



Relation between financial information disclosure and capital structure decisions

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ABSTRACT

The main aim of the present study is to relation between financial information disclosure and capital structure decisions in companies listed on Tehran Stock Exchange. Statistical population of this study is consisted of companies listed on Tehran Stock Exchange during the time period of 2009 to 2014 and sample volume is equal to 118 companeis by using screening method and after the elimination of outlaying observations. In this study rating of information including rating of regulations compliance, rating of timely financial disclosure, rating of financial forecasts disclosure, rating of annual financial reports disclosure and rating of company website disclosure were taken as independent variables in order to study their effect on capital structure decisions. This study is an applied study in terms of goal, in terms of nature and content it is a descriptive - correlation study and in terms of research design, it is an *ex post facto* (semi-empirical) study, which means, it is conducted on the basis of historical and past data analysis (financial statements of companies). In this study, in which panel data with fixed and random effects are used, results obtained from firm data analysis by using multivariate regression at 95% indicated that there is a direct relationship between rating of timely financial disclosures, rating of financial forecasts disclosure and rating of annual financial reports disclosure with capital structure decisions. It was also indicated that there is no significant relationship between rating of regulations compliance and rating of company web site disclosure with capital structure decisions of a company.

Keyword:

enterprise information,
financial information
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structure

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Introduction

Ranking firms in different industries can reflect the status of different firms compared to rivals and it determines strong points and internal weak points and opportunities and external threats (Madani Mohammadi, 2006). The constrain in most assessment and ranking lists' methods in Iran and worldwide is lack of conciseness and the fact that most of them are oriented on one major index such as sales or income. Thus, it seems that over-reliance on only one index deprives firms from achieving the major and several other ranking goals in a way that it can be said that the goal of current ranking lists is to rank the biggest firms instead of the superior ones (Ghodratian Kashan, 2004).

The presence of transparency assures the shareholders one the one hand that they will permanently receive reliable and in time data regarding financial status and firm value and major shareholders do not intend to violate their rights, and on the other hand it encourages managers to try to increase firm value instead of following short-term personal benefits and thus it can reduce the amount and intensity of financial scandals considerably (Hassas-e-Yeghaneh & Nadi-e-Ghomi, 2011).

In the present study we have investigated about the relation between enterprise information and capital structure decisions in firms enlisted in Tehran Stock Exchange.

Statement of the problem

Capital structure decisions are among the most important decisions and basic issues in financing for firms encountered by the managers. This has an important function in decision making regarding current operations' financing and firms' investment projects. Due to lower amounts of the risk of bonds, the expected return on the part of creditors is lower than the return expected by shareholders. Therefore, up to a certain amount, the more use of debts for financing will lead to less overall firm's capital cost and greater profitability. However, increasing debts increases firm's financial risk and thus, the creditors demand higher interest rates. The studies carried out in Iran have shown that there have been some capital structure decisions in some industries. Regarding the position of capital structure and its effect on value and firm's profitability, capital structure decisions are highly important (Tehrani & et al, 2012).

The main goal of the present research is to investigate about the relationship of data ranking and capital structure decisions in firms enlisted in Tehran Stock Exchange regarding 4 aspects of observing regulations, in time rank of financial data disclosure, forecast precision rank of revealed financial data, the disclosure rank of annual financial reports, and data disclosure rank through firm's website. Also we would like to identify theoretical foundations for the amount of effectiveness of ranking firms' disclosure on capital structure decisions in firms based on current status of firms in Stock Exchange and the disclosure quality of the data by them. Regarding what was said above, the main research question is: Is there a meaningful relationship between firm data ranking and capital structure decisions in firms enlisted in Tehran Stock Exchange or not?

Research literatur

Foreign literature

- 1- John Kommunuri (2014) carried out a research entitled: "studying the relationship between disclosure rank and capital structure decisions in firms in New Zealand". The results gained showed that there has been a meaningful relationship between disclosure rank and capital structure decisions in New Zealand.
- 2- Mahmood Moeinaddin & et al (2014) studied about: "the relationship between financial reporting quality and capital structure decisions. The goal was to investigate the effects of financial reporting quality regarding earning quality and their effects on capital structure decisions. Findings showed that there has not been any meaningful relationship between financial reporting quality and capital structure decisions. Additionally, results gained showed that industry type did not have any meaningful relationship with capital structure decisions.
- 3- Lawrence (2014) carried out a research on studying the effect of ranking firm data on capital structure decisions in firms and concluded that in firms with higher data ranking, capital structure decisions are higher than other firms.

Local research literature

- 1- Talebnia & et al (2013) did a research entitled: "cognitive decision making styles, information processing time, and voluntary value content of disclosure: lens processing approach in accounting", and stated that voluntary disclosure of data through increasing the precision of decision making by the users will lead to excessive value contents for firms. Results showed that except cognitive styles with high complexities, on the whole there has not been a meaningful difference between experimental and control groups regarding the decision making conciseness. In other words, information disclosure voluntarily by the firms does not contain excessive value contents.
- 2- Moghaddam & Momeni Yansari (2012) carried out a research entitled: "studying the effect of some features of firm leadership system on capital structure decisions in firms enlisted in Tehran Stock Exchange", and it led to more attentions paid by researchers within financial literature during some recent decades towards capital structure and factors affecting it. Results of testing the hypotheses showed that in firms where the duties of CEO and board are isolated from each other and also firms with fewer board members, there would be more tendencies to employ debts. Meanwhile, there has not been any meaningful relationship between the ratio of managers not in charge in board and capital structure found.
- 3- Saghafi, Gholamzadeh Ladari (2012) investigated about the relatedness of historical accounting information in financing decisions of Iranian firms and the results of their research showed that firms' profitability has been the most important variable in accounting when the decision makers pay attention to them in financing. Liquidity status

based on balance sheet data, sales income amount, and coverage ability of financing are ranked next regarding the effectiveness on financing decisions.

Research method

The present research is among positive researches and since historical data are used to test the hypotheses, it can be categorized within quasi-experimental group. The research method is inferential and post incidental (using past information), and the statistical method is integrated correlation (time and cross sectional series). This means the study of the existence of a relationship between variables through regression.

Research hypotheses

The present research has been comprised of one major hypothesis and 5 minor hypotheses as follows:

Major hypothesis: there is a meaningful relationship between data ranking and capital structure decisions in firms.

First minor hypothesis: there is a meaningful relationship between observing financial information disclosure rules' rank and capital structure decisions in firms.

Second minor hypothesis: there is a meaningful relationship between in time financial information disclosure rank and capital structure decisions in firms.

Third minor hypothesis: there is a meaningful relationship between the precision of forecast of disclosed financial information rank and capital structure decisions in firms.

Fourth minor hypothesis: there is a meaningful relationship between the annual financial information disclosure rank and capital structure decisions in firms.

Fifth minor hypothesis: there is a meaningful relationship between financial information disclosure through firm's website rank and capital structure decisions in firms.

Statistical population of the research

The time range of the present study is March 2009 to March 2014. Thus, the statistical population includes all firms enlisted in Tehran Stock Exchange. Sampling was done through a systematic deletion using the following constrains:

- 1- The data required to calculate operational variables of the research should be accessible.
- 2- Firms should have been accepted in Stock Exchange at least from 2009 and should be active in bourse up to the end of the research period.
- 3- Fiscal year of the firms should end on 20th of March.

The statistical model of the present research

The main research hypothesis and each of the research hypotheses have had an isolated model as follows:

Major hypothesis model

$$\text{Leverage}_{i,t} = \beta_0 + \beta_1 \text{IR}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{QRatio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pfi}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \epsilon_{i,t}$$

First minor hypothesis model

$$\text{Lenerage}_{i,t} = \beta_0 + \beta_1 \text{CIMD}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{QRatio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pfi}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \epsilon_{i,t}$$

Second minor hypothesis model

$$\text{Lenerage}_{i,t} = \beta_0 + \beta_1 \text{TIR}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{QRatio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pfi}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \epsilon_{i,t}$$

Third minor hypothesis model

$$\text{Lenerage}_{i,t} = \beta_0 + \beta_1 \text{DFF}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{QRatio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pfi}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \epsilon_{i,t}$$

Fourth minor hypothesis model

$$\text{Lenerage}_{i,t} = \beta_0 + \beta_1 \text{DAR}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{QRatio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pfi}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \epsilon_{i,t}$$

Fifth minor hypothesis model

$$\text{Lenerage}_{i,t} = \beta_0 + \beta_1 \text{CWD}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{QRatio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pfi}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \epsilon_{i,t}$$

Research variables

The research variables are as follows:

Dependent variable

Leverage = leverage of firm I in period t and refers to the result of dividing total debts into total assets and is calculated using the following ratio:

$$\text{Leverage} = \text{debts' book value} / \text{assets' book value}$$

Independent variable

IR_{it}: the amount of ranking information including 5 elements of rules' observation, in time disclosure, forecast precisions of the disclosed financial information, annual financial reports' disclosure, and information disclosure through firm's website that can be measured through standard check list as follows:

Description		Question in check list
information ranking (IR)		questions 1 to 93
information ranking elements	financial information disclosure rules' observing rank	questions 1 to 10
	in time financial information disclosure rank	questions 11 to 29
	disclosed financial information's forecast precision rank	questions 30 to 33
	annual financial reports' disclosure rank	questions 34 to 73
	information disclosure through website rank	questions 74 to 93

According to the check list above, information ranking and its elements for each firm is calculated using total "yes" responses within overall questions.

Control variables

SLACK_{it}: cash to total book value of the assets of firm i in period t ratio.

Tang_{it}: fixed assets' ratio to total book value of assets of firm i in period t.

QRATIO_{it}: Q Tobin ratio that is calculated through following formula:

$$\text{QRATIO} = (\text{total assets} - \text{equity's book value} + \text{equity's market value}) / \text{total assets}$$

Pfi_{it}: profitability of firms calculated through the ratio of return on assets using the following formula:

$$\text{ROA} = \text{earning before interest and tax} / \text{total assets}$$

Size_{it}: to reduce costs resulted from the index, we have used cash reserves (Chavin & Hirschi, 2000). Therefore,

regarding capital market status and the effect of inflation on firms in our country we have used natural logarithm criterion of book value of total assets in a way that it represents firm's status better. The higher amount of this index shows that the firm is bigger.

$$LN(FirmSize_{i,t}) = FirmSize_{i,t}$$

Where,

FirmSize_{it} = book value of total assets of firm i at the end of year t

AB_{it} = the percentage of stocks owned by real persons out of total stocks of the firm

AG_{it} = the amount of earning forecast error that is calculated using the formula below:

AG: (real earnings – forecast earnings) / real earnings

GGDP_{it}: gross growth domestic production compared to the previous period

Data analysis

In table 1, the descriptive statistics of research variables during the period has been represented. The descriptive statistics of research variables have been measured by using firms' data during test period (2008 to 2014). They include mean, median, standard deviation, minimum, and maximum.

Table 1: The descriptive statistics of research variables

Variables		Mean	Median	Standard error	Minimum	Maximum
leverage	Lev.	0.6645	0.6127	0.3625	0.3751	0.9863
information ranking	IR	0.5025	0.4985	0.1421	0.2548	0.7989
rules' observing ranking	IR1	0.4405	0.4370	0.1246	0.2234	0.7004
in time financial disclosure ranking	IR2	0.3862	0.3831	0.1092	0.1958	0.6140
financial forecast disclosure ranking	IR3	0.3385	0.3358	0.0957	0.1717	0.5382
annual financial reports disclosure ranking	IR4	0.2968	0.2944	0.0839	0.1505	0.4718
website disclosure ranking	IR5	0.2602	0.2581	0.0736	0.1319	0.4136
cash ratio	SLACK	0.0404	0.0300	0.0415	0.0007	0.4609
fixed assets ratio	Tang	0.3766	0.3888	1.294	0.1090	0.5721
Q Tobin ratio	QRATIO	0.0404	0.0300	0.0415	0.0007	0.4609
Firm profitability	Pf	0.1256	0.1046	0.1264	-0.2398	0.6313
firm size	Size	27.3569	27.2260	1.3635	23.8467	32.2701
real person's ownership percentage	AB	0.2921	0.2422	1.559	0.0112	0.3421
earning forecast error	AG	0.1511	0.2189	1.559	0.0112	0.3422
gross growth of domestic production	GGDP	0.0219	0.0195	0.4225	-0.0840	0.0474

Results of consistency of the variables have been represented in table 2.

Testing variables' consistency

Table 2: ith, Posrun, Shin (IPS) test

Variable		W-stat	P-value
leverage	Leverage	24.1770	0.0059
information ranking	IR	56.5970	0.0025
rules' observing ranking	IR1	56.3831	0.0025
in time financial disclosure ranking	IR2	78.1291	0.0018
financial forecast disclosure ranking	IR3	24.1511	0.0059
annual financial reports disclosure ranking	IR4	62.7517	0.0023
website disclosure ranking	IR5	60.2753	0.0024
cash ratio	SLACK	75.1519	0.0019
fixed assets ratio	Tang	38.2050	0.0037
Q Tobin ratio	QRATIO	50.3757	0.0028
Firm profitability	Pf	80.3175	0.0018
firm size	Size	56.8169	0.0025
real person's ownership percentage	AB	54.5600	0.0026
earning forecast error	AG	73.2781	0.0019
gross growth of domestic production	GGDP	68.7307	0.0021

Regarding table 2, since all variables are less than 0.05, the amount of IPS following the results of the test shows that the average and IPSs of the research variables have been consistent during the test period. The results of variance test

of the variables during the pass of time and the covariance of the variables during different years have also been fixed. Thus, using these variables in the model does not lead to pseudo-regressions.

Determining an appropriate model to estimate regression model

A) Chaw's test

Results related to F test for the regression model of the present research are represented in table 3.

Table 3: Chaw's test

Regression model	F statistic	Probability	Test result	
First	88.665	0.0016	Rejection of null hypothesis	panel model
Second	22.909	0.029	Rejection of null hypothesis	panel model

Regarding first and second models and due to the meaningfulness level of the results of Chaw's test we can conclude that H_0 (pooled data) is nor approved. In other words, there are individual and group effects and we should use panel data methods to estimate the research regression. Next, we should use Hausman's test to identify panel model's type (with random effects or fixed effects).

B) Hausman's test

After identifying that latitude from the base has not been the same during different years we should determine which method (fixed or random effects) should be used and we have used Hausman's test to do so. Results of Hausman's test are represented in table 4.

Table 4: Hausman's test

Regression model	χ^2 statistic	Probability	Test result	
First	2.776	0.199	Rejection of null hypothesis	panel with fixed effects
Second	52.009	0.0001	Rejection of null hypothesis	panel with fixed effects

Regarding Hausman's test, the adjustment of the second regression models of the present research by using panel data will lead to use fixed effects method. On the other hand, results related to Hausman's test for the first model are represented in table 4. Results showed that regarding the adjustment of the first regression models of the present research by using panel data will lead to use fixed effects method.

Classic regression hypotheses' test

Before the adjustment of regression models, it is necessary to test the presuppositions of linear regression.

Normality test

Regarding the table above and Jarque-Bera statistics and since the meaningfulness level of leverage is higher than 0.05, hypothesis H_0 is approved. Thus, with an assurance of %95 we can say that the variable above has had a normal distribution.

Table 5: Jarque-Bera test

Variable name		Jarque-Bera statistic	meaningfulness level	Result
Leverage	Lev.	1.225	0.231	the distribution is normal

Results of testing the hypotheses

Major hypothesis

$$\text{Leverage}_{i,t} = \beta_0 + \beta_1 \text{IR}_{i,t} + \beta_2 \text{Slack}_{i,t} + \beta_3 \text{Tang}_{i,t} + \beta_4 \text{Q Ratio}_{i,t} + \beta_5 \text{Size}_{i,t} + \beta_6 \text{Pf}_{i,t} + \beta_7 \text{AB}_{i,t} + \beta_8 \text{AG}_{i,t} + \beta_9 \text{GDP}_{i,t} + \varepsilon_{i,t}$$

"There is a meaningful relationship between data ranking and capital structure decisions in firms."

After testing the regression presuppositions and making sure of their application, the results of regression model

adjustment above were represented in table 6. We can conclude that in the regression equation above, only about 44.2 percent of the changes in the dependent variables of firms under investigations could be identified through independent and control variables. In this table the positive (negative) numbers in the column of coefficient amount show the amount of direct (inverse) effects of each of the variables on capital structure decisions in firms.

Table 6: Results of regression equation adjustment

Variable	variable coefficient	coefficient amount	t statistic	meaningfulness level
Fixed number	α	0.743	2.873	0.004
information ranking	IR	β_1	0.665	2.231
cash ratio	SLACK	β_2	-0.338	-2.876
fixed assets ratio	Tang	β_3	0.427	2.111
Q Tobin ratio	QRATIO	β_4	0.714	0.909
Firm profitability	Pf	β_5	0.602	2.921
firm size	Size	β_6	0.288	2.129
real person's ownership percentage	AB	β_7	-0.194	-3.273
earning forecast error	AG	B 8	-0.156	-2.129
gross growth of domestic production	GDP	β_9	-0.542	-2.388
identification coefficient	0.489	F statistic		10.711
adjusted identification coefficient	0.442	meaningfulness (p-value)		0.0083
		Durbin-Watson statistic		2.188

First minor hypothesis:

There is a meaningful relationship between observing financial information disclosure rules' rank and capital structure decisions in firms.

Test result:

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between observing financial information disclosure rules' rank and capital structure decisions in firms, is rejected.

Table 7: Results of adjusting regression model

Variable		variable coefficient	coefficient amount	t statistic	meaningfulness level
Fixed number		α	0.167	2.483	0.038
rules' observing ranking	IR1	$\beta 1$	0.443	1.509	0.143
in time financial disclosure ranking	IR2	$\beta 2$	0.152	2.921	0.016
financial forecast disclosure ranking	IR3	$\beta 3$	0.111	2.129	0.049
annual financial reports disclosure ranking	IR4	$\beta 4$	0.121	2.273	0.048
website disclosure ranking	IR5	$\beta 5$	0.161	1.335	0.277
cash ratio	SLACK	$\beta 6$	-0.421	-2.381	0.018
fixed assets ratio	Tang	$\beta 7$	0.327	2.619	0.009
Q Tobin ratio	QRATIO	$\beta 8$	0.209	2.886	0.027
Firm profitability	Pf	$\beta 9$	0.253	2.141	0.048
firm size	Size	$\beta 10$	0.181	2.601	0.031
real person's ownership percentage	AB	$\beta 11$	-0.177	-2.671	0.024
earning forecast error	AG	$\beta 12$	-0.216	-1.334	0.277
gross growth of domestic production	GGDP	$\beta 13$	-0.193	-2.055	0.049
identification coefficient		0.528	F statistic		13.843
adjusted identification coefficient			meaningfulness (p-value)		0.00061
		0.481	Durbin-Watson statistic		1.932

Second minor hypothesis:

There is a meaningful relationship between in time financial information disclosure rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between in time financial information disclosure rank and capital structure decisions in firms, is approved.

Third minor hypothesis:

There is a meaningful relationship between the precision of forecast of disclosed financial information rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between the precision of forecast of disclosed financial information rank and capital structure decisions in firms, is approved.

Fourth minor hypothesis:

There is a meaningful relationship between the annual financial information disclosure rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between the annual financial information disclosure rank and capital structure decisions in firms, is approved.

Fifth minor hypothesis:

There is a meaningful relationship between financial information disclosure through firm's website rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between financial information disclosure through firm's website rank and capital structure decisions in firms, is rejected.

Overall conclusion**Major hypothesis**

"There is a meaningful relationship between data ranking and capital structure decisions in firms."

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between the annual financial information disclosure rank and capital structure decisions in firms, is approved.

First minor hypothesis:

There is a meaningful relationship between observing financial information disclosure rules' rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between observing financial information disclosure rules' rank and capital structure decisions in firms, is rejected.

Second minor hypothesis:

There is a meaningful relationship between in time financial information disclosure rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between in time financial information disclosure rank and capital structure decisions in firms, is approved.

Third minor hypothesis:

There is a meaningful relationship between the precision of forecast of disclosed financial information rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between the precision of forecast of disclosed financial information rank and capital structure decisions in firms, is approved.

Fourth minor hypothesis:

There is a meaningful relationship between the annual financial information disclosure rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between the annual financial information disclosure rank and capital structure decisions in firms, is approved.

Fifth minor hypothesis:

There is a meaningful relationship between financial information disclosure through firm's website rank and capital structure decisions in firms.

According to table 7, hypothesis H_0 is approved in an assurance level of %95 and hypothesis H_1 claiming that there is a meaningful relationship between financial information disclosure through firm's website rank and capital structure decisions in firms, is rejected.

Results above accord with results of the researches carried out by Richard & et al (2010), Zhang (2013), Karami & Bazrafshan (2009), Etemadi & et al (2010), and Namazi & et al (2011), to some extent.

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