


SIGNALLING OR PECKING ORDER THEORY: AN EVIDENCE FROM MINING AND ENERGY SECTOR

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 22 May 2023</p> <p>Accepted 15 August 2023</p>	<p>Purpose: The purpose of the research is to determine the impact of asymmetric information on capital structure decisions.</p>
<p>Keywords:</p> <p>Pecking Order; Signalling Theory; Asymmetric Information.</p> <div data-bbox="172 920 480 1167" style="text-align: center;">  </div>	<p>Theoretical framework: The perspective of the Pecking Order Theory (POT) suggests that managers are more informed about new investments than shareholders, making external financing issuance more prone to asymmetric information.</p> <p>Design/Methodology/Approach: The data was collected from companies in the mining or energy sectors listed on the Indonesia Stock Exchange during the period of 2007 to 2022, resulting in 647 observation units. Growth opportunities were proxied by total sales (Lang et al., 1996), and the debt ratio was used to measure capital structure decisions (Myers & Majluf, 1984). OLS regression was employed to determine the impact of growth opportunities on capital structure decisions.</p> <p>Findings: Annual sales are sufficiently increased, companies send positive signals, leading to the issuance of more debt than equity (Akerlof, 1970; S. Ross, 1977; S. A. Ross, 2005).. Companies follow the financing hierarchy when annual sales are lower than the signaling mechanism.</p> <p>Research, practical & social implications: Facts and empirical evidence have challenged the signaling and pecking order theories, leading to significant debates. The obligation of financial disclosure has resulted in a reduction of asymmetric information, consequently leading to an increase (decrease) in annual sales, which in turn causes a decrease (increase) in the debt ratio.</p> <p>Originality/Value: The value of the study was extended in Indonesia with abundant of natural resource (energy and mining).</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i8.3546</p>

SINALIZAÇÃO OU TEORIA DA ORDEM DE BICARETA: UMA EVIDÊNCIA DO SETOR DE MINERAÇÃO E ENERGIA

RESUMO

Objetivo: O objetivo da investigação é determinar o impacto da informação assimétrica nas decisões relativas à estrutura de capital.

Quadro teórico: A perspectiva da Teoria da Ordem Pecking (POT) sugere que os gestores estão mais informados sobre novos investimentos do que os acionistas, tornando a emissão de financiamento externo mais propensa a informações assimétricas.

Concepção/Methodologia/Abordagem: Os dados foram recolhidos junto de empresas dos setores mineiro ou energético cotadas na Bolsa de Valores da Indonésia durante o período de 2007 a 2022, resultando em 647 unidades de observação. As oportunidades de crescimento foram aproximadas pelas vendas totais (Lang et al., 1996), e o

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rácio da dívida foi utilizado para medir as decisões relativas à estrutura de capital (Myers & Majluf, 1984). A regressão OLS foi empregada para determinar o impacto das oportunidades de crescimento nas decisões da estrutura de capital.

Conclusões: As vendas anuais são suficientemente aumentadas, as empresas enviam sinais positivos, levando à emissão de mais dívida do que capital próprio (Akerlof, 1970; S. Ross, 1977; S. A. Ross, 2005). As empresas seguem a hierarquia do financiamento quando as vendas anuais são inferiores ao mecanismo de sinalização.

Investigação, implicações práticas e sociais: Fatos e evidências empíricas desafiaram as teorias de sinalização e ordem de bicada, levando a debates significativos. A obrigação de divulgação de informações financeiras resultou numa redução da informação assimétrica, conduzindo conseqüentemente a um aumento (diminuição) das vendas anuais, o que, por sua vez, provoca uma diminuição (aumento) do rácio da dívida.

Originalidade/Valor: O valor do estudo foi ampliado na Indonésia com abundantes recursos naturais (energia e mineração).

Palavras-chave: Ordem de Escolha, Teoria da Sinalização, Informações Assimétricas.

TEORÍA DEL ORDEN DE SEÑALIZACIÓN O PICOTEO: UNA EVIDENCIA DEL SECTOR MINERO Y ENERGÉTICO

RESUMEN

Objetivo: El objetivo de la investigación es determinar el impacto de la información asimétrica en las decisiones sobre la estructura de capital.

Marco teórico: La perspectiva de la Teoría de la Orden de Pecking (POT) sugiere que los gerentes están más informados sobre las nuevas inversiones que los accionistas, lo que hace que la emisión de financiamiento externo sea más propensa a la información asimétrica.

Diseño/Metodología/Enfoque: Los datos se recopilaron de empresas de los sectores minero o energético que cotizaban en la Bolsa de Valores de Indonesia durante el período de 2007 a 2022, lo que dio como resultado 647 unidades de observación. Las oportunidades de crecimiento fueron sustituidas por las ventas totales (Lang et al., 1996), y el ratio de deuda se utilizó para medir las decisiones de estructura de capital (Myers & Majluf, 1984). Se utilizó regresión OLS para determinar el impacto de las oportunidades de crecimiento en las decisiones de estructura de capital.

Hallazgos: Las ventas anuales se incrementan lo suficiente, las empresas envían señales positivas, lo que conduce a la emisión de más deuda que capital (Akerlof, 1970; S. Ross, 1977; S. A. Ross, 2005). Las empresas siguen la jerarquía de financiación cuando las ventas anuales son inferiores al mecanismo de señalización.

Investigación, implicaciones prácticas y sociales: Los hechos y la evidencia empírica han desafiado las teorías de señalización y jerarquización, lo que ha llevado a importantes debates. La obligación de información financiera ha dado lugar a una reducción de la información asimétrica, lo que ha dado lugar a un aumento (disminución) de las ventas anuales, lo que a su vez provoca una disminución (aumento) de la ratio de deuda.

Originalidad/Valor: El valor del estudio se amplió en Indonesia con abundante cantidad de recursos naturales (energía y minería).

Palabras clave: Orden de Búsqueda, Signalling Theory, Información Asimétrica.

INTRODUCTION

The existence of time-varying elements has resulted in the generation of increasingly dynamic asymmetric information when compared to tax-driven factors. As a result, capital structures that rely on asymmetric information demonstrate greater variations in previous studies than those based on tax-driven considerations (Klein et al., 2002; Korajczyk et al., 1992). Information tends to arrive silently, either voluntarily or involuntarily, resulting in varying levels of asymmetric information over time. This study focuses on the theory of capital structure that originated from asymmetric information. The seminal paper by Modigliani &

Miller (1958) led to the development of three theories of capital structure: signalling theory (S. Ross, 1977), pecking order theory (POT, hereafter) (Myers & Majluf, 1984), and market timing theory (Baker & Wurgler, 2002).

The mining and energy sector companies play a strategic role in Indonesia, and the presence of regulations by the government and ministries has caused asymmetric information (Suryantoro & Manaf, 2002). Signalling theory assumes that when managers possess more information about growth opportunities in the mining sector than shareholders, companies with more growth opportunities are more likely to issue debt rather than rely on internal financing. In contrast, from the perspective of POT, issuing equity and risky debt can lead to mispricing, and thus firms tend to prefer internal financing. The market timing theory demonstrates the impact of mispriced stock, where companies issue new shares when the stock is overpriced and repurchase shares when the stock is underpriced.

Future growth opportunities have been suggested as a proxy for asymmetric information (Lang et al., 1996). Unrealized growth opportunities represent asymmetric information as managers, who directly manage the company, possess superior information compared to outsiders. Therefore, the aim of this research is to determine the impact of future growth opportunities on capital structure decisions. Meanwhile, the purpose of the research is to determine the impact of asymmetric information on capital structure decisions

LITERATURE REVIEW

The assumption of a perfect capital market often fails to hold in real-world conditions. Akerlof, (1970) explained that sellers are often more informed than buyers in the used-car market. When the market price is low, cheaper than the price of a lemon (low-quality car), buyers assume that no one is selling. Buyers will consider the cars being sold as lemons when the market price exceeds the lemon price but is less than the plum price (high quality). If the market price is very high, exceeding the plum price, then sellers of lemons will outnumber sellers of plums.

Growth opportunities are a static form of asymmetric information, explained in Signalling and Pecking Order Theory. Companies with more growth opportunities tend to issue equity debt. Managers with superior information about growth opportunities have incentives to send private signals through their debt choices. If companies with more growth opportunities impact cash flow, then companies with fewer growth opportunities will generate lower cash flow and find it costly to issue higher levels of debt (making them more likely to go bankrupt)

compared to companies with more expected cash flow (Frank & Goyal, 2009; Leland & Pyle, 1977).

The perspective of the Pecking Order Theory (POT) suggests that managers are more informed about new investments than shareholders, making external financing issuance more prone to asymmetric information. If companies with fewer growth opportunities mimic the behavior of those with more growth opportunities in equity issuance, then the securities issued by companies with fewer growth opportunities can be overvalued or undervalued in comparison to companies with more growth opportunities. In reality, asymmetric information is dynamic, as managers can gain or lose information about growth opportunities after the release of stock or debt issuance. Therefore, the research hypothesis is that growth opportunities have an impact on capital structure decisions

Table 1 – Cronbach’s Alpha and KMO

Test	Value
Alpha de Cronbach	0,900
KMO	0,872

* < 0,001

Source: Prepared by the authors (2022)

DATA AND METHODOLOGY

The data was collected from companies in the mining or energy sectors listed on the Indonesia Stock Exchange during the period of 2007 to 2022, resulting in 647 observation units. Growth opportunities were proxied by total sales (Lang et al., 1996), and the debt ratio was used to measure capital structure decisions (Myers & Majluf, 1984). OLS regression was employed to determine the impact of growth opportunities on capital structure decisions.

Firm-age is related to financing decisions, with younger firms assumed to have more asymmetric information compared to older firms. Previous research documented by Rocca et al., (2011) suggests that the opacity of information faced by companies determines their financial life-cycle. Changes in financing needs are influenced by the ability to generate cash flow, growth opportunities, and realization risks. As a result, companies in the introduction stage of their life-cycle tend to have more asymmetric information and prefer debt issuance over equity, as they are sensitive to information.

Agency cost arises due to incomplete alignment between managers and shareholders and may play a role in determining financing decisions. Jensen & Meckling (1976) explained that agency cost is close to zero when managers own 100 percent of the firm. However, when managers sell equity claims to outside shareholders, agency cost occurs because managers may

utilize limited financial resources for their own additional consumption rather than for the benefit of shareholders. Consequently, financing mechanisms are required to discipline managerial behavior. The proxy used for agency cost is the ratio of annual sales to total assets

RESULTS AND DISCUSSION

Table 2, panel A, reveals that mining companies in Indonesia tend not to follow the financing hierarchy, pecking order theory. In more detail, this is because information regarding growth opportunities is dynamic. Managers can have information about growth opportunities that increases or decreases after the release of equity and debt issuance. This lack of differentiation for outside investors can result in variations in asymmetric information

Table 2 – Quartile of Annual Sales (Billion Rupiahs)

	Q1	Q2	Q3	Q4	All Firm
PANEL A: Descriptive Statistic					
N-Obs	162	160	163	162	647
Debt Ratio					
Mean	0.527	0.582	0.476	0.513	0.524
Std Dev	1.824	0.318	0.226	0.219	0.301
Skewness	5.292	1.373	0.818	1.373	1.650
Kurtosis	0.582	3.797	1.802	3.797	6.156
Firm-Age					
Mean	11.772	10.941	11.870	14.263	12.215
Std Dev	7.796	8.277	8.184	7.924	8.123
Skewness	0.376	0.763	0.763	0.187	0.478
Kurtosis	-0.417	-0.319	-0.319	-0.706	-0.595
Agency Cost					
Mean	0.214	0.450	0.718	0.639	0.506
Std Dev	0.267	0.395	0.845	0.417	0.563
Skewness	1.764	1.421	8.880	2.679	8.509
Kurtosis	3.078	2.180	98.508	14.256	136.829
PANEL B: Regression Analysis					
OLS Regression					
Intercept					0.515*
Annual Sales					0.001
Years Old					0.003*
Agency Cost					-0.051*
PANEL C: Anova one way					
Mean Difference					
Debt Ratio		0.055	-0.106*	0.037	

* sig 5%

Source: Prepared by the authors (2022)

When annual sales are sufficiently high, companies send positive signals, leading to the issuance of more debt than equity (Akerlof, 1970; S. Ross, 1977; S. A. Ross, 2005).. Companies follow the financing hierarchy when annual sales are lower than the signalling mechanism. In situations where there is asymmetric information between managers and principles, companies increase external funding to finance new projects, which face adverse selection problems. Less

valuable firms can issue securities indistinguishable from those offered by more valuable firms. As a result, securities are overvalued when issued by less valuable firms and undervalued for more valuable firms (Myers, 1984; Myers & Majluf, 1984).

Clearly, the presence of government-mandated disclosure requirements has encouraged a reduction in asymmetric information, leading companies to prefer debt issuance over internal funding. It has been demonstrated that a decrease in total sales from the second to the third quartile results in more debt issues compared to other stages. Therefore, capital structure decisions are influenced by the financing hierarchy rather than signalling.

CONCLUSION

The facts and empirical evidence have challenged the signalling and pecking order theories, leading to significant debates. The obligation of financial disclosure has resulted in a reduction of asymmetric information, consequently leading to an increase (decrease) in annual sales, which in turn causes a decrease (increase) in the debt ratio. Companies now prefer debt issuance over internal funding.

In the Pecking Order Theory (POT) model, where managers are more informed, they act in the best interest of old shareholders and issue equity when the equity price is higher. Moreover, managers may pass up investments with positive NPV, resulting in underinvestment, if equity is underpriced. Consequently, they suggest that the underinvestment problem can be prevented by issuing securities with less risk of mispricing. Clearly, a financing hierarchy is necessary, selecting internal financing (riskless debt) over risky debt, and ultimately preferring equity.

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