The Mediation Effects of Capital Structure: Evidence from Malaysian and Indonesian Economic Sectors

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Abstract

We study the comprehensive, simultaneous interrelationships between countries, economic sectors (i.e., primary, secondary, and tertiary sector), capital structure and firm financial performance, especially involving the mediation effects in different sectors. We find that some determinants of capital structure do not only directly enhance firm financial performance. Firm financial performance is also influenced by how capital structure from the product category in the economic sectors have been financed. We find a significant relationship between capital structure and firm financial performance in the secondary and tertiary sectors but not for the primary sector. We find that the secondary sector tends to use internal financing while the tertiary sector tends to use external financing to enhance firm financial performance. Our results also reveal that the effect of capital structure on firm financial performance tends to be mediated by firm- and country-specific attributes, as well as by the sector in which they operate. A closer examination of the data showed that in the economic sectors, we find robust results that there are not just positive direct and indirect effects, but also negative direct and indirect effects. It should be well understood by financial managers that secondary and tertiary sectors plays an important role in the mediation effect. The contribution of this study is to help the firm manager to make a good decision on the proportions of their capital structure.

Keywords: capital structure, economic sectors, mediation effects.

1. Introduction

There is a lack of research devoted to the role of economic sectors in capital structure. The important questions remain unknown about how firm capital structure (or so called as firm leverage) and firm financial performance are related to economic sector variation, especially intra- and inter-industry (IIT)[1]. It is widely held that across firms within a given industry firm capital structure is important (Bradley et al., 1984; Das and Roy, 2007; Hall et al., 2000; Mackay and Phillips, 2005; Remmers et al., 1974; Rumelt, 1991). Empirical investigations routinely include the industry as a dummy variable or else they randomly select the industries in the study sample. However, previous literature does not

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[1] Intra-industry is defined as the goods and products that belong to the same industry; inter-industry is defined as the products that belong to different industries.

clearly examine capital structure determinants and firm financial performance varies across industries within economic sectors. Also, as far as we are aware, no study has investigated if there is any significant difference among sectors and, if there is, how the sectors are different across countries. The economy is usually classified into three sectors: primary, secondary, and tertiary. Thus, no capital structure study has tested the simultaneous interrelationships between countries, economic sectors, capital structure and firm financial performance. This is the first study that discusses such interrelationships comprehensively in three ways. First, we take account of manifest variables in this study as explained in previous chapters (Chang et al., 2009; Titman and Wessels, 1988; Yang et al., 2010). Secondly, there has been an ever-increasing recognition that economic sectors are gaining a very important status in the South-East Asian economy. Many practitioners stress the vital contribution of economic sectors to GDP and economic prospects. According to the 2011 Asian Development Bank (ADB) report, governments have encouraged private businesses to invest in certain sectors of the economy in accordance with 'national goals' and an 'industrialization strategy'. The structural transformation from agricultural production to the movement of innovative goods and services, knowledge-intensive skilled labour, investment, and the free flow of capital are of utmost importance to the newly transformed role of Malaysian and Indonesian industry and service sectors (*Asian Development Bank*, *2011*). Thus, Asian countries see an essential improvement not just from their agricultural sector but also in the manufacturing and services industries. Therefore, the newly transformed role of the sector groups is of utmost importance to a capital structure study. Perceiving how these economic sectors vary with numerous IITs related to each sector category, impact on a firm's financial structure and consequently affect firm financial performance. For example, firms in the same sector might have similar capital structure financing to enrich firm financial performance. This is because it is assumed that the same sector might have similar technology, business risk, and asset specificity for its collateral type. Some examples that illustrate this are from the business risk-bankruptcy cost hypothesis; that is, different industries will be involved with different conditions of supply and demand. This implies that businesses face different risk characteristics and, thus, capital structure across IIT has a tendency to systematically vary from one to another. Therefore, this study attempts to assess how the capital structure mediates the effect of capital structure's attributes on firm financial performance across Malaysian and Indonesian economic sectors. If there is intermediation, the question of how, and in what way, does capital structure intercede in such relationships will be intensively investigated.

Natural resources, which the South-East Asian region is rich in, has become a vital asset for growth development over the last decade. The member countries have transformed the region with high economic growth through the movement of goods and services, skilled labour, investment, and free flow of capital (*Asian Development Bank*, 2012). Table 1 demonstrates the economic progress in South-East Asia. In 2011, per capita GDP was 1206.99 US dollars and 5345.21 US dollars in Indonesia and Malaysia respectively. In 2011 the annual GDP growth rates for Malaysia and Indonesia of 5.08% and 6.45%, respectively, are slightly higher than others in the region. In the economic sectors, the GDP share has changed in Malaysia and Indonesia (Table 2). In Malaysia, from 1990 to 2011, the agriculture industry declined from 13.4% of GDP in 1994 to 8.3% in 2000. This is because suitable land is becoming more limited, such as for a palm oil production, as well as food crops but not for fruits and vegetables. In contrast, the GDP share of industry increased from 39.4% (1994) to 46.8% (2000) and then declined to 40.7% in 2011. There was a slight improvement in the

service sector but basically it is constant in its GDP share, 47.2 % (1994) and 47.3 (2011). The strengthening of Malaysian industry is due to the promotion by the government of new equipment production from small-and medium-scale industries (SMIS). The policy reform in manufacturing also led to an increase in value-added products that link with SMIS in Malaysia. In addition, the GDP share of the Indonesian agriculture is quite large compared to Malaysia, but it is slightly lower in the service sector. The agriculture industry was 14.7% (2011) of GDP and the service sector was 38.1% (2011). Indonesian and Malaysian industry seem to be quite comparable. Fast growth in the manufacturing and services industries has provided a sustainable share to the Indonesian GDP. The differences in the economic sectors' GDP share are still relatively large between these developing countries (i.e., Malaysia and Indonesia) and other developed countries (i.e., Australia and Hong Kong) (Table 2).

Table 1. Per capital GDP and GDP growth rates in South-East Asia

Country	GDP Per Capital in 2011 (US$)	Annual Growth rates of GDP in 1992-2011
Indonesia	**1206.991065**	**6.46**
Singapore	33529.83052	4.89
Philippines	1413.366295	3.91
Malaysia	**5345.213415**	**5.08**
Vietnam	757.4009286	5.89

Source: World Bank, World development indicators, 2012

Table 2. Economic sectors' share of GDP % in various countries

Malaysia	agriculture	industry	service	Australia	agriculture	industry	service
1994	13.4	39.4	47.2	1994	3.7	29.5	66.8
2000	8.3	46.8	44.9	2000	3.4	27	69.6
2006	8.7	47	44.3	2006	3	28.4	68.6
2011	12	40.7	47.3	2011	2.8	27.8	69.4
Indonesia	agriculture	industry	service	Hong Kong	agriculture	industry	service
1994	17.3	40.6	42.1	1994	0.2	15.6	84.2
2000	15.6	45.9	38.5	2000	0.1	12.7	87.2
2006	13	46.9	40.1	2006	0.1	8.2	91.7
2011	14.7	47.2	38.1	2011	n/a	n/a	n/a

Source: Asian Development Bank, Key Indicators for Asia and the Pacific (2012)

The following sections describes the hypothesis and discusses the literature. That section is followed by the research technique of multivariate analysis. Finally, after a brief description of the results and findings, the conclusion with the implications for practitioners will be explained.

2. Literature Review and Hypotheses
2.1 Economic sectors

According to the concept of three sector hypothesis developed by Fisher (1939) and Clark (1940), the economic sectors consist of three major stages of production. They are the primary, secondary and tertiary sectors. The engagement between the proportions of the nation's population and the nation's economy is defined by these sectors. The primary sector's production is concerned with extraction and abstraction from raw materials. Packaging and processing the raw material

associated with this sector is also considered part of this sector. In particular, this sector's production plays a vital role in economic development in developing countries such as in Africa and South East Asia. This is because most of the goods and products are sold in commodity markets. This sector deals with natural resources such as agriculture, fishing, farming, forestry and mining. In contrast, the secondary sector involves processing the raw materials into finished goods (i.e., construction or manufacturing industries). In developed economies such as the U.S, U.K, Australia and Hong Kong (see Table 2), the secondary and tertiary sectors may become more prominent and, thus, the primary sector becomes less essential. Services in the economy, such as transportation, tourism and retail stores, are categories in the tertiary sector. Goods and services in the secondary and tertiary sectors are traded with the consumer, capital and industrial markets and, hence, lead to the biggest part of a developed economy. In essence, low-income countries are often dominated by the primary sector, middle-income countries are assumed to be dominated by the secondary sector and high-income countries are dominated by their tertiary sector. Intra- and inter-industry (IIT) is divided into the three economic sectors in order to give a broad picture of the same products and services in intra-industry with different products and services in inter-industry.

2.2. Firm and country attributes

Most literature attempts to examine the determinants of capital structure in the context of developed and developing countries in a variety of industries[2]. Harris and Raviv (1991) summarise evidence of prior studies in which capital structure varies across industries. Myers (1984) suggests that firms within an industry tend to rely similarly on debt financing. The rationale is then to consider the factors of each sector category in this empirical model. Spanos et al. (2004) argue that different sectors present a different profitability because of the different forces to which the industry is exposed such as concentration, entry barriers and growth. Different industries have different capital structure ratios in order to capture the financial characteristics of their industries such as type of asset structure requirements, size, taxation, liquidation and growth opportunities (Scott Jr and Martin, 1975). Therefore, these firm characteristics, which derive from different economic sectors, are linked to the business strategy. For example, the *firm asset structure* is adjusted based on the business strategy, which reduces cost by technology, and thus improving the quality which enables the firm to differentiate its product from its competitors'. The importance of the unique assets employed, inimitable resources and skills are the prime sources for competitive advantage (Montgomery and Wernerfelt, 1988; Rumelt, 1991). The valuation of the secondary market may be different from the primary market. This is because the class of investment that involves redeployment and asset ventures that link with the transaction cost will be different. It is also due to matching their financing to the fixed assets' duration. Thus, the factors influencing capital structure from the asset structure requirements from different sectors differ. The asset structure tends to affect the firm's capital structure through different costs, financial distress, amount and liquidation that might reflect in the

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[2] Madan (2007) in the hotel industry, Ooi (1999) in the property sector, Sheikh and Wang (2011) in manufacturing and Upneja and Dalbor (2001) in the restaurant industry. Different industries in different sectors in different countries, may have different patterns of running their financial activities, which has been noted by prior studies such as Akhtar and Oliver (2009) and Akhtar (2005) in Australia and Japan; Bancel and Mittoo (2004) and Hall et al. (2004)in Europe; Booth et al. (2001) in Brazil, Mexico, India, South Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey, and Zimbabwe; Huang and Song (2006) in China; Pandey (2001) in Malaysia; Rajan and Zingales (1995) in the G-7 countries; Song (2005) in Sweden; Titman and Wessels (1988) in US; and Wiwattanakantang (1999) in Thailand.

firm value. In addition, the *size* of larger firms is an indication of greater market power and demonstrates a greater concentration in the industry that can access new technology better than smaller firms. With all these characteristics, larger size enables firms to generate higher returns on assets and sales, and this leads to a higher firm financial performance by being able to gain higher production value. Titman and Wessels (1988) claim that a firm's liquidation decision is associated with its bankruptcy. They note that that highly specialized services and spare parts in the secondary sector such as the manufacturing industry ought to employ less debt in their debt financing because of high bankruptcy and liquidation costs. Therefore, to have a healthy position in financial prominence, less debt should be financed by a sector that has high liquidation costs and a high probability of bankruptcy. As the current ratio in the financial statements of a firm is a measure of the liquidity, it is suggested that a firm with a higher current ratio indicates that the firm will have a better performance so have a stronger possibility of facing any short- or long-term financial problems. Firms with high current ratios can meet short term obligations. It is expected that firms with a larger liquidity position will tend to increase capital structure so a positive relationship to performance is expected (Wahab and Ramli, 2014). According to tax-based theories, capital structure decisions are influenced by the consideration of tax and bankruptcy costs. The *non-debt tax shield* can be defined as tax deductions for depreciation and investment tax credit. In debt financing, the substitute for the tax benefit is the non-debt tax shield, which is an alternative method of reducing the tax burden (Deangelo and Masulis, 1980). A profitable firm with a lower non-debt tax shield is expected to employ more debt than a less profitable firm because of the investment related tax shield. Therefore, firm specific attributes such as asset structure, growth opportunities, firm size, liquidity, non-debt tax shield are hypothesized to have a positively significant relationship with capital structure and firm financial performance. Remmers et al. (1974) claim that managers in different sectors will have different optimal capital structures because of different business risks, and similar sectors will face the same environment and economic conditions that arise due to the clustering of earnings and sales. Based on the "Static Trade-Off" and "Pecking Order" hypotheses, which are related to the product market interaction, it has been predicted that *business risk* is inversely related to capital structure. High business risk might be prone to higher agency costs thus, there is an incentive to reduce the agency cost by reducing capital structure. Therefore, the role of the *business risk* determinant is vital in a firm financial performance since this factor is uncertain especially with varying economic conditions. Overall, firms in the same sector and the same industry will have similar government industry policies and accounting practices, such as subsidies, government support and tax advantages, and this will lead them to have a similar risk in the firm characteristics. In other words, firms with a similar market orientation in the same sector will generally operate their business activities with the same materials and substances and, at the same time, will have similarly trained workers to produce the same product for the same customers. Consequently, same sector firms face similar risk from firm characteristics because of similar customers and suppliers for the competition in their business activities. Myers (1984) notes that the average debt ratio will be different across sectors due to varying risk and types of financing requirements. This study hypothesizes that business risk has a negative relationship with capital structure and firm financial performance.

Moreover, the macroeconomic factors (country specific attributes) can also be considered as capital structure determinants. The macroeconomic factors (i.e., country attributes) should not be separated from the microeconomic factors (i.e., firm attributes) because they are interrelated,

interdependent and complement one another. Macroeconomic factors (i.e., country attributes) are defined in broad terms such as the GDP, inflation and interest rates, and they affect not only a firm specifically, but entire industries and economies. The macro-economy deals with the aggregate economy and industries rather than specific individual and managerial decisions. For example, economy-wide phenomena, such as the problems that arise from inflation have a strong interrelation with interest rate. This macroeconomic factor can be characterized as a country attribute along with economic growth, and inflation rate. From a capital structure perspective, the market for stock and bond development are also considered macroeconomic factors. All this will affect how a specific firm could maximize its production and capacity by minimizing its cost structure and better compete in its industry. Therefore, the firm- and country-specific attributes are hypothesized to affect capital structure and firm financial performance.

2.3. Capital structure, firm financial performance and mediation

A survey of relationships between the determinants of capital structure and profitability by Hung et al. (2002) in the property and construction industries shows that the profitability of both industries had a different capital and labour intensiveness. Furthermore, a Japanese study by Allen and Mizuno (1989) documents that the relationship between profitability and capital structure was affected by industry effects (industrial and commercial industries in the secondary sector). The relationship between capital structure and firm financial performance is expected to differ in economic sectors. It is also hypothesized that there is a positive relationship between capital structure and firm financial performance. In addition, it is also vital to examine how capital structure determinants (firm-and country-attributes) affect firm financial performance through capital structure in the various economic sectors. Therefore, it is hypothesized that capital structure plays a mediation effect between capital structure determinants and performance.

3. Methodology and sample data

The economic sector variation in the Malaysian and Indonesian markets is analysed by using the PLS-SEM approach. The PLS-SEM is suitable with this study as it is good to analyse the mediation effects (Ramli et al 2018, Latan and Ramli, 2013)). The sample data period is from 1990 to 2010. There are 38 subsectors in the DataStream database. The finance industry and some companies that could not meet the set criteria are excluded from the sample[3]. In this study, the list of the subsectors for the primary, secondary and tertiary sectors in the DataStream database for Malaysia and Indonesia are as follows: (i) 5 subsectors in the primary sector; (ii) 13 in the secondary sector; and (iii) 13 in the primary sector Thus, the total subsectors are 31 out of 38. For Malaysia, there are 352 firm-year observations in the primary sector, 3492 in secondary sector, and 2131 in tertiary sector. For Indonesia, the data total of firm year observations is 175 for the primary sector, in the secondary sector, it is 1080, and in the tertiary sector, it is 589. This study has 13 attributes for the 28 indicators whose proxies have been calculated. Tables 3 shows the summary descriptive statistics of mean and standard deviations. Based on the average capital structure, the secondary sector (46.24%) is a highly leveraged sector compared to the other sectors at around 44%. This indicates that these

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[3] Those listed in the database that have been excluded are such as banks, equity investment instruments, financial services, life insurance, non-equity investment instruments, nonlife insurance, real estate investment services and trusts.

manufacturers rely on debt much more heavily than others. Performance indicators, such as the return on equity (13.10%), return on assets (6.34%) and return on investment (12.14%), in the primary sector are greater than in the secondary and tertiary sectors. This might be because from the data, I note that industries in the primary sector such as mining, oil and gas production, have contributed to high ROE and ROIC in the Malaysia and Indonesia**.**

Table 3. Descriptive arithmetic mean statistics for the endogenous variable (i.e., capital structure and firm financial performance) for each economic sector

Descriptive Statistics (capital structure)				Descriptive Statistics (firm financial performance)			
Sector	Primary Mean	Secondary Mean	Tertiary Mean	Sector	Primary Mean	Secondary Mean	Tertiary Mean
TADR	21.95%	23.22%	19.82%	ROE	13.41	4.14	5.51
TDTC(BV)	27.20%	27.43%	24.78%	ROA	6.53%	4.89%	4.06%
TDTC(MV)	57.71%	86.92%	85%	ROIC	12.31	8.58	7.26
LTDTC(BV)	18.02%	14.33%	17%				
LTDTC(MV)	66.15%	74%	74%				
STDTC(BV)	16.06%	13.32%	14%				
STDTC(MV)	74.77%	84.45%	79%				
Average	40.27%	46.24%	44.80%				

Notes: Capital structure (leverage) is measured by total debt ratio (TADR), total debt to capital (TDTC) for book and market value (BV and MV), and the long term and short term debt to capital are measured for book value and market value, LTDTC (BV), STDTC (BV), LTDTC (MV) and STDTC (BV), respectively. The firm financial performance is measured by return on equity (ROE), return on assets (ROA), and return on investment capital (ROIC).

4. Result analysis
4.1. Measurement and structural model result
Table 4 presents the results of the measurement models (convergent validity and construct reliability) for individual sectors in Malaysia and Indonesia. The measurement model assessments have met the commonly suggested criteria (see example from Chin, 1998; Chin et al., 2010; Henseler et al., 2009). Specifically, the Average Variance Extracted (AVE) values are above 0.5 and the composite reliability (CR) value for most of the constructs achieves a higher value of at least 0.7[4]. The Variance Inflation Factor (VIF) shows the measurement model assessments are robust (VIF <10) and thus, indicating no problems with multi-collinearity. All the R^2 reported in Table 4 are all above 0.8 which indicate that the model's explanatory power provides a better predictive ability for the dependent variable for each sector in each country. The significant value and structural coefficient estimate among the variables for each model are presented in the Table 5 (Malaysia) and Table 6 (Indonesia), respectively.

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[4] The indicators of depreciation, depletion and amortization to total assets real interest rate and price earnings ratio also performed. However, those indicators have been removed because of the low cut-off value of the factor loading. The added two proxies: GDI and IF-GDP also shows a good convergent validity assessment.

Table 4. The Measurement Model

Measurement results for Model A of the factorial construct validity for the endogenous and exogenous variables hypothesised to influence the determinants of capital structure and firm' financial performance estimated using Partial Least Square which is variance based Structural Equation Modelling (PLS-SEM). The measurement estimates are calculated by the PLS algorithm with the path weighting scheme, Mean 0, Variance 1, Maximum iteration 300.

Sector	Primary				secondary				tertiary			
Country	Malaysia		Indonesia		Malaysia		Indonesia		Malaysia		Indonesia	
Exogenous	AVE	CR	AVE	CR	AVE	CR	AVE	CR	AVE	CR	AVE	CR
AS	0.9643	0.9818	0.9538	0.9764	0.9118	0.9538	0.8704	0.9307	0.9100	0.9529	0.6808	0.8076
EG	0.7511	0.8578	0.7400	0.8470	0.7267	0.8412	0.7560	0.8588	0.7111	0.8286	0.7154	0.8292
GRW	0.6833	0.8668	0.6715	0.8526	0.6057	0.8227	0.6995	0.8763	0.6759	0.8556	0.6477	0.8380
INF	0.8232	0.9029	0.9484	0.9735	0.8200	0.9009	0.9662	0.9828	0.8223	0.9024	0.9702	0.9849
FS	0.9300	0.9637	0.9483	0.9735	0.9089	0.9522	0.9591	0.9791	0.9020	0.9485	0.8953	0.9448
IR	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
LIQ	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
NDTS	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
SMD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
BMD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
BR	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Endogenous												
LEV	0.7082	0.9440	0.6852	0.9378	0.5941	0.9103	0.6039	0.9122	0.6152	0.9153	0.5362	0.8863
FFP	0.9420	0.9799	0.9327	0.9765	0.8869	0.9592	0.6491	0.8179	0.6530	0.8381	0.8169	0.9304
R-Squared (R2)												
R^2- LEV	0.9100		0.8867		0.8731		0.9103		0.8560		0.8692	
R^2- FFP	0.8544		0.9226		0.8297		0.9160		0.8875		0.7632	

Note: AVE is defined as average variance extracted, and CR is defined as composite reliability. Total number of samples for Malaysia (primary: n=352; secondary: n=3492; tertiary: n=2131) and Indonesia (primary: n=175; secondary: n=1080; tertiary: n=589). This study model specification for PLS-SEM includes the measurement model (e.g. formative and reflective construct) and structural model. Five reflective constructs (e.g. asset structure, growth opportunities, firm size, inflation rate and economic growth) and six formative constructs (e.g. business risk, liquidity, non-debt tax shield, interest rate, stock market development and bond market development). The structural model is the path coefficient between the exogenous variable and the endogenous variable which consists of capital structure and firm financial performance.

Table 5. Statistically significant value (the structural model) for Malaysia

The table presents the Model A of the PLS-SEM statistically significant estimates for the determinants of capital structure (Panel A) and firm financial performance (Panel B). The PLS path model measures the Beta (β) coefficient, standard error and statistically significant values using resampling from the bootstrapping procedures for 5000 samples for all samples. For Malaysia, the numbers of cases for each economic sector are: (i) N =352 for the primary sector, (ii) N =3492 for the secondary sector and (iii) N =2131 for the tertiary sector.

Model	Primary			Secondary			Tertiary		
Panel A	coef. (β)	Std.error	Critical ratio	coef.(β)	Std.error	Critical ratio	coef. (β)	Std.error	Critical ratio
Asset structure ->	0.0444	0.0154	2.8905***	0.0752	0.0071	10.6508***	0.0824	0.0093	8.9059***
Growth opportunity -> capital structure	0.8874	0.0178	49.8678***	0.8866	0.0091	97.1603***	0.9318	0.0116	80.4213***
Firm size -> capital structure	-0.0086	0.0243	0.3563	-0.0038	0.0061	0.6277	-0.0144	0.0122	1.1803
Liquidity -> capital structure	0.0245	0.0332	0.7377	-0.0697	0.0107	6.528***	-0.0009	0.0071	0.1242
Business risk -> capital structure	0.0014	0.0122	0.1154	0.0036	0.0091	0.395	0.0031	0.004	0.7763
Non-debt tax shield -> capital structure	-0.129	0.0255	5.0519***	-0.0534	0.0131	4.0853***	-0.0248	0.0091	2.7076***
Bond market development -> capital structure	0.008	0.0201	0.3985	-0.0046	0.0072	0.638	-0.0138	0.008	1.7398*
Stock market development -> capital structure	0.0067	0.0208	0.3201	0.0048	0.0084	0.5741	0.008	0.0083	0.9717
Economic growth -> capital structure	-0.0225	0.0227	0.9912	-0.0179	0.0081	2.1972**	-0.0131	0.0084	1.5522
Interest rate -> capital structure	-0.072	0.0214	3.3584***	-0.0423	0.0079	5.344***	-0.0439	0.0092	4.7537***
Inflation rate -> capital structure	0.0133	0.0206	0.6475	0.0153	0.0078	1.9677**	0.0082	0.0086	0.9452
Panel B									
Asset structure -> firm performance	-0.0629	0.0204	3.0801***	-0.0692	0.0102	6.761***	-0.021	0.0103	2.0368**
Growth opportunity -> firm performance	-0.094	0.0789	1.1923	-0.0366	0.0265	1.3818	-0.2211	0.0615	3.5966***
Firm size -> firm performance	0.0712	0.0271	2.6315***	0.0316	0.0095	3.324***	-0.0006	0.0094	0.0629
Liquidity -> firm performance	-0.0253	0.024	1.0582	-0.0215	0.0101	2.1306**	-0.0042	0.0044	0.9631
Business risk -> firm performance	-0.0284	0.0321	0.8835	0.0029	0.0073	0.4018	-0.0047	0.0055	0.8521
Non-debt tax shield -> firm performance	0.899	0.0291	30.9358***	0.8802	0.014	62.6518***	0.9101	0.0233	38.9977***
Bond market development -> firm performance	-0.0106	0.019	0.5589	-0.0131	0.0078	1.6767*	-0.0194	0.0074	2.603***
Stock market development -> firm performance	0.0031	0.0237	0.129	0.0153	0.0128	1.2008	0.0151	0.0107	1.4068
Economic growth -> firm performance	0.0205	0.0295	0.6959	0.0361	0.0118	3.068***	0.0094	0.0112	0.8392
Interest rate -> firm performance	-0.0253	0.0308	0.8199	0.019	0.009	2.1182**	-0.0016	0.0124	0.1253
Inflation rate -> firm performance	0.0088	0.0236	0.371	-0.0062	0.0098	0.6356	-0.0068	0.0131	0.5226
Capital structure -> firm performance	0.0792	0.1053	0.7516	-0.037	0.0295	1.2534	0.1665	0.0618	2.6931***

Note: ***, **,* means statistically significant at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table 6. Statistically significant value (the structural model) for Indonesia

The table presents the Model A of the PLS-SEM statistically significant estimates for the determinants of capital structure (Panel A) and firm financial performance (Panel B). The PLS path model measures the Beta (β) coefficient, standard error and statistically significant values using resampling from the bootstrapping procedures for 5000 samples for all samples. For Indonesia, the numbers of cases for each economic sector are: (i) N =175 for the primary sector, (ii) N =1080 for the secondary sector and (iii) N =589 for the tertiary sector.

Model	Primary			Secondary			Tertiary		
Panel A	coef. (β)	Std.error	Critical ratio	coef.(β)	Std.error	Critical ratio	coef. (β)	Std.error	Critical ratio
Asset structure -> capital structure	0.0216	0.0316	0.6839	0.0463	0.0104	4.4277***	0.1323	0.0193	6.8646***
Growth opportunity -> capital structure	0.936	0.0365	25.6306***	0.9229	0.0117	79.1428***	0.8794	0.0187	46.9701***
Firm size -> capital structure	0.0198	0.0296	0.6704	0.001	0.0118	0.0885	0.1144	0.0194	5.8807***
Liquidity -> capital structure	0.0898	0.0342	2.6217***	-0.0156	0.0179	0.8719	0.0196	0.019	1.0332
Business risk -> capital structure	-0.0175	0.0244	0.7185	-0.0138	0.0114	1.2037	0.0036	0.0151	0.2366
Non-debt tax shield -> capital structure	-0.0585	0.0445	1.315	-0.0198	0.0157	1.2653	-0.0016	0.0377	0.042
Bond market development -> capital structure	0.028	0.0441	0.635	0.0067	0.0154	0.4362	-0.0181	0.023	0.7873
Stock market development -> capital structure	0.0259	0.0322	0.8022	-0.0012	0.011	0.1075	-0.0206	0.0176	1.1713
Economic growth -> capital structure	0.0156	0.0592	0.2644	0.0862	0.0242	3.5658***	0.0714	0.0359	1.9914**
Interest rate -> capital structure	0.0565	0.0576	0.9822	0.0774	0.0185	4.1905***	0.0709	0.0261	2.7147***
Inflation rate -> capital structure	-0.0236	0.0547	0.4319	0.009	0.0244	0.3673	0.0195	0.0416	0.4689
Panel B									
Asset structure -> firm performance	0.0038	0.0247	0.1558	-0.0188	0.0132	1.423	-0.0381	0.0261	1.4582
Growth opportunity -> firm performance	0.1227	0.0971	1.2641	0.088	0.0564	1.5595	-0.2086	0.0941	2.2165**
Firm size -> firm performance	0.0097	0.0313	0.3113	0.0064	0.015	0.428	-0.0643	0.0379	1.6949*
Liquidity -> firm performance	-0.0822	0.034	2.4174**	-0.0259	0.0094	2.7615***	0.0071	0.0272	0.2602
Business risk -> firm performance	-0.0253	0.0238	1.0638	-0.0201	0.0179	1.1223	-0.0044	0.011	0.3987
Non-debt tax shield -> firm performance	0.9554	0.0471	20.2651***	0.918	0.0231	39.7037***	0.8781	0.0245	35.8886***
Bond market development -> firm performance	-0.0138	0.0479	0.2876	-0.0131	0.0138	0.9471	-0.0656	0.0224	2.9245***
Stock market development -> firm performance	0.0163	0.0279	0.5839	0.0208	0.0114	1.8329*	-0.0014	0.0166	0.0867
Economic growth -> firm performance	0.0211	0.0465	0.4528	0.0626	0.0222	2.8147***	-0.0198	0.0391	0.5073
Interest rate -> firm performance	-0.0409	0.0428	0.955	-0.0186	0.0208	0.8929	-0.1057	0.0337	3.1423***
Inflation rate -> firm performance	-0.0042	0.0537	0.0779	0.0209	0.0265	0.7897	0.0407	0.0724	0.5626
Capital structure -> firm performance	-0.1534	0.0976	1.5712	-0.1621	0.0642	2.5251**	0.2684	0.1577	1.702*

Note: ***, **,* means statistically significant at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

5. Discussion

This study reveals that the determinants of capital structure affect firm financial performance directly. The results highlight some specific factors (i.e., asset structure, firm size, liquidity and non-debt tax shield, interest rate and economic growth), disparities in terms of the sign and significance level between sectors. This is probably because of the three different major sectors' production, especially intra- and inter industry (IIT) and possibly because of the institutional and macro-economic differences. For example, it is assumed that the Malaysian primary and secondary sector large firms have an indication of greater market power and demonstrate a greater concentration in the industry that can access new technology better than smaller firms. Larger size enables firms to generate higher returns on assets and sale, and this leads to a higher firm financial performance because of being able gain higher production value. The different outcomes of how firm and country factors affect performance between sectors also reflects the way in which the firm finances its assets (leverage).

Based on the relationship between the firm and country attributes and capital structure, Malaysian primary sector samples show that the asset structure and growth opportunities (positive), non-debt tax shield and interest rate (negative) have significant relationships with capital structure. For Malaysian secondary samples, there is a significant positive relationship exists between capital structure and asset structure, growth opportunities, and inflation. But there is a negative relationship exists between capital structure and liquidity, non-debt tax shield, economic growth and interest rate. While, for the Malaysian tertiary sector shows that asset structure and growth opportunities have a positive effect but non-debt tax shield, bond market development and interest rate have a negative significant relationship with capital structure.

Based on the relationship between the firm and country attributes and capital structure, Indonesian primary sector samples, only liquidity and growth opportunities have a positive significant relationship with capital structure. For Indonesian secondary samples shows that asset structure, growth opportunities, economic growth and interest rate have a positive significant relationship with capital structure. While, for the Indonesian tertiary sector shows that asset structure, growth opportunities, firm size, economic growth and interest rate have a positive significant relationship with capital structure.

5.1. Results discussion on mediation effect

Note: a, b, c, are the path coefficients between the construct
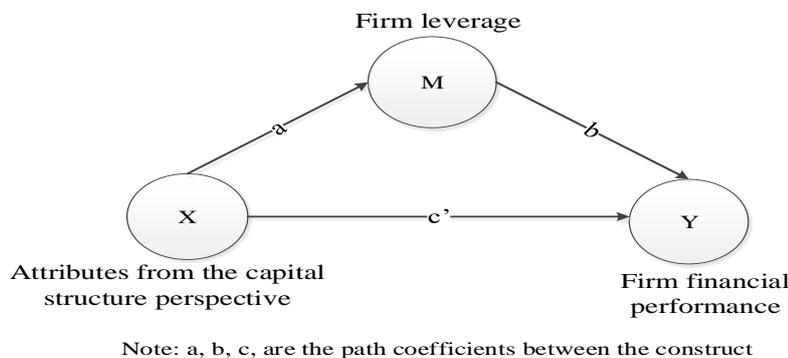
Figure 1 Path diagram coefficients for mediation effects

Figure 1 summarizes the significant mediation analysis results between two sub-samples, i.e., Malaysia and Indonesia, across the economic sectors (secondary and tertiary). The total effect of X on Y can be expressed as the sum of direct (c') and indirect effects (ab): c= c'+ab. A simple example of the mediation model (Figure 1) shows how variable X's causal effect can be assigned onto an indirect effect (ab) on Y through M and direct effect on Y (c'). Path a represents the effect of X on M (mediator), and path b represents the effect of M on Y partially out the effect of X. All these paths were quantified with unstandardized regression coefficients.

The requirement for the   (direct effect) relationship to be significant for mediation to exist seems reasonable because, if there is no significant relationship between X and Y, how can mediation occur? However, most recent studies provide evidence that this is not necessarily the case (Cliff and Earleywine, 1994; Collins et al., 1998; Davis, 1985; Hair et al., 2013; Mackinnon, 2000; Mcfatter, 1979; Shrout and Bolger, 2002; Tzelgov and Henik, 1991; Zhao et al., 2010). The discussion for the mediation effects can be started by understanding the typology of mediation and non-mediation as proposed by Zhao et al. (2010), Rucker et al. (2011), Ramli and Nartea (2016), Ramli et al. (2019). The summarize of the mediation effects can be refer to Figure 3 of a decision tree for a typology of mediation effects.

A typology of mediation is as follows:

(i) *Complementary mediation:* the indirect effect (*path: a x b*) and direct effect (*path c*) both significant and the signs pointing in the same direction. For example, the three path coefficients *a x b x c* are significant and multiplying the three coefficients results in a positive number.

(ii) *Competitive mediation:* the indirect effect (*path: a x b*) and direct effect (*path c*) both significant and the sign pointing in the opposite direction. For example, the three path coefficients *a x b x c* are significant and multiplying the three coefficients results in a negative number.

(iii) *Indirect-only mediation:* the indirect effect (*path: a x b*) significant, but direct effect (*path c*) is not significant.

(iv) *Direct-only non-mediation*: the indirect effect (*path: a x b*) is not significant and the direct effect (path c) is significant.

(v) *No-effect non-mediation:* neither the indirect nor the direct effect is significant.

This study will discuss this issue in more detail. At first glance, the relationship between capital structure and firm financial performance (path "*b*") shows that: (i) the Malaysian tertiary; and (iii) the Indonesian secondary and tertiary sectors have significant relationships. An important question then arises: Are the relationships between the firm- and country-specific attributes and firm financial performance mediated by capital structure in those sectors? The Sobel Test and bootstrap T-statistics were computed to examine mediation (Table 7) (Hair et al., 2013; Preacher and Hayes, 2008). When the mediation t-statistics are significant, then the next step is to obtain the magnitude of the effect, which is given by the ratio of the indirect or mediating effect to the total effect[5]. For instance, the mediating effect of specific attributes via capital structure is exemplified by a high Variance Accounted For (VAF) value (e.g., if the VAF is 40%, it indicates that only half of the total

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[5] The total effect of X and Y can be expressed as the sum of the direct effect and indirect effect: c=c'+ab. Equivalently, c' is the difference between the total effect of X on Y and the indirect effect of X on Y through M-that is, c'=c-ab.

effect of the specific attribute on firm financial performance is explained by the mediating effect). The VAF is evaluated by the formula: $\text{VAF} = \dfrac{a \times b}{a \times b + c}$ where: a b and c are the path coefficients.

Figure 2 further explains each mediation effect analysis and the size of the effect (VAF) of the path coefficients for secondary and tertiary sectors. This explanation is the summary of the mediation test analysis results in Table 7 All explanations are based on the path diagram coefficients of Figure 1. Based on the typology of mediation, the framework for mediation analysis results (Figure 2) shows that the type of mediation for Malaysian and Indonesian economic sectors can be considered as "competitive" and "indirect-only mediation". This study will provide the possible evidence behind these types of mediation and will discuss the practical implications, and the implications for theory building.
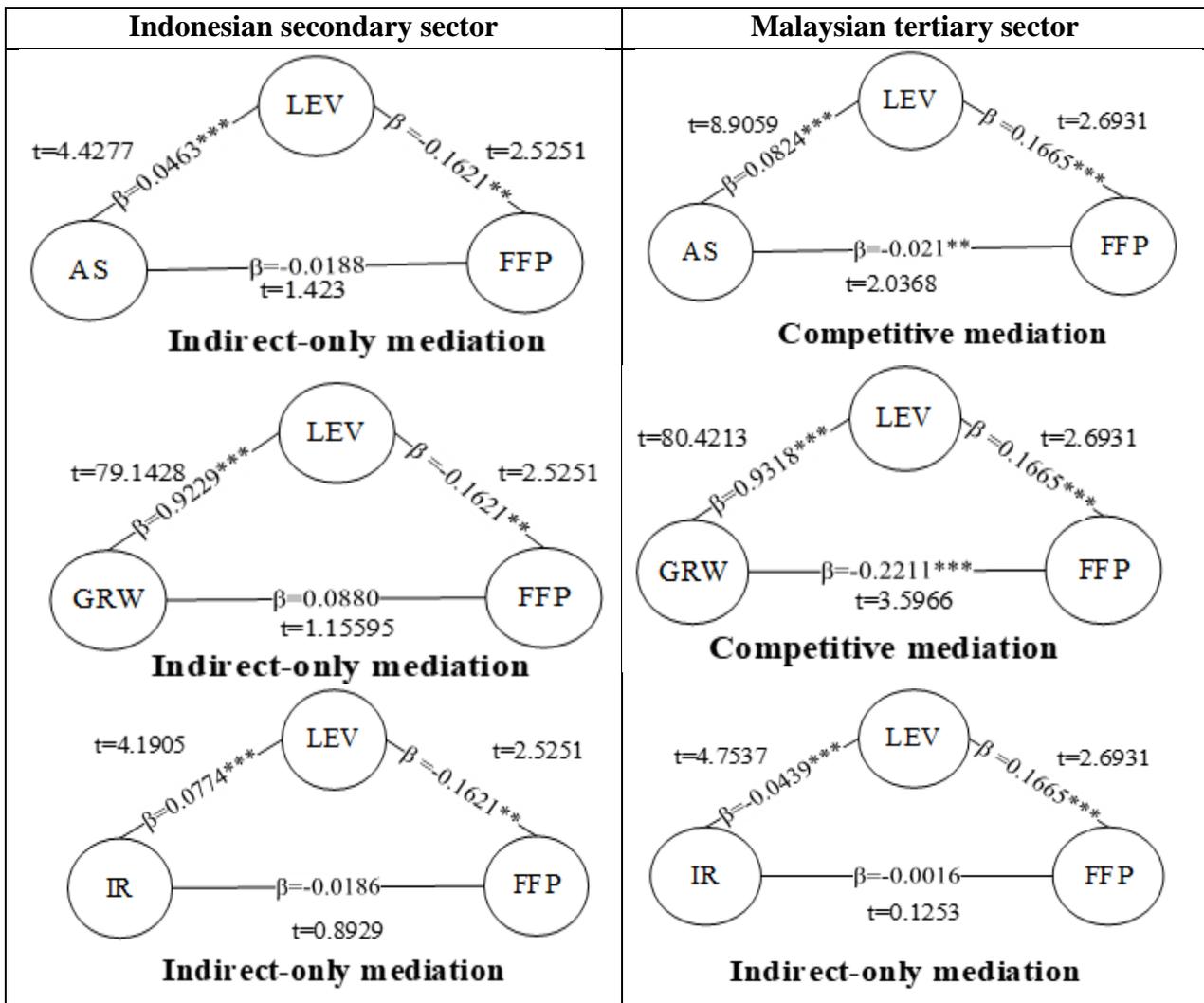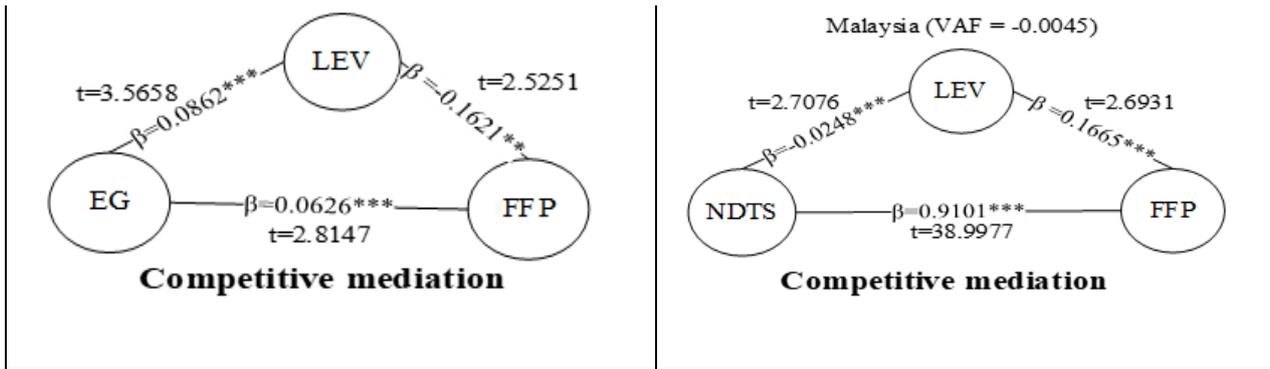
Figure 2. A framework for mediation analysis results

A. Competitive mediation: Let us first consider the reporting of "competitive mediation" for the Indonesian secondary sector for the interrelationships among economic growth, capital structure and firm financial performance (Table 6). I find that the mean indirect effect from bootstrap analysis is negative and significant (a x b = -0.0139), with a 95% confidence interval (CI) at 2.008 (Table 7). In the indirect path, *ab*, a unit increase in economic growth increases capital structure by a=0.0862 units; b=-0.1621, thus, holding economic growth constant, a unit increase in capital structure reduces firm financial performance by 0.162 units. The direct effect path *c'* (0.0626) is also significant (t=2.8147); holding capital structure constant, a unit increase in economic growth increases firm financial performance by 0.0626, perhaps sensible effects. Since multiplying the paths: *a x b x c* (-0.00087) is negative, it is considered to be "competitive mediation" and the size of the effect has become negative, VAF=-0.28. Research on mediation (Cliff and Earleywine, 1994; Collins et al., 1998; Davis, 1985; Hair et al., 2013; Mackinnon, 2000; Mcfatter, 1979; Shrout and Bolger, 2002; Tzelgov and Henik, 1991; Zhao et al., 2010) provides evidence that in "competitive mediation" the size of the effect (VAF) will become larger than one, or in some instances even negative; and this can no longer be interpreted. *Implication:* The inconsistent sign of the indirect and direct effects is possible because of the other omitted mediators, and this can gain information for theory building – this will be discussed shortly. In the above case $(EG \rightarrow LEV \rightarrow FPP)$, the simultaneous model turns to an inconsistent sign of the direct and indirect effects. The indirect effect is: $(EG \uparrow LEV \uparrow FFP \downarrow)$, but the direct effect is $(EG \uparrow FFP \uparrow)$. Rucker et al. (2011) and Zhao et al. (2010) suggest that the total effect might possibly reflect two or more omitted mediators with different signs. They recommend first seeking the same sign for the total effect. For example, if the total effect is positive (negative) then at least one omitted mediator is positive (negative). In addition, the unexplained sign of the direct effect (*c'*) can also be a boon to theory building. Take, for example, the Malaysian tertiary sector's interrelationships with asset structure, capital structure and firm financial performance which is, the direct effect *c'* (-0.021) $AS \uparrow FFP \downarrow$ is negative and significant (t=2.0368) and the indirect effect *ab* is positive and significant $AS \uparrow LEV \uparrow FFP \uparrow$ (*a x b* = 0.0137; path a=0.0824, t=8.9059 and path b=0.1665, t=2.6931).The bootstrap value of the mediation effect with 95% CI is significant: t=2.585 (Table 7). Therefore, the direct path c' is the "unexplained" sign for the $X \rightarrow Y$ relationship. This is because there is good reason to expect a positive relationship, but sometimes this might be missing

in the model[6]. Thus, the sign of the mysterious "direct effect" (negative sign) has an exploratory value for theory building (Rucker et al., 2011; Zhao et al., 2010). Normally, the relationship of the direct effect should be clear, but there are some cases where it is theoretically often unclear. Take the above example of asset structure attributes. Theory, particularly the Trade-Off Theory and Agency Theory, posits that high asset structure (X) has a higher capacity to employ debt (M) and, thus, high debt capacity tends to increase performance (Y), $\text{AS}\uparrow \text{LEV}\uparrow \text{FFP}\uparrow$. This is consistent with the theories. A firm with high tangible assets tends to have a good reputation for getting funds since the assets act as strong collateral value used as a guarantee for external debt. External funds can generate a profitable project resulting in increased performance. Thus, the results show that the debt level acts as a bridge between the asset structure and performance for the positive indirect effect. Obviously, however, a high level of assets leads to low performance, creating a negative direct effect c', $\text{AS}\uparrow \text{FFP}\downarrow$. In theory, a firm with high tangible assets that are considered productive resources is able to boost production, product quality and enhance financial performance. So, the relationship of asset structure and performance is expected to be a positive direct effect c'- but the result shows that it is not necessarily the case (negative sign). Although the mediated paths *a* x *b* is positive (consistent with the theory), it would not undermine the theory if the debt level did not perfectly mediate the effect of asset structure on performance - because the direct effect is significantly negative. So, it can be claimed that such a "direct path" is often because of omission of one or more hidden mediators from the model that match the revealed sign of the direct effect (Rucker et al., 2011; Shrout and Bolger, 2002; Zhao et al., 2010). Future work will need to be done to develop accounting theory for the direct effect as well as other mediators which might contribute to the "negative sign".

B. Indirect-only mediation: This type of mediation is such that indirect effects can exist in the absence of significant total and direct effects (Rucker et al., 2011; Zhao et al., 2010). Recent studies have demonstrated that a significant indirect effect can occur even when there is no sign of a significant effect of total *c* or the direct effect *c'* is detectable (Hair et al., 2013; Rucker et al., 2011; Zhao et al., 2010). This study also contributes to the case for "indirect-only mediation". Take, for example, in the Malaysian tertiary sector, the simultaneous relationships present an indirect effect significant at 95% CI: t= -2.419 (Table 7). Based on Table 5, the effect of interest rate (X) on capital structure (M) is significantly negative (a=-0.0439, t=4.7537), and the effect of capital structure (M) on performance (Y) is significantly positive (b=0.1665, t=2.6931), but the total effect *c* (t= 0.8476)[7] and direct effect *c'* (t=0.1253) are not significant. This means that when the country (Malaysia) has a lower interest rate, companies are prone to employ high capital structure because they are faced with low default risk and hence increase their performance. This is consistent with the low business risk in the tertiary sector, which is related to the interest rate attribute. For this reason, a country that has a low interest rate and supports a firm that has low volatility of earnings will post low financial distress, and, as a result, will perform well. On the other hand, if a firm employs high debt when the cost of borrowing is high this would cause a decline in its performance. This is because greater

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[6] The higher tangible assets are a signpost of the security for lenders that act as collateral; these indicate a good reputation for getting funds, and thus are useful for a profitable project leading to the generation of more returns. This statement has been demonstrated previously in Chapter 4.

[7] We analyzed the total effect using the PLS-SEM statistically significant estimates for the total effect path "c", i.e., the relationships between the determinants of capital structure and firm financial performance. The PLS path model measures the Beta (β) coefficient, standard error and statistically significant values using resampling from the bootstrapping procedure for 5000 samples for all samples.

external financing creates high business risk. This situation is sensible for the case of the Indonesian secondary sector as well. ***Implication:*** Rucker et al. (2011) claim that *"...overemphasizing the* $\mathrm{X} \rightarrow \mathrm{Y}$ *relationship before or after controlling for a mediator can lead to misleading, or even false, conclusion in theory testing"*. Others writing on the topic of mediation also discuss this statement (see Hair et al., 2013; Hayes, 2009; Mackinnon, 2000; Mackinnon et al., 2002; Shrout and Bolger, 2002; Zhao et al., 2010). Baron and Kenny (1986) argue that a significant *c* (total effect-without mediator) has been viewed as a necessary condition for mediation to occur. If the *c* coefficient is not significant, the causal step is no longer to seek for an indirect effect. Thus, this will lead to drawing a conclusion of no indirect effect existing and no account for the overall effect to mediate[8]. However, if *c* is significant, then there is a proposed mediator and the case of the $\mathrm{X} \rightarrow \mathrm{Y}$ relationship in a causal model will be introduced as *c'* (direct effect). After the indirect effect has been found, the report of the mediation effect will be accounted for *perfectly, completely, or full mediation (Recent work recognises this as indirect-only mediation)* if the direct effect *c'* is not significant[9]. Recent work (Hair et al., 2013; Hayes, 2009; Mackinnon, 2000; Mackinnon et al., 2002; Shrout and Bolger, 2002; Zhao et al., 2010) provides new evidence and concludes as the same argument with my finding that mediation can occur even in the absence of a significant total effect *c* or direct effect *c'*. As a result, it is not necessary to first perform the total effect *c* for the mediation effect[10]. The distinction for "indirect-only mediation" (or full mediation) has been influential for the development of practical and theoretical implications that can be concluded in two ways. First, for a simple mediation model (one mediator), it suggests that there is no need for further testing for indirect effects as the process of $\mathrm{X} \rightarrow \mathrm{Y}$ has been completely explained (Baron and Kenny, 1986; Hair et al., 2013; Zhao et al., 2010). Zhao et al. (2010) declare that such a case of identified mediator is consistent with the hypothesized theoretical framework. Second, Mackinnon et al. (2000) and Rucker et al. (2011) acknowledge a possible *suppressor effect (S)*. Mackinnon et al. (2000) describe the term suppressor effect as *"a variable which increases the predictive validity of another variable (or set of variables) by its inclusion in a regression equation"*. This means that omission of the suppressor variable would undermine the total effect *c*. Evidence from previous studies signpost that accounting for the suppressor variable will enhance the predictive accuracy of other variables in an equation. Thus, identification of a suppressor effect might give a better understanding and could improve the mediation model[11] (Mackinnon et al., 2000; Mcfatter, 1979). The omission of the suppressor variable might weaken the effect of X on Y. The suppressor variable (S) might be able to produce both total

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[8] This argument cannot hold as we have robust findings that the absence of total and direct effect can also enable mediation to exist.

[9] Contrarily, if the typical report is for a remaining significant direct effect c', it will be accounted as *partially mediation (Recent work recognize this as "complementary mediation")*. Baron and Kenny (1986) define "competitive mediation" as a no mediation – a ticket to the file drawer. Recent authors provide evidence on this matter and prefer the alternative term for mediation (see the earlier discussion on the typology of mediation). The implication for partial mediation is clear for a suggestion of other indirect effects that could (or probably must) be further empirically examined. See the previous discussion on competitive and complementary mediation.

[10] See Rucker et al. (2011) for the comprehensive arguments and reasons that possibly happen in detecting indirect effects even when c and c' are not significant. They claim; (i) that measurement precision (i.e., size of the standard error), (ii) strength relationship of an independent variable on a mediator than on the dependent variable lead to stronger indirect effect than total effect and (iii) sample size.

[11] McFatter (1979) investigates the suppressor effect (S) for the role of intelligence on task performance. Intelligence (X) is associated with greater ability (M) and thus boosts performance (Y). The total effect of intelligence (X) and performance (Y) appear to be zero (not significant) without inclusion of the suppressor effect (S). Then, after including the suppressor variable (task boredom), both the direct and total effect are significant – it is expected that intelligence (X) faced with high task boredom (S) would consequently harm the performance (Y).

and direct effects to be significant. The implication of the suppressor variable (S) is that instead of the researcher believing no total effect and claiming full mediation, the researcher might tend to ponder the possibility of an omitted variable being suppressed in the model. As a result, the researcher could not simply use the term of "full" or "partial" mediation because it could lead to misleading, or even false, conclusions in theory and practice.

Finally, in this study, the implication of mediation effects can be summarized as follows: (i) "competitive" mediation is likely to involve the omission of a mediator (i.e., one or more hidden mediators from the model that match the revealed sign of direct effect). The inconsistent sign between direct effect (c') and indirect effect (ab) or unexplained direct effect (c') is a guide for future research and a silver lining for theory building in seeking alternative mediators; (ii) "indirect-only" mediation identification is consistent with the theoretical framework and there is no need to further test for an indirect effect because the process of $X \rightarrow Y$ has been assumed to be completely explained (Baron and Kenny, 1986; Hair et al., 2013; Zhao et al., 2010). This implication may be seen if the indirect effect (axb) and the total effect c have the same sign. However, the Indonesian secondary sector's interrelationship with growth opportunities, capital structure and performance has opposite signs for the indirect (axb) and total effect c. Thus, the identification of a suppressor effect might give a better explanation and could improve the mediation model.

Table 7 Mediation test analysis results

	Malaysia		Indonesia			
	Tertiary sector		Secondary sector		Tertiary sector	
	Bootstrap	**Sobel**	**Bootstrap**	**Sobel**	**Bootstrap**	**Sobel**
Path mediating effects	t-stats	t-stats	t-stats	t-stats	t-stats	t-stats
Asset structure -> capital structure -> firm performance	2.585***	2.563***	-1.829*	-2.156**	1.747*	1.64*
Growth opportunities-> capital structure->firm performance	2.711***	2.693***	-2.477**	-2.523**	1.688*	1.701*
Firm size -> capital structure -> firm performance	-1.632	-1.023	-0.071	-0.079	1.688*	1.615
Business risk-> capital structure -> firm performance	0.953	0.702	1.044	1.028	0.2835	0.204
Liquidity-> capital structure -> firm performance	-0.167	-0.119	0.797	0.772	0.9134	0.788
Non-debt tax shield -> capital structure -> firm performance	-2.280**	-1.854*	0.981	1.064	-0.0632	-0.037
Inflation -> capital structure -> firm performance	1.123	0.849	-0.323	-0.339	0.5345	0.393
Interest rate-> capital structure -> firm performance	-2.419**	-2.308**	-2.008**	-2.118**	1.5355	1.377
Economic growth -> capital structure -> firm performance	-1.622	-1.285	-2.137**	-2.008**	1.5383	1.208
Stock market dev. -> capital structure -> firm performance	1.143	0.857	0.095	0.101	-1.1284	-0.868
Bond market dev. -> capital structure -> firm performance	-1.727*	-1.387	-0.389	-0.399	-0.7996	-0.63

***,**,* means statistically significant at the 1, 5 and 10 per cent levels, respectively, using standard errors that have been generated from the 5000 random bootstrapping procedure samples (with replacement). Hair et al. (2013) recommends for the t-value 1.96, p<0.05 for the mediation effects, thus, this study will selecting the one with high confidence level (α=0.05 or 0.01). The null hypothesis will be rejected if the t-value exceeds 1.96 (at p<0.05), i.e., there is no mediating/indirect effect between the determinants of capital structure and firm financial performance.

Note: The mediation tests are measured as follows:

i.   The bootstrap t-statistic is measure by $t_{emp} = \dfrac{w}{se(w)}$ where: t_{emp} is the empirical t-value, w is the original PLS estimate of a certain path coefficient, and $se(w)$ is the bootstrapping of the standard error. This significance test estimates are claimed to perfectly suit the PLS-SEM technique ((Hair et al., 2013; Preacher and Hayes, 2008)

ii. The Sobel test (1982) is measured by $z = \dfrac{a \times b}{\sqrt{b^2 \times s_a^2 + a^2 \times s_b^2 + s_a^2 \times s_b^2}}$ where: the a and b are the original samples of the path coefficient values, S_a^2 is the standard error for the path coefficient a and S_b^2 is the standard error for the path coefficient b.
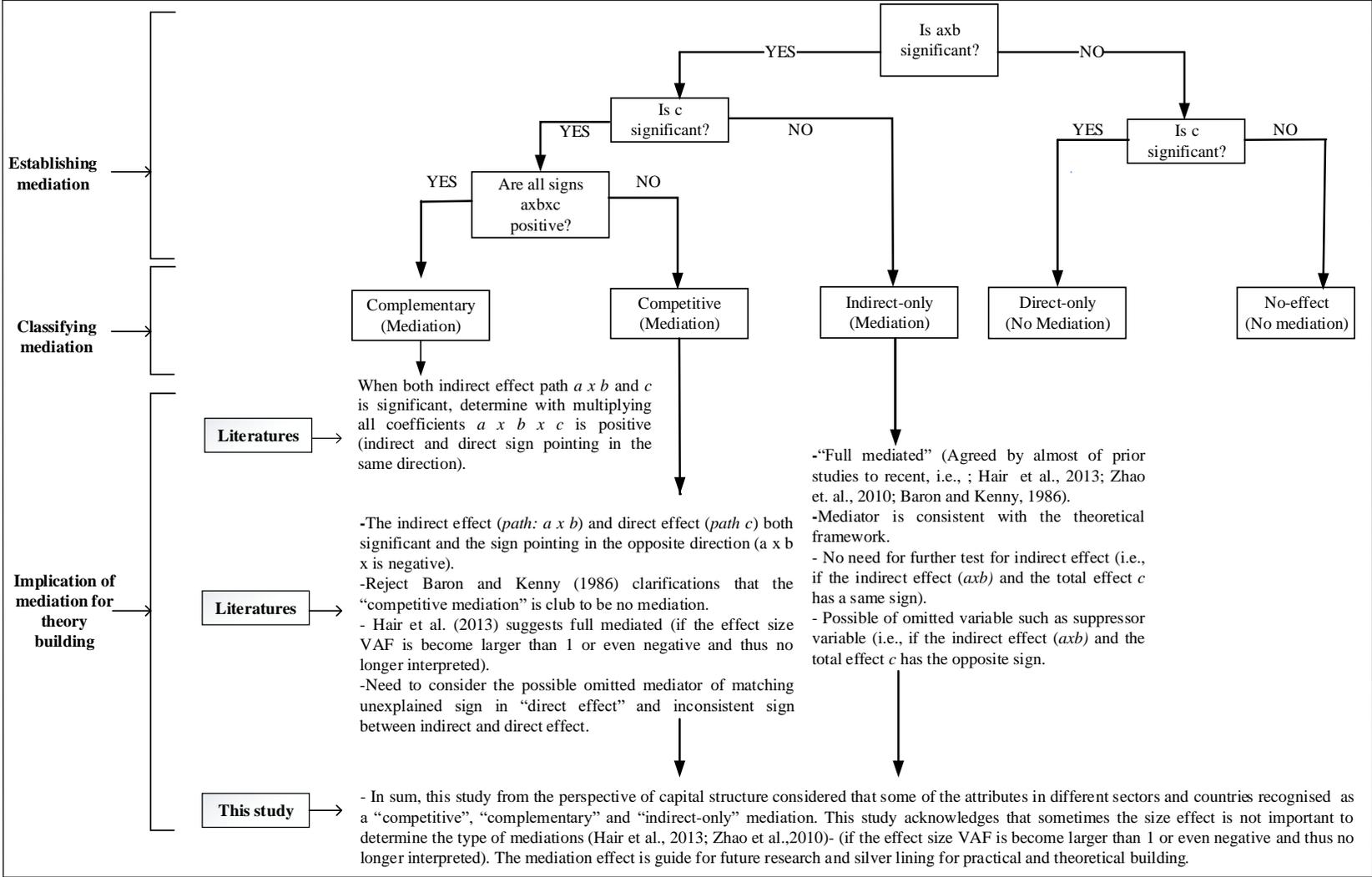
Figure 3 A decision tree for a typology of mediation effects

6. Conclusion

The key objective of this study was to empirically test the comprehensive simultaneous interrelationships between countries, economic sectors, capital structure and performance. To date, this is the first study to examine the relationships between those factors, especially involving mediation and the equality of coefficient effects in different sectors. Normally, the extensive capital structure literature looks at the concept of direct effect relationships $X \rightarrow Y$ (i.e., capital structure determinants) and this is a clear concept that has been understood among all researchers. However, in respect to economic sectors, it is often unclear how capital structure determinants (X) affect performance (Y) directly and how the concept of direct effect $X \rightarrow Y$ can be labelled the "effect to be mediated". Traditional cause and effect relationships let us say X and Y do not normally consider the effect of the mediation variable. My study specifically allows for this "mediation" to define the causal relationship between X and Y. We find that some determinants of capital structure do not only directly enhance firm financial performance. Firm financial performance is also influenced by how capital structure from the product category in the particular sector has been financed.

We find that there is a mediation effects between some of the firm-country attributes and firm financial performance for the Malaysian tertiary sector as well as Indonesian secondary and tertiary sectors. It should be well understood by financial managers that secondary and tertiary sectors plays an important role in the mediation effect between capital structure determinants (i.e., asset structure, growth opportunities, firm size, liquidity, non-debt tax shield, interest rate and economic growth) and firm financial performance but not significant for the primary sector. We find that mediation specifically for asset structure and growth opportunities attributes in the secondary sector is mostly in the form of the negative indirect effect, whereas it is positive indirect effect in the tertiary sector. The negative indirect effect indicates that the firm will not necessarily perform well even though the firm has high capital structure employed and favorable firm and country-specific factors. For example, for a firm that has a high level of tangible assets, the tendency to employ debt will be high, and consequently, high debt employed leads to a lower performance (indirect effect *ab* is negative). This suggests that the secondary sector might be using inappropriate amount of debt which causes the low performance. Also, we observe that the secondary sector has been more seriously affected by the financial crisis compared with the other sectors. This result is reflected in the Indonesian sample, particularly in the year 1997-1999 and 2007 to 2010. Most of the data set during these crisis years produces the high negative firm value, especially for the automobile, construction and industrial metal industry. The implication clearly indicates that the Indonesian government should introduce policies that enhance competitive advantage for the secondary sector. The Indonesian government should also strengthen bankruptcy law in order to have a better future growth and to minimize the bankruptcy risk and firm financial distress. Thus, the activity within the sector suggested growing through new innovative mechanism or less risky routes (if it is necessary use lowest risk debt or safest security).

The positive indirect effect indicates that firm performance is enhanced by having high debt financing and high level of firm and country- specific factors. For example, as we observed in Malaysian tertiary sectors, when the firm has good asset structure and growth opportunities, the firm tends to increase the debt level and consequently lead to a better performance. The firm is able to maximize their performance by minimizing their cost of financing through the appropriate amount of capital structure. The results of this study suggest that the Malaysian tertiary sector is able to mitigate the agency problem, and is better in dealing with the financial distress and risk. The legal protection

in Malaysia is efficient (i.e., high shareholder right, high creditor right and develop of bankruptcy law) compared to Indonesia. We highlight the essentiality of mediation in the capital structure arena to the extent of capital structure determinants and performance in different economic sectors. Thus, mediation analysis should consider this into account because it may contribute well to further practical and theoretical development. The contribution of this study is to help the firm manager to make a good decision on the proportions of their capital structure.

The result provided in this study gives a meaningful guide for future research in speculating about the meaning of unexpected direct effects c'. We give a valuable contribution to the literature on how to identify the attributes from the perspective of capital structure study related to capital structure and performance in different economic sectors.

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