursoy, 2021). In other words, corporation prefer to invest its own gained profit rather than borrowing from outside. Thus, companies are likely to payout low rate of dividend in order to retain the profit for future investment opportunities.

It is obvious that firms produce satisfactory amount of earnings when profitability is high. This enables the firm to have greater retained earnings. According to pecking order theory, firms with high profitability tend to pay fewer dividends because they use the profit to finance their sources. When revisiting the theory by Danis et al. (2014), the negative correlation is yet again emphasised in the case when "firms are not at their optimal level of leverage". In the empirical research, Jozwiak (2015) finds a significant negative correlation

between profitability and dividend policy for Polish listed companies. Kuzucu (2015) confirms consistent results in Turkey. Olowe and Moyosore (2014) have the findings for Nigeria; and Nizar Al-Malkawi (2007) for Jordan. Therefore, the current study supposes that in the social networking industry, dividend payout ratio will be lower when profitability is higher. The first hypothesis is then developed as follows:

H1. Profitability will have significant effect on dividend payout ratio.

2.2. Leverage:

Leverage is the investment approach of utilising borrowed capital: particularly, the usage of different financial mechanisms or borrowed wealth to expand the likely return of an investment (Abdullah, 2020). Leverage it also defined as the ratio of debt employed to finance assets (Abdullah and Tursoy, 2019; Brigham and Houston, 2012). Another considerable factor to determine the dividend policy decision is leverage of firms (see, for instance, Amidu and Abor, 2006; Asif et al., 2011; Rehman and Takumi, 2012) which is predicted to have significant negative impact on it. It is expected that firms with high leverage follow low dividend payout ratio. Rozeff (1982) argue that transaction cost and risk of a firm will increase with the increase of leverage. Leverage ratio indicates the level of debt in a company. High leverage ratio involves high fixed payment for external financing in the form of interest paid to the lenders. This might have a negative impact on dividend payout ratio because management cares about financing sources for future investment opportunities. This means, as long as leverage increase the chance of paying out dividend will decline. This indicates a negative association between leverage and dividend policy. This argument is supported by the agency cost theory of dividend policy because the agents (managers) aim to grow the business and then increase their wealth, whereas this may not be in the best interest of principals (shareholders).

On the empirical ground (see table 1 for an overview), Amidu and Abor (2006) examine the relationship between leverage and dividend policy in Gana over 1998–2003. Using Ordinary Least Squares model, the research findings indicate that there exists a negative association between leverage and dividend payout. Consistent outcome is asserted by Manneh and Naser (2015) when they find that financial leverage is negatively correlated to dividend policy. Jabbouri (2016) finds similar results in MENA emerging markets over the period 2004-2013. Tahir and Mushtaq (2016) found alike relationship in Pakistan. Thus, this study presumes that

in the social networking industry, dividend payout ratio will be lower when leverage is higher. The second hypothesis is developed as follows:

H₂. Leverage will have significant effect on dividend payout ratio.

Table 1

Prior literature on the determinants of dividend policy decisions

Author and Year	Research sample	Duration	Method	Variables	Key results
Jabbouri, 2016	Ten MENA countries	2004-2013	Longitudinal analysis	Profitability, liquidity, leverage, growth, cash flow, size and the state of the economy.	Dividend policy is directly associated with liquidity, profitability, and size, while it is negatively related to leverage, growth, cash flow and the state of the economy.
Manneh and Naser, 2015	31 non-financial firms listed on Abu Dhabi Securities Exchange	2010-2012	Longitudinal analysis	Profitability, cash flow, risk, leverage, and size	Dividend policy is directly related to profitability, cash flows, risk and size. However, it is negatively related to leverage.
Amidu and Abor, 2006	Firms listed on the Ghana Stock Exchange	1998-2003	Longitudinal analysis	Profitability, cash flow, risk, growth, market to book value, institutional holding and tax	Dividend policy is directly related to profitability, cash flow, and tax whereas it is negatively associated with risk, institutional holding, growth and market-to-book value
Jozwiak, 2015	Polish listed companies	2008-2012	Longitudinal analysis	profitability, liquidity, leverage and size	Dividend policy is directly related to liquidity and size. However, it is negatively related to profitability and leverage.
Khan et al., 2017	Firms listed on the Pakistan Stock Exchange	2006-2014	Longitudinal analysis	Taxation, liquidity, leverage, profitability and size	Capital gains tax has no impact on dividend payments, whereas profitability and leverage are significant factors

Graph 1 illustrates the conceptual framework of this study. It clarifies hypotheses 1 and 2 of the study which assumes the existence of relationship between each profitability and leverage with dividend payout ratio.

GRAPH 1

Proposed research framework
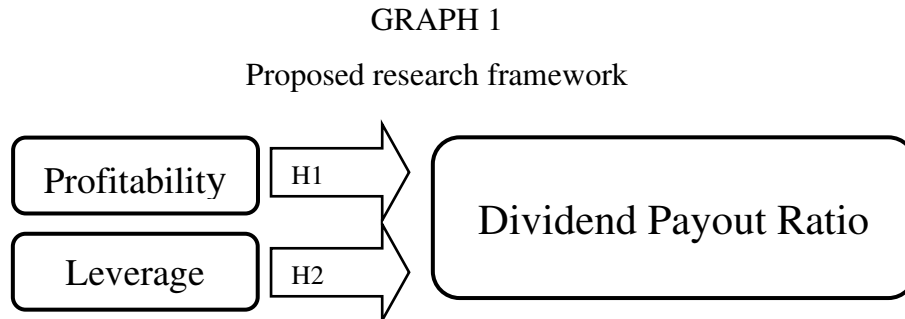
3. Methodology

3.1. Sample and data

The sample consists of financial institutions listed in Turkey on Borsa Istanbul which is selected based on self-selecting sampling method. Panel data is used to examine the relationships between profitability, leverage and dividend policy. The study investigates annual data of the duration of 13 years from 2008 to 2020. Therefore, the research sample includes 975 firm-year observations. Prior studies have even considered shorter period of time such as two years (Manneh and Naser, 2015) and seven years (Saeed and Sameer, 2017). Financial firms with missing data were excluded. Data were collected from DataStream database.

3.2. Variable construction

3.2.1. Profitability

Firm's profitability is an explanatory factor which is supposed to possess a negative effect on dividend policy. In other words, it is an explanatory variable which is assumed to determine dividend payout ratio. The proxies to measure profitability ratio of corporations are several in the literature. They almost provide the same information, however, from different angles of view. Return on assets (ROA) is one of the commonly used ratios to measure profitability (Abdullah et al., 2021; Ahmed, 2018; Amidu and Abor, 2006; Manneh and Naser, 2015; and Brunzell et. al. 2014). It simply measures how much a company earned in a particular period of time on the assets capitalised during that period of time. Jabbouri (2016) also utilises profit before interest and tax divided by total assets capitalised in the determination of dividend policy. Return on equity (ROE) is another important proxy to measure profitability, which is

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also widely utilised in the prior literature (see, for example, Abdullah, 2020; Abdullah and Tursoy, 2021; Jabbouri, 2016; Jozwiak, 2015). ROE measures the amount of return a company earned on the capitalised assets minus its debt, which illustrates return on total shareholders' equity. Consequently, we employ both proxies in this paper in order to be able to properly measure profitability and could be used in the determination of dividend policy. Therefore, the first model is formulated as follow:

$$PRO = f(ROE, ROA) \qquad (1)$$

Where, **PRO** is profitability of firms; **ROE** is the return on equity; and **ROA** is the return on assets.

3.2.2. Leverage

Leverage is another explanatory factor that is also supposed to negatively affect dividend policy in a company. There are three known proxies to indicate leverage ratio used in the literature; total debt ratio, debt to equity ratio, and equity multiplier. The current study employs the first two proxies to measure leverage in the research sample. Those two proxies are the most used ones in the literature. Scholars (e.g., Manneh and Naser, 2015; Olowe and Moyosore, 2014) utilise total debt ratio (D/A). The ratio divides total debt (total assets minus total equity) by total assets capitalised in the firm. The indicator presents the portion of firm's total assets financed through debt. Debt to equity ratio (D/E) is also used in the prior literature by researchers like Mahadwartha (2003). This proxy measures leverage by comparing the size of debt to the size of equity in a firm. In other words, it illustrates how much total assets of a company are financed by debt in comparison to the size financed by equity. We employ both proxies in this paper in order to be able to properly measure firm leverage, then, could be employed to determine dividend policy. Therefore, the second model is formulated as follow:

$$LEV = f(D/A, D/E) \qquad (2)$$

Where, **LEV** is leverage ratio; **D/A** is total debt ratio or (TA-TE)/TA; and **D/E** is debt to equity ratio.

3.2.3. Determinants of Dividend payout ratio

The key objective of this paper is to examine whether profitability and leverage ratios have ability to determine dividend policy. Accordingly, hypotheses 1 & 2 are developed to

accomplish this objective. In this manner, dividend policy is the dependent variable in the model. In other words, dividend policy is regressed on both profitability and leverage. In the literature, dividend payout ratio is used as the measurement of dividend policy (see, for instance, Banerjee, 2016; Naceur et al., 2006; Ouma, 2012; Olowe and Moyosore, 2014; Patra et al., 2012) which is illustrated by the distribution of profit in the form of cash to common shares. Cash dividend per share is calculated by dividing that portion of net income which is decides to be paid out to shareholders to the number of voting shares outstanding. The independent variables, having predicted influence on dividend policy and included in this study, are profitability (ROA and ROE indicators) and leverage (D/A and D/E indicators). We assume, based on the prior illustrated arguments, that both profitability and leverage might have negative impact on dividend policy. To identify these relationships, Ordinary Least Square regression will be undertaken to estimate the following specified model:

$$DIV_{i,t} = \beta_0 + \beta_1 PRO_{i,t} + \beta_2 LEV_{i,t} + \varepsilon_{i,t} \qquad (3)$$

Where,

DIV is dividend payout measured by cash dividend for company i in period t;

PRO is firm's profitability measured by ROA and ROE for firm i in period t;

LEV is firm's leverage measured by D/A and D/E for firm i at time t;

$\beta_0, \beta_1, \beta_2$ are the intercept and parameters of the model;

ε is standard Error.

3.3. Method

This study carried out explanatory research design to examine the selected variables determining dividend policy for the financial sector in Turkey. Explanatory research is used to investigate in a timely manner a phenomenon, that had not been well explained previously (Jaf et al., 2015). Furthermore, this method is performed in the literature for problems in corporate finance that a convincible answer is yet not found for the logical questions (Abdullah and Fatah, 2020; Budur and Demir, 2019). The intention of this method is to provide details where a limited amount of information exists (Abdullah, 2013). This approach is appropriate to investigate the relationships that involve several variables in which they have potential to explain the disperse in the considered explanatory variable (Saed et al., 2021). Regarding the data, panel research design is applied and with a use of a few practical variables instantaneously. Regarding data analysis, fixed effect and random effect models are

performed with relying on Hausman test in order to diagnose the appropriate model. Moreover, residual Cross-Section Dependence Test and some other statistical tests are performed.

4. Data analysis

4.1. Descriptive statistics

Table 2 show some general information regarding the variables we use in this study such as mean, range and standard deviation. As we can see that mean of dividend per share for the sample is 0.056 Turkish Lira over the period with the maximum 2.06 TL dividend paid. Mean of return on assets is 0.036 ranging from -3.006 to 6.91 TL with the standard deviation of 29%. However, return on assets has a relatively wider range almost doubled compared to those of ROA. This illustrates that profitability is different from a financial firm to another in Turkey. The arithmetic mean of total debt ratio demonstrates that the financial institutions in Turkey are leveraged on average around 20.8%. However, there are firms with almost all the capital funded through debt, maximum TDR is 99.85%. Additionally, there are firms with zero debt used to fund their assets. Mean of debt to equity is 1.54 showing that financial firms listed on Borsa Istanbul on average depend more on debt not equity. This is expected in the case of financial firms such as banks and their main competitors since their major operation is to borrow money from investors and lend it to corporations and individuals aiming to make profit on the premium interest rate.

Table 2

Descriptive statistics

	DPS	ROA	ROE	TDR	DTE
Mean	0.056	0.036	0.151	0.208	1.540
Maximum	2.060	6.910	12.515	0.998	32.27
Minimum	0.000	-3.007	-6.676	0.000	0.000
Std. Dev.	0.175	0.292	0.699	0.266	2.964
Observations	975	975	975	975	975

4.2. Correlation matrices

Table 3 shows correlations coefficients between the pairs of the variables of our study. Correlation coefficients show how the variables are associated to each other. Correlation is normally shown as r value which is between negative one and positive one, $-1 \leq r \geq +1$. The value -1 show a high negative association while +1 is for a high positive association between the pair (Mohammed et al., 2019). Any correlation close to 80% and higher would indicate the problem of multicollinearity (Akalpler and Abdullah, 2021; Koop, 2006). If that is the case between to explanatory variables, those to variables cannot be combined in a single model of regression (Abdullah et al., 2016; Torlak et al., 2021), according to the assumptions of classical linear regression model (Abdullah and Aziz, 2017). The results here show that we have no high correlations between the pairs of our variables because the largest correlation is 74.7% between ROA and ROE and other correlations are moderately small. Therefore, we conclude that there is no problem of multicollinearity.

Table 3

Correlation coefficients

	DPS	ROA	ROE	TDR	DTE
DPS	1				
ROA	0.091	1			
ROE	0.028	0.747	1		
TDR	-0.124	0.003	0.196	1	
DTE	-0.088	0.014	0.312	0.725	1

4.3. Panel regression analysis

Fixed-Effect and Random-Effect models of regression are performed to examine the extent and direction of the expected relationship between dividend payout ratio and the measures of profitability and leverage. The results of Hausman test in table 4 indicate that the null hypothesis can be rejected stating Random-Effect model is suitable. This means that we can interpret the results of Fixed-Effect (FE) model of regression.

Table 4

Hausman test

Test Summary	X^2 Stat.	X^2 d.f.	P-value
Cross-section random	14.441	4	0.006

The results of FE model of regression is shown in table 5. The effect of ROA is negative and statistically significant at 5% level. Exactly, 1 per cent decrease in ROA would bring an increase in dividend per share by 0.095% with a low standard error 0.0005. The results show that the impact of ROE is statistically insignificant even at 10% level of significant. Additionally, TRD possesses a negative effect on DPS which is also statistically significant at the 5% and 1% levels. Precisely, 1 per cent increase in leverage measured by total debt ratio leads to a decline in dividend payout ratio per share by 0.49%. The impact of DTE is also statistically significant but positive on DPS. Every 1% increase in debt to equity would increase DPS by 0.012%.

The R-squared show the percentage of variation in the response factor that can be clarified by the independent and control factors. In our model, 58.11% of dispersion in dividend payout ratio can be explained by the explanatory variables (ROA, ROE, TDR and DTE) together. The probability value of F-statistics is smaller than 0.01 indicating that the model has goodness of fit. Durbin Watson statistic result is between dL and dU which is a sign for a no autocorrelation problem in the residuals.

The results of residual cross-section dependence test: Breusch-Pagan LM in table 6 show that the null hypothesis of cross-section dependence (correlation) in weighted residuals can be rejected.

Table 5

Fixed-Effect regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-0.00095	0.0005	-2.8978	0.0480
ROE	0.00038	0.0002	1.5706	0.1166
TDR	-0.00492	0.0014	-3.5425	0.0004
DTE	0.00012	0.0001	2.4972	0.0127
C	0.0565	0.0003	212.23	0.000
R-squared	0.581	Mean dependent var		0.071
Adjusted R-squared	0.545	S.D. dependent var		0.117
S.E. of regression	0.092	Sum squared resid		7.589
F-statistic	15.93	Durbin-Watson stat		1.193
Prob(F-statistic)	0.0000			

Table 6

Residual Cross-Section Dependence Test

Test	Statistic	Degree of freedom	Probability
Breusch-Pagan LM	5733.48	2775	0.000
Pesaran scaled LM	39.712		0.000
Bias-corrected scaled LM	36.587		0.000
Pesaran CD	5.5569		0.000

5. Conclusion and policy implications

This paper aims to examine whether the level of profitability and leverage ratios has ability to determine dividend policy decisions in a sample of the financial institutions quoted on Borsa Istanbul during 2008-2020. In order to do so, fixed-effect model of regression is chosen to run. As we expected, the results of data analysis show that both profitability and leverage have significant effect on the determination of dividend policy and their impacts are negative. These results are consistent with the findings of researchers such as Amidu and Abor (2006), Asif et al. (2011), Danis et al. (2014), Jozwiak (2015), Kuzucu (2015), Olowe and Moyosore (2014), Nizar Al-Malkawi (2007) and Rehman and Takumi, 2012). These results support the argument of pecking order theory in which firms with high profitability tend to pay fewer dividends because they use the profit to finance their sources. Moreover, manager cares about financing sources for future investment opportunities and they decide to pay fewer dividend since leverage involves transaction cost and risk of a firm and high leverage ratio involves high fixed payment for external financing source in the form of interest paid to the lenders, as argued by Rozeff (1982).

This paper contributes to the literature by investigating financial firms which is rarely examined by investors previously. Therefore, the paper is expected to add a valuable contribution to the prior existing literature. It might give a new insight to the managers and investors that the factors such as profitability and leverage are important indicators to determine dividends. Understanding the policy implications of the proposed and tested relationships in this study is important in forming dividend policy decisions by financial firms. Since we have found that dividend policy is dependent to both profitability and leverage levels in this sector which should be the concern of both shareholders and managers.

The degree of generalizability is a possible limitation of this study. The study consists a sample of financial institutions only, we cannot simply extrapolate our findings to other firms in other industries. As a result, the findings are restricted and may be unable to anticipate this association in other sectors in similar market. As a result, this could be a suggestion for future research to look at a bigger number of sectors in order to conduct comparisons and only then more insights will be provided.

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